BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Financing Rural Electric Generating Facilities: A Large And Growing Activity

The Rural Electrification Administration is providing billions of dollars of loans and loan guarantees to finance the construction of electric generating plants and related facilities in rural areas. In fiscal year 1979 such financing totaled about $5.5 billion and, based on projections, could more than double in 1990.

This report provides information on how such financing is provided and budgeted for and on REA's policies and procedures governing loans and guarantees made to power supply systems, including

--the need to include REA loans and guarantees in Federal budget totals and to attain greater private credit involvement in financing borrowers' needs;

--opportunities for improving the planning of power supply systems; and

--lessons to be learned from the Coal Creek Power Project, a project with large cost overruns and other problems.

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This report discusses the Rural Electrification Administration's loan program for financing the construction of electric generating plants and related facilities in rural areas. It examines and provides information on how the loans are funded and budgeted for and on the policies and procedures followed in making the loans.

Our review was made to assess the effectiveness of the policies and procedures followed in guaranteeing and making insured loans to power supply systems and to provide the Congress with information on these relatively new and growing loan programs. A report on loans made to rural electric distribution systems was issued on May 30, 1980 (CED-80-52).

We are sending copies of this report to the Director, Office of Management and Budget; the Secretaries of Agriculture, Energy, and Treasury; interested congressional committees and subcommittees; and to various Members of Congress.

Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT
TO THE CONGRESS

FINANCING RURAL ELECTRIC GENERATING FACILITIES: A LARGE AND GROWING ACTIVITY

D I G E S T

The Rural Electrification Administration (REA), through insured and guaranteed loans, makes available billions of dollars in financing to construct electric generating and transmitting facilities to meet the increasing demands for electricity in rural areas. To gain better budgeting control and increase private credit involvement, GAO believes that changes are needed in how this financing is budgeted for and funded.

Also, because of the magnitude of REA assistance, it has great potential to help solve the Nation's energy crisis. REA's primary role as banker may need to be changed to fully realize this potential. However, REA could help solve energy problems without such a change through improved power system planning.

FUNDING MAJOR GENERATING AND TRANSMITTING FACILITIES

REA has financed generating and transmitting facilities for many years, however, only when the agency was authorized to guarantee loans in 1973 did it begin financing projects at current levels. In 1979 REA approved $50 million in insured loans and $5.43 billion in guaranteed loans to power suppliers (i.e., utilities producing and selling wholesale power as opposed to distribution systems that retail power).

Projections of REA borrowers' capital requirements were made in conjunction with two separate studies--one by the Department of Agriculture and the Office of Management and Budget and the other by two cooperative associations. The first projects that $16.7 billion will be required in fiscal year 1990 and the second projects that $12 billion will be required in calendar year

1990. Without a change in present policies, nearly all of this financing will be met through REA's guaranteed loan program. (See pp. 11 to 15.)

One of the Congress' objectives in authorizing the guaranteed loan program was to increase the private credit involvement in REA's loan programs. But almost all loans REA guarantees are made by the Federal Financing Bank, a wholly owned Government corporation that receives its funds from the U.S. Treasury. This practice converts REA guaranteed loans into direct Government loans.

Alternative credit sources are available to power suppliers, including their own financing organization. Although such financing will be at somewhat higher interest rates, REA must move borrowers in this direction to avoid placing the entire financing burden on the U.S. Treasury, ensure that borrowers have an alternative source of credit if the Government is unable and/or unwilling to fund the capital requirements projected, and achieve greater involvement by private creditors.

Although REA insured loans and guaranteed loans made by the Bank are, in effect, direct Government loans, they are not included in expenditure totals of the unified Federal budget. GAO has consistently opposed such off-budget programs primarily because they do not have to compete for resources on the same basis as on-budget programs. The President has proposed changes to gain better control over Federal credit programs which are expected to be about $600 billion by 1980; however, the proposed changes do not fully satisfy GAO's concerns. (See pp. 15 to 28.)

REA guarantees, by statute, are for the full amount of the loans. As of December 31, 1979, cumulative guaranteed loans totaled $16.7 billion and could exceed $200 billion by the mid to late 1990s. While REA borrowers' repayment record is excellent, such loans are not risk-free. Some of this risk could be shifted to private lenders and borrowers by

reducing the Government guarantee to less than 100 percent and charging a loan guarantee fee to fund a reserve for losses (see pp. 28 and 29).

OPPORTUNITIES FOR IMPROVING PLANNING OF POWER SUPPLIERS

REA's potential to help solve our Nation's energy problems is great. Improving the power suppliers' planning efforts could help toward this end, but to take full advantage of REA's potential, a change in its primary role as banker may be needed.

REA borrowers purchased and generated 164 million megawatt hours of power in 1978 compared with 79 million megawatt hours in 1970. The proportion of this total generated by REA borrowers has doubled about every 20 years; it was 32 percent in 1978. With REA financing more than $5 billion a year to construct generating and related facilities, this trend is likely to continue, if not accelerate. (See pp. 39 to 48.)

Determining the need for powerplants begins with a forecast of power requirements. Accurate forecasts are a critical part of planning--overforecasts can result in costly idle capacity and underforecasts can result in lack of electricity. Although REA has improved its forecasting procedures, it basically relies on forecasting techniques used before the guaranteed loan program and the energy crisis--a single forecast developed primarily on historical data.

GAO examined the accuracy of five power suppliers' forecasts made in the early and mid-1970s, when forecasting was difficult because of rapidly changing use patterns. The 5-year forecasts of four of the borrowers overestimated energy demand by 5.8 to 24 percent and the 4-year forecast of the remaining borrower overestimated demand by less than 1 percent.

Rapidly changing energy-use patterns complicate forecasting because historic growth rates cannot serve as accurate indicators of future growth.

REA has recognized the need for change and is reviewing forecasting methods and techniques to develop a forecasting manual sometime in 1981. (See pp. 48 to 57.)

REA has acted to help solve our Nation's energy problems. Many actions taken have been directed at distribution systems. But, GAO believes the power suppliers, with their overall responsibility for power planning and supply, could be better used in this effort. To do this power suppliers, as part of their planning effort, should be required to perform in-depth, systemwide studies of all reasonable supply options, including conservation, load management, renewable energy sources, purchased power, power pooling, and joint projects.

Power suppliers prepare detailed feasibility studies of the supply alternatives considered. However, the alternatives studied are limited to those judged most appropriate by REA and borrowers during the exploratory planning phase. To ensure that the most appropriate mix of supply alternatives is selected, the suppliers need to formally study the feasibility of, and use, all reasonable alternatives and supplemental supply sources.

Recent REA actions should result in borrowers giving greater consideration to various supply options. For example, January 1980 instructions governing environmental impact studies stress the importance of showing the options considered, and a proposed revision to these instructions specifically requires a discussion of options such as conservation, load management, and renewable energy sources. Also, REA's January 1980 reorganization, in part, was designed to assist borrowers develop alternatives and supplemental supply sources.

In making and guaranteeing loans, REA's prime concern must be the borrowers' ability to repay their loans. The agency has little funding flexibility to finance demonstration projects, studies, or programs designed to solve the Nation's energy problems.

Other Federal agencies and non-Federal organizations, however, are funding such efforts. REA should act as a catalyst by evaluating and disseminating information about these studies and projects to its borrowers. Later, REA may wish to seek broadened funding authority from the Congress to conduct its own demonstration projects, studies, or programs. (See pp. 57 to 74.)

Power planning is viewed as highly technical and is primarily done by the borrowers, with REA and other agencies reviewing the plans. Because decisions by electric utilities can have an impact on the lives of individual consumer/ members and other private citizens, their participation in the early stages of developing the power suppliers' long-range plans should be increased. (See pp. 74 to 78.)

THE COAL CREEK PROJECT--A CASE STUDY

The Coal Creek Power Project--a joint effort by two Minnesota power supply cooperatives--has been beset with problems and public controversy due to escalated construction costs, siting of the transmission line, and uncertainty about possible adverse effects of extra high-voltage transmission lines on people, animals, and plants. These problems could have been minimized through better and more effective planning.

Estimated to cost $537 million in mid-1973, the project's latest estimate is $1,262 million. The initial estimate covered the cost of constructing a generating plant and transmission line which are now estimated at $1,047 million. Development costs for a coal mining complex were not included in the initial estimate but were later estimated at $96 million. This estimate has been increased to $215 million.

In a November 1979 report on the Coal Creek Project, GAO concluded that while some cost increases were beyond the cooperatives' control, there was inadequate planning for a project of this size, and that the decision to proceed with

the project should have been reevaluated based on changed conditions.

One main factor affecting the project was public opposition. Although the project was being considered in 1972, many individuals whose lives and property were affected did not learn of the project until the spring of 1974.

Although the power suppliers began a concerted effort to address the public concerns about the project in 1976, the effort came too late. Also, an opportunity to obtain public comment was missed when the REA Administrator elected not to hold the usual public hearings on the project's environmental impact statement.

Individual consumer/members are insulated from the affairs of the power suppliers. To affect power supply decisions, individual members must work through their local distribution system cooperative. GAO found, however, that this avenue is not used extensively. (See pp. 83 to 105.)

RECOMMENDATIONS TO THE AGENCY

To encourage more private credit sector involvement in the guaranteed loan program, REA should require borrowers to obtain part of their loans from private lenders. (See p. 30.)

To improve power system planning and help solve national energy problems, REA should

--evaluate and disseminate information on demonstration and study projects funded by others and determine whether it should have broadened authority to fund its own projects;

--require power suppliers to make in-depth, systemwide studies of all reasonable power supply options to ensure that the most appropriate mix of alternatives for meeting estimated demand is chosen; and

--require borrowers to take aggressive action to involve individual members and private citizens in the early stages of their long-range planning process. (See pp. 79 and 80.)

To help preclude major cost overruns on projects, GAO recommends a number of actions REA should take to intensify its evaluation of the adequacy of feasibility studies. (See pp. 106 and 107.)

RECOMMENDATIONS TO THE CONGRESS

The Congress should enact previous GAO recommendations that would result in the Federal credit assistance activity that currently goes through the Federal Financing Bank being more adequately reflected in the budget totals.

Also, to avoid placing the full contingent liability of REA guaranteed loans solely on the Government, the Congress should revise the Rural Electrification Act of 1936 to limit the REA guarantee of loans made by private lenders to less than 100 percent and to require that a loan guarantee fee be assessed to fund a reserve for losses. (See pp. 30 and 31.)

AGENCY COMMENTS

The Departments of Agriculture and Treasury and the Cooperative Power Association and the United Power Association--the two owners of the Coal Creek Project--commented on all or a part of this report. Their comments are incorporated where appropriate and their letters are included in appendixes V through VIII.

Agriculture disagreed with GAO's recommendations concerning the need to (1) include REA program outlays in the Federal budget totals, (2) obtain increased private credit involvement in the guaranteed loan program, and (3) require borrowers and lenders to share in the risk of guaranteed loans. (See pp. 31 to 36.)

Regarding the need to include REA program outlays in the budget totals, Agriculture said that all REA programs are extensively reviewed by the Administration and the Congress. This, however, does not alter other equally important facts, particularly that such off-budget programs are not reviewed in competition for resources with on-budget programs.

GAO continues to believe that increased private credit involvement in the program, a congressional objective, needs to be attained.

Although, as Agriculture stated, the Congress specifically required full guarantees and prohibited guarantee fees in the 1973 amendments to the act, GAO believes these statutory provisions should be reassessed in light of the huge contingent liability resulting from the guarantee program, the magnitude of which may not have been fully appreciated in 1973.

Agriculture agreed that planning improvements could be made and said that it had already begun to implement many actions recommended by GAO (see pp. 80 to 82). It also said that REA's cost-estimating record compares favorably with private utilities and other Government agencies (see pp. 107 and 108).

Treasury agreed that REA borrowers should be encouraged to use private credit sources. It said, however, that the increased interest costs of private credit would weaken borrowers' financial positions and delay their eventual transition to private credit. (See pp. 36 to 38.)

GAO believes that involving private credit in the guarantee program would best be done on a gradual basis. In this way the impact of increased interest costs on the borrowers' financial operations could be minimized with increased proportions of private credit required only as warranted.

Cooperative Power Association and United Power Association, in commenting on chapter 4, said they believe that planning for the project and the cost estimates made were adequate considering the time period in which they were made. (See pp. 108 and 109.)

Contents

ABBREVIATIONS

BC	Banks for cooperatives
CFC	National Rural Utilities Cooperative Finance Corporation
CPA	Cooperative Power Association
DOE	Department of Energy
FFB	Federal Financing Bank
GAO	General Accounting Office
GWH	gigawatt-hour
IOU	investor-owned utility
MWH	megawatt-hour
NRECA	National Rural Electric Cooperative Association
REA	Rural Electrification Administration
SMSA	standard metropolitan statistical area
UPA	United Power Association
USDA	Department of Agriculture

GLOSSARY

Capacity	Maximum power output of a generating plant, expressed in kilowatts or megawatts.
Conservation	Improving the efficiency of energy use; using less energy to produce the same product.
Demand	The rate at which electric energy is delivered to or by a system, expressed in kilowatts or megawatts, over any designated period.
Demand forecast	Projection of the future demand for electricity. Various types of demand forecasting models include trending, econometric, and end-use (or engineering).
Econometric model	A forecasting model based on assumed relationships between electricity consumption and general demographic and economic variables such as gross national or State product, prices of electricity and competing fuels, prior year's electricity sales, and population.
End-use (engineering) model	A forecasting model relying on a detailed enumeration of all energy-using equipment that is expected to be functioning during the forecast period. A use-rate is applied to each type of equipment to forecast total energy consumption.
Energy	The ability to do work; the average power production over a stated interval of time; expressed in kilowatt-hours, megawatt-hours, average kilowatts, or average megawatts. Equivalent terms: energy capability, average generation, and firm-energy-load-carrying capability.
Gigawatt	The electrical unit of power which equals 1 billion watts or 1,000 megawatts.

Gigawatt-hour	A basic unit of electrical energy which equals 1 gigawatt of power applied for 1 hour.
Kilowatt	The electrical unit of power which equals 1,000 watts.
Kilowatt-hour	A basic unit of electrical energy, which equals 1 kilowatt of power applied for 1 hour.
Load	The amount of electric power delivered to a given point on a system.
Megawatt	The electrical unit of power which equals 1 million watts or 1,000 kilowatts.
Megawatt-hour	A basic unit of electrical energy which equals 1 megawatt of power applied for 1 hour.
Load management	Influencing the level and state of the demand for electrical energy so that demand conforms to individual present supply situations and long-run objectives and constraints.
Power	The time rate of transferring or transforming energy; for electricity, expressed in watts. Power, in contrast to energy, always designates a definite quantity at a given time.
Reserve capacity	Extra generating capacity available to meet unanticipated demands for power or to generate power in the event of scheduled or unscheduled outages of regularly used generating capacity.
Trend forecast	A forecast that relies heavily on historical consumption patterns to project future consumption.

CHAPTER 1

INTRODUCTION

The Rural Electrification Administration (REA) was established by Executive Order 7037 on May 11, 1935, as part of an unemployment relief program under the Emergency Relief Appropriation Act of 1935 (49 Stat. 115). REA was made an independent agency in 1936 by the Rural Electrification Act (7 U.S.C. 901) and became a part of the Department of Agriculture (USDA) in 1939.

Public Law 93-32 (87 Stat. 65), enacted May 11, 1973, amended the act to, among other things, establish the Rural Electrification and Telephone Revolving Fund and authorize REA to make insured loans and to fully guarantee loans made by others. The insured loans are funded through the Fund's receipts and through the sale of certificates of beneficial ownership (certificates) to the Federal Financing Bank (FFB), a wholly owned Government corporation. The guaranteed loans are made by non-REA lenders, usually the FFB, and guaranteed by REA. Prior to Public Law 93-32, REA was only authorized to make direct loans which were funded through REA borrowings from the Department of the Treasury. The law also provided that REA loans would be excluded from the totals of the Federal budget.

REA, through insured and guaranteed loans, makes billions of dollars of financing available to power supply systems to meet the electrical energy requirements of rural consumers. This report examines and provides information on this relatively new and growing loan program to assist the Congress with its oversight responsibilities and offers some recommendations for improvements and changes.

OBJECTIVES OF REA's ELECTRIC PROGRAM

The Rural Electrification Act, as amended (7 U.S.C. 902), authorizes the REA Administrator to make loans for rural electrification and for furnishing electric energy to persons in rural areas who are not receiving central station electricity (that is, electricity received from a central generating plant as opposed to an individually owned electric generator). As defined in the act, a rural area is any area not within the boundaries of a city, village, or borough having a population in excess of 1,500 inhabitants. Once a rural area qualifies for and receives financial assistance, it remains eligible for REA assistance even though its population goes above 1,500.

Nearly all persons living in rural areas now have central station electricity. Currently, most electric loans are made to finance the continuing need for improving systems and providing new facilities to accommodate the growth of rural areas.

In amendments to the act enacted May 11, 1973, the Congress set forth the following policy.

> "That it is hereby declared to be the policy of the Congress that adequate funds should be made available to rural electric and telephone systems through direct, insured, and guaranteed loans at interest rates which will allow them to achieve the objectives of the Rural Electrification Act of 1936, as amended, and that such rural electric and telephone systems should be encouraged and assisted to develop their resources and ability to achieve the financial strength needed to enable them to satisfy their credit needs from their own financial organizations and other sources at reasonable rates and terms consistent with the loan applicant's ability to pay and achievement of the Act's objecjectives." (Underscoring supplied.)

The objectives of REA's program, as stated in REA Bulletin 2-1, August 15, 1969, are as follows:

> "The objectives of the Rural Electrification Administration programs are to provide, through self-liquidating loans under the Rural Electrification Act of 1936, as amended, and through technical assistance, adequate, dependable electric and telephone service sufficient to meet the needs of beneficiaries of the Act, both farm and nonfarm, in rural areas on an area coverage basis, under rates and conditions that permit full and productive use of these utility services."

REA Bulletin 2-1 also prescribes the policies REA will follow in achieving program objectives. One of the policies is that REA is to help develop the borrowers' resources and ability to meet their financial and other needs, handle their own affairs effectively, and achieve as soon as possible the internal strength and soundness to assure success as an independent enterprise. It states also that as borrowers

develop adequate internal strength and financial soundness, direct REA assistance will diminish accordingly.

Responding to our request, the REA Administrator provided us with a letter describing the objectives of REA's electric loan program. (See app. I.) One objective states that REA is to carry out the President's directives to conserve energy and assist in developing renewable energy sources by:

--Requiring borrowers, as a condition for future financing, to have energy conservation programs and providing financial assistance for load control and load-management equipment.

--Encouraging and promoting development of supplemental sources of energy by the systems or their consumers, using such renewable resources as solar heating and cooling equipment, solar crop drying, small wind generators, farm-based biomass generators, and small-scale hydroelectric facilities.

--Requiring generation and transmission cooperatives, as part of their loan application, to consider those resources capable of producing central station electric power, such as hydroelectric plants, biomass facilities, woodchips, or peat, wherever it is technologically feasible and cost effective.

--Working with other Federal agencies, as appropriate, to develop promising solar demonstration projects.

ELECTRIC LOAN PROGRAM

REA makes insured and guaranteed loans to rural electric systems to finance the construction and operation of electric generating, transmission, and distribution facilities. Insured loans are made at a standard interest rate of 5 percent or at a special rate of 2 percent to borrowers meeting certain criteria specified in the act. The maximum repayment term authorized is 35 years.

Guaranteed loans are to be made at an interest rate agreed to by the borrower and lender, generally with maximum repayment terms of 35 years. Most of the loans REA guaranteed (over 90 percent) have been made by the FFB.

Insured loans are made to both distribution and power supply systems, while guaranteed loans are generally made

only to power supply systems. A distribution system typically buys its power at wholesale rates from existing suppliers and sells it to retail consumers, whereas a power supply system generates electrical power and wholesales it to others for resale. As of December 31, 1978, there were 983 active REA borrowers, of which 934 were engaged primarily in operating distribution systems and 49 engaged primarily in operating generation and transmission facilities.

Although REA is authorized to make loans to investor-owned utilities (IOUs), the act requires that preference be given to public entities and cooperative, nonprofit, or limited-dividend associations. Most of REA's electric loans (over 90 percent) have been made to cooperatives.

LOAN FUNDING AND COSTS

During fiscal year 1979 REA approved 431 insured loans totaling about $1 billion, including about $223 million made at the special 2-percent interest rate, and 14 guaranteed loans totaling $5.43 billion. For fiscal year 1980 the Congress authorized a minimum of $850 million and a maximum of $1 billion of insured loans, and REA estimated that $5 billion of loans would be guaranteed. 1/ Through September 30, 1979, REA cumulative loan commitments totaled $13.7 billion for insured and direct loans and $15.6 billion for guaranteed loans.

REA loan levels have increased substantially since the act was amended in 1973. In fact, the amount of insured and guaranteed loans REA approved during this period is over 2-1/2 times the amount of direct loans it approved in the previous 38 years. From inception of the program in 1935 through the end of 1972, 2/ REA approved a total of $8.4 billion of direct loans, whereas, from May 1973 through December 1979 it approved about $5.6 billion of insured loans and $16.8 billion of guaranteed loans, or a total of $22.4 billion.

1/Although specific levels for guaranteed loans are not authorized by appropriation acts, pending legislation, if enacted, would include such limits for fiscal year 1981.

2/In December 1972 USDA announced the termination of the direct loan program and that future REA loans would be funded through the Farmers Home Administration's Rural Development Insurance Fund. As a result of this action, a number of bills were introduced in the Congress, culminating in the enactment of Public Law 93-32 in May 1973.

REA is authorized to guarantee loans made by a qualified lender. The lenders under this program are shown below.

Lender	REA loan guarantee commitments through December 31, 1979	
	Amount	Percent
	(millions)	
Federal Financing Bank	$14,868.5	88.7
Banks for cooperatives (BC)	729.0	4.4
Lender had not been selected by borrower	1,158.4	6.9
Total	$16,755.9	100.0

Currently FFB obtains its funds from the Treasury. The interest rate FFB pays is based on Treasury's estimate of the interest rate it would pay on long-term borrowings. FFB in turn makes loans to the electric systems at the same interest rate it pays the Treasury plus an add-on of one-eighth of 1 percent to cover its administrative costs and marketing risks.

Although it is intended that the Treasury will not loan funds to the FFB at lower interest rates than it can borrow, whether this is the case depends on the accuracy of the Treasury's estimates and other factors (see pp. 18 and 19). Estimates are necessary because the Treasury does not actually borrow the funds for the loans it makes to FFB on a one-for-one basis. Rather the funds are obtained from a pool of moneys which includes tax receipts and borrowings of various maturities.

Insured loans are funded through the Rural Electrification and Telephone Revolving Fund established by Public Law 93-32 in May 1973. Public Law 93-32 required that the outstanding assets of the electric and telephone programs be transferred into the Fund. Also, the Fund would receive all subsequent receipts of principal and interest, and interest payments on outstanding Treasury borrowings used to finance the program would be canceled. The law also authorized the sale of assets (borrowers' loan notes) in the form of certificates, which are sold to FFB.

The Fund finances insured loans for electric and telephone programs, interest subsidy costs incurred, and

defaults on insured and guaranteed loans. Income for the Fund is derived from principal and interest payments on outstanding loans, and interest expense is incurred on the funds obtained from FFB through sales of certificates and on interim borrowings from the Treasury.

Funds for loans are obtained through principal repayments and interest receipts paid into the Fund on outstanding loans. Loans made in excess of principal repayments and interest receipts are funded on an interim basis by borrowings from the Treasury. In March and September of each year, certificates are sold in an amount necessary to refinance the interim borrowings plus interest expense incurred on the interim borrowings and on the balance of certificates outstanding at the beginning of the period.

As of December 31, 1979, a total of $7,865 million of unpaid, interest-free Treasury notes was outstanding in the Fund. These notes will mature and become due between 1993 and 2016. Primarily because of the large sum of interest-free Treasury notes outstanding, the Fund's interest earnings have exceeded its interest expense, and therefore no direct appropriations by the Congress have been needed. Based on REA projections, the Fund's interest expenses will exceed its interest earnings by 1988, and REA could choose to ask the Congress for appropriations to make up the difference. However, if REA should choose not to do so, the Fund's disbursements are projected to exceed its receipts by about (1) $24 million in 1999, (2) $2.3 billion in 2000, and (3) greater amounts in succeeding years, which will require appropriations.

According to data obtained from REA's Assistant Budget Director, REA estimates that for fiscal year 1981, the Fund's actual interest expense applicable to electric loans will be $133.7 million and that the imputed net interest cost to the Government (REA and the Treasury) will be $652.4 million. These estimates were based on the 9.75-percent average interest rate in effect on all marketable issues of the Treasury outstanding as of February 29, 1980. REA estimates that the imputed interest expense on the $850 million of insured loans it projects will be made in fiscal year 1981 will cost the Government $1,246.6 million over the 35-year life of the loans. Estimated administrative expenses of the electric program for fiscal year 1981 are about $15 million.

PROGRAM ACCOMPLISHMENTS

When REA's electrification program began in 1935, about 11 percent of the Nation's farm families had electricity, whereas nearly all have electricity today. REA has contributed significantly to this accomplishment.

With REA funding and support, rural electric cooperatives were formed to build and maintain distribution systems to serve their rural members. For the most part, the cooperatives purchased electric power from Federal power projects or electric companies and distributed it to consumers.

As the distribution network expanded nationwide, the distribution cooperatives began to form member-owned generation and transmission (power) cooperatives. 1/ Initially, these power cooperatives served largely as a service organization for the members, arranging and contracting for the purchase of bulk power which in turn was sold to distribution members. Subsequently, some of these power cooperatives began to build their own generating capability to reduce their dependence on outside sources of electric power.

According to REA, part of the reason for the lack of central station electricity in rural areas before REA's creation was that costs were prohibitive. For example, the cost of building electrical lines before REA was estimated at $1,500 to $2,000 per mile. By the end of 1936, REA was funding projects with line costs of $941 per mile and by 1939 this cost averaged less than $825 per mile. REA was instrumental in reducing these costs.

The electrical power provided by cooperatives and other REA borrowers has resulted in increased prosperity and productivity and a better quality of life for millions of farmers and other rural residents. By January 1980, 1,098 former and present REA borrowers were providing electricity to about 10.3 million consumers, or an estimated 30 million people, in 46 States, Puerto Rico, and the Virgin Islands.

Cooperatives and other REA borrowers have grown significantly through the years. In calendar year 1978 active distribution system borrowers 2/ sold 135 million megawatthours (MWH) of electricity and had revenues from sales of electric energy of about $4.8 billion, as shown below.

1/ The majority of distribution systems now are members of a power supply system. Notable exceptions are those obtaining their total power needs from Federal power agencies.

2/ Based on data reported by 925 of the 934 active distribution system borrowers.

Type of consumer	MWH sold	Revenue	Consumers
	(millions)		
Residential (farm and nonfarm)	85.9	$3,262	7,644,130
Commercial and industrial, small	10.1	415	525,072
Commercial and industrial, large	30.3	860	44,500
Irrigation	4.6	148	124,457
To others for resale	2.5	55	290
Other electric service	1.6	58	57,262
Total	135.0	$4,798	8,395,711

Power supply systems 1/ sold about 97 million MWH of electricity and had revenues from sales of electricity of about $2.1 billion in calendar year 1978. As of December 31, 1978, the assets of the distribution systems totaled $10.1 billion and those of the power supply systems totaled $9.8 billion, with equities of 31.5 and 3.5 percent, respectively.

REA's accomplishments have been achieved with minimal losses. For example, of the cumulative loans REA had made, only two, with principal and interest totaling about $45,000, have been written off as bad debts.

In addition to financial assistance, REA has provided rural electric systems with management and technical assistance in areas such as engineering, accounting, and financial management. This assistance included technical bulletins and manuals as well as training and direct assistance.

OBJECTIVES, SCOPE, AND METHODOLOGY

The primary purposes of our review were to assess the effectiveness of the policies and procedures REA follows in guaranteeing and making insured loans to power supply systems and to provide the Congress with information on these relatively new and expanding loan programs. A report on loans to distribution systems was issued May 30, 1980. (See app. II.)

1/Based on data reported by 46 of the 49 active power supply system borrowers.

We reviewed legislation and policies pertaining to REA's electric loan program and various studies relating to electric energy and to financing activities. Our review focused on the loans made to five power supply borrowers located in four of REA's five area offices, selected primarily on the basis of location, size of loans, and congressional interest. REA approved $4.2 billion of insured and guaranteed loans to these five borrowers from July 1, 1973, to December 31, 1978--the general period in which the loans covered by our review were approved--or about 38 percent of all such loans to power supply systems approved during this period.

We reviewed borrowers' power requirements forecasts, power supply surveys supporting their loan justifications, feasibility studies, and other documents prepared in conjunction with their loans. For some of these matters, our review was expanded to include loans to borrowers other than the five we focused on.

The review was made primarily at REA's national headquarters in Washington, D. C., where all loan records are maintained. We also visited 5 power supply borrowers and 13 distribution borrowers in four States. We interviewed officials and representatives of REA, other government agencies, cooperative organizations, power supply and distribution borrowers, and lending institutions.

The Chairman, Subcommittee on Family Farms, Rural Development, and Special Studies, House Committee on Agriculture, requested information on the REA-financed Coal Creek electric generation and transmission project and on REA activities. (See app. III.) Because we had ongoing reviews in the electric utility and REA areas, the chairman agreed with our proposal to divide the request and incorporate the audit work for the two areas in the scope of these two reviews. Consequently, we issued a report on November 26, 1979 (see app. II), on the Coal Creek Project which discussed several of the chairman's concerns, including the large increase in costs, the transmission line siting process, and the potential health hazards of the high-voltage, direct current transmission line.

This report discusses these and other concerns of the chairman regarding REA's power forecasting procedures, particularly the consideration given by REA and borrowers to small decentralized generating units, the impact of suburban growth on rural cooperatives, and the individual consumer/

member's role in the decisionmaking process of power supply systems. The Coal Creek Project is also included in the report as the subject of a case study (see ch. 4).

CHAPTER 2

NEED TO ENCOURAGE PRIVATE CREDIT SECTOR INVOLVEMENT IN REA'S GUARANTEED LOAN PROGRAM

The major portion of the loans REA guarantees are made by the Federal Financing Bank. This practice, in effect, converts REA's guaranteed loan program into a direct Government loan program. According to one estimate, $12 billion will be needed in calendar year 1990 to fund the construction of generation and transmission facilities. Unless the present guaranteed loan program is revised, the Government will be asked to fund nearly all of these projected capital needs.

Alternative credit sources are available for funding the power supply systems' capital needs--including the systems' own financing organization. Although such financing will be at somewhat higher interest rates, we believe REA must begin to move the borrowers in this direction to (1) avoid placing a major burden upon the U.S. Treasury, (2) help ensure that power supply systems have an alternative source of credit in the event the Government is unable and/or unwilling to fund such large loan amounts, and (3) be more in line with the Congress' objective of encouraging private credit sector involvement in the program.

Other matters discussed in this chapter are:

--The need to include REA insured loans and FFB loans guaranteed by REA in the totals of the Federal budget.

--The need to consider the desirability of shifting some of the risk of these fully guaranteed loans to the lenders and borrowers by guaranteeing only a portion of the loans made by private lenders and by requiring the payment of a loan guarantee fee.

INCREASING CAPITAL NEEDS OF POWER SUPPLY SYSTEMS

From May 1973 through December 1978, REA approved insured loans of $4.6 billion and guaranteed loans of $10.4 billion, or a total of $15 billion in less than 6 years. While this sum is large, future loan amounts approved by REA are expected to be much greater.

Projections of the capital needed by REA borrowers to finance the construction of electric generating plants and transmission lines were made in conjunction with two different studies. While substantial differences in these projections exist, both indicate large amounts of capital will be needed by the borrowers. For example, the middle estimate from one projection shows $16.7 billion of capital will be needed in fiscal year 1990 and the other shows $12 billion will be needed in calendar year 1990.

Unless changes are made in the policies and procedures REA follows in making insured and guaranteed loans to these systems, nearly all of their capital requirements will be financed through REA. 1/ REA's policies and procedures governing loans made to power supply systems are discussed below. Those governing loans to distribution systems were discussed in our May 1980 report.

REA loans to power supply systems have far exceeded previous projections. For example, in an REA April 1972 study on alternative sources of funds available to borrowers, it was projected that in fiscal year 1978 power supply systems would require about $500 million of long-term financing, of which $150 to $225 million would be provided by REA. The amount of insured and guaranteed loans REA approved for power supply systems in fiscal year 1978 totaled about $2.4 billion.

As illustrated above, projecting the future financing needs of power supply systems is difficult. One reason for this is that the financial projections are closely related to the future requirements for energy which, as discussed in chapter 3 of this report, can be difficult to predict.

In conjunction with a study that was being made of REA's electric program by USDA and the Office of Management and Budget, projections of the capital power supply systems need to finance the construction of electric generating plants and transmission lines were made through 1995. USDA supplied these projections for the record in hearings on REA appropriations for fiscal year 1979. The following schedule shows the projected annual capital power supply systems will need to provide facilities needed to meet low, moderate, and high levels of growth of energy requirements.

1/Power supply systems do obtain long-term financing through non-REA sources. Such financing totaled about $424.4 million in fiscal year 1979. Almost all of this financing was obtained through pollution control bonds, interest on which is exempt from Federal income taxes.

PROJECTED CAPITAL REQUIREMENTS OF POWER SUPPLY

SYSTEMS AT VARIOUS LEVELS OF ENERGY DEMAND

Fiscal year	Low growth amounts		Moderate growth amounts		High growth amounts	
	Current dollars (note a)	Constant dollars (note b)	Current dollars (note a)	Constant dollars (note b)	Current dollars (note a)	Constant dollars (note b)
	(millions)					
1980	$ 5,147	$ 5,005	$ 7,251	$ 7,053	$ 8,726	$ 9,168
1981	3,426	3,048	5,167	4,597	6,849	6,094
1982	3,628	3,048	5,615	4,715	7,617	6,396
1983	3,846	3,048	6,185	4,899	8,456	6,693
1984	4,323	3,231	6,800	5,089	9,681	7,237
1985	4,582	3,231	7,640	5,385	10,957	7,723
1986	5,489	3,651	8,904	5,924	12,951	8,616
1987	6,302	3,953	10,779	8,764	15,472	9,693
1988	7,278	4,308	12,227	7,237	17,175	10,166
1989	8,138	4,544	14,137	7,894	20,136	11,243
1990	9,872	5,201	16,678	8,787	23,608	12,438
1991	10,703	5,319	18,526	9,207	26,376	13,108
1992	12,246	5,740	21,045	9,863	31,413	14,723
1993 (note c)	9,090	4,019	16,042	7,092	24,062	10,638
1994 (note c)	10,485	4,373	18,420	7,683	28,621	11,938
1995 (note c)	11,410	4,492	21,018	8,274	33,329	13,120
Total	$115,965	$66,211	$196,434	$112,463	$285,429	$158,994

a/Includes inflation factor of 6 percent.
b/Base year is 1977.
c/The forecast includes funds to be committed for plants to be online by the year 2000. Amounts decline after 1992 because nuclear plants financed after that year could not be online by 2000.

The moderate growth amounts projected were based on an 8.5-percent growth rate in demand for 1977-85 and a 7.1-percent rate for the remaining years.

The projected capital needs may be overstated somewhat because the demand for energy is growing at a significantly lower rate than anticipated at the time of the projections (the growth rate declined from 6.4 percent in 1978 to 3.3 percent in 1979). At the same time, however, the inflation rate for utility construction has been much higher than the 6 percent used in the projections (about 10 percent in 1979).

USDA objected to using the above projections on the basis that they were made in conjunction with a study that was not completed. In discussing this matter with REA officials, they suggested that we present the projections of capital requirements made by the National Rural Electric Cooperative Association (NRECA) and the National Rural Utilities Cooperative Finance Corporation (CFC) Power Supply Study Committee. The committee's projections, published in a January 1980 study, are discussed below. While lower, these projections still show that the future capital requirements of borrowers will be substantial.

The committee made low, middle, and high projections of which the middle projection was considered the most likely to occur. Capital requirement projections were made for the 1981-90 period (calendar years) based on the added plant capacity needed during the 1986-96 period. The projections range from $2.6 billion in 1981 to $12 billion in 1990, or a total of $62 billion for the period. Note that the projections do not include capital required during the 1981-85 period for plants which would become operational before 1986.

The committee's middle projections were based on a 6-percent rate of growth in demand and included an inflation factor of 8 percent, with 1980 as the base year.

While the projections made in conjunction with the two studies vary, they show the general magnitude of the capital requirements of REA borrowers for generation and transmission facilities and they are enormous. If current methods of funding remain the same, the vast majority of these capital requirements will be financed through REA's loan program.

Regarding the large financing requirements of power supply borrowers, there are three issues which should be of immediate concern to REA and the Congress. These are (1) expanding the use of non-Government lenders, (2) shifting some of the risk of the guaranteed loans to lenders and borrowers, and (3) the off-budget nature of REA loans. These matters are discussed below.

REA's POLICIES AND PROCEDURES GOVERNING LOANS TO POWER SUPPLY SYSTEMS DO NOT ENCOURAGE PRIVATE CREDIT INVOLVEMENT

The Congress' declared policy is that rural electric systems should be encouraged to work toward satisfying their credit needs through their own financial organization and other sources. Also, one of the Congress' objectives in authorizing the guaranteed loan program was to increase the involvement of private sources of credit in REA's loan programs. Since FFB is a wholly owned Government corporation and obtains its funds directly from the Treasury, REA-guaranteed loans are, in effect, direct Government loans. Since nearly all loans REA guarantees are made by FFB, we do not believe the congressional objective of increasing the involvement of private credit sources is being met. Perhaps of greater importance from the borrowers' standpoint is the possibility that the Government may be unwilling and/or unable to fund the huge amounts of capital projected to be needed in the future.

Under the present policies and procedures REA follows in making loans to power supply systems, there is little hope for involving the private credit sector in financing generation and transmission facilities in any significant manner. Because of the low interest rates FFB charges, REA encourages the borrowers to use FFB.

Guaranteed loans

The power supply systems' major source of long-term financing is through loans REA guarantees. Under the guaranteed loan program, established by Public Law 93-32 in May 1973, REA is authorized to guarantee loans made by qualified lenders for electric distribution, generation, and transmission facilities. Section 306 of the act states, in part:

> "The Administrator may provide financial assistance to borrowers for purposes provided in the Rural Electrification Act of 1936, as amended, by guaranteeing loans, in the full amount thereof, made by the Rural Telephone Bank, National Rural Utilities Cooperative Finance Corporation, and any other legally organized lending agency * * *."

When the guaranteed loan program was initiated, REA and others thought that REA would guarantee loans made by private lending institutions, one of which was the cooperatives' own financing organization--CFC. In fact, the CFC was prepared to make such loans.

The establishment of FFB provided a cheaper source of funds for the guaranteed loan program, and REA worked out arrangements with FFB for funding borrowers' needs. FFB soon became the primary source for funding loans REA guarantees.

The Federal Financing Bank Act (12 U.S.C. 2281) established FFB on December 29, 1973. One of its basic functions is to coordinate the borrowing activities of individual Federal agencies with the overall economic and fiscal policies of the U.S. Government. In this role FFB serves as a financial intermediary, lending funds to or purchasing the loans of Federal agencies. FFB is also authorized to purchase any obligation which is guaranteed by a Federal agency.

On August 14, 1974, REA entered into an agreement with FFB whereby FFB would purchase loan obligations guaranteed by the Administrator of REA. Although under this arrangement FFB is acting as a lender in the first instance (that is, loaning funds directly to the borrower), the transaction takes the legal form of purchasing the borrower's note from the borrower. Legally, therefore, FFB is acting in accordance with its statutory authority to purchase obligations guaranteed by a Federal agency. However, we question whether the REA/FFB arrangement satisfies the objective of the Congress to involve the private credit sector in REA's program.

Before enactment of Public Law 93-32, REA was only authorized to make direct loans to eligible borrowers (at an interest rate of 2 percent). These loans were financed through appropriations or borrowings from the Treasury. In December 1972 USDA announced the termination of REA's direct loan program and its replacement with an insured and guaranteed loan program under the Rural Development Act of 1972.

To a considerable extent Public Law 93-32 was enacted in response to USDA's action and represented a compromise that was designed to meet certain objectives the Administration had in replacing REA's direct loan program with insured and guaranteed loans. One of the Administration's objectives was to eliminate direct Federal loans and substitute credit from private sources at interest rates that were more in line with market rates.

In replying to certain legal questions we raised in a November 22, 1978, letter, REA recognized this program objective. REA said, in part:

> "While one of the general purposes of the 1973 RE Act Amendments was to facilitate the involvement of private capital, as opposed to federal funding, into the REA loan program, it does not follow that it was the intent of Congress to prohibit the guarantee of a loan made by a federal instrumentality where the federal instrumentality provides an efficient mechanism for eventual private source funding." (Underscoring supplied.)

We agree that REA is not prohibited from guaranteeing loans made by a Federal entity. We do not believe, however, that the use of Treasury funds through FFB satisfies the objective of the Congress to involve the private credit sector in financing REA's program. Rather, the guaranteed loan program is funded through the Treasury using funds which include tax collections and public borrowings.

Before guaranteeing a loan, REA publishes a notice in the Federal Register. This notice invites financial institutions to submit proposals for making the loan to the applicant under the REA guarantee provisions. The notice also informs such institutions that funding is available from FFB. Prospective lenders have 30 days from the date of the notice to submit their proposals.

REA will consider guaranteeing a loan from a lender other than FFB if the loan applicant requests it. If such a request is made, REA will review the financing options to determine whether the alternative financing is at least as economical as FFB financing.

REA's position on financing for guaranteed loans is that the funds will come from FFB unless the borrower can obtain funds more economically elsewhere. FFB financing is available at a rate only slightly higher than the Government's cost of borrowing, is simple to arrange, can be obtained in sufficient quantities at virtually any time, allows

for complete servicing by REA, and requires no equity investment by the borrower. According to REA's Assistant Administrator-Administration, FFB actually makes money on the program because the one-eighth of 1-percent administrative fee more than covers actual costs.

In his November 1978 letter to us, the REA Administrator made the following comments on the use of FFB financing:

> "The FFB-REA arrangement is extremely simple and economical both in financing costs, legal details, and time required for handling as compared to initial borrowing from the private market. By starting with FFB which can combine individual REA borrower loans with other program obligations and market them at the most opportune time either directly or through the Treasury, savings of many millions of dollars in interest cost may be achieved, not only on those agency obligations but on Treasury obligations generally which might otherwise be marketed in competition with them. * * * In addition, private money markets will also benefit from the orderly timing of government funding of all agency programs, including those of REA made possible by FFB operations."

We agree that FFB makes money on this program. However, whether the Government loses or makes money on loans made by FFB and guaranteed by other Federal agencies such as REA has not been determined. In fact, in commenting on our April 27, 1977, report on FFB (see app. II), Treasury stated that it is doubtful as to whether a study could be designed that could separate FFB borrowings from other Treasury undertakings and clearly delineate a gain or a loss.

FFB is authorized to borrow funds from the Treasury and to issue its own securities to the public. Initially it was contemplated that FFB would obtain funds through the sale of securities in the private money market, and one such sale was made. Subsequent to this sale, however, FFB established a policy of borrowing only from the Treasury.

The interest rate FFB pays on its borrowings from the Treasury is computed on the basis of a "rate curve" the Treasury prepares daily. The curve shows the Treasury's expected borrowing cost for new issues of all maturity

lengths. In making loans to Federal agencies and to private organizations such as power supply systems, FFB adds one-eighth of 1 percent to the rate it pays Treasury.

The maturities of FFB's loans to Federal agencies and others are matched with the maturities of its borrowings from the Treasury. The matching of maturities precludes the possibility that FFB will incur a loss due to fluctuations in interest rates since the interest rate FFB pays the Treasury will remain the same for the entire loan period.

On the other hand, the Treasury does incur a banking-type risk on the loans made to FFB because the Treasury does not borrow funds to meet the needs of FFB by issuing specific securities of the same maturities. The maturities of Treasury borrowings will rarely if ever match the maturities of the loans to FFB. Therefore, the Treasury could make as well as lose money on borrowings for financing loans to FFB.

Although the maturities of Treasury borrowings vary, ranging from a few days to over 30 years, many are short term. The average maturity of Treasury debt in January 1980 was 45 months. On the other hand, FFB loans to REA borrowers are generally made to meet long-term financing needs, with maturities of up to 35 years. Normally interest rates for loans of short maturity are lower than those for long maturities; in recent times, however, the reverse has been true. Therefore, to the extent that Treasury is using short-term borrowings to fund long-term loans, it could incur periodic losses. However, over the life of long-term loans made by FFB, it would be difficult to accurately determine whether money is made or lost as a result of the Treasury-FFB borrowing arrangement.

Insured loan program

Power supply borrowers are also eligible for insured loans funded through REA's revolving fund. Since the huge requirements for generation and transmission facilities would soon deplete the resources of the fund, however, REA places limits on the insured loans that can be made to power supply systems. Insured loans can be made only for certain types of facilities, such as low-voltage transmission lines, general plant, and certain other facilities approved as a part of a 3-year workplan. Insured loans may also be made on occasion to distribution borrowers for generation and transmission facilities or to power supply borrowers for emergency or special situations; however, these are considered on a case-by-case basis.

Insured loans to individual power supply borrowers are limited to a maximum of $10 million. Additionally, REA limits the loans to a percentage of the borrowers' total needs for facilities which are eligible for insured loans. This percentage is determined through a formula that considers (1) the borrower's cost of money, (2) the average cost of power to the borrower's member systems, and (3) the average per capita income in the borrower's service territory.

Insured loans make up a small proportion of the REA financing provided power supply systems. For example, in fiscal year 1979, REA approved about $50 million of insured loans to power supply systems compared to over $5.4 billion of guaranteed loans.

ALTERNATIVE SOURCES OF FINANCING ARE AVAILABLE

The Congress specified that rural electric systems should be encouraged to work toward satisfying their credit needs through their own financial organization and other sources. Also, one of the Congress' objectives in establishing the guaranteed loan program was to achieve greater involvement of the private credit sector in financing the capital needs of rural electric systems. We believe that there are opportunities for increased involvement by the private credit sector, particularly CFC, in financing the facilities power supply systems need. A brief discussion of the financing alternatives afforded by CFC, the banks for cooperatives, private lending institutions, and leveraged lease financing arrangements follows.

National Rural Utilities Cooperative Finance Corporation

As the growth of the rural electric systems expanded in the 1950s and 1960s, program leaders became concerned about the availability of adequate amounts of long-term capital. Concern centered around the credit gap between the capital needed and the loan funds available through congressional appropriations. In 1963 NRECA, the national service organization for rural electric systems, initiated studies to examine alternative sources of financing to meet this credit gap.

As a result of those studies, legislation was introduced in the Congress in 1966 and 1967 to establish a rural electric bank. Efforts to enact legislation were unsuccessful. Subsequently, NRECA appointed a committee to, among other things,

develop recommendations for developing additional sources of credit. One of the committee's recommendations was to establish a supplemental financing institution to secure outside financing.

In accordance with the committee's recommendation, CFC was established in April 1969. CFC is a nonprofit financing cooperative organized by rural electric systems to provide themselves with an independent source of funds. Over 90 percent of the Nation's rural electric cooperatives are members of CFC.

One of the primary reasons for establishing CFC was to assist in financing generation and transmission facilities of power supply systems. Shortly after its creation a financing plan was developed whereby REA would provide 30 percent of a borrower's loan needs, CFC 10 percent, and the remaining portion would be obtained in the money market.

When the guaranteed loan program was established in May 1973, it was thought that private lenders, primarily CFC, would make such loans. In fact, CFC was prepared to do so before FFB was established. Its plan was to pass the REA guarantee to bondholders using certificates of beneficial ownership. At that time CFC expected that it could sell such certificates at a rate at least equivalent to that of securities having a AAA rating. However, this was still above the interest rates available through FFB.

CFC's former loan officer and other CFC officials told us that if FFB loans became unavailable, CFC anticipates it could provide loans to power supply systems under REA's guaranteed loan program, but that the interest rates charged would be somewhat higher. They said they would expect that initially CFC could borrow funds at rates somewhere between those for AAA-rated bonds and the Treasury rate for long-term bonds. Based on a long-term analysis, they said that the average spread is about 25 basis points (100 basis points equal 1 percent). They would expect that the rate CFC would pay would gradually grow closer to the Treasury rate as bond buyers became more familiar with CFC certificates.

CFC will loan funds to power supply systems at its cost plus a minimal charge to cover administrative expenses. CFC's former loan officer and other CFC officials said that, CFC's charge for administrative expenses would generally be less than FFB's charge.

According to CFC's former loan officer, CFC's position is that its members should seek the lowest possible interest rate available, and the FFB has the lowest interest rates available.

Banks for cooperatives

The banks for cooperatives, along with the Federal land banks and production credit associations, are a part of the Farm Credit System. The BC system is composed of 12 district banks, each serving a distinct geographic area, and a central bank. BC's are owned by their member users, and net income is returned to members on the basis of patronage.

BC loan funds are primarily raised by selling securities in the private money markets. These securities are backed by all the banks within the Farm Credit System. The System is able to borrow funds at favorable interest rates. Based on data supplied by a central bank vice president showing the monthly differences in the rates the System and the Treasury paid on 6-month securities, the System's rate averaged about 19 basis points above the Treasury's for the January 1974 to August 1980 period.

BC interest rates and policies are established by each district bank, subject to the approval of the Farm Credit Administration. Loans are generally made on a variable interest rate plan (i.e., interest rates may be adjusted up or down during the period of the loan). Fixed interest-rate loans are available; however, certain restrictions are placed on amounts and terms.

To qualify for a BC loan, an electric borrower must be a cooperative with at least 70 percent of its voting members engaged in agricultural production (pending legislation would decrease this requirement to 60 percent). Generally borrowers must purchase stock in an amount determined by the bank's board of directors. By statute this amount cannot exceed 10 percent of the loan. Although there is a limit on the amount any district bank can loan one cooperative borrower, these limits can be exceeded if the central bank participates. The BC system limit is adjusted every 6 months--for guaranteed loans to electric cooperatives the limit was over $430 million in August 1980.

Participating BCs have adopted an objective to provide financial assistance to electric cooperatives through "sound and constructive loan programs" to meet their specialized needs. An example of this is BC's package financing which includes front-end and construction financing provided in connection with generation and transmission loans guaranteed by REA.

BCs have been making loans to rural electric systems for a number of years. Through January 25, 1980, BCs had loan guarantee committments of $729 million, about 4.3 percent of the total amount of REA loan guarantees.

While BCs have made and continue to make loans to electric cooperatives, under present REA policies and procedures it appears unlikely that BCs will be a major source of funding under REA's guaranteed loan program. The major reason for this is the lower interest rates available through FFB; however, other factors, such as member eligibility criteria, may also contribute to this.

Private lenders

Power supply systems can, under REA's guaranteed loan program, obtain long-term financing directly from the private money markets or from private lenders such as insurance companies. We contacted two investment firms regarding the availability of such financing. Officials of these firms told us that the most likely source of private lending would be through private placements of bonds with insurance companies. They said the potential for power systems to sell bond issues in quantity through public offerings is unknown.

Private placements are sold by an offeror (borrower) through a banking service directly to financial institutions such as insurance companies and pension funds. They are not for resale. The borrower may have to meet certain lender requirements such as financial ratios and sinking funds.

Public offerings are usually handled by a lead underwriter for a syndicate of underwriters. The underwriters purchase the security offerings and then market them to investors. Securities sold through public offerings must be registered with the Securities and Exchange Commission.

The officials we met with told us that:

--Private placements are quicker and require less paperwork than public offerings.

--The interest rates on private placements are from one-eighth to one-quarter of 1 percent above those sold through public offerings.

--With the Government guarantee, the power systems' debt securities would be rated AAA.

In addition to the interest costs, the borrower would incur costs to arrange for selling its securities and for legal services.

Leveraged leasing

Leveraged lease financing plans are arrangements made to take advantage of available tax deductions. Under a typical arrangement, a financial institution will own the property and as owner be entitled to income tax deductions for accelerated depreciation, interest, and an investment tax credit. The financial institution leases the property to a utility, sharing the tax savings with the lessee in the form of lower lease rates. The idea is for the financial institution to cover its risk and earn a satisfactory rate of return on its investment and, at the same time, save the utility money.

There are several problems inherent in leveraged leasing for REA-financed systems. One is that leveraged leasing agreements are generally very complex and difficult to arrange. Another major problem is that, to qualify for tax benefits, the lessor must be the true owner of the property, which means that the property cannot revert back to the utility when the lease expires. Although the property can be sold to the lessee at the fair market value, this may require refinancing.

The fact that the lessee does not own the property at the time the lease expires may not be a problem if the property involved has a limited life, for example, equipment. It could be a very difficult problem, however, if the property involved is an electric generating plant and/or transmission line. One reason for this is that such property may still be useful and needed by the utility when the lease expires.

Another problem is that the owner of the property, under current Internal Revenue Service provisions, is not entitled to the investment tax credit where the lessee is a tax exempt organization. Nearly all power supply systems are tax exempt. CFC's former loan officer and others told us, however, that several systems are considering changing their tax exempt status so that they can more readily participate in leveraged leasing arrangements.

The Director, Electric Loans and Management Division, REA, told us that REA questions leveraged leasing proposals by its borrowers closely. Normally, REA restricts using such arrangements to financing major machinery and equipment. At least one system we know of used a leveraged leasing arrangement to finance an electric generating plant and related facilities, and several other systems are considering this alternative.

Analyzing the pros and cons of leveraged leasing arrangements, particularly those matters relating to taxing policies, is beyond the scope of this review. Despite the problems involved, leveraged leasing arrangements apparently do have some potential as an alternative to REA financing.

REA INSURED LOANS AND FFB LOANS GUARANTEED BY REA SHOULD BE ON BUDGET

The Rural Electrification Act, as amended (7 U.S.C. 935 and 936), provides that insured and guaranteed loans shall not be included in the Federal budget totals and shall be exempt from any limitation imposed by statute on net lending of the United States. The receipts and disbursements of FFB are also exempted by statute (12 U.S.C. 2290(c)) from the Federal budget totals. 1/

Annual ceilings on the amount of insured loans REA can make are established by appropriation acts. Although no such ceilings exist for the guaranteed loan program, if the credit control program the President proposes is implemented, a ceiling would be imposed for loans made in fiscal year 1981. Also, the House and Senate appropriation committees require REA to notify them of any loan above $10 million to be made for generation and transmission facilities.

Before FFB was established, many Federal agencies sold their own securities to the public to raise needed funds. FFB was established to coordinate such borrowings. Rather than each agency selling securities, FFB would sell securities to the public to raise funds for the agencies.

1/For a detailed discussion of FFB see the Congressional Research Service report entitled "The Federal Financing Bank: Background, Operations, and Budget Status" (Report No. 79-37-E, Feb. 2, 1979).

By statute, FFB's outstanding securities to the public cannot exceed $15 billion unless additional amounts are authorized in appropriation acts. This ceiling would limit FFB's activity if all of its funds were raised through the capital markets; however, currently all of its funds are raised through borrowings from the Treasury on which there is no ceiling. 1/

Both FFB and REA are off-budget agencies. Hence, REA's insured and guaranteed loans are excluded from the Federal budget totals. This despite the fact that insured loans and FFB loans guaranteed by REA, are, in effect, direct Government loans funded ultimately through the Treasury. Outlays under these programs have been high in the past and projections are that they will increase further. That such outlays, coupled with the burgeoning outlays of other off-budget credit programs, are not included in the Federal budget totals is of concern to us. 2/

We have consistently opposed off-budget programs principally because such programs do not have to compete for resources within the same decision framework that is applied to on-budget programs, although such programs may be equally worthwhile.

Further, FFB purchases of loans guaranteed by REA and other Federal agencies pose additional budgetary problems. This is because such purchases change the nature of Federal credit programs by substituting direct Government loans for loan guarantees.

In our August 3, 1977, report (see app. II) dealing with the off-budget status of FFB, we stated that the off-budget operations of FFB can cause substantive changes in the meaning of Federal outlays and deficits, the design of Federal assistance programs, and the allocation of Federal resources. Regarding FFB purchases of loans guaranteed by Federal agencies, the report stated in part:

1/The Treasury, however, is not required to hold more than $5 billion in FFB obligations at any one time.

2/The Administration estimates that Federal and federally assisted credit outstanding at the end of fiscal year 1980 will total about $600 billion. Much of these loans and loan guarantees are off budget.

> "FFB's off-budget status leads to direct loans occurring outside of the budget in the guise of guaranteed loans. Consequently, it offers the potential for a failure to design into appropriate loan guarantee programs the essential ingredients of risk sharing. In addition, the potential exists to favor credit assistance programs when they may not be appropriate. The potential for this to occur exists in all FFB transactions that occur off the budget under current budget conventions. It is most likely to be realized, however, for FFB purchases of Government-guaranteed borrowing of private borrowers."

In our 1977 report we recommended that, for Federal credit assistance funded through FFB to be more adequately reflected on the budget, the Congress require that:

--FFB's receipts and disbursements be included in the Federal budget totals.

--The receipts and disbursements of off-budget agencies that borrow from FFB be included in the Federal budget totals.

--Certificates of beneficial ownership be treated as agency obligations and, therefore, be treated in the Federal budget as borrowing.

We believe our recommendations are still valid. 1/

In his 1980 budget message, the President recognized the need for better control over Federal lending. He stated that he is proposing a new system to control the growth of Federal credit activities, particularly federally guaranteed credit. The President's proposal, which was incorporated in his 1981 budget, is to establish a control system over

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1/Although several bills were introduced in the 95th Congress which would require, among other things, that FFB's receipts and disbursements be included in the totals of the Federal budget, the proposed legislation was not brought up to the floor of the House for a vote.

Federal credit programs based on annual limitations on loan activities for both direct and guaranteed loan programs. Under the proposed credit control system, Federal credit programs are to be more fully integrated into the budget process to help coordinate credit and fiscal policies and to help synchronize the allocative aspects of Federal credit activity with budget allocations.

We believe the President's proposal is an important first step toward gaining better budgetary control over Federal credit programs. It should be noted, however, that the proposal does not fully implement the recommendations contained in our 1977 report.

GOVERNMENT ASSUMES FULL BURDEN OF RISK ON LOANS GUARANTEED BY REA

Section 306 of the Rural Electrification Act, as amended, states that (1) REA may provide financial assistance to borrowers by guaranteeing loans, in the full amount, made by a legally organized lending agency and (2) no fees or charges shall be assessed for any such guarantee. Under these provisions, the Government assumes the total risk on loans guaranteed by REA.

We have previously stated that 100-percent loan guarantees should be avoided. One of the primary reasons for this is that if private lenders are not exposed to risk, the normal incentives for them to carefully evaluate the applicant's prospects and provide adequate loan servicing are absent. (For a more detailed discussion of this matter see our August 1977 report.)

Under the present REA/FFB financing arrangement, the Government is both the lender and guarantor and, therefore, the question of sharing risk exposure is moot. However, if the private credit sector is to become involved in the guaranteed loan program as the Congress desired, then we believe the guarantee should be reduced to 90 percent or some other appropriate percentage.

The act precludes REA from charging a loan guarantee fee. Although REA established a reserve for losses for its guaranteed loans, the reserve has not been funded. If a borrower should default, the moneys needed to back REA's guarantee would come from the Rural Electrification and Telephone Revolving Fund and/or appropriations by the Congress.

Historically, losses on REA loans have been small. This record has been built primarily on relatively small individual loans--generally less than $2 million--made to approximately 1,000 distribution systems. Under the guaranteed loan program, large loans--some in excess of $1 billion--are made to a small number of borrowers (about 50), some of which have little or no experience in building and managing large generation and transmission facilities and/or have poor earnings and equity positions.

Although the risk associated with REA loans has traditionally been low, such loans are not risk free. Even if it is assumed that the risk of default is minimal, the huge sums of moneys loaned to individual borrowers creates a potential loss which, if materialized, could jeopardize the entire guaranteed loan program. Because of this, we believe that the Congress should reevaluate the prohibition in the act against loan guarantee fees.

CONCLUSIONS

Under REA's policies and procedures governing its guaranteed loan program, private credit sector involvement has been, and can be expected to remain, extremely limited. This is not in accordance with one of the Congress' objectives for establishing the guaranteed loan program and is inconsistent with the Congress' policy declaration that rural electric systems should be encouraged to work toward satisfying their credit needs through their own financial organization and other sources.

While presently large, the power supply systems' need for capital is expected to increase further. REA must begin to encourage borrowers to use CFC and other credit sources to (1) avoid placing this entire burden on the U.S. Treasury, (2) help ensure the power supply systems an alternative source of capital if the Government is unable and/or unwilling to fund such large loan amounts, and (3) be more in line with the Congress' objective of encouraging private credit sector involvement in the program.

Using FFB as a lender under REA's guaranteed loan program, although legally permissible, changes the program to a direct Government loan program. This arrangement, while benefiting the borrowers through lower interest costs, severely limits private credit sector involvement in the program.

According to CFC officials, CFC could provide loans with an REA guarantee at interest rates somewhat above those available through FFB. Other financing alternatives are also available. REA should begin to involve these credit sources in its program.

Initially REA should require that borrowers finance a minimum portion of their loan needs through CFC or some other private lender. This portion could be increased gradually as experience is gained and circumstances warrant.

REA's insured loans and guaranteed loans made by FFB are off-budget even though both types are, in effect, direct Government loans. The huge amounts of outlays made under programs administered by REA and other off-budget Federal agencies is of concern to us because such outlays are not included in the expenditure totals of the unified Federal budget. While the President's proposed control system for Federal credit programs would more fully integrate such programs into the budget process, it does not fully implement our past recommendations. Because these recommendations are still valid, they are repeated in this report.

The Government is bearing the full risk on REA guaranteed loans which, by the mid to late 1990s, could amount to over $200 billion in contingent liabilities. At least a part of this risk should be shifted to private lenders and borrowers by (1) reducing the Government guarantee to 90 percent or some other percentage of the loan and (2) charging a loan guarantee fee to fund a reserve for losses. Both these proposals would require legislative changes.

RECOMMENDATION TO THE SECRETARY OF AGRICULTURE

To encourage greater involvement of the private credit sector and to assist borrowers to become financially self-sufficient, we recommend that the Secretary direct the REA Administrator to require applicants seeking a guaranteed loan to obtain at least part of their loan from CFC or other private lenders, which portion would be gradually increased as conditions warrant.

RECOMMENDATIONS TO THE CONGRESS

The President's proposal to help integrate Federal credit assistance programs in the budgetary process, while a major improvement, would not fully implement the recommendations we made to the Congress in a previous report. Therefore, in

order for Federal credit assistance funded through FFB to be more adequately reflected on the budget, we are repeating our recommendations that the Congress require that:

--FFB's receipts and disbursements be included in the Federal budget totals.

--The receipts and disbursements of all off-budget Federal agencies that borrow from FFB be included in the Federal budget totals.

--Certificates of beneficial ownership be treated as agency obligations and, therefore be treated in the Federal budget as borrowing.

To avoid placing the risk of the huge contingent liability of REA guaranteed loans solely on the Government, we recommend that the Congress revise the Rural Electrification Act of 1936 to:

--Limit REA's guarantee of loans made by non-FFB lenders to 90 percent or some other appropriate percentage.

--Eliminate the prohibition against REA charging a fee for the guarantee and, instead, require that a loan guarantee fee be assessed and used for funding a reserve for losses.

Specific legislative language for implementing our recommendations to the Congress is presented in appendix IX.

AGENCY COMMENTS AND OUR EVALUATION

USDA

USDA said that the joint study made by it and the Office of Management and Budget referred to in our report was never completed and that officials responsible for evaluating the study and its policy implications had not finished their review before the study was discontinued. USDA said that using the discontinued, incomplete, and unevaluated report as a basis for conclusions about the REA loan program invalidates such conclusions.

Our report presents projections of borrowers' capital requirements that were developed in conjunction with the joint study. The study itself was not finalized; however, we do not believe that this fact would, by and of itself, be sufficient reason not to use these projections to show the general magnitude of the borrowers' future capital requirements. USDA supplied these same projections for the record in hearings on REA appropriations for fiscal year 1979.

Capital requirements projections made by the NRECA/CFC Power Supply Study Committee, which REA officials said better reflect the current situation, were added to the report. While lower, these projections still indicate that huge amounts of capital will be needed by REA borrowers.

Regarding our concern that REA insured loans and guaranteed loans made by the FFB are not included in the Federal budget totals, USDA said that (1) all REA programs receive extensive reviews by the Office of Management and Budget before being included in the Administration's budget, (2) hearings on REA appropriations are held by both Houses of the Congress, and (3) annual appropriation bills establish limitations on both insured and guaranteed loans. Further, it noted that the statute excludes REA loans from budget totals and that it notifies congressional subcommittees of all guaranteed loans and of all insured loans in excess of $10 million for generation and/or transmission facilities.

We recognize that REA loan levels are reviewed by the Administration and the Congress and that, beginning in fiscal year 1981, limitations may be imposed on guaranteed loan levels. This does not alter other equally important facts.

First REA is a Federal entity and unless there are compelling reasons for doing otherwise, the outlays of any such entity should be included in the budget totals to present a complete picture of the scope of Federal involvement in the U.S. economy. Second, although REA's electric loan program may get extensive review, it is not reviewed in competition with other programs for Federal resources as are programs included in the budget totals. This process is very important because it establishes priorities for using Federal resources within some overall ceiling.

USDA said that our recommendations for shifting some of the risks involved in REA guarantees to private lenders and borrowers by reducing the Government guarantee to less

than 100 percent and by charging a guarantee loan fee would add to already escalating energy costs and inflation. Further, it said that the Congress reviewed and rejected such provisions when it enacted Public Law 93-32.

We recognize that reducing the guarantee percentage and charging a guarantee fee would result in increased costs to borrowers. The extent of the increased costs would depend on the proportion of financing REA would require the borrowers to obtain from private lenders (under our recommendations, REA guarantees of FFB loans would remain at 100 percent) and upon the fee established. Even with these increased costs, however, the power systems' costs of borrowings should still be substantially less than they would be without a Government guarantee.

Regarding USDA's statement that the Congress previously reviewed and rejected such provisions in enacting Public Law 93-32, we believe that current circumstances warrant a reassessment. Of particular importance in the need for a reassessment is the large and growing contingent liability resulting from the program, the magnitude of which may not have been fully appreciated in 1973.

USDA said that our criticism of using Treasury funding through the FFB because this procedure does not satisfy the Congress' objective to involve the private credit sector in financing REA's program overlooks the fact that the same Congress enacted the law establishing the FFB. It said that this act's purpose was to make more effective use of the private credit sector in financing programs administered by REA and other Government agencies. To support its position, USDA quoted the appendix to the Federal budget for fiscal year 1981 which states, in part:

> "The Federal Financing Bank was created by the Federal Financing Bank Act of 1973 to: (1) reduce the cost of Federal and Federally assisted borrowing from the public, (2) assure that such borrowings are financed in a manner least disruptive to private finance markets and institutions."

We do not consider that power supply system borrowings from the FFB, which in turn receives its funds from the Treasury, qualify as "Federally assisted borrowing from the public." Rather, we believe the REA-FFB arrangement is, in effect, a direct Government loan program. Our

position is that while this arrangement is legally permissible, it does not meet one of the Congress' objectives for the REA guaranteed loan program, that is, to attain private credit sector involvement.

USDA took exception to a statement made in the draft report that CFC could provide loans under REA's guaranteed loan program at interest rates only slightly higher than FFB rates. It said that such a statement does not consider "* * * the fact that CFC would be providing such financing right now if it could provide such financing at the rates indicated." Also, USDA said that the statement does not consider (1) any CFC requirements for purchasing capital term certificates which would increase CFC's effective interest rate or (2) the increase in rates as a result of implementing our recommendations for less than 100 percent financing and a guarantee fee.

The report was revised to reflect more recent statements by CFC officials that the spread between interest rates on AAA rated securities and Treasury long-term borrowings could vary by about 25 basis points (rather than the 7 to 25 basis points cited in the draft). CFC officials said that this spread, of course, changes but that based on long-term analysis they believe their statements to be true. CFC officials told us that CFC would not require borrowers to purchase capital term certificates under the guaranteed loan program.

The interest rates at which CFC could borrow and loan funds under REA's guaranteed loan program must be a matter of speculation since CFC has never loaned moneys under the program. Nevertheless, the interest rate would still be less than that available on the private credit market without a Government guarantee and, as indicated in the report, the difference between the CFC and FFB rates would likely narrow over time. Since private credit sector involvement was a congressional objective in establishing the guaranteed loan program, we believe that REA should work with CFC and other private lenders to gain their participation to achieve this objective.

Borrowers can be expected to borrow funds at the lowest interest rates available, other things being equal. Without some action by REA to require and/or encourage private credit involvement, it is unlikely that CFC will make loans under the guaranteed loan program regardless of how small the difference is between its rates and those of FFB.

USDA said that:

> "In summary it appears that the current GAO report is built on the questionable premises that: (1) the 1973 Rural Electrification Act amendments, as enacted, do not carry out the intent of Congress in enacting them and in enacting the Federal Financing Bank Act and (2) new legislation should be enacted to (a) 'Limit the REA guarantee of loans made by non-FFB lenders to 90 percent or some other appropriate percentage,' and (b) 'Eliminate the prohibition against REA charging a fee for the guarantee * * *'
>
> "We believe these objectives of GAO do not reflect the Congressional intent to assure rural areas of a viable, continuing financing system for rural electrification, and the means thereby to sustain and encourage agriculture and development in the more sparsely settled areas of the country. Furthermore, acceptance of these premises with respect to the financing of power supply projects to serve consumers in rural areas would increase the cost of providing service to rural people without saving the Government money. For these reasons, this Department cannot endorse them."

We believe that our position is consistent with the 1973 Rural Electrification Act amendments and the Federal Financing Bank Act. The Congress' intent is clearly stated in the preamble to the 1973 amendments, (see p. 2) and is reflected in REA program goals (see pp. 2, 3, and 113). Further, our position that one congressional objective in enacting these amendments was to involve the private credit sector in REA's loan programs was acknowledged by REA in response to a question we raised (see p. 17).

We do not agree that our recommendations to limit the guarantee to something less than 100 percent and to charge a guarantee fee would jeopardize the objective of assuring rural areas a viable financing system and the means to sustain and encourage rural development. While borrowers would experience some increased costs, we

believe that they should be willing to help share some of the risks involved in return for a Government guarantee which lowers interest costs substantially below that available through unassisted borrowing.

Treasury

Treasury said that it supports our general conclusion that REA borrowers should be encouraged to use CFC and other private credit sources. This, it said is consistent with the congressional declaration of policy in the 1973 amendments to the Rural Electrification Act. Treasury views the guaranteed program as a major step toward the goal "of substituting unassisted private credit for Federally-assisted credit."

Treasury said, however, that shifting the financing from FFB to the private credit market would (1) not result in any meaningful private participation and (2) delay the ultimate transition to unassisted credit. In explaining its position on the first point, Treasury pointed out that a full guarantee, in effect, converts a guaranteed loan to a direct loan, regardless of whether the loan is financed in the private market or through FFB.

Regarding its second point, Treasury said that rural cooperatives must strengthen their financial positions to meet the test of the private credit market. Shifting the REA guarantee program to the private market would result in higher financing costs which would weaken the borrowers' financial position and thus delay the eventual transition to private credit.

We do not fully agree that a fully guaranteed loan converts a loan to a direct Government loan regardless of the funding source. Although it is true that the Government assumes the full liability of the loan in the event of default, we believe the private source of funds (rather than Treasury taxes and borrowings) is also a dominant feature distinguishing guaranteed and direct loans--one that the Congress wanted to encourage. Further, if our recommendations for revised legislation were adopted, loans from private sources would not be fully guaranteed by REA.

Shifting the REA loan guarantee program to the private market, in our view, would best be done on a gradual basis. The impact of increased interest costs on the borrowers' financial operations could be minimized if increased proportions of private credit were required only as

conditions warrant. Also, this approach would have the advantage of taking the first step toward what could be a long-term project while providing experience with a private funding program and an opportunity for the private money markets to become familiar with securities sold by CFC and others under the program.

Treasury said that the report contains some common misconceptions about the FFB's purposes and functions. It said that, contrary to a statement made in the draft report, neither the Secretary of the Treasury nor the FFB is authorized to coordinate the lending policies of individual Federal agencies. It said that the FFB Act seeks to assure that the lending activity of agencies is financed in the most efficient manner. The draft was revised to reflect Treasury's position on FFB's role.

According to Treasury, our recommendations that the receipts and disbursements of the FFB be included in the Federal budget totals reflect the common misconception that the FFB is in itself a means of avoiding budget controls.

Treasury said that the FFB does not affect the budget status of the programs it finances. Thus, under current statutes, the budget treatment of REA guarantees and sales of certificates would be the same whether they are sold in the market or to the FFB. We recognize this; however, our position is that the outlays of all Federal entities, including those of the FFB, should be included in the budget totals.

Treasury said that placing the FFB in the budget would encourage REA and other Government agencies financing guarantee programs to bypass the FFB and return to their previous practice of financing their programs directly in the securities market in order to remain outside the budget. This, it said, would result in increased costs and potentially serious adverse effects on the Government securities market.

If all our recommendations concerning budget treatment of FFB and Federal agencies and sales of certificates were adopted, agencies would not be able to remain outside the budget by selling securities either to the FFB or in the private market.

Treasury said that should the guarantee be reduced below 100 percent, it recommends that the financing be structured so as to avoid the problems created in other programs where the guaranteed portion is separated from the unguaranteed portion of the loan and financed in the securities market, with the result that fully guaranteed securities are issued in direct competition with Treasury securities and at higher financing costs.

We believe that the question of whether the guaranteed and unguaranteed portions of the loans are separated should be left open. We are concerned that certain major purchasers of securities, such as insurance companies and pension funds, might be effectively eliminated from participating in the program without such a separation because of limitations and/or restrictions they might have on their investment portfolios.

According to Treasury, the Administration is concerned that, because loan guarantees are not reflected in the budget totals, they may not be as carefully scrutinized in the budget process as other Federal activities. Accordingly, the Administration established a credit program control system. To implement this system, the Office of Management and Budget required Federal agencies, including REA, to include in their fiscal year 1981 appropriation requests limits for direct and guaranteed loans. The major impact of this new system will be on loan guarantee programs. Treasury said that it strongly supports this approach of improving controls over all credit programs regardless of whether they are included in or excluded from the budget totals.

As we said in our report, we believe the proposed credit control system is an important first step toward gaining better budgetary control over Federal credit programs but that the proposed system does not fully implement our recommendations.

CHAPTER 3

REA LOANS TO POWER SUPPLY SYSTEMS--

OPPORTUNITIES EXIST TO IMPROVE PLANNING

The Nation's energy crisis presents problems of great magnitude. REA, in managing resources of billions of dollars, could have a substantial impact in helping to solve these problems. To take full advantage of REA's potential toward this end may require a change in its primary role of a banker. Contributions toward solving these problems could be made without such a change, however, by improving the power supply systems' planning process.

Central to our Nation's energy problems is our dependence on imported fuels. Concern about this problem was manifested in the Administration's National Energy Plan of April 1977 outlining strategies for reducing our dependence on foreign energy supplies. Two of the basic principles cited in the Plan are that the (1) growth of energy demand must be restrained through energy conservation and improved energy efficiency and (2) use of nonconventional sources of energy must be vigorously expanded (see app. IV for a list of the basic principles). Portions of the Plan were incorporated in the energy acts enacted in November 1978. 1/

The growth in demand for electrical energy by consumers of REA borrowers, although slowing, is still increasing at a somewhat faster rate than the rest of the Nation. Much of this growth will be supplied by power supply systems financed with billions of dollars of Government loans. REA must take the lead in rural areas to ensure that the planning of its power supply system borrowers to meet such demand is sound and in accordance with the basic principles cited in the National Energy Plan. To do this, improvements are needed in forecasting power requirements, ensuring that the most appropriate mix of alternatives to meet electric consumers' demands have been selected, and involving individual members and private citizens in the up-front planning process of the power supply systems.

1/These acts were the National Energy Conservation Policy Act; the Public Utility Regulatory Policy Act of 1978; the Powerplant and Industrial Fuel Use Act of 1978; the Energy Tax Act of 1978; and the Natural Gas Policy Act of 1978.

REA has improved the procedures followed by power supply systems to forecast power requirements but still basically relies on the relatively unsophisticated forecasting techniques of a single forecast developed primarily on the basis of historical growth data. Such procedures do not adequately reflect changing use patterns. REA has recognized the need for change and has contracted with a consulting firm to develop new procedures.

REA, working primarily through its distribution system borrowers, has taken actions to help solve our Nation's energy problems. We believe, however, that the power supply systems could be better used as a focal point for this effort.

The power systems, with their overall responsibility for planning for and meeting the power requirements of the distribution systems they serve, are in a good position to help plan and coordinate their members' efforts toward aggressive action to (1) reduce the demand for energy through conservation measures, (2) use available plant capacity as efficiently as possible through effective load-management efforts, and (3) use alternative renewable energy sources to the maximum extent practicable to reduce our Nation's dependence on foreign oil and to conserve our own natural resources. The systems also need to study the alternatives of purchasing power and participating in power pooling and joint projects.

To help improve planning and solve our national energy problems REA needs to revise its power planning bulletin to require power supply systems to perform in-depth, systemwide studies of all reasonable alternatives and supplemental supply options and to carefully review the adequacy of such studies. The studies need to be incorporated into the systems' loan application packages and long-range plans.

Planning by power supply systems is viewed as highly technical and, as a result, individual consumer/members and other private citizens have generally not been involved in this process. With increasing concerns about the impact large generation and transmission facilities have on peoples' lives, individual members and other private citizens should be more involved in the up-front planning process of the power supply systems.

REA has recently taken actions to help ensure that borrowers give greater consideration to alternatives and supplemental supply options and to gain increased involvement by consumer/members and the public in the borrowers' activities but, we believe additional actions are needed.

GROWTH OF DEMAND IN RURAL AREAS

The growth in demand for electrical energy by the consumers of REA borrowers, although slowing, is still increasing at a somewhat faster rate than that for consumers of other utilities--3.3 to 2.9 percent, respectively, in calendar year 1979 and 6.4 and 3.4 percent, respectively in 1978. Increasingly this demand is being met by generation and transmission facilities financed by REA. The Subcommittee on Family Farms, Rural Development and Special Studies, House Committee on Agriculture, asked us to determine the extent to which the need for these facilities is based on suburban/urban growth. We cannot precisely answer this question; however, the results of our analysis indicate that while a substantial portion of the growth in demand for electricity by consumers served by REA borrowers is related to suburban/urban growth, the majority of such growth in demand is related to the increased needs of rural areas.

Meeting the increased power needs of REA borrowers

Power purchased and generated by REA borrowers increased from about 0.4 million MWH in 1940 to 164.4 million MWH in 1978. As shown below, the proportion of this total supplied through borrower-owned generating facilities has doubled about every 20 years, from 8 percent in 1940 to 16 percent in 1960 and to 32 percent in 1978.

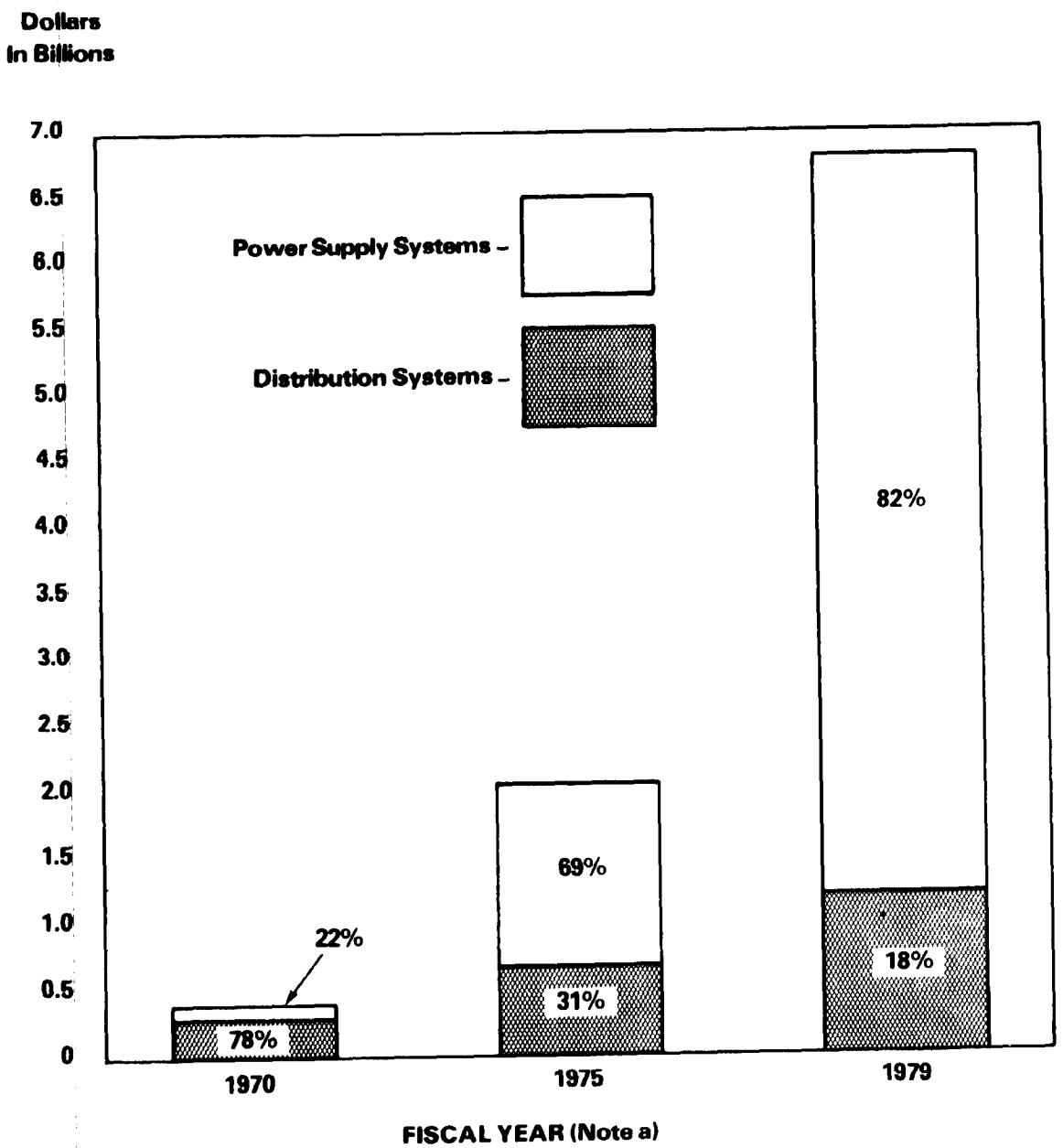
Power Generated and Purchased by REA Borrowers, 1940 through 1978 (note a)

Source of power	1940		1950		1960		1970		1978	
	MWH	Percent	MWH	Percent	MWH	Percent	MWH	Percent	MWH	Percent
	(MWH in millions)									
Purchased from IOUs and others	0.295	70	4.808	63	13.202	45	30.608	39	70.204	43
Purchased from Federal power agencies	0.094	22	1.825	24	11.495	39	27.291	35	41.742	25
Generated by REA borrowers	0.034	8	0.972	13	4.569	16	20.638	26	52.472	32
Total	0.423	100	7.605	100	29.266	100	78.537	100	164.418	100

a/Data is shown for year ending June 30 for 1940 through 1970 and the year ending December 31, for 1978.

The substantial increases in REA loan funds available to power supply systems in recent years indicate that the rate of increase in the proportion of the power needs met through borrower-owned facilities is likely to continue, if not accelerate. The increase in REA loans to power supply systems is shown in the following graph. (Note: Some of the loans made to distribution systems were also used to fund generation and transmission facilities.)

REA LOANS APPROVED BY TYPE OF BORROWER



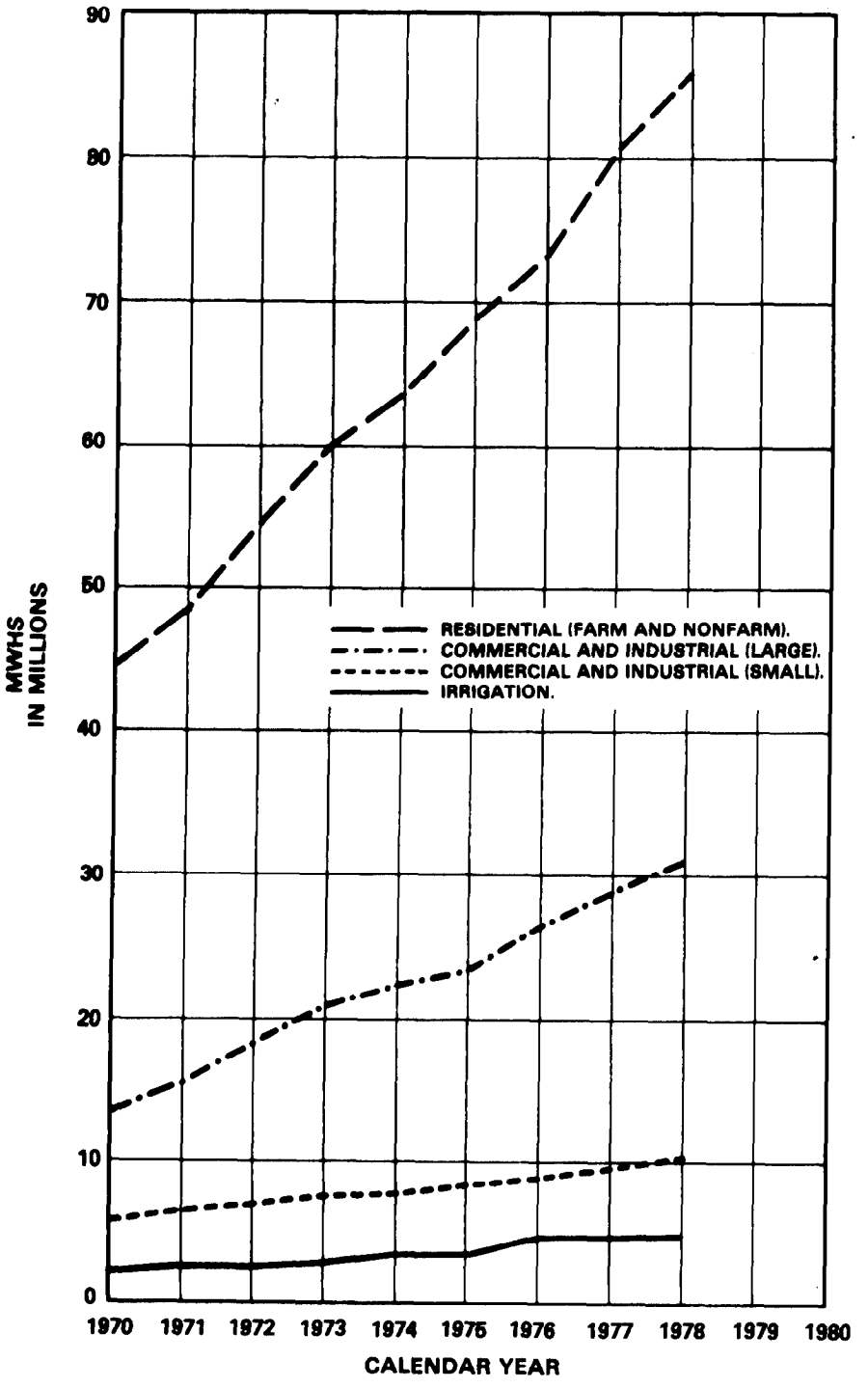
a) Year ending June 30 for 1970 and 1975 and year ending September 30 for 1979.

Impact of suburban growth on rural electric systems

Due to population shifts through the years, many rural electric systems are now serving areas that are primarily suburban. Because of these shifts, some areas served by rural electric systems no longer meet the traditional rural image; however, they continue to qualify for participation since they were eligible when their systems received initial funding. According to REA, the suburban areas served are integral parts of the systems' service areas and vital to the continued economy and efficiency of the systems.

Residential and large commercial and industrial consumers are the two largest classes of customers--in terms of MWH sales--of distribution systems, accounting for 64 and 23 percent of total MWH sales, respectively in 1978. From 1970 to 1978, MWH sales to residential consumers increased by 91 percent and to large commercial and industrial consumers by 128 percent. The growth in MWH sales by class of consumer is shown on page 45.

REA DISTRIBUTION BORROWERS' SALES BY MAJOR CLASS OF CONSUMER CALENDAR YEARS 1970-78



Sales statistics which would show the growth in demand for electrical energy in rural, suburban, and urban areas are unavailable. REA has, however, made surveys to determine the number of consumers served by REA borrowers that are located in standard metropolitan statistical areas (SMSAs) and non-SMSAs. 1/

The latest survey, conducted in 1973, 2/ showed that about 80 percent of consumers served by REA borrowers were located in nonmetropolitan areas. A comparison of 1967 and 1973 survey results shows that the number of consumers living in nonmetropolitan counties increased by about 1.2 million or three times the 0.4 million increase in metropolitan areas. However, the growth in metropolitan counties increased at a faster rate than did the growth in nonmetropolitan counties during this period, about 39 to 27 percent, respectively.

Metropolitan counties (SMSAs)	1967 Consumers	1967 Percent	1973 Consumers	1973 Percent	Percentage growth
Counties within SMSAs of 1,000,000 or more residents	259,162	4.9	405,769	5.8	56.6
Counties within SMSAs of 250,000-999,999 residents	433,737	8.1	538,183	7.8	24.1
Counties within SMSAs of less than 250,000 residents	381,071	7.1	547,493	7.9	43.7
Total	1,073,970	20.1	1,491,445	21.5	38.9
Nonmetropolitan counties (non-SMSAs)					
Counties with 20,000 or more urban residents (note a)	638,781	11.9	862,967	12.5	35.1
Counties with 2,500-19,999 urban residents	2,473,472	46.3	3,091,597	44.6	25.0
Counties with no urban residents	1,157,198	21.7	1,484,752	21.4	28.3
Total	4,269,451	79.9	5,439,316	78.5	27.4
Total	5,343,421	100.0	6,930,761	100.0	29.7

a/Urban residents are defined as those residents living in towns or cities of at least 2,500 persons.

1/A metropolitan county or SMSA is generally defined as a county or group of contiguous counties which contain at least one city of 50,000 persons or more or twin cities with a combined population of at least 50,000.

2/REA is presently conducting a new survey.

The usefulness of the above data in studying the impact of suburban growth is limited because it is outdated and because metropolitan counties can include rural areas and nonmetropolitan counties can include suburban areas and towns and cities with less than 50,000 people. These and other problems--most notably the lack of sales data and any clear definitions of rural, suburban, and urban areas--make it difficult to determine the impact suburban and urban growth has had on the growth of REA's program.

Information developed in the State of Georgia, however, indicates that the impact of suburban/urban growth can be substantial. Eight Georgia cooperatives serving counties in the greater metropolitan area of Atlanta accounted for 35 percent of all the consumers served and 37 percent of all the power sold by the 41 REA distribution systems in Georgia in 1977. They accounted for 43 percent of the total increase in power sales between 1970 and 1977.

Part of the reason power sales by REA borrowers are increasing at a faster rate than the national average appears to be attributable to a general movement back to rural areas. This reversal of the historic trend of migration to urban areas is shown in the following comparison of the U.S. population living in metropolitan and nonmetropolitan areas in 1970 and 1977.

	U.S. population		
	1970	1977	Percent change
	(millions)		
Metropolitan counties	148.9	157.0	5.4
Nonmetropolitan counties	54.4	59.4	9.2
Total	203.3	216.4	6.4

Appropriateness of REA assistance to suburban systems

There have been questions regarding the appropriateness of REA-financed systems' serving "suburban" areas which could be served by IOUs and publicly owned utilities. REA maintains that the continued financing of these systems is in accordance with the act and that the suburban loads are a legitimate and necessary part of the rural systems' operations.

The act defines a rural area as any area of the United States not included in the boundaries of any city, village, or borough having a population in excess of 1,500. REA policy is that, once an area is determined eligible for assistance, an REA borrower can continue to serve the area regardless of subsequent increases in its population. This practice was affirmed by the Senate in the so called Aiken Resolution adopted in 1959, which states in part:

> "It is the sense of the Senate that the Rural Electrification Act of 1936, as amended, continue to be interpreted to authorize the making of loans * * * to (1) bring electric service to persons in those areas defined in the Act as rural areas if such persons are in fact not receiving central station service, and (2) continue to serve those who are presently being served with the aid of funds loaned under the Act."

REA requires that borrowers offer service at standard rates to anyone in its service area. This includes those consumers located in the more isolated areas. According to REA, the more easily served suburban loads help to offset the higher costs of serving the more sparsely populated areas.

Also, many States have territorial protection laws to prevent competition and duplicate services between the rural electric systems and other utilities. Under such laws the utilities are generally required to serve all consumers in their service areas.

IMPROVEMENTS NEEDED IN FORECASTING POWER REQUIREMENTS

The energy problems the Nation encountered during the 1970s have resulted in rapidly changing energy-use patterns. Such changes make it much more difficult to project future energy requirements than it was when the Nation was experiencing a steady increase in demand for electricity. Hence it is no longer a simple matter of using historic growth patterns to forecast demand. The importance of reliable estimates is critical to help avoid costly investments in unneeded capacity and to ensure adequate capacity to meet demands.

REA, like most utilities in the 1950s and 1960s, relied primarily on trending to forecast energy demand. This forecasting method uses historical growth patterns to project future growth trends. Although appropriate at that time, trending was not adequate to reflect the changes that were

occurring in the early and mid-1970s. REA has improved and refined its forecasting procedures, but still relies primarily on trending. New and improved forecasting procedures designed to better reflect changing conditions are needed. REA is studying such procedures and plans to implement changes sometime in 1981. 1/

The power supply systems' forecasts we reviewed showed a general pattern of overestimating requirements in the early and mid-1970s. Since such forecasts support the need for major projects financed by REA, with some costing over $1 billion, the problems associated with building excess capacity could result.

While the Chief of REA's Forecasting Branch acknowledged that many forecasts overestimated requirements in the early and mid-1970s, he said that financing projects supported by such estimates did not result in an oversupply. The major reasons cited for this were that:

--Most power supply systems were purchasing far more power than they were generating. Therefore, the purchased power could be displaced with self-generated power.

--The long period of time required to plan and construct a generating plant allows time to identify any decrease in demand through updated forecasts. In such a case, the construction of the plant could be postponed or the construction schedule allowed to slip.

He also said that the forecasts supporting the need for powerplants are currently better prepared and are more accurate.

REA procedures for forecasting power requirements

REA borrowers are responsible for preparing forecasts of power requirements in accordance with the procedures and guidelines established by REA. The forecasts are used in engineering and financial studies, including long-range planning, rate studies, and financial forecasts. They are a prerequisite to and basis for any studies done supporting applications for REA loans.

1/REA has also contracted with a firm to develop a method of projecting energy requirements of borrowers nationwide.

Under REA procedures the power supply systems' forecasts are based on the individual forecasts of their distribution system members. Distribution systems make 5- and 10-year forecasts which are combined to form the power supply system's forecast. The power supply systems also make 15-year forecasts by extending their 10-year forecasts at the same compound growth rate projected for the 6th through 10th years.

The distribution systems' forecasts are primarily based on trending. This requires developing historical growth data, generally for an 11-year period, as a basis for projecting the future growth trend. The distribution systems provide the historical growth data, adjusted for any abnormal fluctuations, to their power supply system. Through the use of mathematical techniques, the power supply system uses the historic data to project an energy usage trend which, in turn, is used to project a power demand trend. 1/ After the mathematical trends have been computed, the distribution systems may, using subjective analysis of various factors, adjust them.

In making these adjustments, REA suggests that the systems analyze the impact on forecasts that may result from anticipated changes in such factors as population, per capita income, industrial activity, appliance saturation levels, relationships between residential and commercial consumers, consumption patterns, costs, price elasticities, conservation, competitive fuels, and government policies. REA does not, however, prescribe any particular method for considering the impact of such factors on the forecasts.

Using their knowledge of the area served and/or special studies, the distribution systems arrive at separate forecast information on any irrigation and large commercial loads served. The projected needs of these consumers are incorporated into the system's overall forecast.

The power supply systems review each member's forecast, make suggestions for any revisions, and agree to the final forecast. The completed forecasts of its members are then consolidated to form the basis for the power supply system's forecast. REA reviews and approves all forecasts supporting applicants' loan requests.

1/Energy usage refers to the total amount of energy used over a period of time (e.g., a homeowner's monthly bill is based on the number of kilowatt-hours of electric energy used). Demand measures the rate at which electric energy is delivered to or by a system over any designated period.

REA forecasting procedures have not produced consistently accurate results

The accuracy of the forecasts prepared by five power supply systems supporting their loan requests ranged from one nearly perfect 4-year forecast to one 5-year forecast which overestimated actual demand by about 24 percent. The remaining three 5-year forecasts overestimated actual demand by 5.8, 10.2, and 12.6 percent.

There are no precise standards to measure what is an accurate forecast and what is not. In making a judgment about the accuracy of the above forecasts, one must consider, among other things (1) the unsettling period in which the forecasts were made, (2) that the forecasts were for 5 years or less while it takes from 8 to 10 years to plan and construct a facility, and (3) when the demand is to be met by constructing a generating plant, a reserve capacity of as much as 20 or 25 percent above the forecasted demand may be added to the capacity of the plant.

Even if all five forecasts of the power systems were reasonably accurate, this would not necessarily mean that one could conclude that the forecasting procedures prescribed by REA will generally produce accurate results. We say this because of the wide variations from actual requirements found in some of the individual forecasts of the distribution systems which, when combined to form the power system's forecast, offset each other. When, for whatever reason, this does not occur, the power system's forecast may not be accurate. (See borrower E's forecast on p. 52.)

We analyzed the forecasts which five power supply systems had submitted to REA supporting their applications for guaranteed loans. The 5-year forecasts of four of the five borrowers overestimated energy demand by 5.8 to 24.3 percent and the 4-year forecast of the remaining borrower overestimated demand by 0.4 percent. The results of our analysis are summarized on the next page.

COMPARISON OF 5-YEAR POWER

REQUIREMENT FORECASTS WITH ACTUAL

Borrower	Date of forecast	Power supply systems		Power supply systems' members			
		Energy requirements overstated/ (understated)	Demand overstated/ (understated)	Energy requirements		Demand	
				Highest % overstated	Highest % understated	Highest % overstated	Highest % understated
				(Percent)			
A (note a)	Dec. 1975	(3.0)	0.4	16.3	8.6	18.3	10.7
B	Feb. 1974	13.1	12.6	130.5	37.5	166.1	27.8
C	Oct. 1972	13.8	10.2	49.6	16.9	23.6	17.8
D	May 1972	5.4	5.8	18.0	22.0	30.7	14.2
C & D (note b)	See above	9.2	7.7	49.6	22.0	30.7	17.8
E	Aug. 1973	26.8	24.3	54.7	none	48.7	6.1

a/Data shown is for 4th projected year (1978) because actual data for 5th projected year was not available.

b/Borrowers C and D participated in joint project.

As shown on page 52, the comparisons are 4- and 5-year forecasts, which should be more accurate than the power supply systems' 10- and 15-year forecasts. For example, as discussed below, based on revised forecasts, borrower E's 15-year forecast may overestimate actual requirements by more than 185 percent.

A detailed discussion of our analysis of the forecasts three power supply systems made, two of which were involved in a joint project, follows.

Borrower E

In January 1975 REA approved an initial loan of $0.5 billion. (Total loans approved for this borrower as of December 31, 1979, were $2.1 billion.) The loan was made for the purpose of buying a share of facilities being built by an IOU.

The forecast supporting this loan, completed in August 1973, showed a 5-year projection for 1977 energy requirements of about 9,067 gigawatt hours (GWH). This was 27 percent more than the actual energy requirements of 7,148 GWH used by the power supply system's members in 1977. An interpolation 1/ of the power supply system's 5- and 10-year forecasts showed that the estimated energy requirements for 1978 were about 10,294 GWH, or 38.5 percent greater than the actual of 7,430 GWH used.

At the time of our review this power supply system had also prepared revised forecasts in 1975, 1976, and 1977. The revised forecasts estimate a much slower growth rate than did the 1973 forecast. For example, the 15-year forecast made in 1973 projected estimated requirements of 32,900 GWH for 1987, whereas interpolated estimates of the forecast made in 1977 show requirements of 17,760 GWH, a difference of 15,140 GWH (85 percent more than projected in 1977). Further, the REA power requirements officer, in recommending approval of the 1977 forecast, noted that the forecast should be regarded as "the high limit of a range of probable estimates" and suggested that it be "used with caution."

1/A mathematical method of determining estimated requirements between forecasted years.

Borrowers C and D

In February 1974 REA approved loans to two power supply systems to finance the construction of a joint generation and transmission project for $537 million, which subsequently increased to $1.3 billion including about $90 million of non-REA financing. (This REA-financed project is discussed in ch. 4.)

The forecasts of the two power supply systems supporting the need for this project were prepared in 1972. The 5-year combined projection for the two systems' members for 1977 was 4,106 GWH compared to actual requirements of 3,760 GWH, a difference of 9.2 percent. One system's forecast was overstated by 13.8 percent and the other by 5.4 percent.

Although the consolidated 5-year forecasts of the two power systems were reasonably accurate, the individual forecasts of their members' requirements differed from actual by as much as 49.6 percent. Compensating differences, however, offset each other in the consolidated forecasts.

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Although REA does not systematically track the accuracy of the forecasts prepared by its borrowers, it did, in early 1978, review the accuracy of forecasts made by 30 distribution system borrowers. These borrowers were selected at random from among 645 which were members of power supply systems.

The analysis included a comparison of 5- and 10-year forecasts for total power requirements made since 1960 with actual requirements through 1977. An analysis was made of 108 5-year forecasts and 67 10-year forecasts prepared by the 30 borrowers.

The results of the analysis of the 108 5-year forecasts showed that about 5 percent overstated and 22 percent understated energy requirements by over 20 percent. Of the 10-year forecasts, 4 percent overstated and 58 percent understated energy requirements by over 20 percent.

Some of the observations REA personnel made on the basis of their analysis follow.

--Individual analysis of large errors showed that they resulted mostly from difficulties in determining when large power loads (such as a large industry) would come on line.

--Most of the largest errors seemed to occur in the large systems with the fastest growth rates.

--Forecasts done in the 1965-68 period tended to underestimate requirements, while the more recent forecasts tended to overestimate requirements.

REA actions to improve forecasting methodology

Although REA's forecasting method is basically the same method used before the guaranteed loan program was established in 1973, a number of refinements have been made. Also, REA has hired a consulting firm to develop an improved forecasting method for its borrowers.

REA has long recognized the need for changes in its forecasting procedures and has encouraged borrowers to make improvements. We noted that the more recent forecasts have been more systematically prepared, power supply systems have become more involved in preparing forecasts by their members, the systems are using private consultants more, and new forecasting techniques are being studied and used to supplement the method prescribed by REA.

In December 1978 the REA Administrator appointed an internal task force to review forecasting procedures and make recommendations for improvements. The task force concluded that the factors most likely to affect the accuracy of forecasting were population changes, price elasticity, weather, and appliance saturation and recommended that changes requiring the consideration of these factors be made a part of REA's forecasting requirements.

Although no formal changes were made to REA's forecasting methodology as a result of the study, agency personnel did develop some information on the effect price elasticity has had on usage of electricity by residential customers and techniques for appliance sampling and end-use forecasting. This information has been provided to selected borrowers.

Also, REA now emphasizes the need for the systems to include as a part of their power requirements study a detailed narrative description of the basis for any subjective judgments made in conjunction with the forecasts. This helps REA officials review the methodology followed and assumptions made to determine the validity of the forecasts.

In early 1979 REA began returning forecasts to the borrowers when questions about the validity of the forecasts arose. Prior to this, although any reservations about

the forecasts might be noted by REA officials responsible for reviewing them, the forecasts were generally accepted and approved for use in support of the borrower's loan application.

REA has had difficulty determining how more sophisticated methods of forecasting could be applied to rural electric systems. For example:

--Econometric modeling is a forecasting technique which uses a series of equations to predict electric demand as a function of such factors as price, income, and population. The usefulness and applicability of this method for some REA borrowers may be limited, however, due to the lack of an adequate data base.

--End-use modeling is a technique used to forecast residential power requirements on the basis of an analysis of electric appliance saturation. This involves a forecast of the number and type of appliances which will be used in the area served and the energy consumed by these appliances. The accuracy of this method depends heavily on the ability of the forecaster to predict growth of appliance use, new uses of electricity, and changes in the efficiency of the appliances.

A joint NRECA/CFC task force studying forecasting, in a May 1979 report, made a number of recommendations to improve the forecasting methods used by REA and its borrowers. These were that:

--The relationship between power supply systems and their members in developing forecasts should be maintained, recognizing the potential for coordination of such activities as automation of data and special studies.

--Forecasts should be refined by including more quantitative analysis with an emphasis on end-use analysis in forecasting residential loads. Methods should be developed for analyzing the historical effects of weather, price changes, and other factors.

--Procedures should be developed for the periodic evaluation of estimates of the various factors influencing the forecasts.

--Permanent forecast study committees should be created at the national and individual power supply system levels.

--A broad education program should be developed to emphasize the importance of forecasting and to train forecasters.

In May 1979 a private consulting firm wrote REA a proposal to develop an improved forecasting methodology for use in rural areas. The firm will review forecasting methods used by others and new techniques for the purpose of developing an REA forecasting manual sometime in 1981 to be used by its borrowers in preparing their forecasts.

We believe that in developing new forecasting procedures for power supply systems, REA needs to require several forecasts showing the growth levels which can be expected based on different scenarios. In this way, the impact of different levels of conservation efforts upon projected needs could be analyzed and a determination made as to the costs and benefits of such efforts in relation to other alternatives for meeting demand. The advantages of using multiple forecasts to evaluate the benefits and costs of alternative courses of actions in power program planning were discussed in detail in our report on the Tennessee Valley Authority. (See app. II.)

PLANNING BY POWER SUPPLY SYSTEMS--NEED TO ENSURE THAT ALL ALTERNATIVES IN MEETING DEMAND ARE ADEQUATELY CONSIDERED

Increasingly REA borrowers are meeting the needs of their consumers through the construction of large central station generating plants. In reviewing applications for financing such projects, we believe REA could do more to ensure that all reasonable alternatives of power supply have been adequately assessed, evaluated, and used. These alternatives include conservation and load management, purchased power, renewable energy sources, and expanded use of coordination agreements with other utilities. While we recognize that other alternatives may not eliminate the need for large centralized plants, they could be advantageous from a standpoint of national energy goals and policies, deferment and/or reduction of capital investments, and costs.

For the loans we reviewed, we could not assure ourselves that all such alternatives were adequately considered. REA officials told us that such alternatives would be considered in the exploratory planning phase, however, this was frequently done on an informal basis relying heavily on the experience and knowledge of REA and borrower personnel.

We believe that this process needs to be formalized with the borrowers required to show, as part of their loan application package and long-range plans, what alternatives were considered along with a detailed study and assessment of each--particularly those relating to conservation, load management, and renewable energy sources. This would enable the borrower to assure REA and others that the most appropriate mix of alternatives for meeting consumer needs are selected. REA has recently taken actions to help ensure that borrowers give greater consideration to such alternatives (see pp. 81 and 82).

Actions to help solve national energy problems primarily directed at distribution systems

REA requires loan applicants to prepare feasibility studies which analyze in detail the alternatives considered in meeting projected power requirements. The alternatives considered, however, are those previously judged most appropriate by representatives of REA, the applicant and, if applicable, the engineering firm performing the feasibility study. Hence, some very important decisions regarding power supply alternatives are made prior to the feasibility study itself.

REA instructions governing power system planning are contained in Bulletin 105-7, September 12, 1972. This bulletin is intended to provide a summary of the management, engineering, and financial considerations which go into the system planning study. In discussing plans to meet future power supply obligations, the bulletin provides that in the "exploratory phase of planning" consideration should be given to the following alternative supply sources

--various types of generation and available fuels and fuel prices,

--joint ownership,

--possibilities for purchasing power or increasing arrangements already in effect, and

--power pooling arrangements.

It is in the exploratory planning phase that decisions are made about which alternatives are the most appropriate to be analyzed in the feasibility study.

According to REA officials, REA works with the applicant to insure that the feasibility study considers the most appropriate alternatives in accordance with REA's instructions governing power system planning. The feasibility studies we reviewed generally compared costs, and in some cases other factors, of (1) the applicant owning generating facilities versus its purchasing power from other utilities or (2) alternative types and/or site locations of generating plants (e.g., a plant built near a coal mine versus one built near the area served with the coal hauled by rail).

REA's bulletin on power system planning emphasizes achievement of the following objectives

--operating economy and efficiency;

--reliability of service;

--establishing new capital requirements;

--minimum practicable environmental impact; and

--assurance of an adequate and reliable power source at as low a cost as is consistent with prudent management, operations, and fiscal control.

REA's bulletin on power system planning is silent on such matters as conservation, load management, and renewable energy sources. However, REA has issued other bulletins and instructions emphasizing the importance of considering these supply alternatives. For example, according to the Administrator, REA now requires applicants to consider, as a part of their loan application package, the use of renewable and nonconventional energy sources wherever it is technologically feasible and cost effective.

REA has taken a number of actions to help solve our national energy problems. These actions have been directed primarily at the distribution system borrowers. We believe a need exists for the power supply systems to formally study what additional efforts could be made in the areas of conservation, load management, and renewable energy sources and to help plan and coordinate their members' efforts in these areas.

Following is a brief description of some of the actions REA and others have taken to help solve our national energy problems in rural areas.

Energy conservation

Electric energy conservation generally refers to the actions taken by consumers to reduce consumption through such actions as better weatherization of homes and buildings, seasonal adjustments of thermostats, use of more energy-efficient appliances, and wise and prudent use of electricity. Conservation of electric energy is a year-round consideration depending on consumer attitudes, energy costs, and many other factors.

The REA Administrator expressed his commitment to energy conservation in a January 1979 memorandum issued to REA borrowers. In part, he said that

> "* * * Energy conservation is the best means for the people we serve to reduce their cost of electric energy. The most efficient use of energy by the members can reduce, in the long run, the need for new generating facilities."

REA has taken several actions to promote energy conservation.

--In January 1979 REA issued instructions which require distribution system borrowers to develop energy conservation programs as a precondition to obtaining REA loans. When applying for an REA loan the applicant must submit a copy of the system's official policy on conservation, as well as a report on the system's conservation efforts, including a work plan, budget, and estimate of the benefits to be derived from the program. REA also issued recommendations its borrowers can use to develop their programs.

--In February 1979 REA issued an Energy Conservation Handbook which cites a number of ways consumers can use energy more efficiently.

--REA has been encouraging distribution systems to stop using declining block electric rates (i.e., lower rates for higher usages) which promote increased usage of electricity.

--The Farmers Home Administration has a program administered by it and rural electric systems to conduct energy audits of homes in rural areas and make available loans and grants for weatherization of low-income rural households. 1/ Through September 30, 1979, weatherization loans and grants made by Farmers Home totaled $1.2 million. The Department of Energy (DOE) and the Community Services Administration also have weatherization programs for low-income families.

--In June 1980, REA implemented a program to stimulate consumer involvement in energy conservation. This program permits borrowers to defer principal payments on REA loans to make funds available for low-interest rate conservation loans to consumers. These loans, not to exceed 7 years in duration, can be made to purchase such energy-saving items as insulation, clock thermostats, attic fans, and storm windows and doors. (See p. 81 for additional comments on this program.)

In January 1980 NRECA reported the results of a survey made of 908 distribution systems to obtain information on their energy conservation and load-management activities. Of the 908 systems surveyed, 789 responded. The survey showed that the systems' growth rate for 1978 was half that of the previous 10 years. A summary of the systems' conservation activities stated that

--95 percent of the systems responding plan to make personal visits and/or energy audits to help their consumers conserve energy;

--about one-third of the systems have weatherization or conservation loan programs available; and

--the majority of the systems promoted conservation through personal contacts, newsletters, and other methods.

1/Legislation is pending (S. 2658) which would establish a rural weatherization grant program within USDA.

Load management

The demand for electric energy by an electric utility's customers varies greatly between different times of the day and between seasons. To avoid brownouts or outages the utility must be able to meet the highest or peak demand of its customers. Efforts to shift the demand away from peak periods of usage is referred to as load management.

Load management can be achieved through voluntary actions of consumers to reschedule their use of electricity and through load control devices such as a timer or a remote controlled switch. It may be encouraged through time-of-day use rates under which higher rates are charged during peak demand periods and through lower rates for customers agreeing to interruptable service during peak periods.

Through load management a utility may be able to limit or defer construction of new facilities and/or reduce its need for peaking power which is generally provided through generating units fueled by oil or natural gas--both scarce, high-cost fuels. A load-management program could, however, have adverse effects on the power systems' operations if not adequately implemented.

While the cost benefits of load management depend on the individual circumstances of the utility, they can be substantial. In January 1978 DOE estimated that a nationwide savings of up to $15 billion in reduced capital expenditures could be achieved through better load-management efforts by all electric utility systems.

REA issued a bulletin in January 1977 recommending that all borrowers implement some type of load management program. REA will make loans for this purpose if the equipment proposed is feasible from engineering, economic, public relations, and power supplier standpoints. As of fiscal year 1979 REA electric system borrowers had spent more than $35 million on load control systems with anticipated growth in expenditures of almost $200 million by 1986.

REA does not require borrowers to initiate a load management program because the value of such a program varies considerably between systems. REA has promoted the concept, however, by making presentations on the potential savings involved and by helping the systems

develop load management programs. Also, according to the Administrator, REA's recent reorganization 1/ will help strengthen the agency's loanmaking and technical assistance efforts and enable REA to better help borrowers develop load management and to develop new energy sources.

About half of the 789 respondents to the NRECA survey said that they had initiated either direct or voluntary load management programs. The 121 systems using direct control devices reported that 143,000 consumer loads were involved.

Alternative energy sources

The costs and environmental impact of producing electrical energy from fossil and nuclear fuels has spurred substantial interest in various types of renewable energy sources such as hydropower, windpower, solar energy, and biomass. Concern has been expressed over whether rural electric distribution systems, which appear to be particularly well suited to using small-scale projects using renewable energy sources, are taking advantage of the opportunities available to them in this area.

REA policies and procedures governing loans for generation facilities favor constructing large centralized electric generating plants to take advantage of economies of scale such projects offer. In accordance with its legislative mandate, REA must insure that its loans are repaid and, therefore, a prime concern is whether the project to be financed is the most economical available.

According to the former Director of REA's North Central Area Office, experience has shown that centralized units are more economical than decentralized units. Decentralized plants, however, can have advantages over centralized plants, particularly when renewable energy sources are used. Therefore, we believe they need to be one of the options studied in selecting the appropriate mix of supply sources.

REA recently began requiring power supply systems, as part of their loan application, to consider renewable energy sources capable of producing central station electric power

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1/ REA reorganized in January 1980. The principal goal of the reorganization is to focus more attention on the specific concerns of both distribution and power supply systems.

wherever it is technologically feasible and cost effective. REA has also taken other actions to promote the use of renewable energy sources. One of its major efforts has been to help develop small-scale hydroelectric projects.

In conjunction with the "White House Rural Development Initiatives" the President announced in May 1979 that several steps are being taken to help rural communities develop local energy resources. One includes an agreement among several agencies--including USDA--to have up to 100 small-scale hydroelectric plants under construction by the end of fiscal year 1981 and up to 300 projects by 1985. 1/

As a part of this effort, REA has asked its borrowers to identify existing dams which could be used for generating electricity. Potential sites will be screened to determine which appear to be most feasible. Those selected will qualify for up to $50,000 of low-interest rate loans from DOE for a feasibility study. If the study shows the project is not feasible, DOE may cancel the unpaid loan and interest. In February 1980 the Special Assistant to the Administrator told us that DOE had approved loans to 42 REA borrowers.

REA borrowers and their consumers are involved in other projects to determine the feasibility of using alternative energy sources. For example:

--DOE has funded a 150-megawatt solar unit and a 2-megawatt windmill and has purchased 125 windmills for individual consumers to use.

--REA, DOE, and rural electric systems are studying the possibility of using mine gas to generate electricity.

--Farmers Home is providing technical assistance on potential biogas plant projects to use animal manure to produce gas for energy use on dairy farms and feedlots and has contracted for a demonstration project of low-cost, solar-heating systems for homes.

1/In a recent report on the Rural Energy Initiative Program for Small Hydropower we concluded that it is doubtful that the goal of having 100 projects under construction by the end of fiscal year 1981 will be met (EMD-80-66, Apr. 1, 1980).

In the past REA suggested that its borrowers adopt "all requirements" provisions in their bylaws to insure that consumers could not develop other sources of power. In October 1977 REA issued a bulletin suggesting that systems change their bylaws to require consumers to buy all "purchased power" from the system. An REA energy resource engineer said that although some borrowers had changed their bylaws, the total number was unknown.

Most of the systems NRECA surveyed were providing information and assistance to consumers installing solar, wind, or other supplemental energy sources, and some have adopted policies to buy excess energy from such sources. The survey showed that the systems were participating in a wide array of studies and projects involving the use of alternative energy sources.

While some efforts are being made to use alternative energy sources, the impact is small compared to the conventional, large centralized generating units financed by REA. Experiments and studies are being performed, however, on the various alternative energy sources to determine their feasibility and applicability to rural electric systems and their consumers.

REA has been cautious in recommending the rapid development of alternative energy sources because there are potential problems involved. These include the following: 1/

--Some types of projects would, without storage capability, be unable to generate electricity during peak load periods and therefore would not reduce the peak demand placed on the system.

--The interconnection of small consumer-owned units could effect overall system reliability because of the difficulty the borrower could have in insuring that they are properly operated and maintained.

--Power supply systems may have based additions to their generating capacity on the expectation that they will meet the full consumer loads. In such

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1/There are opposing views regarding some of these matters (for example, small, consumer-owned generating units could be considered very reliable because of their simplicity).

cases, reduced sales resulting from alternative energy sources used by distribution systems and/or their consumers could create financial difficulties for the borrowers and/or result in higher electric rates for consumers.

--There may be problems in determining when certain units will be operational and how wholesale power rates will be established.

--Many distribution systems, which have the greatest incentives to develop these small projects, are not experienced in constructing generating facilities.

--Some units are more likely to create interference with normal telephone communications and radio and television reception.

Further, REA has no funds for demonstration projects. In making loans the agency must insure that its loans will be repaid. Its procedures provide that a loan application, to be approved, must demonstrate that a proven technology is being used and that the project is the most economical and reasonable alternative available.

In this regard the Administrator, in a speech given at the annual NRECA meeting in March 1980, said that a review has shown that there are actions REA can take to expedite borrower involvement in supplemental energy-producing projects such as coalbed gas recovery, geothermal energy, low head hydro, wind generators, and wood by-products and solid waste uses. The Administrator also noted a recent Comptroller General decision, solicited by REA, that REA has the authority to make loans for feasibility studies, licensing, and other up-front costs associated with initiating energy-producing projects. In light of this decision, REA is preparing criteria for making loans for studies and licensing of hydro and other renewable fuel projects.

REA procedures for making loans to finance generation and transmission facilities

Throughout most of the history of the REA program there has been much controversy over the need for and desirability of REA financing generation and transmission facilities. Controversy centered around whether the financing of such

facilities was an encroachment upon the business of investor-owned utilities and/or a duplication of their facilities. Also, before the guaranteed loan program was established, the Congress and others were concerned that the amounts of financing needed for costly generation and transmission facilities would divert too great a proportion of the relatively small amounts of loan funds authorized away from the needs of the rural electric distribution systems.

Because of these factors, congressional guidance provided to REA required that rigid restrictions be placed upon the financing of generation and transmission facilities. For example, in its 1966 report, 1/ the House Committee on Appropriations stated that the construction of generating facilities by REA borrowers

> "* * * is a secondary function considered to be necessary to preserve the bargaining position of REA cooperatives in securing power at reasonable rates and under reasonable terms."

The Congress' position was summarized in the following statement made by a former REA Administrator before the Subcommittee on Agricultural Credit and Rural Electrification, Senate Committee on Agriculture and Forestry, on October 27, 1971.

> "Congress has given strict admonition to REA over a period of years to give priority to the needs of distribution systems. This admonition was repeated and emphasized in each year. . . . All of these admonitions emphasize two points: (1) devote as much of the annual loan authorization as possible to the needs of distribution borrowers, and (2) hold G& T loans to a minimum."

Regarding the Congress' concern that facilities financed by REA not supplant power provided by IOUs, the former Administrator said that it was REA's policy to make such loans only when the borrowers "are unable to purchase an adequate and dependable supply of power, or when wholesale power costs would be reduced."

1/H. Report No. 1446, April 22, 1966.

Recognizing the congressional guidance it received, REA designed its procedures to limit the financing of generation and transmission facilities. Circumstances have changed markedly through the years, both regarding loan funds available for generation and transmission facilities and IOU opposition to cooperatives owning such facilities. Except in certain cases where the existing private supplier is opposed, it appears that REA could approve virtually any guaranteed loan application received from power supply systems.

REA procedures governing loans for generation and transmission facilities, last revised in May 1969, provide that an initial loan made to a borrower to finance generation and transmission facilities can only be made if

--no adequate and dependable source of power is available to meet the consumers' needs or

--the rates offered by existing power sources would result in a higher cost of power to the consumers than the cost from facilities financed by REA, and the amount of the power cost savings that would result from the REA-financed facilities bears a significant relationship to the amount of the proposed REA loan.

REA will provide subsequent loans to borrowers if the proposed facilities to be financed are the most effective and economical arrangements available to meet its increasing needs.

In their 1963 reports 1/ the House and Senate Committees on Appropriations instructed REA to insure that every effort be made to obtain for the borrower a reasonable contract to purchase power from private suppliers so that REA-financed facilities would not supplant purchased power. The Senate committee clarified its intent in both 1966 and 1977 that this effort should be made "for initial loans * * * where the facilities to be constructed would displace existing contractual agreements with private power companies." The Administrator must certify compliance with these instructions to the Secretary of Agriculture. For initial loans in

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1/H. Report No. 355, June 3, 1963, and S. Report No. 497, September 12, 1963.

excess of $10 million, certification letters are also sent to the legislative and appropriation committees and to the Comptroller General.

Responding to the instructions contained in the Senate committee's 1963 report, REA developed procedures for conducting a power supply survey. REA's stated purpose in this survey is to determine

> "* * * the basis upon which the existing supplier is prepared to cooperate in the development of an assured source of power financed with the proposed loan or loan guarantee."

If the supplier proposes to continue to provide power, REA procedures provide that it will review the proposed contracts for their reasonableness and attempt to resolve any points that make them unreasonable.

REA's policy is to perform power supply surveys on initial loans for generation or major transmission facilities which would displace existing power supply purchase arrangements with private suppliers. (Prior to April 1978 REA performed surveys on initial and subsequent loans.) Contacts with potential suppliers are limited to "existing suppliers," (i.e., those suppliers under contract to provide power to the REA borrower).

Generally, only after a required power survey has been made can a power supply system submit a loan application to REA. In applying for an REA loan for generation and transmission facilities, the system must prepare a power requirements forecast, a feasibility study, an environmental impact statement, and a financial forecast.

Implementing REA procedures

We reviewed the power surveys made in conjunction with REA guaranteed and insured loans made to seven power supply systems. Based on our review of the documents available and talks with REA and power supply system officials, it appears that the power surveys are generally performed by the borrower, who in effect certifies that continued power purchasing is not a reasonable alternative.

According to an REA power survey officer, REA actively participates in the survey when (1) purchased power will be displaced by that generated by the proposed facilities

and (2) the borrower and its existing supplier(s) cannot reach a mutually satisfactory settlement. Except for the power supply surveys made in conjunction with the initial loans made to three of the borrowers we reviewed, there generally were no formal documents showing what offers were made, why they were considered unreasonable, what efforts were made to make them reasonable, and/or how the problems were eventually resolved.

As noted earlier one of REA's main concerns is the relationship between the borrower and its existing supplier. REA's definition of "existing supplier" refers to the supplier who holds the contracts to supply wholesale power to the distribution systems. In some cases this is the power supply system seeking the loan, even though the power system has no generating capability of its own but merely contracts with IOUs and others for power for its members. Five of the seven power systems included in our review were treated as the existing supplier on initial loans even though they did not own generation facilities. (Two of the five did own transmission facilities.) The remaining two had received REA financing for generation facilities prior to May 1973, and as such, the loans we reviewed were properly treated as subsequent loans.

One loan guaranteed by REA for generation and transmission facilities serves to illustrate the survey process. In 1974 39 distribution systems in Georgia formed a power supply system cooperative. The power supply system applied for a $1 billion loan of which about $513 million was approved in January 1975 to cover the first phase of the system's power supply program.

The loan was made to purchase a 30-percent share of two nuclear and two coal-fired generating units being built by the IOU which was supplying power to the 39 distribution systems and to acquire or build transmission lines. The distribution systems held indefinite period contracts with the IOU. These contracts provided that the IOU would meet the existing and future needs of the cooperatives and that either party intending to terminate the contracts must provide at least 3 years' written notice.

REA, in responding to USDA Office of Audit's questioning of the justification of this loan, said that the loan was appropriate because the IOU had assigned the contracts to the power supply system, making it the existing supplier. Thus, it said the certification that a loan was needed to implement an existing or proposed contract with a power supplier was accurate.

REA said that (1) since the contracts were not firm as to price and duration, the arrangement with the power supply system would correct these weaknesses and (2) the loan could also be justified on the basis that it would result in less costly power to the distribution systems. REA also said that "there is ample precedent establishing that unavailability of power from commercial sources, or unavailability of a power contract, is not a prerequisite for an REA loan."

The circumstances surrounding the power survey are confusing. REA and the power supply system officials said that an assured source of power was not available, yet the loan was used to purchase portions of plants under construction by the IOU. Also, the feasibility study contrasts the cost of power through the purchase of the facilities with the cost of power by continuing to purchase it from the IOU which REA said was not an available option.

The agreement between the system and the IOU made in conjunction with this loan noted the power system's plan to eventually provide for the total power requirements of its members. In accordance with its plan, the system has participated in additional joint projects with the IOU. As of December 31, 1979, REA had approved $2.1 billion of guaranteed loans to this borrower. According to an NRECA newsletter, 1/ the power system's manager said that an agreement made in May 1980 to purchase a 60-percent share of a plant being constructed by the IOU is a major step toward fulfilling the system's goal of self-sufficiency.

All of the joint generation projects provide for arrangements whereby the system sells back part of the power of the capacity acquired to the IOU, on a diminishing basis, over a certain period of time. For example, power from the latest plant the system agreed to buy will be sold back to the IOU over a 10-year period, 100 percent the first year with decreases of 10 percent in each of the following years.

Regarding a question we raised about whether REA considers one of its objectives to be to assist borrowers to become self-sufficient with respect to their total power requirements, the REA Administrator, in a March 9, 1979, letter, said that:

1/Rural Electric Newsletter (May 30, 1980 - No. 936).

"Assuming 'self-sufficiency' means ownership by a cooperative of generation and transmission resources sufficient to provide for all power requirements of the cooperative then 'self-sufficiency' is neither an objective of REA nor a matter taken into consideration in conjunction with generation and transmission loans and loan guarantees.

"As a result of the disruptions caused by the oil embargo in 1973 and subsequent supply disruptions such as coal shortages caused by weather, labor problems, and environmental uncertainties, there appears to be a mood among power users (including electric suppliers) which could be called seeking 'self-sufficiency.' It would be more properly described as taking the responsibility for assuring ones users of a firm, uninterruptable, power supply. REA concurs strongly in borrowers taking an attitude of responsibility for supplying the growth needs of their users." (Underscoring supplied.)

Under REA procedures for approving loans to power supply systems for generation and transmission facilities, it appears that, if the existing private supplier is not opposed, any request for a loan could be approved, providing it meets REA loan approval criteria, irrespective of the availability of power from other utilities. Concerning an initial loan, any power system which contracts for power for its members is considered an existing supplier even though it has little or no generating capability of its own. Such a borrower need not demonstrate that power is unavailable from its existing supplier(s), since it is the existing supplier. Borrowers applying for subsequent loans are also considered as the existing supplier.

In view of REA's procedures for making loans to power supply systems and the fact that most electric distribution systems are presently members of power supply systems (about two-thirds as of December 1979), 1/ it can be expected that

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1/Distribution systems receiving power from Federal power suppliers such as the Tennessee Valley Authority may have no need to join a power supply system.

much more of the growth of consumers' energy needs will be met through borrower-owned generating facilities financed by REA than was true in the past.

Under its procedures REA would get involved directly in power survey negotiations when the borrower and the IOU cannot reach agreement. However, according to the Director of REA's Southwest Area Office and officials of the Edison Electric Institute, due to the problems encountered by the electric utility industry involving such matters as environmental regulations, high costs of capital, and the inflationary impact on construction costs, the IOUs are more willing to have the cooperatives provide for their power requirements than they were in the past. The changing attitude of the IOUs is reflected in the number of joint generation and transmission projects they have participated in with cooperatives. For example, as of April 10, 1980, about 40 percent or $6.9 billion of all REA loan guarantees made or approved were to finance such joint projects with about $3.6 billion for joint nuclear projects. 1/

Many power systems are also members of regional power pools. A power pool is a group of electric utilities that join together to attain the benefits of integrated planning and operation through interconnection of systems. Power pooling allows the members to achieve greater economy and reliability.

Under some power pool arrangements, the members take turns constructing needed generating facilities. For example, the two Minnesota power systems discussed in chapter 4 belong to the Mid-Continent Area Power Pool. Under this power pool agreement, members are obligated to own or otherwise provide sufficient generating capability to meet requirements plus a reserve capacity of 12 percent. The agreement provides that the installation of generating units are to be rotated among the members.

Since the power supply systems receive below-market interest rate Government loans and, as cooperatives, are generally exempt from Federal income taxes and are nonprofit, one would expect that they could construct facilities and provide power at a lower cost than would an IOU.

1/Usually occurs as an administrative settlement under the Nuclear Regulatory Commission's anti-trust provisions governing licenses, where the IOUs agree to offer cooperative electric systems and others a share in the ownership of proposed nuclear plants.

According to REA's Deputy Assistant Administrator-Electric and others, however, this is not always true because, among other reasons, the IOU's embedded plant costs are generally lower (that is, the IOUs have proportionately more older plants built at lower costs to blend with newer higher cost facilities than do REA borrowers).

We recognize that congressional guidance to REA limits the power survey to initial loans only. However, because the possibility exists that at least a part of the power needed could be purchased at a lower cost than it could be produced through new facilities, we believe that REA needs to ensure that purchasing power is one of the options borrowers study in determining how best to meet demand regardless of whether the applicant is seeking an initial or subsequent loan. Other options considered should include participating in power pools and joint projects, 1/ reducing demand through increased conservation efforts, and building centralized and decentralized plants. Only by studying all reasonable options can it be assured that the best mix of alternatives for meeting demand has been selected.

MEMBER PARTICIPATION IN DECISION-MAKING OF POWER SUPPLY SYSTEMS

Concern has been expressed as to whether individual consumer/members are insulated from the decisionmaking process of the power supply systems. We found that member participation in the decisionmaking process of the power supply systems as well as the distribution systems is limited.

Planning for the construction of generation and transmission facilities is viewed as highly technical and is primarily done by the power systems, with REA and other Federal and State agencies reviewing the acceptability of the plans. With increasing concerns over energy costs, the environment, and conservation, there apparently is a need to gain increased participation of individual members, private citizens, and others in the early planning stages of the power systems.

1/A recent DOE study "The National Power Grid Study," (Jan. 1980) makes a series of recommendations to capture opportunities for greater economy, reliability, and conservation in the utility industry. The study calls for increasing coordination in power system planning, development, and operation.

Organization of power supply and distribution systems

REA power system borrowers, as cooperatives, are ultimately owned by the individual consumer/members. Technically, however, the power supply system's members are the distribution systems, most of which are also cooperatives.

Distribution cooperatives have boards of directors which establish policy for the system. The directors are elected by individual members, who have one vote each, at the cooperatives' annual meetings.

A fairly typical example of the organization of a power supply cooperative is found in Minnesota. The 21 members of the board of directors of this cooperative are selected by the boards of the 15-member distribution cooperatives from among their own individual directors. Five distribution cooperatives choose two directors each, and the other 10 cooperatives select one member each plus one at large member.

This power system's 21 board members attend monthly and annual meetings to set policy and agree on major decisions. The annual meeting is also attended by all the board members and managers of the 15 distribution cooperatives who attend as observers. Individual consumer/members are not invited to attend the monthly or annual meetings. To attend a meeting, an individual member must submit a written request to the board, which considers each request individually.

Individual consumer/members can make their opinions and concerns known to the distribution cooperatives' board of directors. If sufficient numbers of such consumer/members are dissatisfied with the actions and/or policies of the board, the directors can be replaced at the annual meetings. Although the annual meetings are the primary means the individual consumer/member has to effect the activities of the distribution cooperatives and, indirectly, its power systems, attendance at such meetings is generally poor.

We reviewed the average attendance of members at the annual meetings of 70 randomly selected distribution cooperatives for the period 1974-78. The attendance at the annual meetings of only 23 of the 70 cooperatives (about 33 percent) averaged more than 10 percent. Even with vote proxies added to the attendance figures, only 26 (about 37 percent) of the cooperatives averaged more than 10-percent participation by their members.

According to the REA Administrator, member participation has not always been a problem. When the REA program was first established and the cooperatives were being formed, the members were actively involved. Once members became "sold" on the concept and familiar with the benefits, they were eager to take part in a cooperative venture with their neighbors. Most cooperatives were small and relied heavily on the direct assistance of members.

As rural electrification became established and the cooperatives grew larger, there was a gradual lessening of direct member participation. There were relatively few new issues in which member participation was necessary. Rates, a primary member concern, were in a steady period of decline up through the 1960s. Under the REA area concept, virtually every area of the country was reached with service and this service was increasingly more reliable. The operations of the cooperatives were, for the most part, left to the staff and boards of directors.

Management officials of REA borrowers told us that there is currently relatively little direct member participation in the business of the cooperatives. There are exceptions to this, of course, such as members expressing concerns over rate increases. Most direct participation, however, is limited to the annual meeting and the election of board members in distribution cooperatives. As discussed above, however, the attendance at such meetings is low.

While the annual meetings of the distribution cooperatives differ in format, they do not generally appear to function as a forum for member participation. The primary order of business includes presenting a financial report, highlighting the year's activities, and electing board directors.

There is even less participation by consumer/members in the affairs of the power supply cooperatives. This is because the boards of directors of the power supply cooperatives are typically selected directly by the directors of the member distribution systems. The power supply cooperatives view the distribution cooperatives as their members and are accountable only to them. Normally, the consumer/members are not asked to participate in the power supply cooperative's annual meetings.

REA is increasing its efforts toward getting more consumer/member involvement in cooperative affairs. In August 1979 REA placed its Office of Information and Public Affairs in the Office of the Administrator to give higher priority to member involvement and effective communications.

This office is now working with cooperatives to improve their member services, communications, and public affairs functions.

Effective communication is seen as a coordinated effort by distribution and power supply cooperatives. In his February 1979 address to the NRECA members, the Administrator said that:

> "* * * an all out effort must be mounted now to get the facts on power supply to the member/consumers, utilizing all the assistance available from your G & T or other supplier. We cannot think of the distribution system service areas as private territories, but must work closely with the G & T to provide the most effective information required to tell the story."

As a prelude to preparing an environmental impact statement on a proposed generation and transmission project, REA now requires the borrower to hold public information meetings in the early stages of planning the proposed projects. The purpose of these meetings, which have been required since January 1980, is to tell the public what is being planned, to discuss any alternatives that have been considered, and to solicit comments from individuals on their concerns. These meetings are to be widely publicized in the affected area and are open to the public.

Holding public hearings on individual projects should prove beneficial. However, at the time a system needs to add generating capacity, the only thing left to decide may be the type and/or location of the facilities. We believe consumer/members and other private citizens should be involved at an even earlier stage. To do this, the power systems should be required to make their long-range plans available to the public. In this way the public would be better able to participate in the up-front planning of the system, including alternative approaches to meeting demand through such measures as conservation, load management, and alternative energy sources.

Further, while it may be impracticable to hold open annual meetings at the power system level because of space limitations and the long distances many members would have to travel (some power systems serve one or more States), other means could be used to obtain member participation and input into the major policy and decisionmaking process. For example:

--Power system representatives could attend the annual meetings of the distribution cooperatives and/or hold special meetings in the areas served by the distribution cooperatives to discuss the system's long-range plans and other major issues.

--Information on the long-range plans and other major issues could be disseminated to the members and their opinions sought through questionnaires or polls.

CONCLUSIONS

REA has loaned many billions of dollars to finance the construction of generation and transmission facilities and, under its present policies and procedures, will loan many billions more. The management of such vast resources provides REA with a great potential to help solve our Nation's energy problems. Some improvements in planning for the generation and transmission facilities financed by REA could help toward this end; however, to take full advantage of REA's potential may require a change in REA's primary role as a banker.

REA's funding authority is primarily limited to making sound repayable loans; it has little funding flexibility to finance demonstration projects or other efforts directed toward solving our Nation's energy problems. Because of the wide array of ongoing studies and demonstration projects that other Federal agencies and non-Federal organizations have funded in rural areas, we are hesitant in recommending that REA's funding authority be broadened. REA could play a catalytic role by assimilating information on and evaluating studies and projects with a view toward disseminating this information to its borrowers. Once this is done, REA would be in a better position of knowing whether it should have broadened funding authority and could, if necessary, recommend appropriate legislative changes.

Improvements in the power supply systems' planning efforts should begin with the procedures and methods followed in forecasting demand. REA recognizes the need for change and has contracted with a firm to revise the forecasting methodology prescribed for its borrowers. There is a need to complete this project expeditiously because of the importance forecasts play in the power supply systems' planning process.

Also, in developing new forecasting procedures, REA needs to require several demand forecasts showing different levels of conservation so that the costs and benefits of the various scenarios can be compared and analyzed and to

implement those recommendations made by the NRECA/CFC task force that are compatible with the revised methodology adopted.

The power supply systems need to study and assess all reasonable options available to meeting estimated future demand. The options studied, as a minimum, should include: conservation, load management, purchasing power from other utilities, and participating in regional power pools and in joint projects with other utilities. These options need to be studied as a basis for developing the most appropriate mix of alternatives to meet demand. The studies should be included as a part of the system's long-range plans and loan application package to enable REA and others to evaluate the appropriateness of the decisions made. These requirements and the emphasis REA places on solving our Nation's energy problems should be included in an updated power planning bulletin.

Decisions regarding power system planning are viewed as highly technical and, as a result, have primarily been made by the systems' directors and management personnel with little involvement by individual consumer/members and other private citizens. Because of the substantial impact these decisions can have on the lives of private citizens, more aggressive efforts are needed to obtain their views and opinions.

Most importantly, individual consumer/members and private citizens need to be involved in the early stages of developing power supply systems' long-range plans to, among other things, help avoid disruption of the systems' power programs through legal actions and protests. Such involvement could be attained at the annual meetings of the distribution systems, at special meetings held throughout the power systems' service areas, and through polls and questionnaires. The active solicitation of individual members' input and views on planning and other major issues is one way to help gain their participation in the affairs of the power systems and the distribution systems.

RECOMMENDATIONS TO THE SECRETARY OF AGRICULTURE

We recommend that the Secretary of Agriculture direct the Administrator of REA to take the following actions.

--Assimilate information on and evaluate the various energy-related demonstration and study projects funded by other agencies and organizations so that this information can be disseminated to and used by all REA borrowers.

--Determine whether REA's efforts to help solve our Nation's energy problems could be significantly enhanced if REA had authority to fund its own demonstration and study projects and, if necessary, recommend appropriate legislative changes to obtain such authority.

--To improve the power demand forecasts made by power supply systems (1) require borrowers to prepare multiple forecasts of demand to reflect different levels of conservation efforts and (2) implement those recommendations made by the NRECA/CFC task force which are compatible with the revised forecasting methodology to be adopted.

--To help improve the planning for major generation and transmission facilities financed by REA and better meet our Nation's energy goals, revise REA's power planning bulletin to require power supply systems to (1) perform in-depth, systemwide studies of all reasonable alternatives and supplemental power supply options to ensure that the most appropriate mix of alternatives for meeting the energy needs of rural consumers is chosen and (2) incorporate such studies in their loan application packages and long-range plans.

--Require that REA's borrowers take aggressive action to solicit the views and opinions of individual consumer/members and other private citizens, as appropriate, in the early stages of the power supply systems' long-range planning process and in other major decisions.

AGENCY COMMENTS AND OUR EVALUATION

USDA said that there is no question that improvements can be made in the planning and estimating processes of power supply systems. According to USDA, major portions of the recommendations contained in this chapter of the report were being implemented prior to the start of our study as ongoing REA functions. REA, it said, has long recognized these needs and has proceeded to overcome the problems.

In discussing the problems and issues relating to the planning and estimating processes, we also discussed the actions REA has and is taking to make needed improvements.

At the time of our review, many of these actions were either only recently taken or were in the process of being taken. Because of this we cannot comment on their adequacy. An example of this is the ongoing study of forecasting methodologies which will serve as a basis for revising REA's forecasting procedures sometime in 1981.

USDA did not comment on our recommendations concerning the desirability of REA having authority to fund its own demonstration and study projects in helping to solve our Nation's energy problems. Along these lines, we cited actions REA has taken to provide borrowers with front-end financing and to establish a conservation loan program for consumers funded through deferral of REA loan principal payments.

We believe the action taken to establish a loan program for conservation efforts reinforces our position that REA may be in need of more flexibility in funding programs of this type. While using deferred loan payments to fund such efforts may be legally permissible and the program objective commendable, we believe that it would be more appropriate to seek specific legislative authority for such a program. Of particular concern to us is the precedent this action may set for other Federal programs.

In discussions held subsequent to USDA's comments, REA officials said that power supply alternatives are considered by REA and its borrowers and are presented in the required environmental impact statements prepared by borrowers which are available for public review and comment. To support their position, the officials provided us with a number of environmental impact statements for our review. The officials also said that the report did not reflect certain recent actions by REA to underscore the importance of identifying and developing power supply alternatives by the borrowers.

Our review of the environmental impact statements provided showed, for the more recent statements, that borrowers are giving greater consideration to alternatives and supplemental supply options. Such consideration, however, in some cases involved a general discussion of the option considered and how it would impact on the need for the proposed facility. Such general discussions do not satisfy the intent of our recommendation for in-depth feasibility studies of alternative supply options which could help assure REA and others that the most appropriate mix of power supply alternatives is selected.

REA has taken actions to help ensure that supply alternatives are adequately evaluated. In a January 1980 change to its instructions on performing environmental impact studies on proposed projects, REA stresses the importance of showing the alternatives and supplemental supply options considered. A proposed addition to these instructions dated June 1980, when implemented, will specifically require a discussion of options such as conservation, load management, nonconventional sources of energy, purchased power, and joint projects.

As part of its reorganization in January 1980, REA established an Energy Management and Utilization Division. A key function of this division is to work with borrowers in developing alternatives and supplemental power supply sources.

Our primary concern is that power supply borrowers perform in-depth studies of all reasonable supply options to select the most appropriate power supply mix and that REA carefully review the adequacy of such studies. The studies should include a detailed systemwide analysis of the feasibility of alternatives and supplemental supply options such as conservation, load management, renewable energy sources, and interutility coordination of expansion plans. The studies should be incorporated into the borrowers' long-range plans.

To ensure that borrowers study and assess all supply options as part of their planning process, we believe REA should revise and update its bulletin on power system planning. At present this bulletin is silent on such important options as conservation, load management, and renewable energy sources.

The proposal made in our draft report was revised somewhat to precisely state the type of studies and actions needed to satisfy our primary concerns regarding power supply options.

Making environmental impact statements on proposed projects available for public comment is desirable and required by law. However, as discussed in our report (see p. 77), obtaining public input at the time a borrower needs to add generating capacity does not fully afford the public the opportunity to participate in the up-front planning of the system. To do this, we believe the borrowers should be required to make their long-range plans available for review and comment by the public.

CHAPTER 4

THE COAL CREEK PROJECT--A CASE STUDY

The Coal Creek Project financed by REA was beset by problems, including large cost increases, construction delays, and public opposition. The cost of the project increased from an initial estimate of $537 million in mid-1973 to an estimated cost of $1,262 million, in late 1979. The latter estimate includes coal mine development costs of $215 million not included in the initial estimate.

As discussed in our November 1979 report (see app. II), some of the cost increases were beyond the control of the two power supply systems participating in the project while others resulted from management decisions. Although the wisdom of these decisions will only be proven with the passage of time, we believe that there was inadequate initial planning for a project of the magnitude envisioned and that the assumptions underlying the decision to proceed with the project should have been re-evaluated prior to construction as conditions changed following the 1973 feasibility study and the oil embargo.

In July 1973, two rural electric cooperatives in Minnesota--United Power Association (UPA) and Cooperative Power Association (CPA)--agreed to construct and operate a generating plant with two coal-fired units in North Dakota and a high-voltage transmission line to carry the power generated to distribution cooperatives in Minnesota. The project went into commercial operation in August 1979 with output available for one of the two generating units. Total financing of the project as of November 1979 is shown below.

REA approved loans	
Insured loans (5%)	$ 82,887,000
Loan guarantees	1,089,197,000
CFC pollution control bonds	89,800,000
Total	$1,261,884,000

On December 5, 1978, the Chairman, Subcommittee on Family Farms, Rural Development, and Special Studies, House Committee on Agriculture, asked us to report on certain aspects of the Coal Creek Project and to consider some of the issues raised by this project in a broader review of REA that was in progress.

Some of these concerns were addressed in our November 26, 1979, report. The other concerns are addressed in this report through discussion of the basic issues facing REA and by

including the project as a case study. The case study presents a more complete description of the planning and evaluation process involved in making loans for major generation and transmission projects and, helps show the interrelationship of some of the problems encountered.

PROJECT PARTICIPANTS

The Coal Creek Project is a joint effort by the United Power Association of Elk River, Minnesota, and the Cooperative Power Association of Edina, Minnesota.

United Power Association

UPA is the wholesale power supplier for 15 distribution cooperatives which in turn provide electricity to about 171,000 consumers in eastern Minnesota and a small area in northwestern Wisconsin. UPA was initially organized on January 22, 1963, by two other generation and transmission cooperatives as a joint venture to construct a 166-megawatt generating plant at Stanton, North Dakota. In 1972 the two parent cooperatives merged with UPA and ceased to exist as separate entities.

Before the Coal Creek Project, UPA operated several small peaking plants and two larger base-load plants. Upon completion of the second of two Coal Creek generating units in early 1980, UPA's net generating capacity will be about 750 megawatts.

UPA's seasonal peak demand has increased from 280 megawatts in 1973 to 389 megawatts in 1978. The number of employees increased from 310 to 426 over this period. The cooperative handles all of its own maintenance.

Cooperative Power Association

CPA is the wholesale power supplier for 19 REA distribution cooperatives which in turn provide electricity to about 132,000 consumers in southwestern and west-central Minnesota. CPA was incorporated in 1956, and shortly thereafter became the purchasing agent for its member systems. Before the Coal Creek Project, CPA owned no generating plant but secured power through firm purchase contracts with other suppliers. Upon completion of the Coal Creek plant, CPA will have a net generating capacity of 615 megawatts.

CPA's peak demand has increased from 334 megawatts in 1973 to 489 megawatts in 1978. The number of employees has increased from 11 to 218 over this period. According to CPA,

this increase is primarily due to its role as operating agent for the Coal Creek plant. CPA performs all of its maintenance and construction functions under contract with its member systems, private utilities, or independent contractors.

THE COAL CREEK POWER PROJECT

In mid-1972 CPA and UPA began discussing the possibility of a joint project to construct a major generating plant. Based on forecasts of electrical demand, CPA and UPA determined that about 800 megawatts of additional generating capacity would be needed in the 1978-82 period to take care of expected deficiencies in their power supply.

Project description

Following the completion of a feasibility study of the proposed generating facility in July 1973, CPA and UPA signed a Memorandum of Understanding in which they agreed to build a generating plant located near the North Dakota lignite fields and related transmission facilities to bring the power from the plant to the utilities' service areas in Minnesota. These planned facilities included a 410-mile $\pm$ 450 kilovolt direct current line from the generating plant in North Dakota to Dickinson, Minnesota. The cooperatives expected to buy their fuel supplies of lignite coal from a coal company which was already supplying lignite to UPA's Stanton plant and owned or leased large lignite coal reserves in the Underwood area.

The project differed from most power projects in two aspects: (1) lignite coal was not a commonly used fuel for electric steam generation and (2) most of the planned high voltage transmission system was direct current rather than the more commmonly used alternating current.

The Memorandum of Understanding specified that based on projected load requirements, CPA was to own a 56-percent share of the project and would be responsible for operating and maintaining the generating plant. UPA was to own the remaining 44-percent share and was to be responsible for constructing the generating plant, transmission lines, and related facilities and for operating and maintaining the transmission facilities.

On November 29, 1973, CPA and UPA submitted requests to REA--which had helped CPA/UPA plan the project--for $536,679,000 in insured and guaranteed loan funds to finance the Coal Creek Project. REA approved the loan request on February 5, 1974.

According to CPA and UPA plans, one generating unit would be operational in 1978 and the second about a year later. These estimated completion dates have slipped by about 1 year and the initial cost estimate of $536.7 million for the proposed project has more than doubled.

Factors affecting project completion and cost

Reasons for the delay and cost overrun are numerous. Some involve decisions by CPA/UPA and others involve external factors generally beyond their control.

One of the principal external factors affecting the project was the public opposition that developed in Minnesota over construction of the transmission line. Beginning sometime in 1974, a strong protest movement against the powerline was evident. Protesters expressed their concern over the lack of opportunity to comment on issues such as the project's need, location, and cost. For example, although the idea for the project was conceived in 1972 and largely formulated by mid-1973, many individuals whose lives and property were to be directly involved did not learn about the project until the spring of 1974.

In commenting on a draft of this chapter (see app. VII), UPA said that unfortunately, most people show no interest in a project until they learn they are directly involved. Such involvement does not normally occur in the early planning stages. In the case of Coal Creek, UPA said that most of the protest developed in the area in which the State rerouted the transmission line and that this did not occur until the line siting process.

Some rural residents had doubts about the power project's necessity. Although most of the transmission line is sited on agricultural land, the purpose of the line was viewed as serving the needs of suburban areas.

The State added to the residents' concern when it granted the cooperatives corridor approval for the transmision line before it determined the need for power. Minnesota's rules requiring certificates of need for power were promulgated after the cooperatives filed their request for a transmission line corridor designation. Consequently, the need for the project was not certified by the State until after corridor approval.

The strongest protests concerned the location of the transmission line. Farmers and landowners felt that the powerlines could be disruptive to farming, reduce yields, and degrade the countryside esthetics, and people living near the powerline route were concerned about potential adverse long-term health effects.

UPA said that the greatest protests occurred in the area in which the transmission line corridor was rerouted through the State siting process. It said that "professional protestors" moved into this area to keep the protest active and are still doing so today.

In a larger sense the rural opponents to the powerline were unhappy because of what they saw as an abuse of State authority. CPA/UPA first asked to be excluded from State siting procedures enacted after the project was started. Later when the cooperatives reached an impasse with county officials over construction permit approvals, they asked to be placed under the State regulations. The rural residents resented this belated use of State power to override local rules as well as the cooperatives' use of the power of eminent domain to obtain the necessary right-of-way for the line.

As project costs escalated, consumers began to be concerned over the price they would have to pay for power from the new plant. Some of the member cooperative officials commented that they had not been well enough informed on the progress and cost of the project.

The concerns and complaints of the public have been presented in numerous court proceedings and State agency hearings. The end result was the decision to proceed with the project, but the polarization and suspicion that developed between CPA/UPA and the project opponents has continued. When the legal remedies requested by the opponents were not granted, acts of vandalism, and even violence, ensued.

PROJECT COST INCREASES

The generating plant and transmission facilities' construction cost has increased from an initial estimate of $537 million to $1,030 million. The coal mining complex development costs were not included in the original estimate but were later estimated to be $96 million. This estimate was subsequently increased to $215 million for a total project cost of $1,262 million.

In discussing the cost increases in our November 1979 report, we concluded that:

> "Many of the events that adversely affected the cost and timely completion of the project were beyond the control of CPA/UPA. Other events, however, resulted from deliberate management decisions. Design changes and equipment modifications, for example, were CPA/UPA decisions as was their request to put the transmission line siting process under the Minnesota siting act. In a project of this size and longevity, and considering the changing environment in which it will operate, the wisdom of those decisions will only be tested with the passage of time.
>
> "The decision by REA and the cooperatives to proceed with the project was based primarily on the operating record of three REA-financed generating plants in the North Dakota lignite coal fields. In 1973, these plants had some of the lowest generating costs in the country and REA and CPA/UPA officials believed that the Coal Creek project would be equally successful.
>
> "Within the limited scope of our review, we believe that the basic underlying causes of the problems encountered by the cooperatives in constructing the Coal Creek project were the inadequate front-end planning for the project and numerous premature commitments which REA and the cooperatives made lacking sufficient information."

The circumstances surrounding the cost estimates and increases are summarized below.

Generating plant

The estimated cost to build a two-unit steam generating plant has increased from about $371 million to $717 million. This increase in cost occurred primarily because

--the initial cost estimates for the contingency allowance and interest costs on construction funds were too low;

--inflation rates were much higher than anticipated;

--major design changes were made because of the anticipated effects of the oil embargo, regulatory requirements, and more detailed economic analyses; and

--delays in construction starts caused by State regulations and contractor and labor problems required accelerated construction schedules.

After the feasibility study was completed, CPA/UPA retained an engineering firm to design and construct the plant. Even before REA approved the initial $537 million loan, of which $371 million was for the generating plant, the engineering firm estimated that the generating plant would cost $413.5 million, or $42.6 million above the original estimate. The increased estimate resulted from an increase in the contingency fund allowance from 5 to 10 percent and from higher estimates covering environment and interest costs.

Subsequent design changes and additional items increased costs by an additional $58.6 million. These costs resulted from additional capacity and changes that made the plant more responsive to environmental concerns, less dependent upon fuel oil, and more economical to operate.

In addition to the design changes and their associated price increases, CPA/UPA encountered other unanticipated problems such as the following:

--As a result of rapidly increasing inflation, many contractors and equipment supply firms would only enter into contracts containing price escalation clauses, tying the cooperatives to the national inflation rates.

--Construction delays due to contractor and labor problems, difficulty in obtaining materials and a construction permit, and bad weather resulted in increased interest costs.

The revised estimates by cost category are shown below.

Generating Plant Cost Increases

Description	Total financing 2/74	10/78	Difference
	----(millions)----		
Land for plant site	$ 0.9	$ 1.3	$ 0.4
Equipment contracts	156.7	254.7	98.0
Construction contracts	90.5	193.6	103.1
Environmental controls	42.4	56.8	14.4
Contingencies	14.4	45.5	31.1
Engineering	17.4	14.7	-2.7
Interest during construction and overhead	41.9	111.9	70.0
Miscellaneous items	6.7	38.8	32.1
Total	$370.9	$717.3	$346.4

According to a study made by the engineering firm, the estimated final plant cost of $700 per net kilowatt of power compares favorably with costs of 10 comparable plants built around the same time which ranged from $598 to $983.

Transmission line

Estimated capital costs for the transmission system increased from $165.8 million in February 1974 to $313 million in October 1978. The major factors contributing to this increase were the costs of additional studies, design and equipment changes, and delays resulting from State and, to a lesser extent, Federal regulations. Other factors included an inflation rate much higher than estimated, court actions, highly escalated right-of-way acquisition costs, vandalism, and substantially greater accrued interest costs during construction.

The transmission line was completed in September 1978 and first energized in October 1978. The line, with its 1,685 towers, stretches across portions of North Dakota and Minnesota.

Selecting the route of the direct current line for the Minnesota area became one of the more difficult and controversial aspects of the project. The project came under the provisions of recently enacted siting laws in both Minnesota

and North Dakota. The North Dakota segment of the line was sufficiently advanced that only limited application of the regulations was made. Initially, the Minnesota segment was excluded from the State's siting provisions, but citizen resistance and the possibility of a legal challenge to this exclusion compelled the cooperatives to request coverage under the siting act, and therefore all of its requirements were applied to the siting process.

To comply with the siting acts' provisions required changes in the cooperatives' plans. Segments of the proposed line were rerouted, making it longer. Additional routing and engineering design studies were performed. These changes resulted in schedule delays, contributing to the loss of the 1976 construction season. This necessitated a compression for the schedule from 2 years to 9 months.

Acts of vandalism also created delays in transmission line construction, particularly in Pope and Stearns Counties, Minnesota. Downed towers, cut cables, bent steel, broken insulators, damaged vehicles, and additional security significantly increased costs. The estimated costs related to vandalism and additional security was $6.1 million. 1/

Other factors which contributed to cost increases in the transmission line were as follows:

--The original estimate for right-of-way acquisition of about $2.4 million was increased to $28 million. As of October 1979 the cooperatives had paid out more than $17 million, including administrative expenses.

--Additional capital needs, delays, and high interest rates increased the funds needed for interest during construction.

--Support items including spare parts, personnel training, tools, professional services, insurance, and State taxes were either underestimated or excluded from the initial estimate.

The studies, changes, and delays created an additional demand for REA loan funds in excess of $147 million, as shown in the table on page 92.

1/On September 18, 1980, ownership of that portion of the direct current transmission line located in Minnesota was transferred to REA, with REA agreeing to lease back the line to CPA/UPA. The transfer will make vandalism against the line a Federal crime.

Transmission Line Cost Increases

	Total financing		
	2/74	10/78	Difference
	----(millions)----		
Transmission lines	$ 43.6	$128.4	$ 84.8
Direct current terminals	77.3	88.8	11.5
Alternating current terminals	11.7	11.4	-0.3
Communications and supervision	2.8	3.0	0.2
Engineering	12.0	21.8	9.8
Interest during construction and overhead	16.6	46.3	29.7
Spare parts, training, and other items	1.8	13.3	11.5
Total	$165.8	$313.0	$147.2

Coal mine development costs

According to the then Director of REA's North Central Area Office, there was originally no plan for UPA and CPA to become involved in coal mining operations for Coal Creek. When the initial loan was made, the cooperatives were planning to buy coal from a company which had reserves near the plant. He said that the company decided it did not want to assume the financial risk of developing the mine and told the cooperatives they would have to provide financing.

The vice president of the coal company told us that the company never intended to finance the mine development because it did not have the required capital. He said that if the cooperatives wanted the coal from his company, there were only two feasible alternatives: (1) CPA/UPA could guarantee a coal company loan or (2) CPA/UPA could provide the financing. The cooperatives decided to finance the coal mining development directly because of the lower interest rates available to them through REA which, ultimately, would result in lower energy costs to their consumers.

The financing arrangements for the mine at the Coal Creek Project are not unique. In 1977 the coal company was operating six mines under similar arrangements. According to a coal company publication, company management has elected to use its capital to acquire new coal reserves. By doing so the company has been able to expand by contributing its coal reserves, management, and engineering expertise to customer utilities, which in turn have arranged for the necessary financing to develop the mines.

On January 30, 1974, before REA approved loans for the project, the coal company submitted a draft coal sales agreement to UPA which clearly delineated the cooperatives' financial responsibility for the mine development. According to the then Director of REA's North Central Area Office, REA was not aware of the agreement until after the February 1974 loan approval.

Under the terms of the July 1, 1974, coal sales agreement, CPA/UPA were required to provide a loan to the coal company to develop, equip, and operate the coal mine. CPA/UPA has secured the required funds from FFB through REA's guaranteed loan program. CPA/UPA purchases coal from the coal company at the cost of production plus an agreed upon profit.

Under the coal sales agreement, loans made to the coal company are interest free but may be converted to interest-bearing loans at a later date. The coal company will repay the loans to CPA and UPA. The loans are secured by a mortgage, or similar security, creating a security interest in favor of CPA/UPA in the assets of the coal company.

Cost increases

Originally estimated at $96 million in 1974, the cost of the coal mine development had increased to over $215 million by October 1978. This large increase resulted from a number of factors either not considered or underestimated in the original projection. These included a failure to adequately consider the effects of inflation, understated interest costs, and revised plans which necessitated additional equipment.

Four specific items which resulted in major cost increases were as follows:

--Preproduction loan interest of $47.6 million was excluded in the original REA loan approval.

--Estimated costs for stripping equipment increased by $46.9 million.

--Failure of REA to include all capital cost estimates in the first loan contributed $19 million.

--Additional equipment costs to meet reclamation requirements are expected to be $11.4 million more than estimated.

The escalated costs for the four items actually exceeded the total $119.8 million increase in mine development costs, but were offset to some extent by reductions in other items.

USDA Office of Audit report on REA

In an August 22, 1975, report on REA's guaranteed loans used to finance the construction of electric power generation facilities, USDA's Office of Audit questioned REA's practice of financing items which are not specifically for generation and/or transmission facilities. For example, the report noted REA's financing of the coal mine development on the Coal Creek Project, as well as other loans made to finance purchases of a coal mine, railroad cars, housing and recreation facilities, and coal river barges.

The report recommended that REA reevaluate the criteria used to determine what types of facilities can properly be financed and that REA establish a policy statement covering such policy. Responding to the report, REA officials stated that when considering whether to make a loan, REA considers the necessity for the loan and whether it is an industry practice to purchase such goods or services. REA disagreed with, and therefore did not implement, the recommendation.

REA power supply surveys did not document the availability of power from existing sources

REA power supply surveys used to justify the Coal Creek Project did not fully document the availability or cost of power from existing sources. REA Bulletin 111-3 states that REA must conduct a power supply survey before accepting an initial application for a loan of over $10 million. The survey must summarize the efforts made by the applicant and by REA to obtain the applicant's power needs from existing suppliers and the reasons why such efforts have not been successful.

REA prepared power supply surveys for both CPA and UPA; however, the completed surveys simply state that the cooperatives were existing power suppliers for their member distribution systems and the Coal Creek Project represented the most economical of those supply alternatives studied by the cooperatives. At the time of the surveys, CPA did not operate or own any generating facilities but was considered the existing supplier because it contracted for the power needs of its member systems.

FEASIBILITY STUDY CONSIDERED FEW ALTERNATIVES AND MADE ASSUMPTIONS WHICH DID NOT MATERIALIZE

The feasibility study supporting the Coal Creek Project considered only alternatives for constructing a central station generating plant and made several assumptions about future construction costs, inflation rates, and fuel supply arrangements which failed to materialize. REA's role in preparing the study was limited, depending on the cooperatives and their consultant to justify and price the alternatives considered.

On November 2, 1972, CPA/UPA authorized an engineering consulting firm to conduct a feasibility study for an electric power plant. The feasibility study, completed in July 1973, discussed several alternative plant sites and fuels and made a detailed analysis of the following two alternatives:

1. A mine-mouth generating plant located adjacent to lignite coal fields in North Dakota with high-voltage electric transmission service to Minnesota.

2. A generating plant located near the utilities' electric load center in Minnesota with coal transported by rail from western coal fields.

As part of the feasibility study, the capital and operating costs of the two alternatives were compared. The comparison showed that the North Dakota site offered an expected savings of about $73 million on a cash basis and $39 million on an accrual basis over the first 10 years of operation.

Part of the savings of the mine-mouth plant was attributable to surplus energy sales. Such sales were considered only for the mine-mouth plant on the basis that the high price of fuel at the Minnesota plant site would probably preclude any economy of sales from that site. Surplus sales were calculated by selling one-half the difference between the members' requirements and the energy available. This resulted in earnings of about $27 million over the 10-year period which, if not considered, would have reduced the estimated savings to $46.2 million on a cash basis and $11.7 million on an accrual basis.

According to the feasibility study, the North Dakota mine-mouth plant was environmentally superior to the Minnesota location because the mine-mouth plant eliminated

--another possible pollution source from a major population concentration located in the Twin Cities area;

--a substantial movement of coal trains each year through the communities along 700 miles of rail line in Minnesota, North Dakota, and Montana, with consequent degradation of these communities; and

--increased consumption of diesel fuel due to the requirement for coal trains.

The study did not consider the potential for other strategies such as

--conservation,

--purchasing power from other sources on a long-term basis, or

--building a number of smaller facilities throughout the cooperatives' service areas.

UPA said that the feasibility study was not intended to consider all possible alternatives. It said that previous studies made by UPA and CPA, which considered alternative fuels and sites, showed the two alternatives considered in the feasibility study to be the best alternatives to study in detail. UPA said that although conservation was not considered, it should be noted that at that time conservation was not considered by other utilities as a viable alternative.

In August 1980 UPA's Assistant to the General Manager told us that UPA is studying alternative supply sources to meet latest demand projections and that a load management program will be implemented shortly.

According to the then Director of REA's North Central Area Office, the study seriously considered only the two alternatives because (1) other alternatives had been previously dismissed as not satisfactory and (2) three utilities were already operating successful North Dakota plants. In 1973 these plants had some of the lowest generating costs in the country. UPA owned and operated one of these plants at Stanton, North Dakota; therefore, a mine-mouth lignite plant became a serious alternative even before the feasibility study was undertaken.

The former Director said that the study did not consider decentralized sources of energy to meet the cooperatives' needs because that strategy had already been attempted in this country and abandoned. He said that many small municipal plants built in the United States were abandoned because their size made them uneconomical to operate.

According to the former Director, REA considered the lack of available long-term power contracts a fact of life and believes that powerplant construction by the cooperatives is a cheaper alternative because of the low REA interest loan rate and the cooperatives' nonprofit structure. Furthermore, he said that IOUs often prefer that cooperatives build their own powerplants or purchase part of the IOU's plants because of high interest rates.

REA reviewed drafts of the feasibility study but did not review the various supporting documents and depended upon previous experience with lignite plants to critique the consultant's work. REA does not maintain a data bank of cost information to use in judging the reasonableness of cost estimates. According to an REA power planning officer, REA staffing is oriented toward distribution cooperatives, and the staff available for reviewing matters relating to generation and transmission facilities is limited. 1/ REA, he said, depends upon cooperatives to make reasonable decisions and views itself as primarily a lending institution--not a regulatory agency.

The feasibility study made several assumptions about future events which did not materialize, resulting in underestimating costs. The following assumptions contributed to this result:

--The cooperatives could purchase coal at the Coal Creek site without having to finance the development of the mine.

--The inflation rate during the construction period would be 6 to 8 percent.

--Local government construction permits could be readily obtained.

1/For fiscal year 1981, REA requested authority to hire an additional 64 people; however, USDA forwarded a request to the Office of Management and Budget for only an additional 17 people.

--There would be a need for only minimum winter construction and productivity would be at a normal level.

--Only a low allowance for contingencies was necessary.

Two of the most significant shortcomings of the feasibility study were the underestimated rate of inflation and the low amounts estimated for contingencies. Based on a number of historical indexes and the Government's policy to reduce inflation, the study projected an annual inflation rate of 6 to 8 percent. However, actual inflation rates were much higher, with the costs of public utility construction increasing by about 25 percent in 1974 alone. From January 1973 to December 1979 construction costs in general increased 65 percent--a rate far in excess of that anticipated.

REA allowed a contingency fund of only 5 percent to cover additional expenses. Subsequent experience indicates that the contingency should probably have been at least 10 percent or more. An engineering firm official said that a 5-percent contingency is an unreasonably low amount for a project of this nature and scope.

The feasibility study foresaw few problems in obtaining construction permits and assumed normal productivity and minimum winter construction; however, subsequent events proved these assumptions to be wrong. CPA/UPA scheduled the generating plant construction to begin in October 1974, but this was delayed until May 1975 due to weather conditions and difficulties in obtaining a construction permit from the North Dakota Department of Health. Contractor problems also caused delays and schedule problems. For example, the mechanical contractor ceased operation near the end of 1976 and abandoned the entire project in February 1977. The delays created a need for increased winter construction, resulting in poor productivity and increased contractor costs. This caused the contractors to demand additional compensation from the cooperatives.

REA and the consultant assumed that coal could be purchased at the generating station site, but subsequent events--as previously discussed in this chapter--changed the concept to providing financing for all costs associated with developing the mine.

FORECASTING POWER REQUIREMENTS

Power requirement forecasts prepared in 1972 by UPA and CPA provided the basis for the engineering and planning that went into the feasibility study for Coal Creek. These forecasts were based on a consolidation of power requirements

reported by the member distribution systems. While the combined 5-year forecast of UPA and CPA was reasonably accurate, there was considerable variation in the accuracy of the individual distribution system forecasts.

Forecasting procedures used

The 1972 forecast was prepared using REA procedures in effect at that time. Each distribution cooperative prepared its own forecast by projecting future needs on the basis of historical trends, adjusted somewhat to reflect the judgment of knowledgeable cooperative officials. These individual forecasts were then combined by UPA and CPA into their own forecasts.

CPA and UPA prepare forecasts about every 2 years. In past years, the cooperatives used the trending method. Although the trending method was still used for the more recent forecasts at the time of our review, the cooperatives and their member systems were attempting to consider factors other than historical trending and judgment. For example, the cooperatives had (1) begun research on saturation levels for residential appliances and (2) experimented with an econometric model which considers the influence of such items as fuel oil costs and price elasticity of demand.

Although historical trending still formed the basis for forecasts and heavy reliance was placed on the forecasts of the member systems at the time of our review, UPA and CPA had begun to work more closely with their individual member systems and make adjustments to their forecasts. In commenting on our report, UPA told us that it no longer uses historical trending as a basis for its forecasts but instead uses other methods, including end-use analysis.

Comparison of forecasts to actual

The 1972 forecast projected a need of 953 megawatts to meet the peak demands of their members in 1977, with annual energy requirements totaling 4,106 gigawatt hours. In comparing the CPA/UPA forecast used to support the REA loan with actual requirements, we found that the forecast exceeded the actual demand and energy requirements for each year from 1973 through 1977, with differences ranging from less than 2 percent to about 9 percent. The results of this comparison are detailed in the following schedules.

Year	Megawatt demand			
	Forecast	Actual	Difference	Percent
1973	652.6	628.5	24.1	3.8
1974	717.3	657.9	59.4	9.0
1975	788.6	750.9	37.7	5.0
1976	866.8	823.9	42.9	5.2
1977	953.1	884.7	68.4	7.7

Year	GWH requirements			
	Forecast	Actual	Difference	Percent
1973	2,826.1	2,792.1	34.0	1.2
1974	3,102.4	2,978.1	124.3	4.2
1975	3,405.9	3,291.1	114.8	3.5
1976	3,739.4	3,525.6	213.8	6.1
1977	4,105.8	3,760.5	345.3	9.2

While the combined forecasts of CPA/UPA appear reasonably accurate, there were wide variations in the forecasts prepared by member systems. For example, in comparing UPA members' 5-year forecasts (1977) with actual energy requirements, the differences ranged from an underestimate of about 17 percent to an overestimate of almost 50 percent. These differences offset each other on the UPA forecast which was about 14 percent greater than actual. When the CPA and UPA forecasts were combined, this difference was reduced to 9.2 percent.

At the time CPA and UPA prepared the forecasts, there was less concern about conserving energy, and conservation was not a factor introduced into the forecasts. CPA and UPA do, however, encourage energy conservation.

The consulting firm that performed the feasibility study and a management consultant firm for CPA reviewed the load projections and procedures followed in developing the forecasts. In their judgment, the projections were reasonable and the procedures adequate. In addition, the Minnesota Energy Agency hearing examiner reviewed the forecast and concluded it would produce accurate or even conservative results.

SERVICE TO SUBURBAN CONSUMERS

The proportion of the energy from the Coal Creek Project which will be sold to suburban consumers is not a readily available statistic. CPA/UPA have made some estimates which indicate the extent of the suburban influence on the total power needs of their members. For example, the cooperatives estimated that about 20 percent of the one

million people served by their members are located in the seven-county, Twin Cities metropolitan area, and that less than 25 percent of the power from the transmission line will go to the Twin Cities area. UPA has estimated that 60 percent of the consumers served by its distribution system members are located in rural areas. We could not verify the accuracy of the estimates made by CPA and UPA because no supporting documents were available.

Using CPA, UPA, and REA records, we prepared a number of analyses in an attempt to measure the urban character of the cooperatives' service areas in terms of population, electrical usage, and density. The CPA/UPA power forecast made in 1972 estimated a peak demand of 953 megawatts in 1977. Two of the distribution systems accounting for a significant portion of this demand served the Twin Cities metropolitan area. Together these cooperatives represented 239 megawatts or 25 percent of the total demand--a figure paralleling that which CPA/UPA cited. Similarly, REA statistics showed that these two distribution systems accounted for almost 22 percent of all consumers served by members of CPA/UPA in 1978. Further, while the average consumer density per mile for all CPA/UPA distribution systems was 4.7 in 1978, the average for these two systems was 11.9.

The above statistics do not provide a precise answer to the question of the impact of suburban growth; however, they do indicate that while a significant portion of the Coal Creek output will go to suburban consumers, the rural areas are still the largest beneficiary of this project.

INVOLVEMENT OF INDIVIDUAL CONSUMER/ MEMBERS IN COOPERATIVES' ACTIVITIES

The structure and organization of CPA and UPA permit very little direct involvement by individual consumers in the decisionmaking or planning activities of these cooperatives. Technically CPA's and UPA's members are the distribution systems and not the individual consumer/members. The individual consumers are represented indirectly through their distribution systems' boards of directors, whom they elect at annual meetings. Attendance at these meetings, however, has been poor.

Structure and organization of the cooperatives

The articles of incorporation and the bylaws of CPA and UPA state that the government and management of their affairs and business are vested in a board of directors.

The directors who serve on the boards of the distribution system cooperatives elect the directors who serve on the boards of CPA and UPA. Thus, the consumers do not directly select the persons who represent them on the power supply cooperative boards.

Member participation in meetings

Neither of the power cooperatives opens its regular or annual meetings to the individual members or the public. Generally, the boards meet 1 or 2 days each month for a regular meeting and conduct a 1-day annual meeting in the spring or early summer. Meetings are normally held on weekdays. According to CPA and UPA management officials, the extent, importance, and complexity of the business to be acted upon dictates the length of the meetings, and the agenda is usually full.

Although CPA/UPA board meetings are not public forums, the public is not totally excluded from them. If an individual wishes to appear before the board, that person generally makes a written request stating the subject to be addressed and the discussion time necessary. Occasionally the boards extend invitations to individuals. For example, a critic of the Coal Creek Project spoke at one CPA meeting.

Other means of participation and communication available to consumers

Individual consumer/members do have some opportunities available to have a voice in the affairs of the power cooperatives and to learn about their activities. These include the annual meetings of the distribution cooperatives and the publication of newsletters and other informational materials. For example, UPA said its practice for many years has been to have a representative attend its members' annual meetings. These representatives, it said, often report on UPA's activities and answer questions or take notes of comments.

The most substantive way an individual consumer can express his or her opinion is through the local distribution cooperative. At this level the individual members can make their views known and have the opportunity to vote for directors who in turn elect the directors of CPA/UPA's boards. We found, however, that this avenue is not extensively used.

We visited several distribution cooperatives which are a part of the CPA/UPA systems and examined their annual and district meeting attendance records. Attendance at these

meetings was low. For example, less than 1 percent of the members of one of the larger distribution cooperatives attended its most recent annual meeting at the time of our review. Of some 27,000 members, only 210 voting members attended. At other cooperatives the statistics for 1979 were not much better, ranging from 2.3 percent to 9.7 percent. In the 2 years prior to 1979, these cooperatives had equally low attendance, ranging from less than 1 percent to 13.5 percent.

A distribution cooperative in the UPA system conducted a survey in early 1979, and among the questions asked were several concerning meetings. Responding to a question on how many of the regular meetings the members had attended, 73 percent said "none," and 61 percent said they did not want to attend any meetings.

The lack of interest, as evidenced by the low member turn-out at annual meetings and the questionnaire responses, is a concern to the managers who said they would like to see larger attendance. Even though these annual meetings are publicized in advance and often provide free meals and prizes, such incentives seem to do little to bolster attendance. One cooperative official said that unless there are issues or circumstances which directly affect them, such as a substantial rate increase or service problems, the members display little interest.

Public/member involvement in Coal Creek

Our earlier report on the Coal Creek Project pointed out that one of the principal external factors affecting the project was the public opposition that developed in Minnesota over the construction of the transmission line. Protesters expressed their concern over the lack of opportunity to comment on issues such as the project's need, location, and cost. Even though the project was planned and approved during the 1972-73 period, many individuals did not learn of the project until after the project was approved by REA in February 1974.

According to an REA official, the agency had no requirements to hold public hearings on proposed projects at the time that Coal Creek was being planned. Moreover, the draft of the environmental impact statement issued in October 1973 to various Federal and State agencies received so few comments that the Administrator of REA elected not to hold any hearings because of the perceived lack of opposition.

Although REA lacked a policy requiring public hearings, once REA approved the project and the power cooperatives elected to come under the siting process and started acquiring easements, the cooperatives held numerous public meetings in Minnesota and North Dakota. These meetings did not deal with the issues of need, cost, or other phases of the planning process; however, since the decision to build Coal Creek had already been made. After many court proceedings and State agency meetings to hear the public's concerns and complaints, the final outcome was to continue with the project.

The distrust and alienation between the power cooperatives and the project's opponents resulted in acts of vandalism and violence. According to UPA, the acts of vandalism were also encouraged by outside professional protesters.

CPA and UPA officials admitted they could have done a better job of communicating with the public on the transmission line. A UPA public relations official commented that the cooperative had not expected the problems it encountered because past powerline sitings had not met resistance like that associated with the Coal Creek Project. An REA official expressed a similar view, commenting that CPA/UPA problems with the protesters were not predictable or expected. Nevertheless, the opposition occurred and it was not until about 1976 that the cooperatives began a concerted public relations program to explain the need for the project, answer questions, and address the protesters' concerns.

The cooperatives are still trying to bring their side of the story to the public through newspapers, radio and television, brochures, and other means. In addition, CPA/UPA attempt to have one of their representatives attend the annual meetings of the distribution cooperatives to report on the status of the Coal Creek Project.

Following loan approval by REA, the power cooperatives held meetings with various government entities and public officials, advisory commissions, cooperative boards, the citizen route commission, and protesters. They conducted public and information meetings in some 20 Minnesota counties. In total, CPA/UPA organized or participated in about 140 meetings from 1974 through 1977. Moreover, from 1976 and into 1979, CPA/UPA had over 130 contacts with the media and various civic organizations.

Regardless of these efforts to inform the public, the fact remains that they came too late. The cooperatives and REA recognized this and both are planning changes in their

procedures. REA now recommends that at least two kinds of meetings be held. The first is an intergovernmental agency meeting to determine which agency will assume the lead in developing the environmental impact statement. The second is a public meeting where individuals and organizations which might be affected by the location of a proposed facility can express their opinions. REA requests cooperatives involved in any project to announce such meetings in local newspapers, while REA will publish notices in the Federal Register.

One of the power cooperatives involved in the Coal Creek Project has decided that more public input will be necessary before any future facilities are undertaken. The general manager of UPA informed us that his staff will be searching for ways to achieve this input because the Coal Creek controversy has taught that today's consumer/members will not go along with the practices of the past.

Assuming that REA and the cooperatives adequately implement the changes in procedures, the individual consumer/members will have increased opportunities to influence the decisions of the power cooperatives. Once the options and alternatives are analyzed, the power cooperatives can solicit input through polls, public hearings, cooperative meetings, or other means. While these methods can assure that members have a more active role in the decisions of their power supplier, the effectiveness of the methods hinges on the members themselves. The individual consumer/member must take a greater interest in the operations of the cooperatives and openly participate by exercising voting rights and attending the meetings.

CONCLUSIONS

Although the Coal Creek Project may not be typical in many respects to other large generation and transmission projects financed by REA, if indeed any can be considered typical, it does provide some lessons which can be useful in improving REA's loan evaluation procedures. Our conclusions on some of these matters, such as those concerning the need to involve individual consumer/members and other private citizens in the early stages of the power supply systems' long-range planning process, were provided previously (see ch. 3). Our conclusions on the cost overrun are presented below.

REA needs to intensify the review and evaluation it makes of loan applications for major generation and transmission projects to insure the reasonableness of the cost

estimates and comparisons. One of the reasons given for REA's not getting more involved in the details of the feasibility study was a lack of staff. Regardless of the validity of this reason, it still remains that REA is committing hundreds of millions of dollars of Government funds into a single project and, therefore, has the responsibility to insure that the project is needed, is the best alternative available, and cost is reasonably estimated.

REA's reorganization and the increase in personnel hiring authority should help solve the staffing problems somewhat. If necessary, however, we believe REA should intensify its review and evaluation even if this results in increasing the time it takes to process loan applications.

REA, in reviewing loan applications for major projects such as Coal Creek, must insure that

--cost estimates are adequately prepared and supported;

--loan approval is based on the most current information available and, if warranted, the proposed project should be reevaluated in light of any new information; and

--agreements crucial to the success of the project, such as for fuel supply, are of a binding character.

Also, REA should (1) require that cost estimates on major projects include a contingency allowance of at least 10 percent, (2) develop a cost data bank to use in determining the reasonableness of cost estimates made in conjunction with proposed projects, and (3) require that, for each alternative studied, any estimated earnings from power sales to other power systems should be shown in a separate and distinct manner from the overall estimated costs.

RECOMMENDATIONS TO THE SECRETARY OF AGRICULTURE

To help preclude major cost overruns on large generation and transmission projects financed by REA, we recommend that the Secretary of Agriculture direct the REA Administrator to revise REA's loan approval process with a view toward intensifying the agency's evaluation of the adequacy of the feasibility study supporting the loan request. At a minimum the procedures should require

--the REA reviewing official to certify that the cost estimates of alternative proposals considered in the feasibility study are adequately prepared and supported;

--the loan applicant, prior to REA approving its loan, to certify that it has apprised REA of any change(s) which might significantly affect REA's judgment regarding the proposed project;

--the applicant to obtain binding agreements on all items crucial to the success of the project;

--a minimum contingency allowance of 10 percent; and

--that estimated earnings resulting from power sales of any alternative proposals considered be shown as a separate and distinct item from the overall estimated cost comparisons.

Further, the Administrator should be directed to have a cost data bank developed for use by REA officials in determining the reasonableness of estimated costs of proposed projects.

AGENCY COMMENTS AND OUR EVALUATION

USDA

USDA said that

> "* * * Insufficient construction budgets have been the norm rather than the exception because of unparalleled escalations, incremental and environmental control regulations and construction delays. REA's record in the cost estimating area compares favorably with that of the investor-owned utilities and other Government authorized construction programs. To cite this single project implies that problems related to cost overruns are unique to this plant and is therefore misleading. The proposed GAO report should be revised, if this section is included, to reflect the entire situation confronted by the electric utility industry."

As discussed in the report, many factors contributing to the project's increased costs were beyond management's control. Our review, however, did not address the issue of how well REA's cost estimating record compares with IOUs

and other Government agencies. Accepting USDA's statement that REA has a favorable cost estimating record does not alter the validity of our position that lessons can be learned from the project which could help minimize cost overruns on future projects REA finances.

CPA/UPA

CPA's and UPA's comments dealing with specific matters were incorporated into chapter 4, as appropriate (see apps. VII and VIII). Some of their more general comments are discussed below.

CPA and UPA said that the report should point out that many of the same factors which increased the cost of the Coal Creek Project also increased the cost of similar projects constructed in a similar time frame. As noted in the report, many of the factors increasing the cost of the Coal Creek Project, such as inflation and costs of more stringent regulations, were beyond the control of the cooperative. These same factors undoubtedly caused problems on other projects, however, we did not determine the extent to which this occurred.

UPA said that the report should give more consideration to the reality that the load forecasts and study work was done in the 1972-73 time frame which was prior to the: oil embargo, emphasis on conservation, period of high inflation, emphasis on public input, and State laws on transmission line siting and certification of need for power. UPA said that no project planning done at that time took these factors into account and that the planning for Coal Creek was reasonably adequate, given the conditions at the time. CPA made a similar comment. UPA said that while the original cost estimate may have been slightly low and could have included a larger contingency, this is far from making the original planning ineffective.

We agree that the 1972-73 period was a difficult time for planning and that many of today's concerns were not concerns then. Also, as noted in the report, the cooperatives have acted to address these concerns. Nevertheless, we still believe that the project should have been reevaluated prior to starting construction as conditions changed following the 1973 feasibility study and the oil embargo.

UPA said that the report places undue emphasis on the coal supply arrangements. Both UPA and CPA pointed out that the project's cost did not change because the cooperatives

decided to finance the mine development (that is, the development costs would be incurred regardless of who financed them). According to UPA, it was impossible to get a long-term firm commitment on coal prices from any coal company at the time. All such contracts, it said, contain escalation clauses on every item of production on which costs will escalate for the life of the contract. UPA believes that the coal supply arrangement will provide the lowest cost of fuel over the life of the project (with lower energy costs to consumers) and give the cooperatives control over investments made in the mine.

UPA's comments that the coal mine development costs would be incurred regardless of the financing source and that the coal supply arrangement was the most advantageous may be valid. Nevertheless, we believe that REA should have required the cooperatives to obtain a firm commitment from the coal mining company regarding financing arrangements before approving the loan. As it was, REA was not notified of the revised agreement until after it approved the loan.

UPA took exception to comments in the report that individual consumer/members and other private citizens were not involved in the initial steps of the planning process. It said that UPA's member cooperatives were kept informed of the status of the project in many ways including annual meetings of the members, newsletters, and budget and member services meetings. It said it met with State legislators from involved districts to discuss the project as early as August 1973 (REA approved the loan in February 1974).

CPA said that studies it made prior to the final project studies were discussed with member system directors and managers. In addition, it said, meetings with legislators and other public officials and numerous public information meetings were held during 1973 and 1974.

We recognize that UPA and CPA advised their cooperative members of the proposed project. No support is presented, however, that individual consumer/members or the public were involved in the initial planning process in any meaningful way. In fact supporting documents show that public meetings were not held in Minnesota until the summer of 1974 and those meetings were poorly attended.

APPENDIX I

UNITED STATES DEPARTMENT OF AGRICULTURE
RURAL ELECTRIFICATION ADMINISTRATION
WASHINGTON, D.C. 20250

OFFICE OF THE ADMINISTRATOR

OCT 18 1979

Mr. Richard A. Hart
Assistant Director
United States General Accounting Office
Community and Economic Development Division
Washington, D.C. 20548

Dear Mr. Hart:

Pursuant to your recent request, we are pleased to set forth a definitive description of the Rural Electrification Administration's electric program objectives as follows:

1. Provide technical assistance and the financing required for "the construction and operation of generating plants, electric transmission and distribution lines or systems" to furnish adequate "electric energy to persons in rural areas who are not receiving central station service" and enable the organizations financed for these purposes by or through REA to meet their utility responsibilities of assuring continued adequate service for the consumers they are serving and to potential consumers in their service areas on an area coverage basis at affordable rates.

   The Congress set forth the basic long-term objectives of REA when it passed the Rural Electrification Act (RE Act) in 1936 and in amendments thereto. In 1959, in response to a Government Accounting Office opinion, the Senate passed S. Res. 21. Senate Report 86-703 on the "Interpretation of the Rural Electrification Act of 1936" stated: "This resolution construes the Rural Electrification Act of 1936 as authorizing loans (1) to bring electric service to persons not in fact receiving central station service without regard to whether such service is otherwise available to them and (2) to provide continued service to persons who are already being served with the aid of REA funds."

APPENDIX I

The report also quotes the General Counsel of the General Accounting Office as stating ". . . we have no objection to the approval of Senate Resolution 21. It would clarify a difference of opinion existing between our office and the Department of Agriculture on the interpretation of the RE Act."

Utility responsibilities of the rural electric systems include the following duties:

a. Providing reliable service to all unserved persons requesting service (in accord with State and Federal laws) who can pay for that service. This responsibility is referred to as providing "area coverage" by the rural electric systems.

b. Providing service adequate to the needs of the people that are served. This responsibility includes providing service to the limit of capacity, maintaining reserve equipment, adequate maintenance of facilities and planning and expanding capacity as demand for service expands. Rural electric systems, as any public utility, have this duty to serve, a fundamental obligation imposed on them as it is on all public utilities.

c. Providing service at reasonable rates and without discrimination.

d. Providing service under safe conditions.

By creating REA and providing for its continuation since 1936, the Federal Government made possible electric service for millions of unserved rural people. The RE Act in providing a preference to cooperatives, public utility districts and other nonprofit associations, has sponsored a special type of utility in the electric field. These cooperatives have the same responsibilities to the people that they serve as the investor owned systems, including the responsibility of having an adequate supply of power for future needs.

2. Carry out the directives of the President to conserve energy and assist in developing renewable resources of energy by:

a. Requiring energy conservation programs by the borrowers as a condition for future financing and providing financing for load control and loan management equipment.

b. Actively encouraging and promoting development of supplemental sources of energy by the systems or their consumers, using such renewable resources as solar heating and cooling equipment, solar crop drying, small wind generators, farm-based biomass generators, and small-scale hydroelectric facilities.

c. Requiring generation and transmission cooperatives, as part of their loan application, to consider those resources capable of producing central station electric power, such as hydroelectric plants, biomass facilities, wood chips, or peat, wherever it is technologically feasible and cost effective.

d. Working with other Federal agencies, as appropriate, to develop promising solar demonstration projects.

3. Assist and encourage borrowers to develop their resources and ability to achieve financial strength. The preamble of the 1973 Rural Electrification Act declared:

> ". . . it is hereby declared to be the policy of the Congress that adequate funds should be made available to rural electric and telephone systems through direct, insured and guaranteed loans at interest rates which will allow them to achieve the objectives of the Rural Electrification Act of 1936, as amended; and that such rural electric and telephone systems should be encouraged and assisted to develop their resources and ability to achieve the financial strength needed to enable them to satisfy their credit needs from their own financial organizations and other sources at reasonable rates and terms consistent with the loan applicant's ability to pay and achievement of the Act's objectives."

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Since passage of the 1973 Act, the Costs of all elements of providing service have increased greatly, primarily the result of double-digit inflation. These higher costs, combined with the higher interest on REA insured and guaranteed loans and sharply higher costs of both purchased power and that generated by their own systems have made it extremely difficult for borrowers to satisfy their credit needs from other sources at "rates and terms consistent with the loan applicant's ability to pay and achievement of the Act's objectives." REA recognizes the importance of this objective and will continue to work toward achieving it, consistent with Congressional directives.

4. Assure that construction financed by REA loans or loan guarantees meets requirements of all Federal environmental and historical preservation laws and regulations.

5. Provide support for the principles of cooperative ownership. To carry out this objective, REA works with the borrowers to assure democratic control of the nonprofit organizations it finances by encouraging active programs of member communication and retail rates based on cost studies that allocate equitably the cost of providing service.

Sincerely,

Robert W. Feragen

ROBERT W. FERAGEN

Administrator

GAO REPORTS

Rural Electrification Administration Loans to Electric Distribution Systems: Policy Changes Needed (CED-80-52, May 30, 1980).

Coal Creek: A Power Project With Continuing Controversies Over Costs, Siting, and Potential Health Hazards (EMD-80-16, Nov. 26, 1979).

Audit of Financial Statements of the Federal Financing Bank--Fiscal Years 1975 and 1976 (GGD-77-36, Apr. 27, 1977).

Government Agency Transactions with the Federal Financing Bank Should Be Included on the Budget (PAD-77-70, Aug. 3, 1977).

Electric Energy Options Hold Great Promise for the Tennessee Valley Authority (EMD-78-91, Nov. 29, 1978).

APPENDIX III

U.S. House of Representatives
Committee on Agriculture
Subcommittee on Family Farms,
Rural Development, and Special Studies
Room 1301, Longworth House Office Building
Washington, D.C. 20515

December 5, 1978

Mr. Elmer B. Staats
Comptroller General of the
United States
General Accounting Office
441 G Street N.W.
Washington, D.C. 20548

Dear Mr. Staats:

The Rural Electrification Administration has financed, through its insured and guaranteed loan programs, the building of electric generation and transmission facilities by the Cooperative Power Association and United Power Association -- two Minnesota rural electric power cooperatives. The building of these facilities has stirred much controversy and raised valid questions on how such projects are planned and approved as well as the manner in which the Rural Electrification Administration administers its electric program. Some of the questions raised include:

1. The estimated cost of this project has increased from $536,679,000 to $1,172,084,000. What were the major factors contributing to this huge increase in costs?

2. In approving loans for rural electric power cooperatives does REA require a thorough and adequate forecast of the energy needs of the area served? Also, to what extent are alternative, less costly methods of meeting the forecasted electric energy needs of an area considered? For example, are smaller decentralized units considered?

3. To what extent is the justification for new generation and transmission facilities based on suburban or regional power needs as opposed to rural needs?

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4. Rural electric power cooperatives such as the Cooperative Power Association and the United Power Association are federations of rural electric distribution cooperatives. Does this arrangement work to insulate the consumer/members from playing an effective role in the major decisions of the power cooperatives? Is there a more viable alternative arrangement that would be more effective in increasing individual member and consumer roles?

5. What are REA's policies and procedures regarding public hearings on proposed projects? Are public hearings encouraged or required? If they are not should they be?

6. The location of transmission lines has been one of the more controversial issues in the Minnesota project, as I am sure it is in similar projects in other States. What criteria is used in citing these lines; what regulations impact on such citings; and what consideration is given to the economic or other disruption caused by such citings? I am particularly interested in whether and to what extent the cost of lost agricultural lands is evaluated.

7. Construction of the Minnesota power line has again generated serious questions as to whether or not exposure to high voltage lines of this kind poses a direct threat to human health. I would like the General Accounting Office to review and evaluate existing information relative to the question, including information secured by the Soviet Union and other foreign nations.

In discussions with staff from your Community and Economic Development Division (CED) and your Energy and Minerals Division (EMD), I am aware of two ongoing surveys that may provide answers to some of these questions. I am therefore requesting that your staffs closely coordinate

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their study efforts with my staff. More specifically I would hope that the CED's survey of REA's electric power program will address the specific issues enumerated above. I would also appreciate a briefing in March, 1979, the scheduled completion date for the survey, on the results of the survey and on the detailed reviews that will be initiated as a result of the survey.

With regard to the EMD study which will assess the effect of Federal regulations on the cost of electric generation and transmission, it is my understanding that your staff has agreed to include the Minnesota project as one of its case studies. It is also my understanding that although the final report will not be issued until the fall of 1979, your staff will provide periodic briefings on the work in Minnesota and provide a separate report to me on the project in early 1979.

I appreciate your attention to this matter and look forward to hearing from you.

Sincerely,

Richard Nolan
Chairman

RN:sjt

APPENDIX IV

BASIC PRINCIPLES CITED IN THE ADMINSITRATION'S NATIONAL ENERGY PLAN

Principle

1. The energy problem can be effectively addressed only by a government that accepts responsibility for dealing with it comprehensively, and by a public that understands its seriousness and is ready to make sacrifices.

2. Healthy economic growth must continue.

3. National policies for the protection of the environment must be maintained.

4. The United States must reduce its vulnerability to potentially devastating supply interruptions.

5. The Unites States must solve its energy problems in a manner that is equitable to all regions, sectors, and income groups.

6. The cornerstone of National Energy Policy is that the growth of energy demand must be restrained through conservation and improved energy efficiency.

7. Energy prices should generally reflect the true replacement cost of energy.

8. Both energy producers and consumers are entitled to reasonable certainty as to Government policy.

9. Resources in plentiful supply must be used more widely, and the Nation must begin the process of moderating its use of those in short supply.

10. The use of nonconventional sources of energy must be vigorously expanded.

APPENDIX V

DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON D C 20250

August 15, 1980

Mr. Henry Eschwege
Director
Community and Economic Development
Division
U. S. General Accounting Office
Washington, D.C. 20508

Dear Mr. Eschwege:

This is in response to your request of July 10, 1980, for comments from this Department and the Rural Electrification Administration (REA) on a draft of a proposed report to the Congress entitled, "Financing Rural Electric Generating Facilities: A Large and Growing Activity."

This report examines REA's policies and procedures covering loans and guarantees made to power supply systems and discusses: (1) a recommendation that REA loans and guarantees be included in the Federal budget and that there be "more involvement of private creditors in financing borrowers' needs"; (2) opportunities for improving the planning of power supply systems; and (3) the Coal Creek Power Project, a project on which the General Accounting Office has already published a special report.

On page i of the digest in the draft report, reference is made to "a Department of Agriculture and Office of Management and Budget joint study." It should be noted that this study was never completed and
[31] its discontinuance was announced at a meeting at the White House on December 1, 1978. The officials responsible for evaluating the study and its policy implications had not finished their review before the study was ended and any conclusions drawn about the REA program based on this draft report would not be well founded.

In this connection it should be noted that the GAO places a notice on its draft reports which states "This document is a draft of a proposed report of the General Accounting Office. It was prepared by GAO's staff as a basis for obtaining advance review and comment by those having responsibilities concerning the subjects discussed in the draft. It has not been fully reviewed within GAO and is, therefore, subject to revision. Recipients of this draft must not show or release its contents for purposes other than official review and comment under any circumstances. At all times it must be safeguarded to prevent publication or

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other improper disclosures of the information contained therein." (Underscoring is GAO's.) The Department expects similar treatment with [31] respect to its draft reports and believes use of the discontinued, incomplete, and unevaluated report as a basis for conclusions about the REA loan programs invalidates such conclusions.

At page ii of the digest, GAO states it is gravely concerned that large outlays resulting from loans and guarantees to power supply systems can be made without the same detailed review and control as is given to "on-budget programs." [See GAO note.] All REA programs receive extensive reviews the Office of Management and Budget before being included by the President in his budget presentation to the Congress. Details on these programs appear on pages 1125-1129 of the Appendix to the Budget of the United States Government, Fiscal Year 1981. Hearings are held by appropriation committees of both Houses of Congress. Page 1124 of the Budget Appendix states, "Public Law 93-32 removed from the budget totals the Government financing of rural electric and telephone systems [32] administered by the Department of Agriculture." This same public law states that the REA Administrator is authorized to make insured loans "subject only to limitations as to amounts authorized for loans and advances as may be from time to time imposed by the Congress of the United States for loans to be made in any one year." Annual appropriation bills establish limitations which the Congress considers necessary on both the insured and guaranteed loan programs.

In addition to the normal budgetary process required for "on-budget" financing, the Chairmen of the Appropriations Subcommittees on Agriculture, Rural Development and Related Agencies of the Senate and House of Representatives are notified in writing by REA at least 30 days in advance of (1) all loan guarantee commitments, and (2) all insured loans in excess of $10 million for generation and/or transmission facilities.

Page ii of the digest contains a recommendation that some of the risks involved in the making of guarantees can be "shifted to private lenders and borrowers by (1) reducing the Government guarantee to less than 100 percent and (2) by charging a loan guarantee fee to fund a reserve for losses." Provisions for guarantee fees and guarantees of less than 100 percent add to already escalating energy costs and inflation. Such pro- [32 & 33] visions were in the Consolidated Farm and Rural Development Act under which REA had to operate in the early months of 1973. The Congress reviewed and rejected such provisions when it enacted Public Law 93-32 which provided that "The Administrator may provide financial assistance . . . by guaranteeing loans, in the full amount thereof" and that "No fees or charges shall be assessed for any such guarantee."

Chapter 2 of the Draft Report is entitled, "Need to Encourage Private Credit Sector Involvement in REA's Guaranteed Loan Program." Although

GAO note: The language referred to has been revised.

the report states at page 17 that "REA is not prohibited from guaranteeing loans made by Federal instrumentalities," it is critical of "the use of Treasury funding through the FFB" on the grounds that this does not satisfy "the objective of Congress to involve the private credit sector in financing REA's program." Such statements overlook the fact that the same Congress enacted the law establishing the Federal Financing Bank to make a more effective use of the private credit sector in the financing of programs administered by REA and other Government agencies. The Appendix to the Budget of the United States Government for Fiscal Year 1981 states at page 1124, "The Federal Financing Bank was created by the Federal Financing Bank Act of 1973 to: (1) reduce the cost of Federal and Federally assisted borrowing from the public, (2) assure that such borrowings are financed in a manner least disruptive to private finance markets and institutions. The Bank is authorized to make direct loans by making commitments to purchase and sell, and purchasing and selling on terms and conditions determined by the Bank, any obligation that is issued, sold, or guaranteed by a Federal agency."

[33 & 34]

The Draft Report at page 21 indicates that the Cooperative Finance Corporation (CFC) could provide loans to power supply systems under REA's guaranteed loan program at interest rates that would be only "slightly higher" than FFB's rate. The statement does not take into consideration the fact that CFC would be providing such financing right now if it could provide such financing at the rates indicated. The statement does not consider any CFC requirement for the purchase of capital term certificates which would increase CFC's effective interest rate to borrowers or the increase in rates which would be made necessary if GAO's recommendations for less than 100 percent financing and a guarantee fee were accepted by the Congress and the President. The proposed report should be revised to reflect this.

Chapter 3 of the Draft Report is entitled, "REA Loans to Power Supply Systems--Opportunities Exist to Improve Planning." There is no question that improvements can be made in the planning and estimating process. [80] Major portions of the recommendations contained in this chapter were being implemented prior to the start of the GAO study as ongoing REA functions. The agency has long recognized these needs and has proceeded to overcome the problems.

Chapter 4 is entitled, "The Coal Creek Project--A Case Study." This was the subject of a special GAO report and the current report presents little new information on this subject. Insufficient construction budgets have been the norm rather than the exception because of unparalleled escalations, incremental and environmental control regulations [107 & 108] and construction delays. REA's record in the cost estimating area compares favorably with that of the investor-owned utilities and other Government authorized construction programs. To cite this single project implies that problems related to cost overruns are unique to this

plant and is therefore misleading. The proposed GAO report should be revised, if this section is included, to reflect the entire situation confronted by the electric utility industry. [107 & 108]

This response does not cover other misleading or erroneous statements which appear throughout the draft report. REA will be pleased to discuss such matters with GAO at its convenience.

GAO comments: Subsequent meetings with REA officials failed to substantiate USDA's comment that there were erroneous and misleading statements throughout the draft report. We believe such a comment unfortunate in that the comment itself is misleading and fails to recognize the basic objective of obtaining agency comments on our draft reports which is to accurately present both the GAO and agency views on the matters discussed and help assure that our reports consider all pertinent facts. Comments such as the one made by USDA, since they do not include specifics on the matters being called into question, do not provide the readers of our reports with a basis for judging the validity of an agency's position.

Most of the comments made by REA officials we met with repeated and/or elaborated on USDA's official comments on this report and on our May 1980 report on distribution systems. Some of the comments made were due to basic disagreements on matters discussed in our draft report and others were made to update certain information contained therein.

Perhaps the most significant matter discussed by REA officials was their statement that power supply alternatives are considered by REA and borrowers and are presented in the required environmental impact statements which are available for public review and comment. This matter is discussed on pages 81 and 82 of the report.

In summary it appears that the current GAO Report is built on the questionable premises that: (1) the 1973 Rural Electrification Act amendments, as enacted, do not carry out the intent of Congress in enacting them and in enacting the Federal Financing Bank Act and (2) new legislation should be enacted to (a) "Limit the REA guarantee of loans made by non-FFB lenders to 90 percent or some other appropriate percentage," and (b) "Eliminate the prohibition against REA charging a fee for the guarantee . . . ." [35 & 36]

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[35 & 36]

We believe these objectives of GAO do not reflect the Congressional intent to assure rural areas of a viable, continuing financing system for rural electrification, and the means thereby to sustain and encourage agriculture and development in the more sparsely settled areas of the country. Furthermore, acceptance of these premises with respect to the financing of power supply projects to serve consumers in rural areas would increase the cost of providing service to rural people without saving the Government money. For these reasons, this Department cannot endorse them.

Sincerely,

Jack Williams

Jack Williams
Acting Secretary

GAO notes: Page references in this appendix have been changed to agree with the page numbers in the final report.

Page numbers in brackets refer to pages in the report where the comments are discussed.

APPENDIX VI

DEPARTMENT OF THE TREASURY
WASHINGTON, D.C. 20220

ASSISTANT SECRETARY

August 14, 1980

Dear Mr. Staats:

I am pleased to respond to your request for the views of the Treasury Department on your draft of a proposed report, "Financing Rural Electric Generating Facilities: A Large and Growing Activity".

We support the general conclusion in Chapter 2 that REA borrowers should be encouraged to use the Cooperative Finance Corporation and other private credit sources. This general conclusion is consistent with the Congressional declaration of policy in the 1973 amendments to the Rural Electrification Act that "rural electric and telephone systems should be encouraged and assisted to develop their resources and ability to achieve the financial strength needed to enable them to satisfy their credit needs from their own financial organizations and other sources at reasonable rates and terms consistent with the loan applicant's ability to pay". We view the REA guarantee program as a major step toward the goal of substituting unassisted private credit for Federally-assisted credit for financing rural electrification projects. The REA guarantee program has demonstrated that rural electrification projects can be successfully financed at interest rates substantially in excess of the 2 percent rate which had traditionally been used in the REA programs.

However, shifting the financing of the REA guarantee program [36] from the FFB to the private securities market, as suggested in Chapter 2, would not result in any meaningful private participation in the financing of rural electrification projects and would delay the ultimate transition to unassisted credit for these projects.

As the Treasury has testified many times, there is no difference in substance between a direct loan and a fully guaranteed loan. Clearly, when the Government provides a full guarantee, it assumes just as much liability as if it had made the loan directly. Similarly, when a lender purchases an obligation which is fully guaranteed, the lender is investing in the credit of the United States in just the same manner as a lender which purchases a Treasury security, the proceeds of which are used to finance a direct loan. Thus, the act of providing a full guarantee on a loan has the practical effect of converting the loan to a direct loan, regardless of whether the loan is financed in the private market or through the FFB.

As the Congress recognized in its 1973 policy statement, in order to obtain private credit, the rural co-ops must strengthen their financial positions in order to be able to meet the test of the private credit market. Shifting the REA guarantee program from the FFB to the private securities market would result in higher financing costs to the rural co-ops. Borrowing costs on Federally-guaranteed issues are higher because of the small size of the issues, maturity and cash flow restraints, problems in developing markets for new issues, investor portfolio restrictions, underwriting costs, and market congestion resulting from crowding of competing issues in the financing calendar. Payment of these needlessly higher costs would weaken, not strengthen, the financial position of the borrower co-ops, and thus delay the eventual transition to private credit. We strongly support the statement of the REA Administrator quoted on page 18 of the draft regarding the cost effectiveness, simplicity, and other advantages of FFB financing for the REA, the affected co-op borrowers, and the Government, generally.

I am also concerned that the draft report contains some common misconceptions about the purposes and functions of the FFB.

In enacting the Federal Financing Bank Act in 1973, Congress stated that the purpose of the Act is to assure coordination of Federal and Federally-assisted borrowing programs with the overall economic and fiscal policies of the Government, to reduce the cost of Federal and Federally-assisted borrowings from the public, and to assure that such borrowings are financed in a manner least disruptive of private financial markets and institutions. Section 7 of the Act vests in the Secretary of the Treasury the function of coordinating Federal borrowing activities. Section 6 of the Act authorizes the Bank to purchase any obligation which is issued, sold, or guaranteed by a Federal agency. Thus, contrary to the statement in the third paragraph on page 16, neither the Secretary nor the FFB is authorized to coordinate the lending policies of individual Federal agencies. /See GAO note./ Lending policies are determined by the program agencies within the confines of their statutory charters. Lending levels are determined in the normal budget preparation/appropriations process. Given decisions on appropriate lending levels, the FFB Act seeks to assure that such lending activity is financed in the most efficient manner.

The recommendation in the report that the receipts and disbursements of the FFB be included in the Federal budget totals reflects the common misconception that the FFB is in itself a means of avoiding budget controls. Section 11(c) of the FFB Act states specifically that "nothing herein shall affect the budget status of the Federal agencies selling obligations to the bank under section 6(a) of this Act, or the method of budget accounting for their transactions".

GAO Note: The language referred to has been revised.

Thus, the FFB does not affect the budget status of the programs financed by it, so some budget agencies using the FFB, such as TVA and the Eximbank, are not removed from the budget by FFB financing.

Most of the agencies using the FFB are financing loan guarantee programs. Under conventional budget accounting principles which were endorsed by the 1967 Report of the President's Commission on Budget Concepts, loan guarantees are not reflected in the budget totals. Moreover, in the 1973 Rural Electrification Act amendments, Congress specifically provided that the REA guarantees will be off-budget. Similarly, the 1973 amendments provided that sales of certificates of beneficial ownership (CBO's) by the Rural Electrification Administration are to be treated as sales of assets for the purposes of the Budget and Accounting Act of 1921. The effect of this legal requirement is to treat the sale of these CBO's as negative outlays in the budget. The budget treatment of REA guarantees and CBO's would be the same whether they are sold in the market or to the FFB.

Placing the FFB in the budget would encourage REA and the other agencies financing guarantee programs to bypass the FFB and return to their previous practice of financing their programs directly in the securities market in order to remain outside of the budget. The same amounts would be financed as with the FFB, but the financing costs incurred would be higher. Such a wholesale shift to government-backed issues in the private securities markets would also carry with it the potential for serious adverse effects on the Government securities market. Should the Congress determine that REA guarantees should be limited to 90 percent of the loan, as recommended in the draft report, we recommend that the financing be structured so as to avoid the problems created in other programs where the guaranteed portion is separated from the unguaranteed portion of the loan and financed in the securities market, with the result that fully guaranteed securities are issued in direct competition with Treasury securities and at higher financing costs.

[37 & 38]

The Administration is concerned that, because loan guarantees are not reflected in the budget totals, they may not be as carefully scrutinized in the budget process as other Federal activities. Accordingly, the Administration has established a credit program control system. To implement this system, the Office of Management and Budget required Federal credit program agencies, including REA, to include in their fiscal year 1981 appropriation requests limits on new obligations for direct loans and new commitments for guaranteed loans. The major impact of this new system will be on loan guarantee programs. We strongly support this approach of improving controls over all credit aid programs regardless of whether they are included in or excluded from the budget totals.

I appreciate this opportunity to comment on your draft report on the REA program. Other, technical, comments regarding maturities and interest rates contained in the draft report have been provided to your staff. Please let me know if I can be of further assistance.

Sincerely yours,

Roger C. Altman
Assistant Secretary

The Honorable
Elmer B. Staats
Comptroller General
of the United States
General Accounting Office
Washington, D.C. 20548

GAO notes: Page references in this appendix have been changed to agree with the page numbers in the final report.

Page numbers in brackets refer to pages in the report where the comments are discussed.

APPENDIX VII

UNITED POWER ASSOCIATION

Elk River Minn. 55330 Phone 612 441 3121

Philip O. Martin
General Manager

July 31, 1980

Mr. Henry Eschwege, Director
Community and Economic Development Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

Thank you for sending us a draft of Chapter 4, "The Coal Creek Project--A Case Study", of your proposed report to the Congress on the results of your review of the Rural Electrification Administration's (REA) electric loan program. We sincerely appreciate the opportunity to review and comment on the draft copy.

I would like to first make some general observations and then follow these with comments on specific items in the draft.

First, since there are several excerpts from and references to the November, 1979 GAO report on the Coal Creek Project, we feel there should be a more specific reference made to that report early in Chapter 4. We feel that the November report was a fairly objective analysis of the project. When only certain portions of that report are used in Chapter 4 without the benefit of other information in the report, we feel the results have a much more negative emphasis. For example, there is considerable discussion about the large cost increases in the generating plant. This is generally true except that no reference is made to the fact that many of these same factors which increased the cost of the Coal Creek Project also correspondingly increased the costs of [108] similar projects constructed by other major utilities in a similar time frame. No reference is made to the fact that the final cost of the generating plant on a dollars per kilowatt basis compares very favorably with other similar plants as is shown on pages 18-19 of the November report. The reader of Chapter 4 might be left with the incorrect impression that the plant costs were exorbitant and this only happened to the Coal Creek Project.

Second, we believe that more consideration should be given to the reality that the load forecasts and study work was done in the 1972-1973 time frame. This was prior to the oil embargo, prior to any emphasis on conservation, prior to the

period of high inflation, prior to emphasis on public input and, prior to most state laws concerning siting and need processes. I don't believe any planning for projects at that time frame took these items into account. Still reference is continually made in the report to poor planning which did not take these factors into account. We feel the planning was reasonably adequate, given the conditions at that time. We agreed that the original estimate may have been slightly low and could have included a larger contingency; however, this is far from making the original planning ineffective.

Third, we believe there is a great deal of undue emphasis on the coal supply which may be because of a misunderstanding of the coal supply arrangements. The total cost of the project did not change just because the cooperatives decided to finance the coal mine development. This decision was made on the basis that is was more economically beneficial to the cooperatives' members for the cooperatives to finance the mine than for the coal company to do this. The cooperatives could supply the capital at a lower rate than the coal company. This increased the financing requirements of the project, but, will actually reduce the overall cost of energy to the members. Thus it is unfair and incorrect to say that this increased the cost of the project. Regardless of who supplies the capital, the cost of developing the mine is there and has to eventually be borne by the ultimate consumer. If the coal company supplied the capital, the costs of supplying the capital would be passed on in the price of the coal. This would decrease the capital outlay of the cooperatives but would end up in much higher coal costs and a higher resultant total cost of energy. Also at that time it was impossible to get a long term firm commitment on coal prices from any coal company. All such contracts have a multitude of escalation clauses on every item of production which continue to escalate for the life of the contract. UPA still firmly believes that the present arrangements will provide the best possible cost of fuel for its members over the life of the project. Also, the present arrangement provides the cooperatives control over investments made in the mine.

Finally, we must take exception to comments in the report that the individual consumer/members and other private citizens affected were not involved in the initial steps of the planning process. UPA's member cooperatives were kept informed of the status of the project in many ways. This was accomplished through annual meetings of the members at which UPA always had a representative, periodic newsletters, budget meetings and member services meetings. The REA loan was made in February, 1974. In regard to public information meetings, there was a meeting with state government leaders

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and legislators whose districts were contemplated to be involved in the power line route as early as August 23,
[109] 1973. Many public meetings were held starting in the spring of 1974. The list of public meetings is voluminous as indicated on page 104 of your report.

The above general observations apply to several areas of the report and to the overall impression of the report. In addition, I would like to offer the following specific comments on items in the order in which they appear in the report:

In the initial paragraph on page 83, we feel it would be more appropriate to compare the cost of the generation and transmission facilities and then separately mention the additional loan funds for the mine. [See GAO note.] It is not an accurate comparison to go from $537 million without a mine to $1,262 million with a mine. The language at the end of page 87 is more appropriate.

As mentioned in our general observation, we do not concur with the conclusion of the second paragraph on page 83. [See GAO note.] We feel that the two opening paragraphs are speculative and unnecessarily negative, given the facts contained in the November GAO report.

On page 84 at the end of the first paragraph, we would like to see a sentence added stating that The Rural Cooperative Power Association, one of the parent cooperatives, was organized in 1937.

In the first paragraph on page 85, we are not sure what you have done to come up with a 604 megawatt average annual power deficit or what its significance is. [See GAO note.] This type of averaging is not normally used.

In the second paragraph on page 85, should the two 345 kilovolt alternating current lines in Minnesota be mentioned in the project description?

In the third paragraph on page 85, it infers that only REA financed generating plants have used lignite. [See GAO note.] This is not true as private utilities in Minnesota and North Dakota have used lignite before any of the REA projects. Also, lignite has been used by utilities in Texas and Canada. Low grade coal similar to lignite has been used successfully in Europe for many years.

In the last sentence at the top of page 86, it would be more correct to say cost has "almost" doubled

GAO note: The language referred to has been revised.

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rather than "more than" doubled if the mine cost is properly taken into account as mentioned previously.

In the last sentence of the third paragraph on page 86, it states that many individuals whose lives and property were to be directly involved did not learn about the project until the spring of 1974. Unfortunately, most people do not show any interest in a project until they learn they are directly involved. This does not occur early in the project. Most of the protest developed in the area in which the State rerouted the transmission line. This did not occur until the project went through the siting process. This does not normally occur in the early planning stages of any project.

In the fifth paragraph on page 86, we do not feel that "many" people doubted that the power project was needed. [See GAO note.] I believe this was limited to a very small percentage. In the last sentence of this paragraph it does not explain that the rules in Minnesota requiring the certificate of need were not promulgated until after the corridor request was filed by the cooperatives (see page 36 of the November report). This was not the fault of the cooperatives or the project.

In the first paragraph on page 87, it could be pointed out that the area of greatest protest was the area in which the line was rerouted through the State siting process. [See GAO note.] It could also be pointed out that professional protestors moved into this area to keep the movement active and, incidentally, are still doing so to this day.

In regard to the second sentence of the fourth paragraph on page 87, United Power Association (UPA) kept its members informed and to our knowledge these views were not expressed by any of UPA's member cooperative officials.

We disagreed with the conclusion in the third paragraph on page 88 when it was in the November report and still disagree with it. We feel this is a matter of speculation. It is not practical in a project of this magnitude to have all the details worked out before commencing the project.

In the third paragraph on page 89 it should be noted that including price escalation clauses in contracts is a common practice in the industry and not limited to this project [See GAO note.] The labor problems referred to were primarily problems with a contractor supplying labor and not labor problems per se.

On page 90, after summarizing the plant cost increases, would be an appropriate place to discuss plant costs per kilowatt and comparisons to other plants as mentioned in my general observations and as was done in the November report.

GAO note: The language referred to has been revised.

The last sentence at the top of page 91 states that citizen resistance compelled the cooperatives to request coverage under the siting act. [See GAO note 1.] This was not the only reason. In North Dakota the cooperatives had requested to be grandfathered out of the siting act provisions and it was determined in a court decision that they were not. In reviewing the cooperatives' situation in Minnesota there was concern that the grandfather provision would not hold up if it was later legally challenged during condemnation proceedings. This was another compelling reason to request coverage under the siting act.

In the third paragraph on page 91 it could be mentioned that the total anticipated cost of right of way was $28 million (see page 24 of November report) [See GAO note 1.]

In the second item on page 81 it could be noted that the high escalation during this period affected all transmission costs, not just the converter terminals. The extra costs due to compliance with regulatory actions was also an important item (see pages 22-23 of the November report). Delays caused by protestor activities and the many court actions were also a significant factor in cost increases. [See GAO note 2.]

On the bottom of page 81, the mine did not add $215 million to the "cost" of the project. [See GAO note 2.] It did add to the financing provided by the cooperatives as explained earlier.

At the end of the second paragraph on page 92, we would like to see the following words added: "resulting in lower cost energy to their consumers". [See GAO note 1.]

In the second sentence of the third paragraph on page 93, it should state that the coal company will repay the loans to Cooperative Power Association/UPA. [See GAO note 1.]

We feel that the third paragraph on page 85 should be deleted from the report. [See GAO note 2.] This is purely speculation and not based on fact. Our studies show a considerable savings to the cooperatives by having them supply the capital for mine development. There is no reason to believe the results would have been any different earlier. Naturally both comparisons would have shown lower costs at that time before subsequent escalation, the added equipment needed for reclamation, and without coal severance taxes.

In the second paragraph on page 95 it should be noted that this feasibility study was not intended to consider all
[96] possible alternates. Each of the cooperatives had previously conducted separate studies for their own organizations which resulted in these two alternatives as the best alternatives

GAO notes:

1. The language referred to has been revised.

2. Material referred to not included in final report.

APPENDIX VII

to study in more detail. Conservation was not considered but it should be noted that this was not being considered by [96] other utilities as a viable alternative in the time frame the feasibility studies were performed.

On page 97 we feel that the second assumption should be modified. [See GAO note.] The word "low" could be interpreted that the cooperatives purposely picked an inflation rate that was abnormally low. This was not the case. The inflation rate was based on a number of historical indices. Also at the time it was the Federal government's stated policy to reduce inflation (see pages 12-13 of the November report). Instead, during the 1974-76 period when the majority of the equipment for the project was purchased, we had run-away inflation rates. It certainly would not have been possible to predict this based on the information available in early 1973. This same comment applies to the word "understated" in the first sentence of the first paragraph on page 98. [See GAO note.] Maybe "underestimated" would be more appropriate.

In the third sentence of the third paragraph on page 98, the word "labor" problems is again used. [See GAO note.] This was a contractor problem and not a labor problem per se.

The last paragraph under Forecasting Procedures Used on page 99 is incorrect. [See GAO note.] UPA no longer uses historical trending as the basis for its forecasts. Other methods, including [99] end use analysis, are presently being used. A recently completed forecast does not follow historical patterns.

On pages 99 and 100 in the section on Comparison of Forecasts to Actual, this is a combination of CPA and UPA data so we are unable to verify the totals. However, the order of magnitude appears to be reasonable.

We disagree with the conclusion reached in the third paragraph on page 101. [See GAO note.] The cooperative structure is similar to any form of democratic government where people (in this case members) elect representatives (in this case directors) to represent them, promulgate laws and make decisions in their behalf. It is impossible for every person to act directly. They can let their wishes be known to their representative but they have to abide by the decisions or the laws that are made. In the case of the cooperatives, the members have [102] additional opportunity for input. There are annual meetings at which times the members have a chance to ask questions and make comments. In the case of UPA, it has been our practice over many years to always have a representative at these annual meetings. In many cases this representative reports on activities of the G&T cooperative and answers questions or takes note of comments. We don't see where it

GAO note: The language referred to has been revised.

makes any difference if the members directly pick their representative to the G&T board of directors if the member system board picks the representative. He still represents those members in any case. We can't agree that the structure does not permit involvement by the individual consumer. The member certainly has the opportunity. Whether he uses that opportunity is adequately discussed on page 102 of the report.

On page 91, the last sentence in the second paragraph infers that the Board does not have time for considering other matters. [See GAO note 1.] UPA has for several years gone to two-day Board meetings so that adequate time would be available for any important aspect of the cooperative.

In regard to the second paragraph on page 102, UPA does not have a rigid written requirement for a member to appear at a Board meeting. [See GAO note 2.] We have occasionally had requests from members and these have always been honored.

At the end of the second paragraph on page 104, we would also add that we believe acts of vandalism were also encouraged by outside professional protestors [See GAO note 2.]

Please accept my apologies for these comments getting rather lengthy. It would be much easier to sit down and discuss these items with the author of the report since there are a great number of areas covered in the report. We would appreciate the opportunity to do this and offer to send a representative or two to a discussion meeting at a location and time of your convenience.

Again, thank you for the opportunity to comment on the draft of your proposed report.

Sincerely,

UNITED POWER ASSOCIATION

Philip O. Martin
General Manager

POM/vh

GAO notes:

1. Material referred to not included in final report.
2. The language referred to has been revised.
3. Paragraph and page references in this appendix have been changed to agree with those in the final report.
4. Page numbers in brackets refer to pages in the report where the comments are discussed.

APPENDIX VIII

Office of the General Manager

July 9, 1980

Mr. Henry Eschwege, Director
Community and Economic Development Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

This letter is in response to your request for comments on Chapter 4, "The Coal Creek Project--A Case Study", of your proposed report to the Congress on the results of your review of the Rural Electrification Administration electric loan programs.

In the discussions of the large increase in cost, it is not appropriate to compare the initial cost of the project, $537 million without the mine to $1,262 million with the mine. Furthermore, we think that it is important when discussing cost increases that you acknowledge that factors which [108] increased the cost of the Coal Creek Project also increased the costs of similar projects constructed in the same time frame. In fact, the final cost of the Coal Creek generating plant on a dollars per kilowatt basis compares very favorably with other similar plants as shown on pages 18-19 of the November, 1979 GAO report on the Coal Creek Project.

We feel that there was adequate planning for the project, both in terms of the load forecasts and studies which were completed. The load forecasts used all techniques and assumptions which were [108 & 109] appropriate to forecasts made at that time. CPA had conducted studies to narrow the power supply alternatives prior to the time the final studies were made as part of the final decision.

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These studies with recommendations were discussed with the Board of Directors and member system Directors and Managers. In addition, meetings with [109] legislators and other public officials and numerous public information meetings were held during 1973 and 1974.

We feel that the report should explain that financing the coal mine resulted in lower coal costs to the cooperatives because of lower capital costs [108 & (interest). It should be pointed out that any 109] purchase of coal involves an element of capital cost. In this case, the capital was provided by the cooperatives who pay the interest with such costs amortized and added to the cost of the coal by the cooperatives instead of the mining company.

On page 84, the reference to the increase in the number of CPA employees should explain that the primary increase is due to CPA's role as operating agent of the Coal Creek Station. [See GAO note 1.] It should be recognized on page 86, 6th paragraph, that the new laws were passed as the project developed. [See GAO note 1.] The laws and corresponding rules and regulations were not passed and implemented in any logical order, hence the formal need process, which resulted in the granting of a certificate of need, was conducted during and after the routing process.

Finally, on page 87, we feel that the point should be made that the legal remedies were available and used by the opponents. Because they did not agree with the court's decision, they chose to conduct acts of vandalism.

Thank you for the opportunity to comment on the draft of your proposed report.

Sincerely,

T. V. Lennick

T. V. Lennick
General Manager

TVL:tn

GAO notes:

1. The language referred to has been revised.
2. Paragraph and page references in this appendix have been changed to agree with those in the final report.
3. Page numbers in brackets refer to pages in the report where the comments are discussed.

SUGGESTED LEGISLATIVE CHANGES TO IMPLEMENT OUR RECOMMENDATIONS TO THE CONGRESS

The following specific legislative language was prepared to assist the Congress in implementing our recommendations for legislative changes.

RECOMMENDATIONS TO THE CONGRESS CONCERNING BUDGETARY MATTERS

We made recommendations to the Congress that would result in the Federal credit assistance activity that currently goes through the Federal Financing Bank being more adequately reflected in the Federal budget totals.

To implement our recommendation that the Congress require that FFB's receipts and disbursements be included in the Federal budget totals, we suggest that the second sentence in section 11(c) of the Federal Financing Bank Act of 1975 (12 U.S.C. 2290(c)) be amended to read as follows:

> "The receipts and disbursements of the Bank in the discharge of its functions shall be included in the totals of the budget of the United States Government."

To implement our recommendation that the Congress require that the receipts and disbursements of all off-budget Federal agencies that borrow from FFB be included in the Federal budget totals, it would be necessary for the Congress to delete all specific statutory references in the enabling legislation under which the off-budget agencies operate that now exempt the receipts and disbursements of those agencies from inclusion in the budget totals. For example, to bring the activities financed out of the Rural Electrification and Telephone Revolving Fund on budget, the following changes would be necessary.

1. Section 304(a) of the Rural Electrification Act of 1936, (7 U.S.C. 934) should be amended by

--deleting, in its entirety the proviso at the end of the last sentence in that subsection and

--replacing the colon immediately preceding the deleted proviso with a period.

2. Section 304(b) of the Rural Electrification Act of 1936, (7 U.S.C. 934) should be amended by deleting the last sentence of that subsection.

3. Section 305(a) of the Rural Electrification Act of 1936, (7 U.S.C. 935) should be amended by

--deleting the second proviso at the end of that subsection and

--replacing the colon immediately preceding the deleted proviso with a period.

To implement our recommendation that the Congress require that certificates of beneficial ownership be treated as agency obligations and, therefore be treated in the Federal budget as borrowing, it will be necessary for the Congress to delete all statutory provisions that authorize the agencies involved to "sell" certificates of beneficial ownership and treat such "sales" as asset sales rather than borrowing. If this were done, the Office of Management and Budget's current policy of treating such transactions as borrowing would be applied.

The Congress should so amend section 310B(d)(6) of the Consolidated Farm and Rural Development Act (7 U.S.C. 1932(d)(6)) and section 304(c) of the Rural Electrification Act of 1936 (7 U.S.C. 934).

RECOMMENDATIONS TO THE CONGRESS TO REDUCE THE GOVERNMENT'S CONTINGENT LIABILITY ON GUARANTEED LOANS

We made two recommendations to the Congress that would avoid placing the risk of the huge contingent liability of loans guaranteed by the Rural Electrification Administration solely on the Government.

The following changes are suggested to implement our recommendations that the Congress revise the Rural Electrification Act of 1936 to (1) limit REA's loans to 90 percent or some other appropriate percentage and (2) eliminate the prohibition against REA charging a fee for the guarantee and, instead, require that a loan guarantee fee be assessed and used for funding a reserve for losses.

Section 301(a) of the Rural Electrification Act of 1936 (7 U.S.C. 931(a)) should be amended by

--striking out "and" at the end of paragraph (5);

--striking out the period at the end of paragraph (6) and inserting in lieu thereof ";and"; and

--adding the following new paragraph after paragraph (6):

"(7) all guarantee fee payments received by the Administrator pursuant to section 306 of this Act."

Also, section 306 of the Rural Electrification Act of 1936 (7 U.S.C. 936) should be amended to read as follows:

"The Administrator may provide financial assistance to borrowers for purposes provided in this chapter by guaranteeing loans, in an amount not to exceed 90 per centum 1/ of the outstanding unpaid balance thereof, made by the Rural Telephone Bank, National Rural Utilities Cooperative Finance Corporation, and any other legally organized lending agency, or by accommodating or subordinating liens or mortgages in the fund held by the Administrator as owner or as trustee or custodian for purchases of notes from the fund, or by any combination of such guarantee, accommodation, or subordination. Guaranteed lenders shall be required to pay a guarantee fee to the Administrator for all loan guarantees approved under this section, which fee shall be paid in such amount and in such manner as may be prescribed by the Administrator except that the fee shall not exceed 1 per centum 1/ of the guaranteed portion of a loan. All loan guarantee fees collected by the Administrator shall be deposited in the fund and used, together with such other moneys in the fund from whatever source, as are necessary, to establish a reserve in an amount that the Administrator determines to be sufficient to pay all losses occurring in connection with loans guranteed under this section. Guaranteed loans shall bear interest at

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1/The percentages shown are for illustrative purposes only.

the rate agreed upon by the borrower and the lender. Guaranteed loans, and accommodation and subordination of liens or mortgages, may be made concurrently with a loan insured at the standard rate. The amount of guaranteed loans shall be subject only to such limitations as to amounts as may be authorized from time to time by the Congress of the United States: Provided, That any amounts guaranteed hereunder shall not be included in the totals of the budget of the United States Government and shall be exempt from any general limitation imposed by statute on expenditure and net lending (budget outlays) of the United States, except that this proviso shall not be construed so as to exempt the Federal Financing Bank or any other Federal lending agency that makes a loan guaranteed under this section from including the sum of all such loans in its budget totals. As used in this subchapter, a guaranteed loan is one which is initially made, held, and serviced by a legally organized lending agency and which is guaranteed by the Administrator hereunder. A guaranteed loan, including the related guarantee, may be assigned to the extent provided in the contract of guarantee executed by the Administrator under this subchapter, the assignability of such loan and guarantee shall be governed exclusively by said contract of guarantee."

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