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Revenues And Costs Allocated To Power Operations At Multiple-Purpose Projects In The Southwestern Federal Power System

B-125031

Department of the Interior
Department of the Army

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

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913528

FEB 20, 1973



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON DC 20548

B-125031

Dear Mr Speaker

In accordance with your request of May 2, 1972, and subsequent arrangements with your office, this is our report on revenues and costs allocated to power operations at multiple-purpose projects in the Southwestern Federal Power System. The Departments of the Interior and the Army are responsible for administering activities discussed in this report

The contents of the report were reviewed by and discussed with the Departments' officials, however, written comments were not obtained.

We do not plan to further distribute this report unless you agree or publicly announce its contents.

Sincerely yours,

A handwritten signature in cursive script that reads "James B. Staats".

Comptroller General
of the United States

The Honorable Carl Albert
Speaker of the House of Representatives

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ABBREVIATIONS

GAO	General Accounting Office
O&M	operation and maintenance
SPA	Southwestern Power Administration
SCRB	separable cost-remaining benefits

COMPTROLLER GENERAL'S REPORT
TO THE HONORABLE CARL ALBERT
SPEAKER OF THE HOUSE OF
REPRESENTATIVES

REVENUES AND COSTS ALLOCATED TO
POWER OPERATIONS AT MULTIPLE-PURPOSE
PROJECTS IN THE SOUTHWESTERN FEDERAL
POWER SYSTEM

Department of the Interior
Department of the Army
B-125031

D I G E S T

WHY THE REVIEW WAS MADE

At the request of the Speaker of the House of Representatives, Carl Albert, the General Accounting Office (GAO) obtained financial data for fiscal years 1960 through 1970 on the federally owned hydroelectric projects in the Southwestern Federal Power System

The Speaker's request stemmed from his concern over (1) recent rate increases for electric power sold to consumers throughout the Southwest and (2) the propriety of costs and other charges assessed against the power operations of these projects

Background

GAO obtained information on

- the total revenues from the sale of electric power and related activities,
- the operation and maintenance costs of producing, transmitting, and selling electric power, and
- the indicated surplus or deficit of electric power operations

This information is summarized in appendix I.

In addition, GAO obtained information on the cost of power facilities as of the year initial construction was completed and as of June 30, 1970 (See app. II) GAO also analyzed reasons for changes in construction costs from the time initial construction was completed until June 30, 1970 (See app. III)

At June 30, 1970, the system generated power at 16 multiple-purpose water resource projects constructed and operated by the Army Corps of Engineers and sold the power over facilities and transmission lines owned or leased by the Department of the Interior's Southwestern Power Administration (SPA)

SPA is responsible for selling the power at rates which are adequate to recover the Federal costs of producing and transmitting the power, including repayment of the Federal investment over a reasonable period SPA is required to sell the power so as to encourage widespread use at the lowest possible rates to consumers, in accordance with sound business principles

Each project in the system serves more than one purpose In addition to power, the purposes include flood control, navigation, recreation, water supply, fish and wildlife enhancement, and water quality The total cost of a project is allocated to the various project purposes

FINDINGS AND CONCLUSIONS

Revenues

System revenues totaled about \$263 million for fiscal years 1960 through 1970, and expenses--excluding depreciation expenses--totaled about \$273 million, which resulted in a deficit of \$10 million. The cumulative system operating loss--including depreciation expenses--was about \$56.5 million at June 30, 1967, but was reduced to about \$52.2 million at June 30, 1970.

This loss was reduced primarily because increased rainfall in 1968 and 1969 lessened the need to purchase power from other sources to meet contract commitments and because a contract was renegotiated to provide for transmitting Federal power at reduced costs. (See p. 7.)

SPA last increased its general rates in 1957, but it decreased its rates on a large part of the electric energy in 1962. In May 1970 and November 1971, it increased rates for services on certain contracts but the customers affected are contesting these increases. (See p. 10.)

SPA has attributed its financial problems, in part, to eight of the 67 contracts under which it sells power. Under these eight contracts, net revenues per kilowatt-hour of electricity were less than under other power contracts. The reduction in revenues from sales under these contracts totaled about \$67 million through June 30, 1970. SPA increased rates for certain types of services to eliminate or compensate for the effects of some of these contracts. (See p. 9.)

Another situation contributing to the financial problems is that

SPA has contracted to provide the total power requirements of certain preference customers who do not own power-generating facilities. Because it cannot generate sufficient electricity during years of light rainfall to meet requirements of such customers, SPA must purchase electricity from others. It pays more for the electricity it purchases, however, than it receives from the sale of electricity to the preference customers. (See p. 9.)

Construction costs
allocated to power

The Federal investment allocated to power facilities for the system's 16 Corps projects in operation at June 30, 1970, totaled \$437,940,455, of which \$377,823,392 represented separable costs--the incremental costs of adding power to the multiple-purpose projects--and \$60,117,063 represented joint costs--costs which could not be identified with a single project purpose--which were allocated to power. (See p. 11.)

Although the system's power construction costs per kilowatt of capacity have increased, the increases have been less than general cost increases indicated by a construction cost index. The percentage of total multiple-purpose project costs allocated to power has decreased. (See p. 17.)

Important factors affecting the amount of joint costs assigned to each project purpose are (1) the cost allocation method used, (2) the administrative judgments made in applying the method, and (3) the project purposes considered eligible for sharing in such costs. (See p. 12.)

At least nine methods of allocating project costs are recognized. Two

of these methods were used in the Southwestern Federal Power System. The incremental-flood control basic method was used for the first two projects in the system--Norfolk and Denison--because of representations made to the Congress when the projects were authorized. Under this method the power purpose was allocated only the estimated cost of adding power to the projects. All the joint costs were allocated to flood control.

Costs for all other projects in the system were allocated using the separable cost-remaining benefits method. Under this method each project purpose was allocated its separable (incremental) cost and a percentage of the joint cost based on the purpose's benefits in relation to total project benefits.

In 1950 a Federal interagency group first recommended the separable cost-remaining benefits method, and in 1952 a congressional committee recommended adoption of this method for Federal multiple-purpose projects. In 1954 the Department of the Interior, the Corps of Engineers, and the Federal Power Commission agreed that this method was preferable to other methods.

In 1956 the House of Representatives rejected an amendment to a bill (S 3338) which would have required that the incremental-flood control basic method be used for all projects in the system. (See pp 14 to 16.)

Changes in applying the separable cost-remaining benefits method have, in total, tended to decrease the amount of total project costs assigned to the power purpose of the system. (See p 17.)

Operation and maintenance expenses allocated to power

The system's operation and maintenance expenses totaled about \$48.8 million for the 11 fiscal years ended June 30, 1970--\$20.5 million for SPA's activities and \$28.3 million for the Corps' generating projects.

Because SPA only transmits and sells power, all its expenses are charged directly to the power purpose. Of the total Corps expenses of \$28.3 million charged to power

--about \$17.9 million (63.28 percent) was for specific power expenses,

--about \$6.3 million (22.23 percent) was for allocations of project joint expenses, and

--about \$4.1 million (14.49 percent) was for allocations of administrative and general expenses. (See p 26.)

Allocations of joint operation and maintenance expenses were based on the same methods as those used in allocating construction costs--the incremental-flood control basic method for two projects and the separable cost-remaining benefits method for 14 projects. (See p 27.)

GAO test checked the Corps' specific expenses charged to power for fiscal year 1970 and found no significant amounts which should have been charged to project purposes other than power. (See p 26.)

GAO computed the Corps' expenses that would have been assigned to power for fiscal year 1970 if the incremental-flood control basic method had been used for all

projects and found that the \$4.2 million did not differ significantly from the \$4.4 million actually assigned by the Corps using the separable costs-remaining benefits method (See p 27)

Although the percentage of total project joint-use expenses allocated to power has tended to decrease for projects constructed in recent years--partly because of changes made in applying the separable costs-remaining benefits method--the total joint-use costs allocated to power have increased (See p 26)

For fiscal year 1970 total Corps operation and maintenance expenses increased about \$1,140,000, or 38 percent, compared with such expenses for fiscal year 1967. About 77 percent, or \$882,000, of the increase applied to six projects in one Corps district (See p 30.) The increases at the six Corps projects were caused primarily by increases in (1) salaries, (2) extraordinary maintenance and replacements, (3) boundary marking, (4) condition and operation studies, (5) operation and maintenance of permanent operating equipment, and (6) administrative and general expenses (See p 31)

CHAPTER 1

INTRODUCTION

Pursuant to a request dated May 2, 1972, from the Speaker of the House of Representatives, Carl Albert (see app. V), and in accordance with subsequent discussions with his office, we obtained financial data for fiscal years 1960 through 1970 on the federally owned hydroelectric projects in the Southwestern Federal Power System. The Speaker's request stemmed from his concern over (1) recent rate increases for electric power sold to consumers throughout the Southwest and (2) the propriety of costs and other charges assessed against the power operations of these projects.

We obtained information on the (1) total revenues from the sale of electric power and related activities, (2) operation and maintenance (O&M) costs of producing, transmitting, and selling electric power, and (3) indicated surplus or deficit of electric power operations. This information is summarized in appendix I.

In addition, we obtained information on the Federal investment in power facilities as of the year initial construction was completed and as of June 30, 1970. (See app. II.) Also, we analyzed the reasons for changes in the Federal investment in power facilities from the time initial construction was completed until June 30, 1970. (See app. III.)

At June 30, 1970, hydroelectric power generated at 16 multiple-purpose water resource projects constructed and operated by the Corps of Engineers (Civil Functions), Department of the Army, was sold over facilities and transmission lines owned or leased by the Southwestern Power Administration (SPA), Department of the Interior. The Secretary of the Interior is required by law (16 U.S.C. 825s) to sell the power so as to encourage widespread use at the lowest possible rates to consumers, in accordance with sound business principles.

The law further requires that rates established for selling the power shall recover the Federal costs of producing and transmitting the power, including repayment of

the Federal investment over a reasonable period. The Secretary of the Interior has established this period at 50 years from the date the last power project in the system is placed in service. Power rates become effective upon approval by the Federal Power Commission.

We obtained the data on revenues and costs from records, reports, and transactions of SPA at its headquarters office in Tulsa, Oklahoma, and from records at Corps district offices in Fort Worth, Texas; Little Rock, Arkansas; Tulsa, Oklahoma; and Vicksburg, Mississippi. In addition, we reviewed legislation and congressional hearings and reports on the cost allocation methods used for the system.

CHAPTER 2

REVENUES

Revenues for the system totaled about \$263 million for fiscal years 1960 through 1970, and expenses--excluding depreciation expenses--totaled about \$273 million, which resulted in a deficit of about \$10 million. Including depreciation expenses and prior-year deficits increased the cumulative operating loss at June 30, 1970, to about \$52.2 million. The gross revenues and operating expenses by year for the above period are shown in chart 1.

The large deficits in fiscal years 1962 through 1966 are attributable, in part, to the fact that these were years of light rainfall and therefore hydroelectric generating conditions were not good. Net revenues increased in fiscal years 1968 through 1970 primarily because (1) SPA reduced its transmission expenses about \$724,000 a year starting in fiscal year 1968 by renegotiating a contract to provide for the transmission of Federal power to SPA's customers and (2) increased rainfall in 1968 and 1969 reduced the need for SPA to purchase power from other sources to meet its own contract commitments. As a result, the system reduced its cumulative operating loss from about \$56.5 million at June 30, 1967, to about \$52.2 million at June 30, 1970.

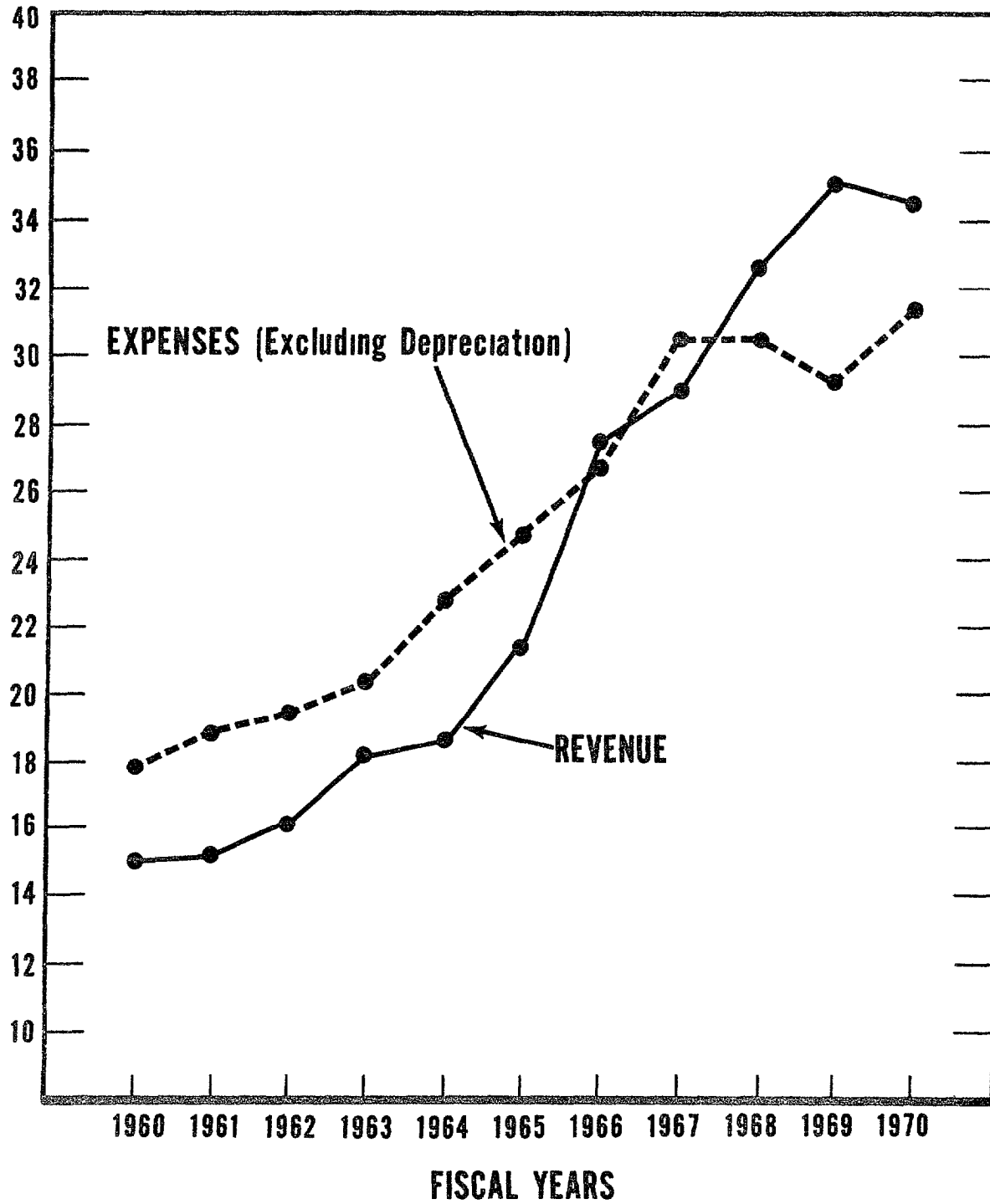
SPA's financial difficulties can be attributed, in large part, to the water conditions affecting the generation of power and to the manner in which it sells the power.

Although SPA receives some revenues from the sale of power under special contracts and the sale of electric energy generated during periods of excess water, it receives most of its revenues from the sale of firm and peaking power. "Firm power" is that supplied to meet the total power requirements of a customer, "peaking power" is that supplied to meet the power requirements that exceed a customer's own generating capability.

The power available from most of the projects in the system is best suited for meeting peaking-power requirements

SOUTHWESTERN FEDERAL POWER SYSTEM REVENUE AND EXPENSES FISCAL YEARS 1960 THROUGH 1970

MILLIONS OF DOLLARS



because the quantity of water available does not provide enough hours of generation to meet firm-power requirements.

Section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s) provides that, in selling power, the Secretary of the Interior give preference to public bodies and cooperatives. Many of SPA's preference customers do not have generating facilities and have no use for SPA's peaking power unless they contract with someone else to meet part of their firm-power requirements. SPA has estimated that customers with firm-power requirements need annually about 4,500 kilowatt-hours of electric energy per kilowatt of capacity but that annually only about 1,200 kilowatt-hours of electric energy per kilowatt of capacity can be provided from the system during adverse drought and streamflow conditions. Therefore, SPA is required to purchase electricity to help meet the firm-power requirements of some of its preference customers.

In 1969, because rainfall was plentiful, SPA had sufficient water to generate most of its requirements and had to purchase only about \$217,500 worth of electricity. In 1967, however, rainfall was light and SPA purchased about \$2,978,400 worth of electricity. Because SPA pays more for purchased electricity than it receives for the electricity it sells, its net revenues are reduced substantially in years of light rainfall.

SPA has entered into 67 contracts under which it sells power. In 1969 SPA identified eight of these contracts which provided a return of less net revenues per kilowatt-hour than SPA was generally receiving under its other contracts. The reduction in revenues for these eight contracts averaged about \$6.4 million a year and through fiscal year 1970 totaled about \$67 million. The reduction resulted from (1) providing in contracts to allow very favorable credits to a few customers for their services for the Government, such as providing transmission services and reserve generating capacity, (2) selling power to an industry at low rates on the basis of meeting national defense requirements, and (3) agreeing to purchase off-season power which SPA had been unable to sell from an existing SPA customer. SPA has acted to eliminate or compensate for the effects of some of these contracts, including increasing its rates for certain types of services in May 1970 and November 1971.

SPA last increased its general rates in 1957, although costs have increased substantially since that time. In 1962 SPA decreased its rates for a large part of its electric energy. Later, as discussed above, it increased rates for certain types of services in May 1970 and November 1971, but the SPA customers affected are contesting these increases.

CHAPTER 3

CONSTRUCTION COSTS ALLOCATED TO POWER OPERATIONS

The Federal investment in the system at June 30, 1970, included about \$55.6 million of transmission facilities owned by SPA and \$549.2 million of hydroelectric generating facilities owned by the Corps, which were in operation or under construction. Because of unpaid deficits from prior years, the net unpaid Federal investment in the system totaled about \$651.4 million at June 30, 1970.

The hydroelectric generating facilities are only parts of multiple-purpose projects constructed by the Corps. In addition to power, project purposes include flood control, navigation, recreation, water supply, fish and wildlife enhancement, and water quality. The total cost of a project is allocated to the various project purposes. The allocation of costs to purposes is important because, under Federal laws, costs allocated to such purposes as power and water supply--irrigation and municipal and industrial water--are reimbursable to the Federal Government, whereas costs allocated to other purposes are nonreimbursable. Costs allocated to power are used in determining rates charged customers for the power. The total costs of a project can be more precisely determined than the portions of such costs that apply to each project purpose.

As shown in appendix II, the Federal investment allocated to power facilities for the system's 16 Corps multiple-purpose projects in operation at June 30, 1970, totaled \$437,940,455, of which \$377,823,392 represented separable costs and \$60,117,063 represented joint costs.

Total project costs allocated to each project purpose are made up of two elements--separable costs and joint costs. Separable costs are the incremental costs of adding a given project purpose to a multiple-purpose project. Some portions of the separable costs--such as for hydroelectric turbines--can be readily identified with project purposes and are referred to as specific costs.

The remaining portions of the separable costs, determined on the basis of engineering estimates, include such costs as adding to the height of a dam to accommodate power as a project purpose.

To identify the separable costs for each project purpose, the Corps estimates what the project would have cost if that purpose had not been included and subtracts this estimate from the total project cost. The remainder is the Corps' estimate of how much the particular purpose increased the costs of the project, or the separable cost of such purpose. The estimated separable cost for power includes specific power costs and other increases in construction costs which would not have been necessary if power had not been included.

Joint costs are that portion of total project costs which cannot be identified with any single project purpose and which are therefore allocated to all project purposes. For example, the dam stores water for all purposes, including power. Also, the sediment pool increases the life of the project and therefore benefits all purposes. Joint costs must be associated with project purposes through some allocation method. The total of joint costs for a project is the difference between the separable costs for all project purposes and the total project costs.

Important factors in determining the amount of joint costs to be assigned to each project purpose are (1) the allocation method used, (2) the administrative judgments made in applying the method, and (3) the project purposes considered eligible for sharing in joint costs.

Appendix II shows a comparison by project of the costs allocated to power as of the year initial construction was completed and as of June 30, 1970, and the specific costs charged to power. Appendix III shows an analysis of the changes in investment costs charged to power for all projects for the same period.

ALLOCATION METHODS

At least nine methods are recognized for allocating total project costs among the various project purposes. The

Corps has used two methods for allocating costs of the multiple-purpose projects in the system. These methods, not specifically prescribed by law, have been established by administrative agencies with guidance from congressional committees. They are

- the incremental-flood control basic method and
- the separable cost-remaining benefits (SCRB) method.

Under the incremental-flood control basic method, only the separable cost of adding power to a project is allocated to power. All the joint costs are allocated to flood control. Use of this method has been advocated only when the basic purpose of the project is flood control and when power is added as an incremental purpose.

This method was used for the Denison and Norfolk projects. The Corps, the Federal Power Commission, and the Department of the Interior agreed before 1954 that this method should be used for these projects because of representations made to the Congress when the projects were authorized.

The SCRIB method was used for the other projects in the system. Under this method each purpose is allocated its separable cost plus a portion of the joint costs. The portion of joint costs to be allocated to each purpose is computed by

- determining remaining benefits (benefits¹ estimated for each purpose less the separable costs allocated to that purpose),
- determining the ratio of remaining benefits for each purpose to remaining benefits for all purposes, and
- applying the ratio to total joint costs in determining joint costs for each purpose.

This method is intended to insure that each purpose shares equitably in the savings resulting from multiple-purpose construction.

¹Benefits are limited to the alternate cost of achieving the same benefits by a single-purpose project.

A Federal interagency group first recommended the SCRB method for application to Federal projects in 1950, on the basis of studies which began in 1946. Although the Corps adopted the SCRB method for general application in the system, SPA initially did not accept it and prepared cost allocations using a variety of methods. Before 1952 the Corps, using primarily the SCRB method, had determined the power investment to be about \$418 million for 12 projects, whereas SPA determined the power investment to be about \$218 million.

In 1952 the House Subcommittee to Study Civil Works (also known as the Jones Committee), 82d Congress, 2d session, reviewed disagreements between the Corps and SPA on cost allocations for the 12 projects which then made up the system. The Subcommittee's report¹ stated that SPA had gone to extremes to allocate the lowest possible costs to power and had not recognized interest during construction as a part of the total project costs. The Corps had included interest during construction in the total project construction costs.

The Subcommittee recommended use of the incremental-flood control basic method for the Denison and Norfolk projects because, when these projects were authorized, power was to be an added increment to flood control works. The Subcommittee stated, however, that the SCRB method was desirable for use on Federal multiple-purpose projects and recommended adoption of this method for future use, unless the legislative history of a project indicated that another method should be used.

In 1954 the Department of the Interior, the Corps, and the Federal Power Commission agreed that the SCRB method was preferable to other methods. After adopting the SCRB method, SPA recognized substantial additional costs to be recovered through power revenues. SPA indicated that, to recover such costs, it would request an increase in power rates from the Federal Power Commission. This prompted hearings before a

¹House Committee Print No. 23, 82d Congress, 2d session, dated December 5, 1952, entitled "The Allocation of Costs of Federal Water Resource Development Projects."

subcommittee of the Senate Committee on Public Works, 84th Congress, in February and March 1956. Members of four separate subcommittees representing both Houses of the Congress participated in the hearings. The objectives of the hearings were to determine whether the rate increase proposed by SPA conformed with congressional policy and had a reasonable basis.

Two of the suggestions discussed during the hearings to preclude the necessity for a rate increase were

- reallocating project costs using the incremental-flood control basic method instead of the SCRB method and
- extending the repayment period from 50 to 100 years.

The Chairman of the Public Works Subcommittee said that the incremental-flood control basic method should be used for all projects in the system.

The Corps' Assistant Chief of Engineers for Civil Works testified during the hearings that many projects under construction could not be justified by the incremental-flood control basic method because the costs allocated to flood control would exceed flood control benefits and, consequently, flood control could not be included as a project purpose. He said also that extending the repayment period for power facilities beyond 50 years was unsound and dangerous because of possible obsolescence and unforeseen maintenance costs.

As a result of the hearings, the Senate Committee on Public Works reported favorably on a bill (S. 3338) which precluded the Secretary of the Interior, for 18 months after January 1, 1956, from increasing the rates for power sold from Federal power projects to any public body or cooperative.

The Committee's report (S Rept. 1764, 84th Cong., 2d sess.) indicated that the bill should be enacted to allow time for considering the need for clarifying legislation on the establishment of power rates and pointed out that there was a need for a review of the existing laws and policies

on how costs should be apportioned for multiple-purpose projects. The Senate passed the bill (S. 3338) and referred it to the House Committee on Interior and Insular Affairs.

The House Committee reported (H R. 2788, 84th Cong., 2d sess.) the bill with amendments which limited the preclusion of a rate increase to power marketed by SPA and added a new section 2 as follows:

"From and after the effective date of this Act, the basis for determining the allocation of project costs used in arriving at the schedule of rates for the sale of electric power and energy marketed by the Southwestern Power Administration shall be the incremental method of allocation, whereby the costs allocated to power shall be limited to the costs of adding power as a purpose in the projects."

This proposed section, however, was rejected when the House of Representatives considered the bill. The act, as finally approved by the Congress, was vetoed by the President in a memorandum of disapproval dated August 9, 1956, and the proposed rate increase--which was held in abeyance during the consideration of Senate bill 3338--was submitted to and approved by the Federal Power Commission, effective August 1957.

Thus, over the years, the administrative agencies and the Congress have carefully considered and questioned the cost allocation methods used in the system, and neither the 1952 nor the 1956 congressional hearing resulted in a requirement that the SCRB method be changed.

ADMINISTRATIVE CHANGES MADE
IN APPLYING THE SCRB METHOD

Although power construction costs per kilowatt of capacity have increased for the system, the increases have been less than would be expected by applying a construction cost index published in the "Engineering News Record" as applicable to irrigation and hydroelectric construction. Changes in applying the SCRB method and the inclusion of additional purposes as eligible for sharing in joint costs have tended to decrease the percent of total project costs assigned to power.

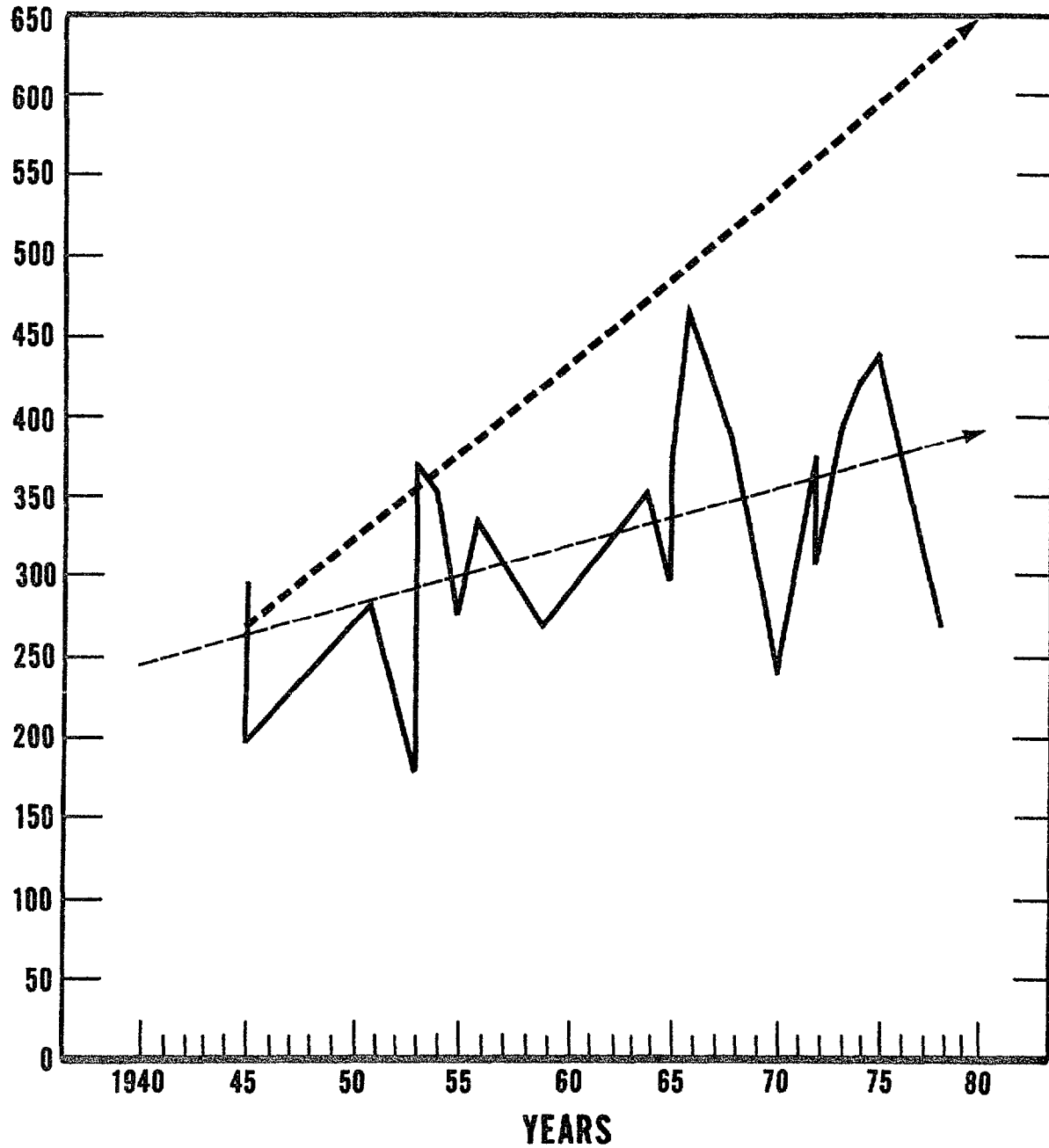
The principal changes in applying the SCRB method have been (1) elimination of taxes foregone as an economic cost (see p. 22), (2) a change in determining the alternate source of power (see p. 22), and (3) inclusion of recreation as a project purpose sharing in joint cost (see p. 23). The trend of construction costs allocated to power for projects constructed and under construction in the system at June 30, 1970, is shown in charts 2 and 3.

Although chart 3 depicts an overall decreasing trend in the percentage of total project costs assigned to power, increases are shown in 1956, 1959, 1964, and 1965. The increases shown in 1956 and 1959 resulted from completion of the Blakely Mountain and Table Rock projects. Most of the benefits estimated as resulting from these projects were assigned to power, and the benefits for other project purposes accounted for only 23 percent at Blakely Mountain and 14 percent at Table Rock.

The increases in 1964 and 1965 resulted from a change in cost allocation practices whereby taxes foregone were no longer considered as an economic cost of power in allocating costs for the Greers Ferry and Beaver projects. (See p. 22.) Such economic costs had been considered in cost allocations for prior Corps projects. The increase resulting from this change was offset in later projects by other changes, such as using a federally financed steam plant as an alternative cost and making other project purposes eligible for cost sharing.

SOUTHWESTERN FEDERAL POWER SYSTEM POWER COSTS PER KILOWATT OF INSTALLED CAPACITY

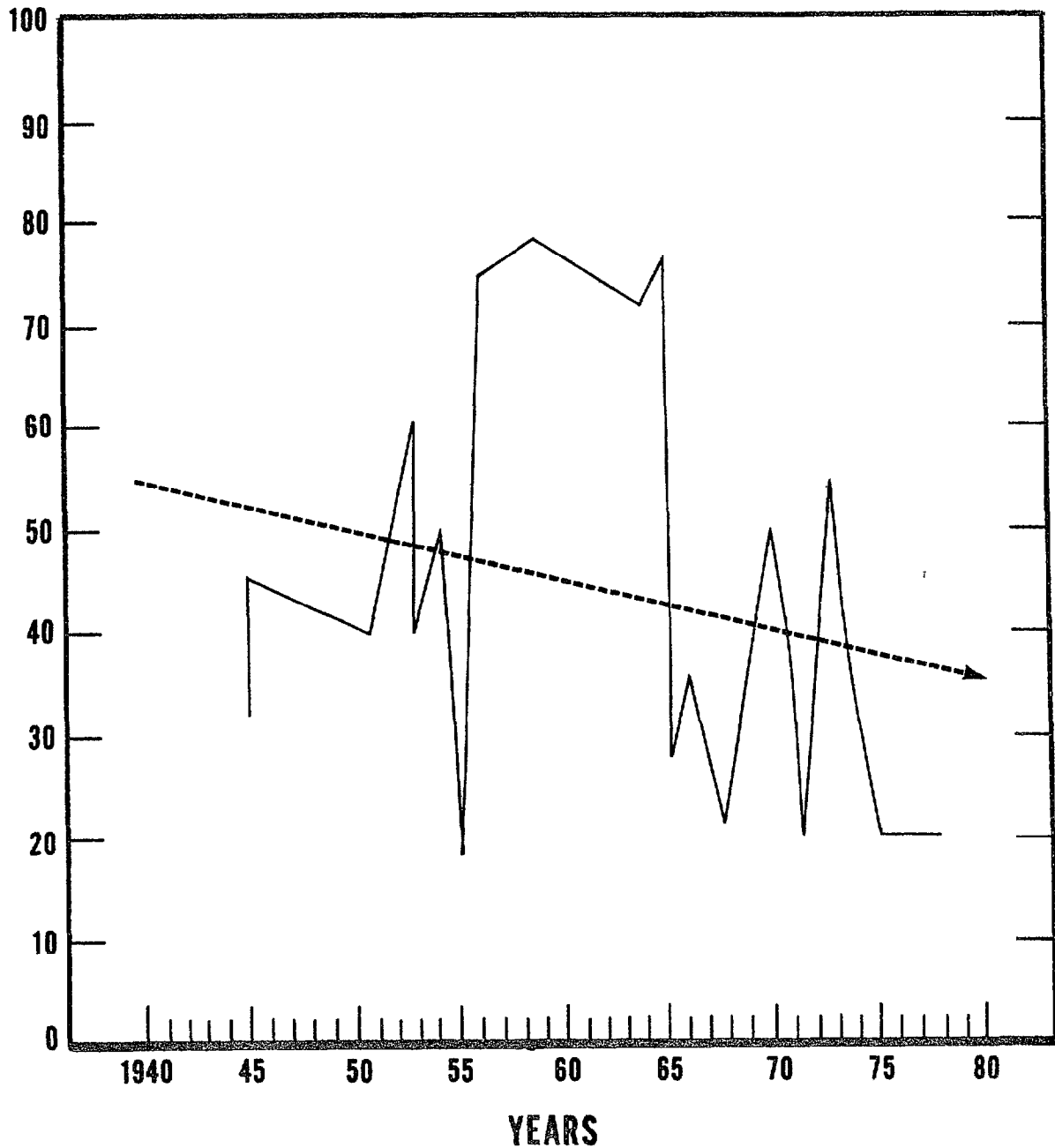
DOLLARS



- CORPS CONSTRUCTION COSTS ALLOCATED TO POWER PER KILOWATT OF CAPACITY
- - - TREND FOR CORPS CONSTRUCTION COSTS ALLOCATED TO POWER PER KILOWATT OF CAPACITY
- . - TREND FOR CONSTRUCTION COSTS OF PROJECTS HAVING IRRIGATION AND HYDROELECTRIC POWER BASED ON COST INDEXES IN ENGINEERING NEWS RECORD

SOUTHWESTERN FEDERAL POWER SYSTEM POWER COSTS AS A PERCENT OF TOTAL PROJECT COSTS

PERCENT



— PERCENT OF CORPS CONSTRUCTION COSTS ALLOCATED TO POWER
 - - - - - TREND

For the 16 projects constructed and the seven projects under construction in the system at June 30, 1970, the Corps, in applying the SCRB method to 21 of the projects

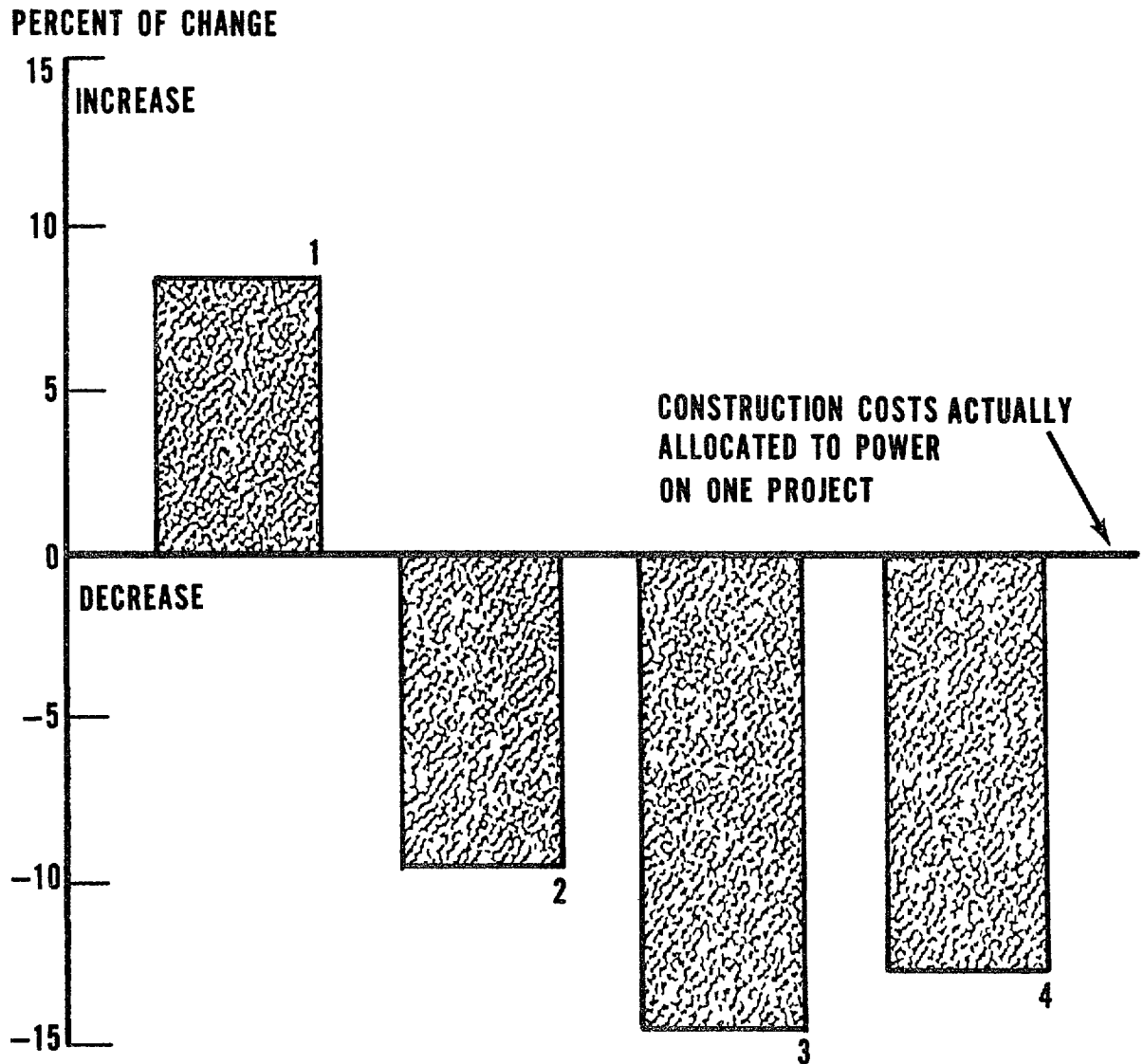
- included taxes foregone as an economic cost of power and used a single-purpose hydroelectric project as an alternative source of power for seven projects,
- excluded taxes foregone as an economic cost of power and used a single-purpose hydroelectric project as an alternative source of power for three projects, and
- excluded taxes foregone as an economic cost of power and used a federally financed steam plant as an alternative source of power for 11 projects.

Chart 4 shows the effects of the different concepts used in allocating costs under the SCRB method. To develop the chart, we selected one (Bull Shoals) of the nine projects for which (1) taxes foregone were included, (2) a single-purpose hydroelectric project was used as an alternative source of power, and (3) recreation was not authorized to share in joint costs. The chart shows separately and cumulatively the possible effects on the costs allocated to power of

- eliminating taxes foregone as an economic cost of power,
- substituting a federally financed steam plant in lieu of a single-purpose hydroelectric project as an alternative source of power, and
- including recreation as an authorized project purpose for sharing in joint costs.

Although useful as an illustration, chart 4 does not necessarily depict what would happen if the Corps made a completely new study of the project and reallocated the costs. The outcome of such a reallocation would depend on the relationships by project purpose among the new estimates of benefits, alternative costs, and incremental costs--any of which might change if a new study were made under current conditions.

SOUTHWESTERN FEDERAL POWER SYSTEM EFFECT OF CHANGES IN APPLICATION OF THE SCRB METHOD



- 1 ELIMINATING TAXES FOREGONE AS AN ECONOMIC COST OF POWER
- 2 USING A FEDERALLY FINANCED STEAM PLANT AS AN ALTERNATIVE COST OF POWER
- 3 INCLUDING RECREATION AS A PROJECT PURPOSE SHARING IN JOINT COST
- 4 CUMULATIVE EFFECT OF CHANGES 1, 2, AND 3

Elimination of taxes foregone
from cost allocations

Taxes foregone represent taxes which taxing authorities have lost because the Government, rather than a private investor, was the builder and operator of power facilities. Taxes foregone were considered as part of the separable costs allocated to power and were deducted from benefits computed for power in determining the ratio of remaining power benefits to the total remaining benefits for all project purposes.

As previously indicated on page 13, this ratio is used to allocate joint project costs to all project purposes, and the effect of including taxes foregone as a cost is to reduce the portion of total project costs allocated to power. This happens because taxes foregone are used only to allocate joint costs and are subsequently deducted from separable costs in arriving at total costs allocated to power.

The Corps included taxes foregone as an economic cost of Federal power projects until 1962. Senate Document 97, 87th Congress, dated May 29, 1962, provided that taxes foregone should no longer be included, except as required by law. As illustrated in chart 4 on page 21, this change tended to increase costs allocated to power on projects for which initial construction funds were appropriated after 1962.

Change in alternate source of power

Under the SCRB method the benefits claimed for including power in a project are not allowed to exceed the estimated cost of accomplishing the same power benefits by some alternative source of power. Shortly after the Corps eliminated taxes foregone in its cost allocations, it also changed the alternative source of power considered from a single-purpose hydroelectric project to a federally financed steam plant. Because the cost of a federally financed steam plant was estimated as substantially less than that of a single-purpose hydroelectric project, this change significantly limited the power benefits to be considered in allocating costs and consequently lowered the percentage of

joint costs allocated to power. The tendency of this change is illustrated in chart 4 on page 21.

In a report to the Congress entitled "Inappropriate Source of Power Used as Basis for Allocating Costs of Water Resources Projects" (B-163798, May 25, 1970), we reported that using a federally financed steam plant as an alternative source of power was inappropriate because the Congress had not authorized construction of such a plant outside the area served by the Tennessee Valley Authority. We suggested that the most likely and viable alternative source would be a privately financed steam plant. We reported that using a privately financed instead of a federally financed steam plant would have increased the costs allocated to power for 11 of the projects in the system by about \$81.7 million. The Departments of the Army and the Interior did not agree with our suggestion.

Additional project purposes considered
eligible for sharing in joint costs

For the earlier multiple-purpose projects constructed in the system, only two purposes--flood control and power--were authorized as eligible for sharing in the allocation of joint costs. In later projects total project costs were allocated to additional project purposes. Under the SCRB method the addition of project purposes reduces the percentage of joint costs allocated to power because other purposes share in the allocation of such costs. The following schedule shows, by project, the purposes which share in the allocation of joint costs in the system.

<u>Project</u>	<u>Flood control</u>	<u>Power</u>	<u>Navi- gation</u>	<u>Recre- ation</u>	<u>Water supply</u>	<u>Fish and wildlife</u>	<u>Water quality or streamflow regulation</u>
Norfolk	X	X					
Denison	X	X					
Narrows	X	X					
Bull Shoals	X	X					
Fort Gibson	X	X					
Tenkiller Ferry	X	X					
Whitney	X	X					X
Blakely Mountain	X	X					
Table Rock	X	X					
Greers Ferry	X	X					
Eufaula	X	X	X		X	X	
Dardanelle		X	X				
Beaver	X	X			X		
Sam Rayburn	X	X				X	X
Keystone	X	X	X		X	X	
Broken Bow	X	X		X	X	X	X
Stockton (note a)	X	X		X			
Robert S Kerr (note a)		X	X	X		X	
Ozark (note a)		X	X	X		X	
DeGray (note a)	X	X	X	X	X		
Webbers Falls (note a)		X		X		X	
Cannon (note a)	X	X	X	X	X	X	
H S Truman (note a)	X	X		X			

^aThese projects were under construction as of June 30, 1970

Significant recreation benefits have developed at all projects, including those at which recreation was not initially considered an authorized purpose for sharing in joint costs. Generally, however, only those projects for which initial construction funds were appropriated after the 1962 publication of Senate Document 97, 87th Congress, included allocations of joint costs to recreation. This document stated that joint costs should be allocated to recreation.

On the basis of recent recreation use and current visitor-day values, it appears that the joint costs assigned to power would have been decreased by several million dollars if recreation on the earlier projects in the system had been considered eligible for sharing in joint costs.

The Corps has advised us informally, however, that it will not allocate joint costs to recreation on the earlier projects unless the Congress is fully advised and authorizes the change. Support for the Corps position can be found in Senate Report 1589 which accompanied Senate Bill 2553, 90th Congress. The bill, as introduced, authorized the Secretary of the Interior to modify the operation of the Kortes Unit, Missouri River Basin, by adding fish and wildlife as a project purpose and provided that the costs allocated to such

purpose would be nonreimbursable. The Senate Committee on Interior and Insular Affairs reported favorably on the addition of the project purpose but deleted the section which provided for reallocating project costs, stating:

"The committee believes, however, that reallocation of costs of the project would not be appropriate. There are many existing projects which are providing benefits from purposes to which allocations were not recognized at the time of authorization. The committee does not believe that it is appropriate to establish a precedent of revising the repayment aspects of existing projects to recognize post-authorization benefit analysis."

CHAPTER 4

OPERATION AND MAINTENANCE EXPENSES

ALLOCATED TO POWER OPERATIONS

O&M expenses allocated to power in the system totaled about \$48.8 million for the 11 fiscal years ended June 30, 1970--\$20.5 million for SPA activities and \$28.3 million for Corps generating projects. (See app. I) All of SPA's expenses were charged to power because SPA had only transmitted and sold power.

Expenses charged to power by the Corps, however, include (1) those expenses specifically identified with power and (2) allocations of a part of other expenses which are incurred for various Corps activities, including power. Of the total Corps fiscal year 1970 O&M costs for multiple-purpose projects in the system, the largest allocation was to recreation (42.92 percent) and the balance was allocated to power (36.04 percent) and to other purposes (21.04 percent). (See app. IV.)

Corps O&M expenses specifically charged to power are identified with power and are recorded as such in Corps accounting records as they are incurred. Examples of such expenses are the salaries of powerplant employees and materials used to repair turbines. Of the total Corps O&M expenses of \$28.3 million charged to power, about \$17.9 million (63.28 percent) was for such specific power expenses. We test checked these specific power expenses for fiscal year 1970 and found no significant amounts which should have been charged to project purposes other than power.

The balance of the \$28.3 million charged to power by the Corps included allocated portions of the projects' joint-use O&M expenses of \$6.3 million (22.23 percent) and of administrative and general expenses of \$4.1 million (14.49 percent).

JOINT-USE EXPENSES

In the cost allocation study for each project, the Corps establishes a ratio for allocating a project's total

joint-use O&M expenses to each project purpose and does not change the ratio later. The ratios for allocating such joint-use expenses to power vary substantially among projects, however, and have been affected by such factors as the cost allocation method used, the administrative judgments made in applying the method, and the inclusion of additional project purposes. These are the same factors which affect the amounts of the projects' joint construction costs allocated to power, as discussed in chapter 3, and changes in these factors are partly responsible for the recent trend toward a decrease in the percentage of joint-use expenses allocated to power.

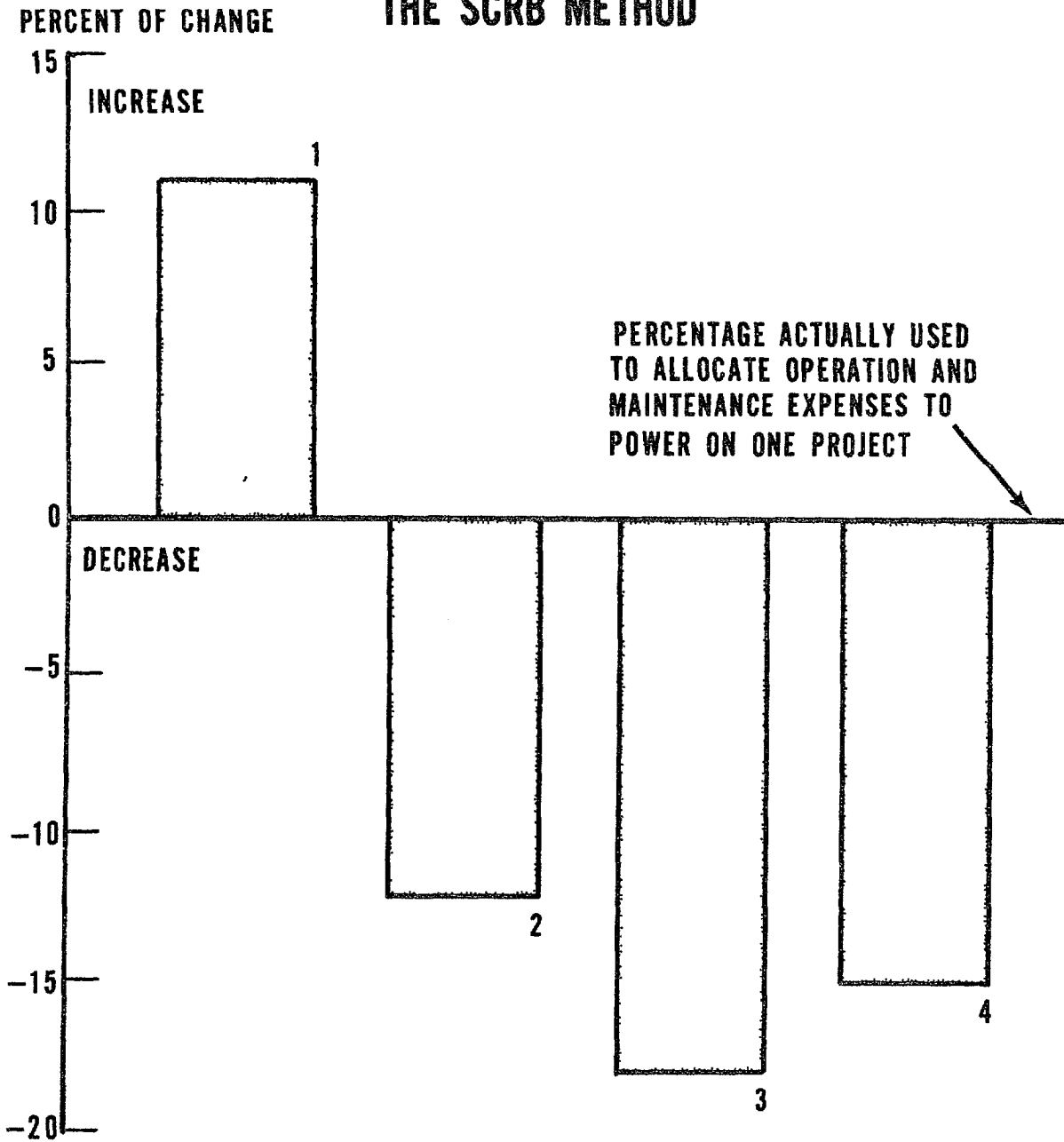
The Corps used the SCRB method to allocate joint-use O&M expenses for system projects, except for the Norfolk and Denison projects. The effects of changing the administrative judgments made in applying the SCRB method and making recreation eligible for sharing in joint-use expenses are demonstrated for one project in chart 5. Chart 5 uses the same project as chart 4, page 21. Although useful as an illustration, chart 5 does not necessarily depict what would happen if the Corps made a new study of all the factors affecting the project's benefits and costs.

Specific O&M expenses recorded in Corps accounting records for a particular project purpose, such as power, generally do not include all the incremental O&M expenses incurred because of the inclusion of the power purpose in a project. Those incremental O&M expenses of power, which are in excess of specific O&M expenses of power, are recorded as part of the joint-use expenses and are allocated to all project purposes.

If, instead of the SCRB method, the incremental-flood control basic method had been used to allocate O&M expenses to power, that part of the joint-use expenses attributable to the inclusion of power in the project would still have been allocated to power. The amount of such incremental power O&M expenses was about 86 percent of the total joint-use expenses which the Corps allocated to power expenses for fiscal year 1970.

Our computation of the total amount of Corps O&M expenses that would have been allocated to power for fiscal

SOUTHWESTERN FEDERAL POWER SYSTEM EFFECT OF CHANGES IN APPLICATION OF THE SCRB METHOD



- 1 ELIMINATING TAXES FOREGONE AS AN ECONOMIC COST OF POWER
- 2 USING A FEDERALLY FINANCED STEAM PLANT AS AN ALTERNATIVE COST
- 3 INCLUDING RECREATION AS A PROJECT PURPOSE SHARING IN JOINT COST
- 4 CUMULATIVE EFFECT OF CHANGES 1, 2, AND 3

year 1970 if the incremental-flood control basic method had been used showed that the amount (\$4.179 million) would not have differed substantially from the amount actually allocated (\$4.373 million).

ADMINISTRATIVE AND GENERAL EXPENSES

Corps administrative and general expenses totaled about \$4,100,700, or about 14.49 percent of the O&M expenses charged to power during the 11 fiscal years ended June 30, 1970. Included in administrative and general expenses were administrative and technical costs of district and project offices that had been incurred for system projects but that had not been charged to specific or joint-use expenses of the projects and district office overhead expenses, such as accounting, procurement, payroll, and personnel office activities. Administrative and general expenses are allocated to project purposes on the basis of the percentage relationship between the specific and joint cost of each project purpose and the specific and joint cost of all project purposes.

INCREASES IN CORPS OPERATION AND MAINTENANCE EXPENSES

The fiscal year 1970 power O&M expenses charged to 14 Corps projects¹ increased about \$1,140,000, an increase of 38 percent over such expenses for fiscal year 1967. Such increases for six projects in the Little Rock district were about \$882,000, or about 77 percent of the total increase for all 14 projects. We therefore analyzed the reasons for the increases in the district and summarized them as follows.

	<u>Labor</u>	<u>Other</u>	<u>Total</u>
	----- (000 omitted) -----		
Specific power	\$236	\$ 62	\$298
Joint-use allocation to power	267	184	451
Administrative and general allocation to power	-40	155	115
Credits and payments to States	<u>-</u>	<u>18</u>	<u>18</u>
Total increases	<u>\$463</u>	<u>\$419</u>	<u>\$882</u>

¹Two projects in the system (Keystone and Broken Bow) did not begin operations until after 1967; therefore, we did not include them for comparison.

Following are the reasons for the increase at the six projects in the Little Rock district.

1. Salaries increased.
2. Extraordinary maintenance expenses and replacements increased.
3. Boundary marking was charged to expense. (This cost was deleted from cumulative expenses and charged to investment in 1972.)
4. More condition and operation studies of the reservoirs were made.
5. More costs were incurred to maintain and operate permanent operating equipment, such as tractors, trucks, and mowers.
6. Administrative and general expenses allocated to power increased, primarily because of a change in the method of allocating overhead.

Salary increases

Labor expenses charged to power increased from \$1,241,000 in fiscal year 1967 to \$1,704,000 in fiscal year 1970. The increase of \$463,000 is 37.3 percent of the 1967 cost. This is a higher percentage increase than that determined by using the labor indexes in the "Engineering News Record," which shows increases of 33.67 percent for skilled labor and 36.45 percent for common labor during this period. The higher percentage increase may be attributable, in part, to the fact that the average number of personnel at the projects increased from 236 in 1967 to 308 in 1970.

Of the \$463,000 increase in labor expenses, \$236,000 was charged as specific power expenses. This was a 28.3-percent increase over the 1967 cost and is less of a percentage increase than that determined by using the labor indexes because salary increases were offset, in part, by a reduction in the average number of personnel specifically charged to power from 110 in 1967 to 98 in 1970.

Labor expenses allocated to power from joint-use expenses, however, increased \$267,000, or a 112.4-percent increase over those for 1967. This was a substantially greater percentage increase than that determined by using the labor indexes and is attributable to an increase in activities charged to joint-use expenses. We identified \$215,000 of additional labor expenses which were attributable to the increased activities charged to joint-use expenses and subsequently allocated to power, as follows

Extraordinary maintenance and replacements	\$ 50,000
Boundary marking	78,000
Increased condition and operation studies	62,000
Increased permanent operating equipment	<u>25,000</u>
	<u>\$215,000</u>

These increases in joint-use labor expenses allocated to power are discussed further in the following sections of this report, which concern the reasons for increases in other than labor costs.

Increases in specific and joint-use labor costs were partly offset by a \$40,000 decrease in administrative and general labor expenses charged to power.

Extraordinary maintenance expenses and replacements

Extraordinary maintenance expenses and replacements at the six projects in the Little Rock district increased substantially in fiscal year 1970 compared with fiscal year 1967. For example, in fiscal year 1968 remedial foundation treatment was begun at Beaver Dam. This work, to correct a leak, cost \$565,000 and was completed in fiscal year 1972. In fiscal year 1970, the part of joint-use expenses to repair this leak, which were allocated to power, was about \$50,000 in joint-use labor and \$23,000 in other joint-use expenses. We found no comparable extraordinary repair expenses for 1967.

Other maintenance and repair costs specifically charged to power--not including labor costs--which were incurred in fiscal year 1970 but not in fiscal year 1967 included

--\$5,600 to repair a turbine at the Beaver project,

--\$23,400 to replace a switch gear assembly which caught fire and failed at the Bull Shoals project, and

--\$11,600 for painting in the powerhouse and \$7,400 for replacement of storage batteries at the Norfolk project. The replacement of storage batteries occurs about once every 15 years.

Boundary marking

As a result of encroachments on project lands and other problems in administering and managing the projects, the Corps decided that permanent survey markers would be installed on all angle points of project boundaries. About \$97,000 of the fiscal year 1970 increase in power O&M expenses in the Little Rock district, including \$78,000 for joint-use labor, resulted from allocating expenses incurred for surveying and marking of boundary lines. Comparable expenses were not incurred in fiscal year 1967.

In fiscal year 1971 the Corps issued instructions to capitalize all boundary line survey expenses for 1970 and prior fiscal years. Therefore, the Little Rock district reduced prior-year power O&M expenses by \$163,665 and capitalized such expenses.

Condition and operation studies

The fiscal year 1970 joint-use expenses for condition and operation studies allocated to power in the Little Rock district were about \$91,000 more than in fiscal year 1967. This increase, which comprised about \$62,000 in joint-use labor expenses and about \$29,000 in other joint-use expenses, was largely due to a program of periodic inspections and evaluations which was established after fiscal year 1967. The Chief of Engineers established this program to insure the

continuing structural integrity and operational adequacy of the Corps' civil works projects whose failure would endanger life or substantially damage property.

The \$91,000 increase in expenses allocated to power resulted from

Costs for studies on such items as foundation drains, leakage, and pressure, which the district did not make in 1967	\$57,000
Costs allocated from the Corps' Southwestern Division for operating a reservoir control center established in 1968 (note a)	15,000
Contracted studies by other agencies	17,000
Other increases (net of decreases)	<u>2,000</u>
	<u>\$91,000</u>

^aThe center is responsible for reservoir water regulation; the district and the division were responsible before 1968.

Operation and maintenance of permanent operating equipment

Joint-use expenses allocated to power in the Little Rock district to operate and maintain project equipment, such as trucks and tractors, were about \$96,000 more in fiscal year 1970 than in fiscal year 1967. The increase included about \$25,000 in joint-use labor expenses and about \$71,000 in other joint-use expenses. Officials of the Little Rock district told us that increasing use and additional quantities of equipment had caused the increased expenses. O&M expenses for project-owned equipment were charged as joint-use costs and, consequently, were not allocated to recreation. However, some of the equipment was used to support recreation activities.

District officials advised us that, in the future, they would charge some of these types of expenses to recreation, which should tend to reduce the amount of such expenses charged to power.

Change in method of allocating overhead

Administrative and general expenses allocated to power increased about \$115,000, from \$276,000 in fiscal year 1967 to \$391,000 in fiscal year 1970. The increases included:

Project office administrative and technical expenses	\$ 1,000
District office direct charges	-34,000
Overhead	153,000
Other	<u>-5,000</u>
Net increase	<u>\$115,000</u>

District office direct charges decreased in fiscal year 1970 compared with fiscal year 1967 partly because fiscal year 1970 charges were allocated to all project purposes, including recreation, whereas fiscal year 1967 charges were not allocated to recreation. This change resulted in charging more expenses to recreation in fiscal year 1970 and therefore in charging less expenses to power. In addition, certain district expenses in fiscal year 1970 were charged to specific power rather than to administrative and general expenses as in fiscal year 1967.

In fiscal year 1970 total overhead expenses assigned to the Little Rock district for all activities of that district were 20 percent more than in fiscal year 1967, an increase of \$282,000. Such overhead expenses allocated to power, however, increased \$153,000, or 161 percent, partly because of a change in the method of allocating overhead expenses. In fiscal year 1967 overhead was allocated to contracting costs and direct Government costs, whereas in fiscal year 1970 overhead was allocated only to direct Government costs.

The change was made on the basis of Corps studies which showed that the prior method did not realistically distribute overhead expenses.

This change, which was effective July 1, 1967, resulted in allocating to direct Government costs those overhead expenses which formerly had been allocated to activities carried out under contracts. Because O&M expenses were incurred primarily by means other than contracting, the change resulted in allocating more overhead expenses to those Corps activities with a high proportion of O&M activities, such as power. In addition, part of the increase was due to a shift in workload, whereby the construction activity decreased and the O&M activity increased. This latter situation would have resulted in an increase in the overhead expenses allocated to power even if the overhead allocation method had not changed.

APPENDIXES

SOUTHWESTERN FEDERAL POWER SYSTEM

REVENUES AND EXPENSES

FISCAL YEARS 1960 THROUGH 1970

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
	—————(000 omitted)—————			
Total revenues	\$14,968	\$15,084	\$16,064	\$18,037
SPA expenses				
Borderline power purchases (note a)	6,201 ^b	2,980	3,204	3,784
Direct power purchases	-	3,055	2,440	1,363
Service charges	4,206	4,083	4,262	5,189
SPA O&M	<u>1,135</u>	<u>1,214</u>	<u>1,341</u>	<u>1,568</u>
Subtotal	<u>11,542</u>	<u>11,332</u>	<u>11,247</u>	<u>11,904</u>
Corps expenses				
Specific power costs	972	1,018	1,197	1,226
Joint costs	342	358	390	401
Administrative and general	<u>223</u>	<u>233</u>	<u>188</u>	<u>199</u>
Total O&M expenses	<u>1,537</u>	<u>1,609</u>	<u>1,775</u>	<u>1,826</u>
Interest	<u>4,896</u>	<u>6,024</u>	<u>6,461</u>	<u>6,663</u>
Total expenses (note c)	<u>17,975</u>	<u>18,965</u>	<u>19,483</u>	<u>20,393</u>
Excess of revenues or expenses (-)	<u>\$-3,007</u>	<u>\$-3,881</u>	<u>\$-3,419</u>	<u>\$-2,356</u>

^a Borderline power purchases are power purchases by SPA for direct resale to certain preference customers

^b No breakdown of purchased power available

^c Does not include depreciation expenses

APPENDIX I

<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>Total</u>
(000 omitted)							
\$18,520	\$21,481	\$27,340	\$29,051	\$32,632	\$35,171	\$34,589	\$262,937
4,757	4,936	5,225	5,573	5,858	5,602	6,182	54,302
2,104	1,611	1,127	2,979	1,402	217	932	17,230
5,168	5,066	5,190	5,308	5,553	4,622	4,703	53,350
<u>1,774</u>	<u>1,817</u>	<u>2,057</u>	<u>2,127</u>	<u>2,328</u>	<u>2,489</u>	<u>2,616</u>	<u>20,466</u>
<u>13,803</u>	<u>13,430</u>	<u>13,599</u>	<u>15,987</u>	<u>15,141</u>	<u>12,930</u>	<u>14,433</u>	<u>145,348</u>
1,301	1,553	1,830	1,981	2,015	2,286	2,528	17,907
413	375	549	559	724	976	1,205	6,292
<u>232</u>	<u>373</u>	<u>435</u>	<u>464</u>	<u>536</u>	<u>578</u>	<u>640</u>	<u>4,101</u>
<u>1,946</u>	<u>2,301</u>	<u>2,814</u>	<u>3,004</u>	<u>3,275</u>	<u>3,840</u>	<u>4,373</u>	<u>28,300</u>
<u>7,060</u>	<u>9,109</u>	<u>10,355</u>	<u>11,556</u>	<u>12,130</u>	<u>12,435</u>	<u>12,628</u>	<u>99,317</u>
<u>22,809</u>	<u>24,840</u>	<u>26,768</u>	<u>30,547</u>	<u>30,546</u>	<u>29,205</u>	<u>31,434</u>	<u>272,965</u>
<u>\$-4,289</u>	<u>\$-3,359</u>	<u>\$ 572</u>	<u>\$-1,496</u>	<u>\$ 2,086</u>	<u>\$ 5,966</u>	<u>\$ 3,155</u>	<u>\$-10,028</u>

APPENDIX II

SOUTHWESTERN FEDERAL POWER SYSTEM

INVESTMENT ASSIGNED TO POWER ON PROJECTS IN OPERATION

ON JUNE 30, 1970

<u>Costs in year initial construction completed</u>				
<u>Year costs determined</u>		<u>Incremental costs (note a) (1)</u>	<u>Joint costs (note b) (2)</u>	<u>Total costs (3)</u>
Norfolk	1954	\$ 13,741,451	\$ -	\$ 13,741,451
Denison	1955	19,721,043	-	19,721,043
Narrows	1951	5,496,130	-	5,496,130
Bull Shoals	1955	37,493,100	8,263,053	45,756,153
Fort Gibson	1954	15,409,111	1,002,509	16,411,620
Tenkiller Ferry	1957	11,711,025	540,100	12,251,125
Whitney	1957	7,725,700	456,735	8,182,435
Blakely Mountain	1959	22,006,000	3,007,251	25,013,251
Table Rock	1963	44,228,300	8,732,543	52,960,843
Greers Ferry	1965	27,436,800	6,029,544	33,466,344
Eufaula	1966	31,499,535	-	31,499,535
Dardanelle	1966	24,522,300	15,147,700	39,670,000
Beaver	1966	30,424,300	2,680,064	33,104,364
Sam Rayburn	1967	21,749,200	2,642,540	24,391,740
Keystone	1970	25,235,000	1,696,858	26,931,858
Broken Bow	1971	<u>22,987,319</u>	<u>650,384</u>	<u>23,637,703</u>
Total		<u>\$361,386,314</u>	<u>\$50,849,281</u>	<u>\$412,235,595</u>

^a"Incremental (separable) costs" are the costs which were made necessary because power was included in the multiple-purpose project

^b"Joint costs" are defined as the total project costs less the separable costs

^c"Specific costs" are those costs which are readily identified with an individual project purpose, i e , a generator is a specific power cost

APPENDIX II

As of June 30, 1970			Change in total investment (col 6 - col 3) increase or decrease(-)	Specific costs (note c)	
Incremental costs (note a) (4)	Joint costs (note b) (5)	Total costs (6)		Year initial construction costs finalized	As of June 30, 1970
\$ 13,627,140	\$ -	\$ 13,627,140	\$ -114,311	\$ 7,143,706	\$ 7,160,830
20,675,592	-	20,675,592	954,549	13,649,878	14,032,373
7,162,136	-	7,162,136	1,666,006	2,951,010	4,617,936
48,593,999	11,123,040	59,717,039	13,960,886	19,011,069	29,993,499
14,798,267	1,908,122	16,706,389	294,769	11,943,470	10,454,656
11,372,686	631,218	12,003,904	-247,221	8,378,920	8,085,061
7,953,019	231,578	8,184,597	2,162	6,288,419	6,288,419
21,994,845	3,018,071	25,012,916	-335	16,301,728	16,300,845
44,445,393	8,871,713	53,317,106	356,263	21,470,770	21,522,593
27,157,828	6,884,887	34,042,715	576,371	11,453,038	11,492,628
32,221,784	1,956,727	34,178,511	2,678,976	18,492,058	18,669,789
25,640,269	19,127,612	44,767,881	5,097,881	23,663,600	24,771,669
30,489,045	3,036,424	33,525,469	421,105	11,478,459	11,594,245
23,795,262	654,237	24,449,499	57,759	16,379,950	16,385,762
24,908,808	2,023,050	26,931,858	-	24,002,808	24,002,808
22,987,319	650,384	23,637,703	-	20,682,319	20,682,319
<u>\$377,823,392</u>	<u>\$60,117,063</u>	<u>\$437,940,455</u>	<u>\$25,704,860</u>	<u>\$233,291,202</u>	<u>\$246,055,427</u>

APPENDIX III

SOUTHWESTERN FEDERAL POWER SYSTEM ANALYSIS OF CHANGES

IN INVESTMENT COSTS CHARGED TO POWER FROM

YEAR INITIAL CONSTRUCTION COMPLETED TO JUNE 30, 1970

<u>Reason for increase or decrease(-)</u>	<u>Amount</u>
Installation of additional generators	
Bull Shoals (4 units)	\$10,772,392
Narrows (1 unit)	<u>1,666,926</u>
	\$12,439,318
Additions to plant in service-- 9 projects (net of retirements)	1,711,427
Boundary line surveys	
Greers Ferry	219,760
Beaver	<u>305,751</u>
	525,511
Investment costs adjusted to re- flect actual costs (note a)	-1,774,868
Investment costs adjusted on the basis of final cost allocation approved by the Chief of Engi- neers	
Denison	1,572,013
Eufaula	3,544,794
Fort Gibson	103,120
Bull Shoals	3,301,447
Dardanelle	<u>4,584,044</u>
	13,105,418
Miscellaneous minor adjustments	<u>-301,946</u>
total increases	<u>\$25,704,860</u>

^aThe Corps transfers work in process to plant in service in its ac-
counting records on the basis of estimated costs to complete at the
time a purpose is placed in operation. Later the Corps revises the
estimated costs to actual costs.

CORPS OF ENGINEERS

OPERATION AND MAINTENANCE EXPENSES BY PROJECT

FISCAL YEAR 1970

	<u>Recreation</u>	<u>Power</u>	<u>Flood control</u>	<u>Navigation</u>	<u>Other</u>	<u>Total</u>
	(000 omitted)					
Denison	\$ 464	\$ 382	\$ 238	\$ -	\$ 4	\$ 1,088
Norfolk	397	308	114	-	-	819
Narrows	153	165	82	-	-	400
Bull Shoals	430	524	131	-	-	1,085
Fort Gibson	327	240	116	-	-	683
Tenkiller Ferry	276	155	107	-	-	538
Whitney	111	170	93	-	8	382
Blakely Mountain	222	244	52	-	-	518
Table Rock	556	425	71	-	-	1,052
Greers Ferry	505	345	98	-	1	949
Beaver	369	385	99	-	38	891
Dardanelle	310	487	-	334	-	1,131
Eufaula	507	144	190	144	37	1,022
Sam Rayburn	156	165	84	-	68	473
Keystone	338	160	183	162	14	857
Broken Bow	86	74	43	-	41	244
Total	<u>\$5,207</u>	<u>\$4,373</u>	<u>\$1,701</u>	<u>\$640</u>	<u>\$211</u>	<u>\$12,132</u>
Percent	42.92	36.04	14.02	5.28	1.74	100.00

APPENDIX V

The Speaker's Rooms
U S House of Representatives
Washington, D C 20515

May 2, 1972

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

Dear Mr. Staats:

The Southwestern Power Administration is the marketing agent for the sale of electric power from federal reservoir projects under control of the U. S. Corps of Engineers in the states of Texas, Louisiana, Arkansas, Oklahoma, Kansas and Missouri. During the past two years, Southwestern Power Administration has undertaken a program of increasing rates for electric power to consumers throughout the southwest which may well terminate the benefits which this program has brought to the area over the past twenty-five years. This program of increased rates is based on an alleged financial crisis not heretofore brought to the attention of the Congress.

I cannot overemphasize the detrimental effects which, in my judgment, may result from a continuation of this policy and rate increase action. Municipally owned electric systems and rural electric cooperatives, as well as the private utilities of the southwest face a possible disruption of their entire electric rate structure and financial planning which, to a considerable degree, has been keyed to and is dependent upon the stability and soundness of the federal power program. The yardstick effect of the federal power program upon the private utility systems will likewise be changed to encourage an unstable condition in their rate structures. Last, but not least, the projected increase in rates for federal power could, in the opinion of a number of power experts in the southwest, well price federal power out of the market.

The Honorable Elmer B. Staats
March 13, 1972

In light of the above, I and a number of my colleagues in the Congress have become so concerned about this situation that legislation has been introduced in the House of Representatives to amend Section 5 of the Flood Control Act of 1944 to prevent these rate increases. Likewise, my colleague, Honorable Ed Edmondson, through inquiry of the Department of the Interior and the Corps of Engineers, has learned that the costs, allocated to electric power production on projects in the southwest area since going into full operation, have increased by \$21,425,336. This means that had the projects been financially sound when they went into full commercial operation based on electric power rates in effect at that time, they would now be in arrears in the amount of \$32,000,000 because of these increases in costs allocated to power and the interest charged thereon. In addition, information furnished Congressman Edmondson indicates that the operation and maintenance costs assessed to power production by the Corps of Engineers has increased from \$2,190,612 per year during the first full year of commercial operation to \$4,122,025 in 1970. - This is an increase of 88 percent and it is obvious from this information furnished Congressman Edmondson that many of the charges being assessed to power production have nothing whatsoever to do with the cost of producing and transmitting electric power. Further, in a letter dated January 31, 1972, the Executive Director of Civil Works for the Corps of Engineers advised the estimated cost of power facilities at federal projects in the southwest at the time construction was started was \$398,161,000. This compares to some \$670,191,300 now charged to power production. After taking into account all additions to these projects, the cost allocated to power exceeds the estimated costs by 55 percent.

The figures set forth above seem to indicate that the financial problems of the federal power program in the southwest and the Southwestern Power Administration may be due to the assessment of improper costs and charges rather than in the rates being charged for federally produced power. The variations in costs indicated would

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The Honorable Elmer B. Staats
March 13, 1972

certainly create an unstable power operation even with the most reasonable and proper electric power rates. Accordingly, it is imperative that a proper determination be made of the costs and charges that should be assessed to federally produced electric power under existing legislation. If this determination indicates that these charges are not proper under existing law, it will be our purpose to amend the law.

In the Flood Control Act of 1944 the Congress of the United States directed that the electric power produced at federally owned hydroelectric projects should be sold to the ultimate consumer at the lowest possible rates consistent with sound business principles, and that electric rates should be set to recover only the cost of producing and transmitting such electric power. It now appears that electric power rates are being based on assessing electric charges on the principle of -- "All the Traffic will Bear".

In the most recent order of the Federal Power Commission, issued November 30, 1971, that Commission dismissed protests of the charges being assessed to electric power by the Associated Electric Cooperatives of Missouri with a simple statement that these additional amounts have been verified by the letter filed with the Commission on April 28, 1971, by the office of the Chief of Engineers, U. S. Army Corps of Engineers. Section 5 of the Flood Control Act of 1944 vests in the Federal Power Commission the responsibility of confirming and approving the rates for federally produced electric power. I do not feel that the Federal Power Commission has met their responsibility of confirming the proposed rate increases when they accept, without a thorough check, the financial data submitted to them by the Corps of Engineers and the Department of the Interior. The order of the Federal Power Commission, issued November 30, 1971, indicates that these figures have not been confirmed by the Commission through a detailed review, but rather that they were verified by a letter from the Chief of Engineers who submitted them in the first place.

The Honorable Elmer B. Staats
March 13, 1972

In order that the Congress may properly legislate in these matters, I request that your office immediately initiate a detailed audit of the operations of the U. S. Corps of Engineers so that you may report to the Congress, through my office, the following:

1. The actual cost of the power facilities installed in federal reservoir projects in the southwest at the time such projects were placed in full commercial operation.
2. The cost of any electric facilities added to these projects and the dates of such additions, from the time they were placed in full commercial operation until December 31, 1970.
3. The actual operation and maintenance costs of producing electric power at such projects for each year from 1960 to 1970 inclusive.
4. The actual cost of the Southwestern Power Administration in transmitting and marketing electric power for each year from 1960 to 1970 inclusive.
5. The total financial requirements as determined by your office, including interest, of the cost of producing and transmitting electric power produced at the federal reservoir projects in the southwest for each year from 1960 to 1970 inclusive.
6. The total revenue available from the sale of electric power and related activities in connection with the electric power produced from the federal projects in the Southwest area for each year from 1960 to 1970 inclusive.
7. The indicated surplus or deficit of federal power operations in the area of the Southwestern Power Administration as determined by our office from the financial data herein requested for each year from 1960 to 1970 inclusive.

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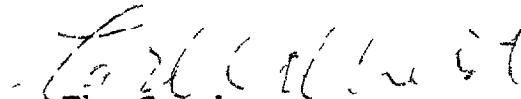
The Honorable Elmer B. Staats
March 13, 1972

The federal reservoir projects for which the above data is requested includes all reservoir projects for which the Southwestern Power Administration is designated as the marketing agent.

Further in this connection, your attention is directed to the fact that the Congress of the United States is only interested in the audited figures of actual costs and not arbitrary allocations of costs or computations which have been evolved through the application of administratively developed formulas.

You are requested to supply the Congress with this information as soon as possible.

Very truly yours,


The Speaker

CA/Rckh