

**AUDIT REPORT  
TO  
THE CONGRESS OF THE UNITED STATES**



LM087963

**CENTRAL VALLEY BASIN, CALIFORNIA  
WATER RESOURCES DEVELOPMENT PROGRAM  
BUREAU OF RECLAMATION  
DEPARTMENT OF THE INTERIOR  
AND  
CORPS OF ENGINEERS (CIVIL FUNCTIONS)  
DEPARTMENT OF THE ARMY  
FOR THE FISCAL YEAR ENDED JUNE 30, 1956**

**BY  
THE COMPTROLLER GENERAL OF THE UNITED STATES**

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THE COMPTROLLER GENERAL OF THE UNITED STATES**



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON 25

DEC 11 1957

B-125045

Honorable Sam Rayburn  
Speaker of the House of Representatives

Dear Mr. Speaker:

Herewith is our report on the audit of activities of the Bureau of Reclamation, Department of the Interior, and the Corps of Engineers (Civil Functions), Department of the Army, in the Central Valley Basin, California, for the fiscal year ended June 30, 1956. This audit was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

This report combines the related activities of the Bureau of Reclamation and the Corps of Engineers in the Central Valley Basin. Circumstances which prompted many of the recommendations contained in our report to the Congress dated December 21, 1956, on the audit of Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects in the Central Valley Basin for the fiscal year ended June 30, 1955, have not changed. In this report we are, therefore, repeating those recommendations. Among those are (1) consideration by the Congress of matters having to do with allocations to power and other purposes of construction costs of the projects and (2) recommendations to the Secretary of the Interior and the Chief of Engineers on establishing policies jointly for accounting and financial practices necessary to present fairly the financial position of and results from the Government's activities in the water resources development program of the Central Valley Basin.

A copy of this report is being sent today to the President of the Senate.

Sincerely yours,

Comptroller General  
of the United States

Enclosure

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REPORT ON AUDIT  
OF  
CENTRAL VALLEY BASIN, CALIFORNIA  
WATER RESOURCES DEVELOPMENT PROGRAM  
BUREAU OF RECLAMATION  
DEPARTMENT OF THE INTERIOR  
AND  
CORPS OF ENGINEERS (CIVIL FUNCTIONS)  
DEPARTMENT OF THE ARMY  
FOR THE FISCAL YEAR ENDED JUNE 30, 1956

The General Accounting Office has made an audit of activities of the BUREAU OF RECLAMATION, Department of the Interior, and the CORPS OF ENGINEERS (Civil Functions), Department of the Army, in the Central Valley Basin, California. This report combines the related activities of the Bureau of Reclamation and the Corps of Engineers in the Central Valley Basin. Our prior report dated December 21, 1956, on the Central Valley Basin for the fiscal year ended June 30, 1955, included comments only on the Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects in the Central Valley Basin. The scope of the audit work performed is described on page 68 of this report.

GENERAL COMMENTS

The Central Valley consists of the Sacramento and San Joaquin River valleys in California, extending from Mount Shasta in the north to the Tehachapi Mountains in the south, an area about 500

miles long and 120 miles wide. The Central Valley Project, authorized for construction, operation, and maintenance by the Bureau of Reclamation, has the objective of transferring water from the northern portion of the basin to the southern portion. This objective is achieved through controlled releases of water stored behind Shasta Dam in the Sacramento River and Folsom Dam in the American River, diversion through the Delta Cross Channel to the Tracy Pumping Plant near the confluence of the Sacramento with the San Joaquin River, and transport of water by gravity southward through the 117-mile Delta-Mendota Canal. Some of that water replaces water of the San Joaquin River impounded by the Friant Dam and diverted in part southward in the 153-mile Friant-Kern Canal. Other smaller dams and canals and distribution systems have been constructed or authorized for construction by the Bureau to serve irrigation and municipal water supply users in the Sacramento-San Joaquin service areas which contribute to the comprehensive plan for development of the water resources of the Central Valley Basin.

Power plants having name-plate capacity of 629,500 kilowatts and 762 miles of transmission lines have been constructed by the Bureau of Reclamation, and the energy is used in pumping operations or for sale as commercial power.

River and harbor and flood control acts have authorized construction by the Corps of Engineers of projects in the Central Valley, primarily for purposes of flood control and navigation. These projects are included in this report.

The Bureau of Reclamation is an activity of the Department of the Interior under the supervision of the Assistant Secretary of the Interior for Water and Power Development. Under authority delegated by the Secretary of the Interior, the management of the Bureau is vested in the Commissioner of Reclamation who is appointed by the President. The Commissioner, in directing and supervising the irrigation, power, and other programs of the Bureau, has three assistant commissioners and technical staffs organized into 12 divisions and offices located at Washington, D.C., and Denver, Colorado. The activities of the Bureau in the Central Valley Basin are carried out through the regional office at Sacramento, California.

The activities of the Corps of Engineers in the Central Valley Basin are carried out by the district office at Sacramento, California, in the South Pacific Division headquartered at San Francisco, California. The district offices of the Corps are operating offices headed by Army engineer officers as district engineers and carry out both military and civil works activities within defined areas under the general direction of division engineers. For civil works activities, divisions generally encompass one or more river basin or drainage areas. The division engineers are responsible to the Chief of Engineers, who, with his staff, is located at Washington, D.C.

## STATUS OF RECOMMENDATIONS IN PRIOR REPORT

Our report to the Congress dated December 21, 1956, on the audit of Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects in the Central Valley Basin, California, for the fiscal year ended June 30, 1955, contained comments and recommendations relating to our findings. Our audit for the fiscal year 1956 showed that the following fiscal year 1955 findings and recommendations had not been completely or satisfactorily resolved.

1. Allocation of construction costs of multiple-purpose projects.
2. Need for Secretarial approval of allocations for construction costs of the Central Valley Project.
3. Repayment of reimbursable costs of the Central Valley Project.
4. Negotiations for repayment contracts at Kings River and Isabella Reservoir Projects.
5. Revenues paid over to states not charged to projects.
6. Costs incurred by Corps of Engineers in preliminary surveys and investigations not included in project costs.
7. Wheeling rate under Transmission and Exchange Service Contract with Pacific Gas and Electric Company.
8. Operations under Sale and Interchange Contract with Pacific Gas and Electric Company.
9. Matters relating to accounting and financial policy.

The current status of these findings and recommendations is summarized in the sections of the report immediately following. More detailed discussion of the findings and recommendations is contained in the body of the report.

1. Allocation of construction costs  
of multiple-purpose projects

Laws forming the basis for the Federal water resources program do not provide policies or criteria to be applied for allocation of construction costs to multiple-purpose projects. The Department of the Interior and the Corps of Engineers have reached general agreement on allocation methods to be followed and have provided for an exchange of information and discussion at field location and between staff members in Washington. However, the agreement between the Bureau and the Corps has not resulted in firm cost allocations that would permit an evaluation of the financial administration of the multiple-purpose projects in the Central Valley Basin.

We believe that the lack of policies and criteria to be applied in making allocations of construction costs should be resolved by legislative action. Our report dated December 21, 1956, contained a recommendation that the Congress provide policies and criteria to be applied for making allocations of construction costs of multiple-purpose projects, the results of which would serve as a basis for establishing rates for commercial power and reimbursement from beneficiaries of other project purposes. Also, we recommended that the new legislation provide for (1) period for repayment of construction costs, (2) rates of interest, (3) subsidies to nonpower purposes, and (4) designation specifically of the agency to make the allocation where one agency is authorized to construct the project and another agency is authorized to market the products of the project. In addition, the Congress might wish

to clarify the role of the Federal Power Commission in these allocations for future multiple-purpose projects.

Although a substantial and increasing degree of agreement on methods and procedures among the three agencies concerned has been achieved, we continue to be of the opinion that the matter should be resolved by congressional action.<sup>1</sup>

Allocations of estimated construction costs to purposes of the projects in the Central Valley Basin are discussed on pages 19 through 24 of this report.

2. Need for Secretarial approval of allocations of construction costs of the Central Valley Project

The allocation of estimated construction costs of the Central Valley Project is preliminary and tentative and has been made to serve the administrative needs of the Bureau of Reclamation. The existing allocation of construction costs is not an allocation by the Secretary of the Interior that can be used to base and to review the Bureau's financial administration of the Central Valley Project.

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<sup>1</sup>In a letter dated October 2, 1957, the Assistant Chief of Engineers for Civil Works, Corps of Engineers, stated that it is believed pertinent to note accomplishments of Federal agencies toward resolution of these problems and to observe that, to the degree agreement on basic principles and methods of allocations is achieved, the matter of agency responsibility for allocations becomes of less importance.

By letter dated November 27, 1957, the Administrative Assistant Secretary of the Interior stated that a staff level working group comprising representatives of the Corps of Engineers, General Accounting Office, Federal Power Commission, and Department of the Interior had been recently established to cope with this problem.

In our report dated December 21, 1956, we recommended that the Secretary of the Interior take appropriate steps to have the allocation of construction costs of completed features of the Central Valley Project submitted to him for review and approval. Further, we recommended that the financial policies and practices of the Bureau of Reclamation at the Central Valley Project be based on this allocation until a Secretary-approved revision is made as a result of authorizations of additional features that affect the physical operation of existing features and have an impact on the operating characteristics of all features.

The reply of the Department of the Interior to this recommendation contained a statement that cost allocations in the feasibility reports for the Central Valley Project and new divisions thereof become official when the feasibility reports are adopted by the Secretary. However, subsequent to the allocations in the feasibility reports adopted by the Secretary, allocations of construction costs based on various criteria have been made by the Bureau of Reclamation to serve the administrative and financial needs of the Bureau. The changing criteria have not had specific Secretarial approval and have had a material effect on such matters as the annual recording of interest on the commercial power plant in service, allocation of operation and maintenance expense to the various project purposes, and the amount of interest on the unamortized balance of electric plant in service. Since these changes in criteria have not had official Secretarial approval, an evaluation of the financial administration of the Central Valley

Project on the basis of consistent application of criteria is not feasible.

Accordingly, we repeat our recommendation that the Secretary of the Interior take steps to have the allocation of construction costs of completed features of the Central Valley Project submitted to him for review and approval.<sup>1</sup>

Tentative allocation of total estimated construction costs of the Bureau of Reclamation in the Central Valley Basin is discussed on pages 19 through 22 of this report.

### 3. Repayment of reimbursable costs of the Central Valley Project

Reimbursable allocations of estimated construction costs at the Central Valley Project total \$762,863,917. This estimated cost includes \$65,998,917 for water-service distribution systems. The total reimbursable estimated construction costs represent about 93 percent of the total estimated project costs of \$823,330,917.

The reimbursable allocations include \$450,603,917, or about 59 percent, to irrigation. Of this amount, \$345,159,217 is repayable by water users and \$105,444,700 is repayable from commercial power and municipal water-supply revenues.

The amounts repayable by water users include estimates of revenues for water deliveries in the Sacramento River and Folsom service areas, which our prior report dated December 21, 1956,

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<sup>1</sup>The Administrative Assistant Secretary of the Interior in his letter dated November 27, 1957, stated that the Department's comments on this matter included in his letter of December 10, 1956, are still pertinent.

stated may not be realized until water-right questions are resolved or Federal construction of additional irrigation facilities are authorized by Congress and completed. We stated also in our prior report that litigation in the case of Rank v. Krug might result in reduction in deliveries of water and in revenues from the Friant-Kern and Madera service areas which are significant revenue-producing areas for water deliveries in the project.

Our review for the fiscal year 1956 showed no change in the Bureau policy with respect to inclusion of revenues from the Folsom and Sacramento River service areas, although the circumstances which prompted our comments had remained unchanged.<sup>1</sup>

Sources and status of repayment of reimbursable construction costs of the Central Valley Project are discussed on pages 25 through 33 of this report.

#### 4. Negotiations for repayment contracts at Kings River and Isabella Reservoir Projects

Repayment arrangements for the amounts allocated to irrigation at Kings River Project are the responsibility of the Bureau of Reclamation, and those at the Isabella Reservoir Project are the responsibility of the Corps of Engineers. Pending the

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<sup>1</sup>In the letter dated November 27, 1957, the Administrative Assistant Secretary of the Interior stated that, since the period covered by the report, a firm contract for American river water had been negotiated with the city of Sacramento with substantial revenues commencing in 1963; also, that the Department remains of the opinion that it is prudent to include in any financial reviews an estimate of revenues to be realized in the Sacramento River and Folsom service areas and that there is a market in California for the water which the Government has been developing in those areas.

execution of long-term repayment contracts, interim contracts for water service have been entered into with water users at both projects. Negotiations have been in progress since 1947 at the Kings River Project and since 1953 at the Isabella Reservoir Project; but as of the last date of our audit for the fiscal year 1956, contracts for repayment of construction costs had not been signed.

Since these contracts remained unsigned as of the last date of our audit, we are again recommending that the Secretary of the Interior and the Chief of Engineers make vigorous effort to consummate contracts for repayment of construction costs allocable to water conservation at these projects. Further, we are repeating our recommendation that, should these efforts fail, the matters be referred to the appropriate congressional committee for instruction as to further actions.<sup>1</sup>

Negotiations for repayment contracts at the Kings River and Isabella Reservoir Projects are discussed on pages 33 and 34 of this report.

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<sup>1</sup>The Assistant Chief of Engineers for Civil Works, Corps of Engineers, in his letter dated October 2, 1957, stated that review is being made to determine what steps should be taken to satisfactorily resolve the Isabella contract, and that meanwhile both the Department of the Interior and the Department of the Army were proceeding to request the Attorney General to review and to furnish his opinion on the question as to which Federal agency is legally responsible for entering into the repayment contracts covering irrigation benefits from Army projects and under which laws.

The Administrative Assistant Secretary of the Interior in a letter dated November 27, 1957, stated that divergent views have been held by the Department of the Interior and the Department of the Army as to which agency, as a matter of law, is charged with the final legal responsibility for the disposition of irrigation benefits from Army projects, and a conclusion had been recently reached by the two departments to request the Attorney General to consider the question and to render an opinion thereon.

## 5. Revenues paid to states not charged to projects

Under the provisions of the Flood Control Act of 1941, as amended (33 U.S.C. 701c-3), 75 percent of the moneys received during any fiscal year on account of the leasing of lands acquired for flood control, navigation, and allied purposes are returned to the states in which the lands are located. The gross revenues are credited to projects in the accounting records in the district offices of the Corps, but the payments to the states are disbursed and recorded at the Office of the Chief, Washington, D.C.

We recommended in our report dated December 21, 1956, that the revenues from reservoir lands paid to states be recorded in the accounts of the projects at district offices. In commenting on the recommendations contained in this report, the Acting Chief of Engineers of Civil Works did not comment specifically on this recommendation, but he stated that the importance of the matter was recognized and that efforts would be continued toward the developing of mutually satisfactory procedures as soon as possible.

Our audit for the fiscal year 1956 disclosed that procedures relating to accounting for revenues paid to states have not changed and, accordingly, the recommendation in our previous report is repeated.<sup>1</sup>

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<sup>1</sup>In a letter dated October 2, 1957, the Assistant Chief of Engineers for Civil Works, Corps of Engineers, stated that consideration of the matter by the Corps of Engineers has confirmed the need for recording the revenues from reservoir lands paid over to states in the accounts of projects at district offices and that the establishment and maintenance of the additional account was being undertaken.

Comments on these revenues are included on pages 35 and 36 of this report.

6. Costs incurred by Corps of Engineers in preliminary surveys and in investigations not included in project costs

Under the accounting procedures of the Corps of Engineers, costs incurred in conducting preliminary investigations and surveys are not included as a part of costs of the project when built. To provide for an adequate disclosure of total project costs and to permit consideration of all proper costs for allocation of total construction costs to purposes, we recommended that the Corps of Engineers include an appropriate share of these costs as costs of the project. In commenting on our recommendations contained in our previous report, the Acting Assistant Chief of Engineers for Civil Works did not comment specifically on this recommendation, but he stated that the importance of the matter was recognized and that efforts would be continued toward developing mutually satisfactory procedures as soon as practicable. Our audit for the fiscal year 1956 disclosed that the accounting procedures relating to costs incurred in conducting preliminary investigations and surveys have not changed and, accordingly, the recommendation in our previous report is repeated.<sup>1</sup>

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<sup>1</sup>The letter dated October 2, 1957, from the Assistant Chief of Engineers for Civil Works, Corps of Engineers, referred to the comments on investigation costs made by the Senate and House Conferees on the Public Works Appropriation Bill, 1958, contained in House of Representatives Report 1049, Eighty-fifth Congress; and stated that this matter is being considered further with the view of developing satisfactory procedures for the inclusion of such costs.

7. Wheeling rate under transmission and exchange service contract with Pacific Gas and Electric Company

Most power customers of the Bureau of Reclamation are served through the distribution facilities of Pacific Gas and Electric Company. The basic charge for this service is 1 mill per kilowatt-hour of energy wheeled by the Company on its system. Our prior report dated December 21, 1956, concluded that the rate of 1 mill per kilowatt-hour was high because it did not fairly equate the significance of the load wheeled or the distances over which wheeled. It was pointed out in our prior report that the fairness of the rate charge would have a material effect on the proposed San Luis unit of the Central Valley Project. Our audit for the fiscal year 1956 disclosed that no change in the wheeling rate had been negotiated.<sup>1</sup>

Wheeling rate under transmission and exchange service contract with Pacific Gas and Electric Company is discussed on pages 41 and 42 of this report.

8. Operations under Sale and Interchange Contract with Pacific Gas and Electric Company

Our report dated December 21, 1956, which in turn referred to prior reports, contained comments on a number of specific matters concerning operations under the Sale and Interchange Contract with the Company.

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<sup>1</sup>The letter dated November 27, 1957, from the Administrative Assistant Secretary of the Interior noted that the Pacific Gas and Electric Company had the only existing power wheeling facilities, and under congressional declaration it was mandatory for the Bureau to seek a reasonable wheeling contract with the Company rather than construct Federal transmission lines.

Our audit for the fiscal year 1956 showed that many of the findings previously reported on have not been completely or satisfactorily resolved. Those matters which were not completely or satisfactorily resolved relate to:<sup>1</sup>

- Project dependable capacity.
- Capacity available to the Company in excess of that billed.
- Credit for dependable capacity demand by preference agencies.
- Adjustment for losses in power transmission.
- Purchase of reactive requirements.

Operations under the Sale and Interchange Contract with Pacific Gas and Electric Company are discussed on pages 42 through 48 of this report.

#### 9. Accounting and financial policies

The financial statements included in this report present on a combined basis the assets and liabilities of all the projects of the Bureau of Reclamation and the Corps of Engineers in the Central Valley Basin. The financial statements have been prepared from the records of the Bureau of Reclamation and the Corps of Engineers. However, until construction cost allocations to power and other project purposes are firm and the Department of the Interior and the Corps of Engineers reach an agreement on certain accounting and financial policies, financial statements cannot be presented that fairly show the financial position and financial

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<sup>1</sup>In the letter dated November 27, 1957, the Administrative Assistant Secretary of the Interior reiterated the Department's prior comment that the Pacific Gas and Electric Company contract was believed to be the best contract that the Government could obtain for the sale of surplus power and in the best interests of the Government.

results of operations of the Central Valley Basin Water Resources Development Program. We recommended in our report dated December 21, 1956, that the Secretary of the Interior and the Chief of Engineers establish comparable accounting and financial policies and apply practices thereunder uniformly and consistently on:

1. Allocations to power and other purposes of joint costs and expenses of operating and maintaining multiple-purpose projects.
2. Provisions for depreciation on plant in service and allocation of the provisions on multiple-purpose plant to purposes.
3. Computation and recording of interest on the Federal investment in commercial power and municipal and industrial water-supply facilities.

The establishment jointly of comparable policies and effective application of them by each agency is necessary before financial statements can be fairly presented on the Government's water resource operations.

General agreement has been reached by the Department of the Interior, Corps of Engineers, Federal Power Commission, and concurred in by the General Accounting Office on the use of simple interest during construction and the proportionate method of accounting for the operation of joint facilities on multiple-purpose projects. The Corps of Engineers has reached decisions on certain of the other major accounting and financial policies, but decisions thereon had not been made by the Department of the Interior. Accordingly, the establishment of comparable policies by the Corps of Engineers and the Department of the Interior remains virtually unchanged in status from that in the previous report, and the recommendation is repeated in this report.

We recommended also that statements be designed specifically to show the status on repayment of the Federal investment based on memorandum records for scheduled repayment requirements. This recommendation also is repeated in this report.<sup>1</sup>

Accounting and financial policies are discussed on pages 59 through 67 of this report.

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<sup>1</sup>In the letter dated October 2, 1957, the Assistant Chief of Engineers for Civil Works, Corps of Engineers, stated that the Chief of Engineers was undertaking to form an interagency working group which will have as one of its objectives the development of mutually satisfactory procedures for handling the accounting matters with which the General Accounting Office was concerned and that the participation of the General Accounting Office in this effort had been invited.

The Administrative Assistant Secretary of the Interior in the letter dated November 27, 1957, stated that these matters together with other pertinent problems, are receiving current consideration of the Department of the Interior Financial Practices Committee. The views with respect to accounting and financial policies cannot be determined until such time as the Committee's recommendations have been considered by the Department.

## PRINCIPAL FINDING AND RECOMMENDATION OF CURRENT AUDIT

The principal finding and recommendation resulting from our audit for the fiscal year 1956 are discussed below.

### 1. Allocation of project dependable capacity to Bureau customers

Our review of power operating records for the fiscal year 1956 relating to the Central Valley Project (CVP) Power System and discussion with Bureau officials have not disclosed any specific and written criteria which provide for standardized and consistent allocations of Central Valley Project dependable capacity to existing and potential preference customers.

Our review for the fiscal year 1956, based upon project dependable capacity of 450,000 kilowatts, showed that there were about 117,500 kw of project dependable capacity which could be allocated to either existing or potential preference customers. The quantity of 117,500 kw is arrived at after deducting 22,500 kw of system reserve requirements indicated by an official of the Department of the Interior to be necessary for the CVP system. At December 31, 1956, the Bureau had active requests for power deliveries from preference agencies not then under contract and from existing preference customers. Also, our review showed that one customer had under contract about 56 percent of the project dependable capacity.

In view of the facts (1) that there are considerable quantities of reserve or unused capacity, (2) that one preference customer receives a very large quantity of project dependable capacity,

and (3) that there are several requests for allocation of project dependable capacity from potential and existing preference customers, we are recommending to the Secretary of the Interior that specific policies and procedures relating to the allocation of project dependable capacity to existing or potential customers of the Central Valley Project Power System be established for guidance of Bureau and preference agency officials.<sup>1</sup>

Allocation of project dependable capacity to Bureau customers is discussed on pages 49 and 50 of this report.

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<sup>1</sup>The letter dated November 27, 1957, from the Administrative Assistant Secretary of the Interior stated that the problem of allocation of additional power available from Folsom and Nimbus Power Plants is currently under study by the Bureau and the Department, and it is anticipated that the additional power will be placed under contract with Bureau customers in the near future.

ALLOCATION OF ESTIMATED TOTAL CONSTRUCTION COSTS  
TO PURPOSES

TENTATIVE ALLOCATION OF TOTAL ESTIMATED  
CONSTRUCTION COST OF BUREAU OF RECLAMATION  
PROJECTS IN THE CENTRAL VALLEY BASIN

The estimated total construction cost of Bureau of Reclamation projects in the Central Valley Basin at June 30, 1956, including the water distribution systems, is \$879,074,787. This amount does not include interest during construction of these projects.

The composition of the estimated total construction cost is as follows:

Central Valley Project:	
Trinity River Division	\$225,000,000
Shasta Division	181,530,528
American River Division	45,647,570
Folsom Dam and Reservoir constructed by	
Corps of Engineers	61,870,300
Sacramento River Division	56,544,000
Delta Division	85,616,220
Friant Division	151,610,674
Water rights and general property	11,894,000
Project investigations of abandoned work	892,625
Costs pending distribution	<u>2,725,000</u>
	<u>823,330,917</u>
Solano Project:	
Monticello Dam and Reservoir, Putah Diversion	
Dam and South Canal	37,246,000
Distribution system	12,701,000
Drainage system	<u>2,463,000</u>
	<u>52,410,000</u>
Orland Project:	
Plant in service	2,572,684
Plant abandoned	11,186
Rehabilitation	<u>750,000</u>
	<u>3,333,870</u>
Total estimated construction cost	<u>\$879,074,787</u>

Folsom Dam and Reservoir shown in the table above as a part of the American River Division of the Central Valley Project was transferred to the Bureau by the Corps for operation and maintenance on May 15, 1956. The amount of \$225,000,000 shown as the estimated construction cost of the Trinity River Division of the Central

Valley Project includes about 56 million dollars for Federal construction of the power facilities.

A tentative allocation of the estimated total construction cost has been made by the Regional Director, Region II, Bureau of Reclamation, to the following project purposes:

	<u>Together</u>	<u>Project</u>		
		<u>Central Valley</u>	<u>Solano</u>	<u>Orland</u>
<b>Reimbursable purposes:</b>				
Irrigation	\$502,004,087	\$450,603,917	\$48,066,300	\$3,333,870
Municipal and industrial water	20,517,700	17,419,000	3,098,700	-
Fish and wildlife	2,804,000	2,804,000	-	-
Commercial power	292,150,000	292,037,000	113,000	-
<b>Total</b>	<b>817,475,787</b>	<b>762,863,917</b>	<b>51,278,000</b>	<b>3,333,870</b>
<b>Nonreimbursable purposes:</b>				
Flood control	36,816,000	35,684,000	1,132,000	-
Navigation	12,940,000	12,940,000	-	-
Fish and wildlife	11,628,000	11,628,000	-	-
Recreation	215,000	215,000	-	-
<b>Total</b>	<b>61,599,000</b>	<b>60,467,000</b>	<b>1,132,000</b>	<b>-</b>
<b>Total estimated construction cost</b>	<b>\$879,074,787</b>	<b>\$823,330,917</b>	<b>\$52,410,000</b>	<b>\$3,333,870</b>

The above allocation of Central Valley Project cost to irrigation includes \$65,998,917 for distribution systems repayable through construction cost repayment contracts (section 9(d) contracts) by irrigation districts. Also, included in the Central Valley Project reimbursable fish and wildlife allocation is an amount of \$67,000 representing a pipeline for the California State fish hatchery at Friant Dam paid for by the State of California.

The estimated construction costs were allocated to purposes by the Bureau of Reclamation through the use of the separable costs--remaining benefits method, which is described in appendix B, page 109 of this report. Allocations to nonreimbursable fish and wildlife and to recreation were limited to specific costs, no joint costs being assigned to these purposes.

In prior years the cost of the Central Valley Project Power System which is related to its use for irrigation and municipal water pumping, as well as for commercial power purposes, could be identified in the Bureau's tentative allocations of power construction cost. Currently, the allocation of power construction cost between the commercial power and irrigation and municipal water pumping purposes is not readily determinable. The application of the separable costs--remaining benefits method results in the direct allocation of project costs to the end purposes of the

project based on the benefits accruing from each purpose, as limited by the alternative cost for each purpose.

Recommendation to the Secretary of the Interior

Our audit report to the Congress on the Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects, Bureau of Reclamation, Department of the Interior, and Corps of Engineers (Civil Functions), Department of the Army, for the fiscal year ended June 30, 1955, contained the following recommendation:

"The allocation of estimated construction cost of Central Valley Project is preliminary and tentative and has been made to serve the administrative needs of the Bureau of Reclamation. The existing allocation is not an allocation by the Secretary of the Interior that can be used to base and to review the Bureau's financial administration of the Central Valley Project.

"We recognize that authorization of additional features of the Central Valley Project may have an impact on the physical operation of existing features and result in changes in the operating characteristics of all features. However, we believe that the changes brought about by the construction and placing into operation of new features through additional authorizations can be given consideration through revision of official Secretarial allocations. During the periods within the additional authorizations, the financial practices should be based on an approved fixed allocation for the features in operation, rather than tentative allocations subject to continuing changes. Accordingly, we recommend that the Secretary take steps to have the allocation of construction costs of existing features of Central Valley Project submitted to him for review and approval. We recommend further that the financial policies and practices of the Bureau of Reclamation be based on this allocation until such time as a Secretary-approved revision is made."

The reply to this recommendation by the Administrative Assistant Secretary for the Department of the Interior, dated December 10, 1956, recognizes the desirability of fixing cost allocations but states that the fixing of allocations has been impractical because of enlarged project scope, changing legislative requirements, and reevaluation of project accomplishments. The reply stated also that a cost allocation which serves as a basis for feasibility determination in departmental planning of proposed additions to the Central Valley Project becomes official when the feasibility reports are adopted by the Secretary.

Between these allocations which are contained in feasibility reports adopted by the Secretary, allocations must be made to serve administrative and financial needs. For example, the annual recording of interest on the commercial power plant in service requires the allocation of project cost to project purposes. Change in assumptions such as the cost of an alternative single-purpose power project, or whether actual operation and maintenance expense will be allocated to non-revenue-producing purposes or all such expense will be borne by the revenue-producing purposes, will affect the amount of interest on the unamortized balance of electric plant in service.

Our review for the fiscal year 1956 showed that changes such as those indicated above occurred and other considerations which prompted the above recommendation remained substantially unchanged. Accordingly, the recommendation is repeated.

ALLOCATION OF TOTAL ESTIMATED CONSTRUCTION COST  
OF CORPS OF ENGINEERS (CIVIL FUNCTIONS) PROJECTS  
IN THE CENTRAL VALLEY BASIN

As at June 30, 1956, the latest approved estimate of Federal construction cost of authorized Corps projects in the Central Valley Basin was \$460,179,000. These estimates do not include interest during construction.

The composition of the approved estimate of total Federal construction cost of \$460,179,000 and the classification by project purposes are as follows:

<u>Projects</u>	<u>Multiple- purpose</u>	<u>Single-purpose</u>	
		<u>Flood control</u>	<u>Navigation</u>
Authorized projects completed or under construction:			
Big Dry Creek Reservoir	\$ -	\$ 1,370,000	\$ -
Farmington Reservoir	-	3,687,000	-
Merced County stream group	-	2,764,000	-
Pine Flat Reservoir	40,900,000	-	-
Isabella Reservoir	21,093,000	-	-
Tuolumne River (including Cherry Valley Reservoir)	-	12,340,000	-
Sacramento River and tributaries:			
Active portions	-	20,500,000	-
Deferred for restudy or inactive portion	-	14,550,000	-
Sacramento River flood control	-	66,100,000	-
Lower San Joaquin River and tributaries	-	11,400,000	-
Sacramento River Deep Water Ship Channel	-	-	39,500,000
Sacramento River Shallow-Draft Channel	-	-	960,000
San Joaquin River, Stockton Deep Water Ship Channel	-	-	14,000,000
<b>Total</b>	<b>\$249,164,000</b>	<b>61,993,000</b>	<b>132,711,000</b>
Authorized projects--construction not started:			
Success Reservoir	14,400,000	-	-
Terminus Reservoir	21,000,000	-	-
Black Butte Reservoir	17,000,000	-	-
Hogan Reservoir	18,300,000	-	-
Iron Canyon (Table Mountain) Reservoir	77,200,000	-	-
New Melones Reservoir	58,700,000	-	-
American River levee	-	2,440,000	-
Middle Creek	-	1,270,000	-
Bear Creek Channel	-	705,000	-
<b>Total</b>	<b>211,015,000</b>	<b>206,600,000</b>	<b>4,415,000</b>
<b>Total together</b>	<b>\$460,179,000</b>	<b>\$268,593,000</b>	<b>\$137,126,000</b>
			<b>\$54,460,000</b>

Although Folsom Dam and Reservoir, a multiple-purpose project, was constructed by the Corps, the project estimated construction cost is not included in the total cost shown in the table above because Folsom Dam and Reservoir was transferred to the Bureau of Reclamation for operation and maintenance on May 15, 1956. The total estimated construction cost is shown in the table of Bureau projects appearing on page 19 of this report.

Power generation has not been planned in the construction of the authorized multiple-purpose projects, with the exception of the Iron Canyon Project. Construction of Iron Canyon Reservoir, however, has been deferred indefinitely because the construction of the project would inundate valuable agricultural land and block salmon runs. Construction contracts on the Terminus and Success Reservoir Projects had not been awarded at the time of our audit. Construction of the American River levee has been started subsequent to June 30, 1956.

Approved allocations of multiple-purpose project costs have been made for Pine Flat and Isabella Dams and Reservoirs which were substantially completed and placed in operation during fiscal year 1954. (See appendix A, pp. 102 through 104, of this report.)

Allocations of construction costs  
of Pine Flat and Isabella Reservoir Projects

Total estimated construction costs and allocations to purposes at June 30, 1956, are summarized for the two projects, as follows:

	<u>Pine Flat</u>		<u>Isabella</u>	
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Reimbursable purpose:				
Irrigation	<u>\$14,250,000</u>	<u>35</u>	<u>\$ 4,573,000</u>	<u>22</u>
Nonreimbursable purposes:				
Flood control	19,250,000	47	15,469,000	73
Power	2,260,000	6	1,051,000	5
Channel improvements	<u>607,000</u>	<u>1</u>	<u>-</u>	<u>-</u>
Total	<u>22,117,000</u>	<u>54</u>	<u>16,520,000</u>	<u>78</u>
Unallocated increase in estimated construction cost	<u>4,533,000</u>	<u>11</u>	<u>-</u>	<u>-</u>
Total estimated cost	<u>\$40,900,000</u>	<u>100</u>	<u>\$21,093,000</u>	<u>100</u>

The allocation of Pine Flat Dam and Reservoir costs was made in 1946 although construction by the Corps did not begin until April 1947. This represents a departure from the general rule by the Corps of making allocations when each project is substantially completed. As a result, the increase in construction costs of \$4,533,000 over the original amount allocated has not been allocated to the reimbursable and nonreimbursable purposes.

With respect to the amounts allocated to each of the project purposes, correspondence and studies we have reviewed indicated that both the Corps of Engineers and the Bureau of Reclamation agree that the irrigation benefits to be realized from the Kings River Project (which included Pine Flat Dam and Reservoir) exceed the flood control benefits. As can be seen from the table above, 47 percent of the estimated construction costs are allocated to flood control and 35 percent are allocated to irrigation.

The latest annual benefit estimates presented to Congress by the Corps for the Pine Flat Dam and Reservoir, contained in the planning report prepared in January 1953, are as follows:

	<u>Annual benefits</u>	<u>Percent</u>
Irrigation	\$2,656,000	51
Flood control	2,399,000	47
Power	<u>77,000</u>	<u>2</u>
Total	<u>\$5,132,000</u>	<u>100</u>

The amounts shown as allocated to power in the table above are classified as nonreimbursable since no definite repayment arrangements now exist to repay the amounts allocated to power. The cost of Pine Flat Dam allocated to power represents the cost of power penstocks only, and no portion of the joint costs of the dam is included in the amount even though one operational use of Pine Flat Dam is to reregulate power releases from upstream hydroelectric power plants of the Pacific Gas and Electric Company. We have been informed by the Corps of Engineers that the operation to reregulate power releases will not be allowed to reduce the flood control and irrigation benefits of the project and that the power company is paying for the reregulating benefits under the terms of a permanent contract with the Department of the Army.

In contrast to the allocation of Pine Flat estimated construction costs, the allocation of Isabella cost is based on the latest approved estimate of construction costs and was made after the construction of the project was completed and placed in operation. The estimated annual benefits resulting from the operation of Isabella Reservoir as determined by the Corps are:

	<u>Annual benefits</u>	<u>Percent</u>
Flood control	\$1,353,000	81
Irrigation	261,000	16
Power	<u>60,000</u>	<u>3</u>
	<u>\$1,674,000</u>	<u>100</u>

REPAYMENT OF CONSTRUCTION COSTS

ALLOCATED TO REIMBURSABLE PURPOSES

SOURCES AND STATUS OF REPAYMENT OF REIMBURSABLE  
COSTS OF CENTRAL VALLEY PROJECT

Reimbursable allocations of estimated construction costs of Central Valley Project, anticipated repayments, and repayments through June 30, 1956, are as follows:

<u>Purpose</u>	<u>Tentative allocation</u>	<u>Anticipated repayment</u>	<u>Repayment through June 30, 1956</u>
Power	<u>\$292,037,000</u>	<u>\$397,565,000</u>	<u>\$60,930,519</u>
Irrigation water users:			
Water service	384,605,000	279,160,300	1,620,968
Distribution system repayment	<u>65,998,917</u>	<u>65,998,917</u>	<u>84,412</u>
Total	<u>450,603,917</u>	<u>345,159,217</u>	<u>1,705,380</u>
Municipal water users	17,419,000	17,576,400	-977,243 <sup>a</sup>
Fish and wildlife man- agement use	<u>2,804,000</u>	<u>2,563,300</u>	<u>66,692</u>
Total	<u>\$762,863,917</u>	<u>\$762,863,917</u>	<u>\$61,725,348</u>

<sup>a</sup>Excess of costs over revenues before capital amortization to June 30, 1956. (See page 32.)

The amount shown as anticipated repayment from commercial power is based on the assumption of Federal construction of Trinity River Division power facilities. The act of August 12, 1955 (69 Stat. 719), which authorized the construction of the Trinity River Division provided that engineering studies and negotiations should be undertaken with the purpose of determining the feasibility and possibility of partnership construction of the power facilities by a non-Federal agency. On February 12, 1957, the Secretary of the Interior submitted to Congress a proposal of the Pacific Gas and Electric Company (PG&E) for joint participation in the construction of the Trinity River Division. The Secretary advised that the proposal of PG&E was acceptable generally and recommended approval by the Congress, subject to thorough consideration of the provisions for severance damages in the event the United States should exercise its election to take over the power facilities at the end of the proposed contract period. If the partnership proposal is adopted, the anticipated repayment from the power purpose might be materially changed.

The repayment amounts through June 30, 1956, for the commercial power and municipal water purposes of the project have not been reduced by an appropriate amount for the cost of interest during construction. However, the Bureau has provided for interest at 3 percent on the investment in commercial electric plant and 2.5 percent on the investment in municipal water plant which were in service at June 30, 1956.

Repayment of construction costs from power revenues

Construction costs of the Central Valley Project to be repaid for power revenues have been estimated by the Bureau of Reclamation as follows:

Construction costs allocated to:	
Commercial power	\$292,037,000
Irrigation	105,287,300
Fish and wildlife	<u>240,700</u>
Total	<u>\$397,565,000</u>

Based on these estimates, power revenues will repay 52 percent of the total estimated reimbursable allocations of construction costs of Central Valley Project, 23 percent of the construction costs allocated to irrigation, excluding irrigation distribution systems, and 9 percent of the construction costs allocated to the reimbursable fish and wildlife purpose.

The Reclamation Project Act of 1939 does not provide a specific period of years for repayment of construction costs allocated to commercial power. An administrative policy has been established by the Department of the Interior for repayment of these costs within 50 years from the date the facilities are placed in service. The power system average rate and repayment study for the Central Valley Project at June 30, 1956, shows repayment of the power investment of \$292,037,000 by 1993, or 50 years from initial operations of power features in the Central Valley Project (1943) and about 30 years from estimated completion date of construction of all power features in the project (1963).

Particulars on the repayment of the investment in power at the Central Valley Project at June 30, 1956, as shown by the records of the Bureau of Reclamation are:

	<u>Cumulative to June 30, 1956</u>	<u>Fiscal year ended June 30</u>	
		<u>1956</u>	<u>1955</u>
Electric plant in service (note a)	<u>\$134,283,000<sup>b</sup></u>	<u>\$134,283,000<sup>b</sup></u>	<u>\$99,519,420</u>
Revenues for repayment:			
Net revenues before interest on plant in service	70,007,432	6,984,655	5,455,936
Less interest due the United States on plant in service (note c)	<u>9,076,913</u>	<u>1,325,647</u>	<u>1,024,246</u>
Total	<u>\$ 60,930,519</u>	<u>\$ 5,659,008</u>	<u>\$ 4,431,690</u>
Percent of plant in service repaid at June 30, 1956	<u>45</u>		

<sup>a</sup>Includes a proportionate amount of construction cost of multiple-purpose feature construction cost allocated to electric plant in service through the separable costs--remaining benefits method of allocation.

<sup>b</sup>Includes Folsom-Nimbus power facilities, the cost of which are not included in the June 30, 1955, amount of \$99,519,420.

<sup>c</sup>Interest is computed at the rate of 3 percent on the unpaid balance of electric plant in service.

The Bureau of Reclamation has the responsibility of fixing commercial power rates for the Central Valley Project at a level which will, over the administratively determined repayment period, ensure repayment of the investment in commercial power and the investment in irrigation activities assigned for repayment from commercial power revenue. At June 30, 1956, the Bureau had not prepared scheduled payout requirements for comparison with realized returns. (See page 67.)

#### Repayment of construction costs allocated to irrigation

Construction costs allocated to irrigation are repayable by water users based on capacity to repay, and the repayment of the balance of irrigation construction costs is made from excess power and municipal water-supply revenues. Repayments of construction costs by irrigators are made under construction cost repayment contracts and water-service contracts.

The probable repayment of construction costs tentatively allocated to irrigation has been estimated by the Bureau of Reclamation, at June 30, 1956, as follows:

Repayment by irrigation water users through water-service rates	<u>\$279,160,300</u>
Repayment from other sources:	
Power revenues	105,287,300
Municipal water supply	<u>157,400</u>
Total	<u>105,444,700</u>
Total	<u>\$384,605,000</u>

In addition, the irrigation water users will pay the estimated cost of distribution systems totaling \$65,998,917 at June 30, 1956, under construction cost repayment contracts.

Water-service operations at the Central Valley Project are classified in 12 water-service areas with rates for water deliveries ranging from \$1.50 an acre-foot at river bank to \$3.50 an acre-foot for firm supply delivered to distribution systems. Long-term service contracts for Central Valley Project water have been executed with 34 agencies at June 30, 1956, and negotiations with 38 agencies were in various stages of completion.

Contracts totaling \$62,974,984 for the construction of distribution systems have been executed at June 30, 1956, with 12 water user organizations, but 4 contracts had not been approved by the courts and 2 were in litigation. To June 30, 1956, costs incurred for construction of the distribution systems totaled \$42,266,911.

At June 30, 1956, most of the distribution systems had not been completed and transferred to the irrigation districts for operation. In addition, development periods provided in the contracts have not expired. For these reasons installments have matured (\$84,412.50) on only one contract, the Lindsay-Strathmore Irrigation District, Lindsay, California, at June 30, 1956.

Estimated revenues from certain irrigation service areas not assured.

Our audit report to the Congress on the Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects, Bureau of Reclamation, Department of the Interior, and Corps of Engineers (Civil Functions); Department of the Army, for the fiscal year ended June 30, 1955, contained the following general comment with respect to the realization of estimated revenues from the Sacramento River and Folsom service areas:

"Estimates of revenues for repayment of irrigation costs are included from the Sacramento River and Folsom service areas which will not be realized until water-right questions are resolved or construction of additional irrigation facilities is authorized by the Congress and completed. Failures to realize these revenues at the time and in the amounts shown by financial analysis and repayment studies would extend the repayment period upon which the Bureau analyses are based or would require further call upon power revenues to repay irrigation construction costs."

During our audit for the fiscal year 1956, we determined the current policy and practice of the Bureau of Reclamation with respect to estimating revenues from these service areas. Comments on the current estimates of revenues from the Sacramento River and Folsom service areas are included in the following sections:

Revenue from the Sacramento River service area--The Bureau of Reclamation financial analyses and repayment studies upon which our reviews of the estimates of Sacramento River service area revenues for fiscal years 1956 and 1955 were based showed the following pertinent information:

	<u>Fiscal year ended June 30</u>		<u>Increase (-decrease)</u>
	<u>1956</u>	<u>1955</u>	
Estimated annual revenue	\$ 1,000,000	\$ 1,000,000	\$ -
Total estimated revenues during repayment period	54,000,000	57,000,000	-3,000,000
First year revenues estimated to accrue	1960	1957	3 years
Number of estimated revenue years	54	57	-3 years
Year of termination of repayment period	2013	2013	-

In our prior report we stated that the revenues in the amount estimated by the Bureau were doubtful of realization principally for the following reasons:

1. The actual realization of revenues has continually been postponed beyond the estimated accrual date. The March 1954 study, for example, showed revenues accruing during fiscal year 1955 in the amount of \$750,000 and continuing annually thereafter in the amount of \$1,442,500. The reason that these revenues did not accrue in the years which the Bureau estimated such revenue would accrue was due to the fact that the water users' and Bureau's relative rights to water in the Sacramento River had not been finally resolved.

2. The Bureau was continuing the "trial run" agreement which had been arranged between it and agencies of the State of California. The objective of the agreement was the delineation of relative water rights, which would be a prerequisite to payment to the Bureau for use of Sacramento River water. Estimates on the length of time required to settle the question of relative rights were extremely vague.
3. Rate and quantity factors which would provide support for the estimate of the revenues were not available.

In the reply by the Department of the Interior to our prior report, the position was taken that, although collection of revenue had not corresponded with the estimated realization of this revenue, it could not be maintained that the revenues from the Sacramento River would be permanently lost. Also, it was stated that a longer repayment period might be required or greater revenues than anticipated for some areas may offset losses in others.

The most recent repayment analysis, upon which we based our review for fiscal year 1956, and which represents the Bureau's estimate of anticipated revenues from all irrigation service areas, includes revenue from the Sacramento River service area in the amounts as shown in the table above. As stated in our prior report for the fiscal year ended June 30, 1955, the estimate of \$1,000,000 annually beginning with the fiscal year 1960 is not supported by data showing the quantity of water expected to be delivered or the rate per acre-foot expected to be charged for such deliveries. Until such time as this information is obtained, we believe that the realization of revenue from the Sacramento River service area in the amounts shown must be classified as doubtful.

Revenue from the Folsom service area--In our prior report it was stated that irrigation water-service revenue at the rate of \$1.50 an acre-foot was estimated by the Bureau to accrue from the Folsom service area, although conveyance facilities, which would allow the realization of the revenue value of water service in this area, had not been authorized for construction by the Congress, nor had the Bureau included in the cost to be repaid the estimated construction cost of such a conveyance system. The Bureau's average rate and repayment analysis, upon which we based our review for fiscal year 1956, again shows revenue at the rate of \$1.50 per acre-foot in the same circumstances as indicated above.

In the reply of the Department of the Interior to our prior report, the following positions were taken:

1. The rate represents the value of the water at river bank.
2. There are applications for about 9,000,000 acre-feet of water on the American River, of which 1,000,000 acre-feet

can be supplied by Folsom. Therefore there is a market for the water.

3. The water could be sold in other service areas if the Folsom south unit were not constructed.

Since the comments included in our prior report take into consideration each of these positions, our comments are repeated in the following paragraphs:

"Regional officials of the Bureau informed us during the audit that the rates for delivery of water at the river bank below Folsom Dam are the best estimate that can be given currently. However, two circumstances would appear to have a bearing on the reasonableness of this assumption.

"1. A formal or informal agreement with the Folsom service area water users has not been consummated which would embrace a plan wherein the water users would be required to furnish their own capital to construct a conveyance system. Without a conveyance system for the distribution of water to the lands to be irrigated, water deliveries at river bank would have no value to the water users as a usable water resource even though a value as a potential water resource exists.

"2. The design of Folsom and Nimbus Dams consistent with the comprehensive plan for the development of the Central Valley Project contemplates Federal construction of the Folsom Canal and related facilities. A preliminary report by the the Regional Director of Region 2 of the Bureau on 'Folsom south unit,' dated February 1955, has been prepared. Although this report is preliminary and subject to revision, it is indicative of Bureau planning in the Central Valley Project with respect to the Folsom south unit.

Since the revenues from the Folsom service area included as a factor in the repayment of the total reimbursable irrigation construction cost could not be obtained without additional capital investment, it can be concluded that, unless the Folsom south unit is authorized by the Congress and constructed by the Bureau, the revenues shown from the Folsom service area would have to be obtained from excess commercial power revenues.

"Bureau officials have stated that, without constructing the water-service facilities, the Folsom water

can be marketed in the San Joaquin service area through existing Tracy pumps and the Delta-Mendota Canal. This observation presumes that the users in the Folsom service area could be by-passed in favor of the Delta-Mendota service area. However, it would seem that before the Bureau could deliver residual or surplus water to the Delta-Mendota service area, satisfaction of the American River water rights in the Folsom service area would be necessary."

Construction of Sacramento canals unit  
without repayment contracts

In our prior report we stated that construction of the Sacramento canals unit had started even though repayment contracts had not been finally negotiated, Reclamation policy requires that water-service contracts be signed in advance of construction, and the Congress has expressed concern over the length of time required to negotiate and sign irrigation project repayment contracts. To June 30, 1955, costs totaling \$2,901,646 had been accumulated for construction of this unit.

During fiscal year 1956, additional costs in the amount of \$1,419,269 were accumulated, bringing the total accumulated cost to \$4,320,915 at June 30, 1956. During our current audit, we were informed by regional officials that repayment contracts had not been finally negotiated and signed as of June 30, 1956.

In the reply of the Department of the Interior to our prior report, it is stated that the Congress has been informed of the difficulties the Bureau has encountered in negotiating repayment contracts after construction of facilities is completed and that construction work is being brought to a standstill after completion of construction under existing contracts.

Status of repayment of construction costs  
allocated to municipal water supply

Five water-service areas in the Central Valley Project are expected to provide revenues from municipal water-supply users totaling \$17,576,400 for repayment of construction costs. This amount is applied to repayment of the allocation to municipal water supply of \$17,419,000, and the balance of \$157,400 will be used to assist in repaying construction costs allocated to irrigation which irrigators are unable to repay. In addition, the rates for sales of water to municipal water-supply users include interest on the unamortized investment allocated to municipal water supply at 2.5 percent per annum. On this basis, Central Valley Project's financial records of municipal and industrial water service show a deficit of \$977,243 at June 30, 1956. This deficit will have to be absorbed before any amounts can be shown as repayment of the construction cost investment in municipal water supply.

Estimates of operating revenues from municipal and industrial water supply include Folsom service area beginning in 1960. Conveyance facilities for this service have not been authorized. (See pages 30 and 31.)

#### NEGOTIATIONS FOR REPAYMENT CONTRACTS AT THE KINGS RIVER AND ISABELLA RESERVOIR PROJECTS

Provisions of authorizing legislation for construction of Kings River and Isabella Reservoir Projects require payment to the United States by the state or other responsible agency either in lump sum or in annual installments for water conservation, when used. Contracts for repayments at these projects have been under negotiation with the project beneficiaries by the Corps of Engineers and the Bureau of Reclamation for a number of years, but at neither project had the contracts been executed at completion of the audits in January 1957.

On pages 48 through 51 of our prior report, we commented on the status of repayment contract negotiations relating to these two projects. The significance of these comments is summarized as follows:

1. Negotiation of a long-term repayment contract for the Kings River Project, which is the responsibility of the Bureau of Reclamation, began in 1947. Negotiation of the construction cost to be repaid is based on the amount of \$14,250,000, although construction cost estimates have increased by \$4,533,000 over the amount on which the \$14,250,000 is based.
2. The Kings River Project has been in operation since 1954, and interim contracts for water service have been executed. The disposition of the interim revenues, which to June 30, 1955, totaled \$705,000, had been unsettled. The issue to be negotiated was whether the interim revenues should be applied to repayment of the amount of \$14,250,000 or to the increased construction costs of \$4,533,000. The total revenues accrued to June 30, 1956, were \$1,249,000.
3. Revenues actually received to June 30, 1955 (\$595,000), had been returned to the Treasury as a reclamation fund deposit (symbol 145000). Since the Kings River Project is not a Bureau of Reclamation project, the deposit to the reclamation fund is questionable. The total revenue deposited to the reclamation fund to June 30, 1956, was \$1,194,000.<sup>1</sup>

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<sup>1</sup>In a letter dated April 22, 1957, the Administrative Assistant Secretary of the Department of the Interior stated that revenues received by the Bureau of Reclamation in connection with contracts for irrigation service from Pine Flat Dam will be deposited in the general fund of the Treasury as a miscellaneous receipt rather than to the reclamation fund.

4. Negotiation of a long-term contract for the Isabella Reservoir Project, which is the responsibility of the Corps of Engineers, is based on a tentative, rather than final, allocation in the amount of \$4,573,000.
5. Isabella Reservoir Project has been in operation since 1954 but interim revenues, which to June 30, 1955, amounted to \$115,629, have been deposited to the general fund of the Treasury. The amount of revenue which accrued after January 1, 1956, was to be applied to repayment of the amount of \$4,573,000 if a long-term contract had been signed by June 30, 1956.

We were informed during our current audit that an extension of the interim water-service contract for the Kings River Project provided that interim revenues for the years 1956 and 1957 would be applied to the repayment of the amount of \$14,250,000 provided that a long-term contract was signed.

At the completion of our audit in January 1957, long-term contracts for the Kings River and Isabella Reservoir Projects had not been signed.

Recommendations to the Secretary of the Interior  
and the Chief of Engineers

We believe that the repayment obligations of the beneficiaries of the conservation purpose at the Kings River and Isabella Projects should be finally resolved. The projects have been serving the conservation purpose for 3 years, but the repayment arrangements have not been completed, although negotiations have been carried on for many years. The financial interests of the United States are not served by continuing delays in bringing these contracts to agreement and execution.

Accordingly, we recommend that the Secretary of the Interior and the Chief of Engineers make vigorous efforts to consummate contracts for repayment of costs properly allocable to water conservation at these projects. We further recommend that, should efforts fail to reach agreement on and execution of contracts for repayment arrangements, the matters be referred to the appropriate congressional committees for instructions as to further actions.

## INCIDENTAL REVENUES OF THE CORPS OF ENGINEERS

Revenues are derived by the Corps of Engineers from reservoir projects represented principally by rentals from the leasing of reservoir lands for farming and grazing purposes. Other revenues are derived from the concessions and privileges in the project areas. The aggregate of these revenues are shown as reductions of expenses for operating and maintaining the facilities.

Under the provisions of the Flood Control Act of 1941, as amended (U.S.C. 701c-3), 75 percent of the moneys received during any fiscal year on account of the leasing of lands required for flood control, navigation, and allied purposes are to be returned to the state in which the lands are located. The moneys so returned are to be used for the benefit of public schools, public roads, and similar purposes within the counties in which the lands are situated. The amounts returned to the states are not entered in the accounting records at the district offices but are disbursed and recorded at the Office of the Chief, Washington, D.C.

Amounts derived from the leasing of lands at the Corps projects cumulative to June 30, 1956, are summarized:

<u>Project</u>	<u>Total revenues credited to project</u>	<u>Returnable to state (75 percent)</u>	<u>Revenue retained by Federal Government (25 percent)</u>
Kings River	\$ 63,924	\$ 47,943	\$15,981
Isabella Reservoir	81,611	61,208	20,403
Farmington Reservoir	1,210	908	302
Folsom Reservoir	<u>4,822</u>	<u>3,616</u>	<u>1,206</u>
Total	<u>\$151,567</u>	<u>\$113,675</u>	<u>\$37,892</u>

On the above basis, the net revenues from operation and maintenance of facilities have been improperly increased by \$113,675.

### Recommendation to the Chief of Engineers

Our report dated December 21, 1956, on the audit of Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects, for the fiscal year ended June 30, 1955, contained a recommendation as follows:

"To show properly the costs of operating and maintaining the reservoir projects and to provide for the recovery of all proper costs in producing power, we recommend that the revenues from reservoir lands returned

and returnable to states under the provisions of the Flood Control Act of 1941, as amended, be recorded in the accounts of the projects at the district offices."

The Assistant Chief of Engineers has stated that the importance of matters having to do with procedures to be followed in cost and financial accounting for projects with power has been recognized and efforts will be continued to resolve them as soon as practicable.

## ELECTRIC PLANT CONSTRUCTION AND OPERATION

Project authorizations to the Bureau of Reclamation in the Central Valley Basin have provided for construction of hydroelectric power plants for generation of electric energy as a feature at reservoir projects. Although by law the power program is generally subordinate to other purposes at multiple-purpose projects, it has developed into a significant activity from a construction and operating point of view. Operation of these plants is generally governed by the storage and release of water for other project purposes with the generation of hydroelectric energy, a product derived from the water releases for the other purposes. A part of the energy is used for pumping water for irrigation and municipal water-supply purposes. The responsibility for operation of power plants at Federal reservoirs in the Central Valley, as well as marketing the power which is excess to project water-service pumping needs, has been placed with the Bureau of Reclamation.

The authorized Federal hydroelectric power plant construction program in the Central Valley in operation at June 30, 1956, is comprised as follows:

<u>Power plant</u>	<u>Initial operation of first unit</u>	<u>Number of generating units</u>	<u>Name-plate capacity (kilowatts)</u>
Shasta	1944	7	379,000
Keswick	1949	3	75,000
Folsom	1955	3	162,000
Nimbus	1955	<u>2</u>	<u>13,500</u>
Total		<u>15</u>	<u>629,500</u>

The act of August 12, 1955 (69 Stat. 719), authorized for construction the Trinity River Division with a purpose of diverting excess waters from watersheds outside the basin for use in the Central Valley. Incident to this development, the Bureau planned an installation of 233,000 kilowatts of hydroelectric generating capacity to be integrated with the Central Valley Project Power System. However, the act provides for engineering studies and negotiations with a non-Federal agency on proposals for purchase of falling water that are to be concluded and submitted to Congress for approval within 18 months following the enactment of the act.

In accordance with the provisions of the act, a report on the negotiations and studies, together with the recommendation of the Secretary of the Interior, was submitted to Congress on February 12, 1957. (See p. 25.) This report contains no extended comments on the proposed partnership agreement.

In addition to the hydroelectric power plants in operation, the Central Valley Project Power System includes transmission

lines which are in operation by the Bureau. No additional transmission lines were under construction or placed in operation during 1956. At June 30, 1956, the number of circuit miles of transmission lines by transmission voltage was:

<u>Kilovolts</u>	<u>Circuit miles</u>
230	696
115	7
69	41
Other	<u>18</u>
Total	<u>762</u>

The total construction cost at June 30, 1956, of the Central Valley Project Power System, including a share of the cost of multiple-purpose project features related to the generation of power (commercial, irrigation and municipal water pumping), has not been determined by the Bureau. The separable costs--remaining benefits method of allocation of construction costs results in an allocation of costs directly to the functions of commercial power, irrigation (including irrigation pumping), municipal water supply (including municipal water pumping), flood control, navigation, fish and wildlife, and recreation. For this reason the construction cost of the power system including a proportionate share of the cost of dams, which provide head for hydrogeneration, cannot be determined before a portion of this cost is allocated to the irrigation and municipal water purposes of the project.

#### FINANCIAL RESULTS FROM POWER OPERATIONS

Operation of power facilities in the Central Valley Basin by the Bureau of Reclamation during the fiscal year 1956 resulted in excess of revenues over deductions of \$5,659,008, as shown on schedule 3, page 73, of this report. At June 30, 1956, there was a cumulative excess of revenues over deductions of \$60,930,519. Depreciation is not included by the Bureau of Reclamation in determining the results from power operations. On page 69 we express an opinion on the financial statements included in this report.

#### ENERGY PRODUCTION AND DELIVERIES

The source of electric energy, which is received into the Central Valley Project transmission system for ultimate delivery to the electric customers of the Bureau of Reclamation and for project pumping and other uses, is primarily from the four hydroelectric power plants of the Central Valley Project. In addition to the generation of these plants, however, there is an interchange of energy generated by the system of the Pacific Gas and Electric Company. On relatively infrequent occasions, energy is purchased from the PG&E system.

A summary of the Central Valley Project system energy generated, interchanged, and purchased and the disposition of that energy, comparative for the fiscal years ended June 30, 1956 and 1955, is shown in the following table:

	Fiscal year 1956		Fiscal year 1955	
	Kilowatt- hours	Percent	Kilowatt- hours	Percent
<b>Source of energy:</b>				
Central Valley Project Power Plant generation less station use (note a):				
Shasta	1,904,821,950	46.3	1,794,401,677	53.3
Keswick	426,655,800	10.4	372,582,600	11.1
Folsom	575,407,745	14.0	49,447,438	1.4
Nimbus	44,455,150	1.1	9,938,952	.2
Total available from Central Valley Project production	2,951,340,645	71.8	2,226,370,667	66.0
<b>Add:</b>				
Interchange energy received from PG&E system	1,158,606,878	28.1	1,107,300,218	32.9
Energy purchased from PG&E system	3,380,755	.1	35,485,004	1.1
Total energy available for disposition	4,113,328,278	100.0	3,369,155,889	100.0
<b>Disposition of energy:</b>				
Sales to Bureau customers:				
Pacific Gas and Electric Company	1,235,013,171	30.0	667,767,389	19.8
Sacramento Municipal Utility District	973,642,824	23.8	864,920,776	25.7
Ames Aeronautical Laboratory (NACA)	84,650,154	2.0	47,390,578	1.4
Mare Island Naval Shipyard	79,160,000	1.9	73,059,720	2.2
Other customers	155,740,895	3.8	141,629,510	4.2
Total sales to Bureau customers	2,528,207,044	61.5	1,794,767,973	53.3
Project and other uses:				
Tracy Pumping Plant	165,225,520	4.01	248,778,940	7.4
Contra Costa Pumping Plants	9,621,400	.23	9,665,300	.3
Folsom Pumping Plant	2,283,000	.05	907,000	.02
Other project uses	3,123,117	.07	4,407,515	.1
Other uses	161,710	.0039	283,336	.008
Total project and other uses	180,414,747	4.3	264,042,091	7.8
Interchange energy delivered to PG&E system	1,227,913,542	29.9	1,179,716,787	35.0
Transmission and associated losses	176,792,945	4.3	130,629,038	3.9
Total energy disposition	4,113,328,278	100.00	3,369,155,889	100.00

<sup>a</sup>Station use by all power plants for the fiscal year ended June 30, 1956, was 8,928,955 kwh and for the fiscal year ended June 30, 1955, 7,270,933 kwh.

During the fiscal year 1956 the Pacific Gas and Electric Company received about half of the energy of the Central Valley Project system which was available for commercial use, the Sacramento Municipal Utility District received about one third, and the remainder of the energy available for commercial use was distributed to the remaining customers of the Bureau of Reclamation which totaled 24 customers at June 30, 1956.

### CUSTOMERS SERVED

Particulars on sales of electric energy for the fiscal years 1956 and 1955 to the various users of Central Valley Project energy are presented in the following summary:

	Fiscal year ended June 30					
	1956			1955		
	Revenue	Average rate per kwh (mills)	Number of customers	Revenue	Average rate per kwh (mills)	Number of customers
Pacific Gas and Electric Company	\$3,670,470	2.97	1	\$2,296,094	3.44	1
Sacramento Municipal Utility District	4,151,192	4.26	1	3,702,880	4.28	1
Other state agencies	7,763	6.07	1	8,494	5.89	1
Public authorities	1,544,170	4.98	22	1,437,694	5.59	22
Rural cooperatives	37,579	4.56	1	15,543	4.48	1
Project use and inter-project sales	451,037	2.50	11	660,105	2.50	10
	<u>\$9,862,211</u>	<u>3.64</u>	<u>37</u>	<u>\$8,120,810</u>	<u>3.94</u>	<u>36</u>

### STATUS OF FINDINGS RELATING TO POWER OPERATIONS IN PRIOR REPORT

In our report dated December 21, 1956, on the audit of Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects, Bureau of Reclamation, Department of the Interior, and Corps of Engineers (Civil Functions), Department of the Army, for the fiscal year ended June 30, 1955, we presented several findings relating to electric service provided to customers of the Bureau.

During our audit for the fiscal year 1956, we reviewed the current status of the findings commented upon in our prior report. The results of our review have shown that many of the findings reported on had not been completely or satisfactorily resolved. Those which were not completely or satisfactorily resolved relate to:

Wheeling rate under transmission and exchange service contract with Pacific Gas and Electric Company

Operations under Sale and Interchange Contract with PG&E:

- Project dependable capacity
- Capacity available to company in excess of that billed
- Credit for dependable capacity demand by preference agencies
- Adjustment for losses in power transmission
- Purchase of reactive requirements

Comments on the current status of those findings are included in the following sections of this report.

Wheeling rate under transmission and exchange service contract with Pacific Gas and Electric Company

In our prior report we stated that, on the basis of our review of the cost of wheeling the Sacramento Municipal Utility District (SMUD) load (40 percent of total energy produced, less transmission losses) to the several points of distribution of the SMUD system by PG&E, the rate of one mill per kilowatt-hour was excessive.

The contract with SMUD provides that, at such time when SMUD has its own transmission facilities constructed for interconnection with the Bureau's system at Elverta switchyard and its distribution points, the Bureau will allow a 10 percent discount applied to the gross billing charge to SMUD, rather than the current provision of 5 percent which is applied to the gross billing charge. It thus becomes apparent that, as between the contracting parties, this increment of 5 percent is the measure of the value placed on connecting the SMUD load with the CVP system. The SMUD is constructing its own facilities to interconnect with the CVP system, rather than the alternatives which are that the Bureau would (1) construct similar facilities or (2) continue the wheeling agreement with the Company.

It was pointed out also that the significance of this conclusion would be increasingly important in the evaluation of the PG&E partnership proposal in connection with the Trinity River Division power development, if the San Luis Project were also authorized. The project pumping load occasioned by the San Luis Project would be significant. During fiscal year 1956 there had been no amendment to the wheeling contract (I75r-2650) which changed the rate charged for wheeling power by PG&E.

The reply of the Department of the Interior to our prior report, as it related to our conclusion that the wheeling rate was excessive, contained the following statement:

"This contract (I75r-2650) was negotiated and signed April 2, 1951, and expires in 1961. The circumstances under which it was executed, with a variety of considerations between the Government and the Pacific Gas and Electric Company, made it a contract mutually agreed to. Prior to its expiration undoubtedly new situations will call for modifications that can be mutually agreeable to the continuation of such a contract.

"It should be pointed out that at the time of the contract, the Congress had declared that no transmission lines shall be constructed unless the Department finds that private power concerns are unable or unwilling to negotiate contracts for wheeling Government power to preference customers. In the case referred to, the Pacific Gas and Electric Company has the only facilities capable of wheeling the power."

During the early part of February 1957 the Secretary of the Interior made public his recommendation of non-Federal construction of the power plants of the Trinity River Division of the Central Valley Project. As of January 30, 1957, however, agreement had not been reached between representatives of the Bureau and the Pacific Gas and Electric Company concerning the provision of pumping energy for the proposed San Luis unit of the Central Valley Project.

Preliminary conferences between representatives of the Bureau and PG&E have been held for the purpose of making arrangements for delivery of energy to the proposed San Luis unit when required. The results of these conferences were not available to us during the period of our audit.

#### Operations under Sale and Interchange Contract with Pacific Gas and Electric Company

During our audits of operations under the Sale and Interchange Contract (No. I75r-3428) between PG&E and the Bureau, we have noted several matters which we believe do not provide adequate protection to the financial interests of the Federal Government. These matters have been reported in three prior reports. Two of these reports, dated January 20 and August 12, 1955, respectively, were made to the Commissioner of Reclamation. The third report for the fiscal year 1955 was made to the Congress under date of December 21, 1956.

Since the release of the first two reports, the Sale and Interchange Contract has been renegotiated to give consideration to

the inclusion in the Central Valley Project Power System of the Folsom and Nimbus Power Plants. The initial operation of these power plants began in May of 1955. The amendment to the contract was signed December 9, 1955, and became effective January 1, 1956. Also, the contract between the Bureau and PG&E, which provides for wheeling of power to Bureau customers by use of the Company's facilities, was supplemented to make it consistent with the amendment to the Sale and Interchange Contract. This supplement was signed December 9, 1955, and became effective January 1, 1956.

We stated in our prior report, dated December 21, 1956, that a determination of the effect of the amendment and supplement to the contracts on the findings, which were contained in the previous reports, would be made during our audit for the fiscal year 1956.

Our review for the fiscal year 1956 has shown that many of the findings previously reported on were not completely or satisfactorily resolved by the amendment and supplement to the contracts. Comments on those findings which were not completely or satisfactorily resolved are included in the paragraphs which follow.

#### Project dependable capacity

In our prior reports we have commented on the dependable capacity of the Central Valley Project Power System, which prior to the amendment discussed above had been established by contract at 300,000 kilowatts.

The 300,000 kilowatts of dependable capacity was established without giving consideration to the capacity of Folsom and Nimbus Power Plants, which were not in operation at the time of the negotiation of the 300,000 kilowatts.

It was our opinion that the contract dependable capacity was understated principally for the following reasons:

1. The dependable capacity in the contract was negotiated by considering the power production facilities at Shasta and Keswick plants of the Central Valley Project as an entity separate from the PG&E system. The CVP system, however, actually is integrated with the Company's system.
2. The value of the Central Valley Project capacity to PG&E is dependent upon how the capacity may be used in its integrated system to help serve its customer load.
3. Over a period of years the Company had consistently reported to the Federal Power Commission that 400,000 kilowatts of dependable capacity was available to it from the facilities of the Central Valley Project, to serve its system requirements at the time of its system peak.

4. Reviews of the power operating records of the Central Valley Project for the fiscal years 1953 through 1955 showed that the average of the monthly maximum simultaneous demands measured at generation had been about 498,000 kw, 502,000 kw, and 467,000 kw, respectively. This amount of capacity adjusted for transmission losses, as provided by the contract with the Company, would be substantially in excess of 400,000 kilowatts.

The amendment to the Sale and Interchange Contract (amendment 3, I75r-3428), signed on December 9, 1955, increased the project dependable capacity under certain operating characteristics. These operating characteristics are dependent, in effect, on the concurrent availability of water in Folsom and Shasta Reservoirs. For example, if the water in the reservoirs reached certain levels at concurrent points of time, the project dependable capacity would be escalated upwards depending upon the amount of water actually available in the reservoirs. If both reservoirs were substantially filled, concurrently, the maximum amount of contract dependable capacity would be 450,000 kilowatts. This water condition existed during May of 1956, and, in accordance with the contract, the maximum dependable capacity of 450,000 kw was established.

In planning reports prepared by the Bureau immediately preceding renegotiation of the project dependable capacity, the Bureau had contemplated that the integration of Folsom and Nimbus Power Plants in the power system would result in the increase of project dependable capacity to 465,000 kw. We were informed by Bureau officials that they were not able to demonstrate conclusively that 465,000 kilowatts of dependable capacity would be available at all times during the driest water year of record based on subsequent water availability studies. For this reason the Bureau representatives were unable to insist on 465,000 kilowatts in the negotiations with the Company. This demonstration was based on the assumption that the CVP system was independent of the PG&E system.

The Pacific Gas and Electric Company in its latest annual report to the Federal Power Commission, however, has stated that 518,000 kilowatts of dependable capacity adjusted for transmission losses would be available at the time of its system peak. The 518,000 kilowatts is based on the same water availability study as used in the negotiation of the contract dependable capacity and is based on an adverse water year.

Our review of the power operating records for the period during which 450,000 kw became the contract dependable capacity and which was June through December 1956 shows that the average of the monthly maximum simultaneous capacity demands, adjusted for transmission losses and project use, was about 580,000 kilowatts. Also, the amount of energy produced in relationship to the capacity

available substantially exceeded the requirements of the contract to support 450,000 kilowatts of contract dependable capacity.

Based on these facts, we believe that the renegotiated project dependable capacity has been understated. However, we were informed by Bureau officials that, in the earlier phases of the negotiations concerned with the amended project dependable capacity, the Company was negotiating for a quantity of 400,000 kilowatts, but the Bureau was successful in increasing the final negotiated amount from 400,000 to 450,000 kilowatts. This increase of 50,000 kilowatts would amount to \$25,000 a month.

Capacity available to Company  
in excess of that billed

Our reviews of power operating records of the Central Valley Project for the fiscal years 1953 through 1955 showed that the Company had availed itself of power capacity of the CVP substantially in excess of that which was used as a base for billing purposes. The amount of the excess capacity received by the Company for these years at 25 cents per kilowatt was \$546,435.

With respect to this capacity, our prior reports contained the following significant observations:

1. Reviews of the contract files did not disclose any information that would lead to the conclusion that this excess capacity not paid for was considered in the rates charged by the Bureau for capacity made available to the Company.
2. The Company receives a valuable capacity benefit without cost to it as a result of the provisions in the contract between the Bureau and the Company.
3. Analysis of selected billings to PG&E showed that the effective revenue received by the Bureau from the sale of energy to the Company had decreased from 3.8 mills per kilowatt-hour in June 1953 to 2.5 mills per kilowatt-hour in July of 1954. The reduction in the effective revenue rate received by the Bureau was occasioned primarily because of substantial reductions in nondependable capacity declarations to the Company, although in fact the Company did avail itself of large amounts of capacity in excess of the declaration to it.
4. At the time of our prior reviews most of the energy generated by the CVP system flowed into the PG&E system, and the generating capabilities were controlled primarily by the PG&E dispatchers subject to the availability of water as determined by regional officials of the Bureau. All energy not required for CVP customers wheeled by PG&E was then available for distribution by the Company to its own customers.

The amendment and supplement to the contracts, which govern the sale of power to the Company and wheeling by it to the Bureau customers, did not change the previous provisions of the contract which, in our opinion, result in the finding we had commented on in our previous reports. The Sale and Interchange Contract, as amended, still provides that the Company will pay at the rate of 25 cents per kilowatt for that nondependable capacity which is made available to it upon at least 60 days' advance notice and which will continue to be available for not less than 5 successive calendar months.

During the fiscal year 1956 the amount of free dependable capacity at 25 cents per kilowatt received by the Company was \$288,413. The total amount for the fiscal years 1953 through 1956 is \$834,848. Similarly, the amount for the 6 months ending December 31, 1956, was \$128,413.

For the fiscal year 1956 the effective revenue rate received by the Bureau from energy sales to the Company was 2.97 mills per kilowatt-hour. For the 6 months ended December 31, 1956, the average effective revenue rate received by the Bureau was 3.73 mills per kilowatt-hour. Although this increase is substantial, we do not believe that it is an indication of a resolution of our findings, but represents the effect of increased energy consumption by the Sacramento Municipal Utility District and a slight change in the utilization of the capacity of the Central Valley Project system to meet the load patterns of the PG&E system.

Credit for dependable capacity demand  
by preference agencies

In our prior reports we pointed out that in accordance with the contract (I75r-3428) the Company is given credit which is applied against the dependable capacity billed to it to the extent of the maximum simultaneous capacity demand by the preference agencies which occurred in the monthly billing period or any of the 11 immediate preceding months. The effect of this "ratchet" provision of the contract is to provide the Company with an element of free dependable capacity.

A review of the CVP power operating records for the fiscal years 1953 through 1955 showed that the Company has received free dependable capacity amounting to about \$124,000 for these years.

The amendment to the contract, signed December 9, 1955, did not result in a change of this contract provision, and for the fiscal year 1956 the Company received free dependable capacity amounting to \$90,967. For the 6 months ending December 31, 1956, the free dependable capacity amounted to \$102,555.

Consistent with the statement in our prior report, the significant increase for the 6 months ending December 31, 1956, is

occasioned primarily by the incidence of the large Sacramento Municipal Utility District power load on the CVP system.

Adjustment for losses in power transmission

We have stated in our prior reports that the contract (I75r-3428) with PG&E for the sale and interchange of capacity and energy provided for a load center at Tracy switchyard of the Bureau and for losses in power transmission equal to 9 percent of capacity measured at generation. In addition, for energy delivered directly to the Company's Cottonwood substation, the contract provided an adjustment of 4-1/2 percent to arrive at equivalent energy at Tracy switchyard.

We reported that the adjustment of energy physically delivered at Cottonwood to arrive at equivalent energy at Tracy switchyard was inequitable for the following reasons:

1. The interconnection of two of the three 230 kv Bureau transmission lines with the PG&E system at the Company's Cottonwood substation provides a preponderance of system versatility in favor of the Company. Although the arrangement provides some degree of additional system stability for the CVP system, the stability and versatility afforded the Company more than offset any advantage to the Bureau.
2. Our reviews of the power operating records for the fiscal years 1953 through 1955 showed that on the average the energy deliveries direct to Tracy switchyard on the Bureau's west side line were substantially in excess of the combined agency and preference use adjusted back to Tracy switchyard.
3. Where large blocks of power are involved, such as those which exist in the relationship with the CVP power with the PG&E system, it is improbable that such factors as availability of water, daily and hourly load on transmission lines, and other factors which would have bearing on transmission losses would remain constant and thus lend validity to percentage adjustments used in the contract to compute transmission losses.

In response to our report to the Commissioner of Reclamation dated July 31, 1953, the Commissioner replied that direct metering would give a more accurate basis for billing than on the basis of calculations. We were informed also that the installation of direct metering had been directed by the Chief Engineer of the Bureau.

Installation of direct metering at all points of interconnection with the Company's system has been accomplished. However, percentage adjustments are still required by the contracts, as amended and supplemented, to adjust energy at points of interconnection as though the energy had been physically delivered to

Tracy switchyard. Since mathematical loss adjustments are still required, the effectiveness of complete in-and-out metering is diminished.

Discussions with representatives of the regional office of the Bureau resulted in the acknowledgment that the metering system has not resulted in any substantial change as compared with the previous arrangements because percentage loss adjustments are still used to arrive at energy consumption for purposes of billing the Company.

We were told that efforts were made in the negotiation proceedings to attempt to obtain agreement that points of interconnection with the Company's system would be used as a basis for determining energy for billing purposes. This agreement would have resulted in effective in-and-out metering. The Company, however, was apparently insistent with respect to maintaining the contract load center at Tracy switchyard. Consequently, the point from which billings would be based continues to be Tracy switchyard. In addition, we were informed that further negotiations directed toward acceptance of the points of interconnections as the basis for determining billing energy would have to be deferred until the expiration of the contracts, which occurs in 1961.

#### Purchase of reactive requirements

In our prior report dated December 21, 1956, we commented on the contract amendment (amendment 2, I75r-3428) which made provision for the purchase of the Central Valley Project Power System reactive requirements from PG&E.

We reported also that the conditions which were anticipated to occur on the CVP system and which would require the purchase of reactive requirements from the Company did not occur. However, the total contract amount of \$108,000 was paid by the Bureau to the Company, and the audit disclosed that very little consideration, if any, was obtained by the Bureau from these payments to PG&E.

During the fiscal year 1956, PG&E refunded about \$6,700 of the total of \$108,000 paid to it by the Bureau. Since the contract stated the necessity of the arrangement as resulting from the incidence of a large load (Ames Aeronautical Laboratory) which never materialized, the adequacy of the amount refunded seems questionable.

We were unable to determine during our audit for the fiscal year 1956 whether the amount of about \$6,700 represented a final adjustment of the contract amount. We were told, however, that there were no active negotiations on the part of the Bureau to secure an additional refund.

ALLOCATION OF PROJECT DEPENDABLE CAPACITY  
TO BUREAU CUSTOMERS

Our review of the power operating records for the fiscal year 1956 relating to the Central Valley Project Power System and discussion with Bureau officials have not disclosed any specific and written criteria which provide for standardized and consistent allocations of Central Valley project dependable capacity to existing and potential preference customers.

In our prior report dated December 21, 1956, we stated that as of June 30, 1955, the Region had 25 preference customers being served from the project dependable capacity, and the total of the contract rates of delivery was about 323,000 kilowatts. We stated also that technically it could be said that the Bureau had oversold its project dependable capacity because a simultaneous demand by all the project customers at their contract rates of delivery would exceed the 300,000 kilowatts previously established as project dependable capacity. However, we noted that included in the 323,000 kilowatts was a quantity of 33,000 kilowatts contracted to the Colorado River Commission, an agency of the State of Nevada. This contract had never become operative, and, if that quantity were excluded from the contract rates of delivery, the total would have been less than the 300,000 kilowatts of contract dependable capacity which would be supported with energy, if necessary, by PG&E in accordance with the terms of the contract. In addition, this conclusion was based on the fact that the actual average maximum coincidental demands for the fiscal year 1955 were about 213,000 kilowatts. Therefore, about 87,000 kilowatts of dependable capacity were either not used or set aside as a system capacity reserve.

Also our review showed that included in the 323,000 kilowatts of contract rates of delivery was a quantity of 215,000 kilowatts which represented the current contract rate of delivery to the Sacramento Municipal Utility District (SMUD). This quantity represented about 67 percent of the total dependable capacity of the CVP power system which, at that time, was 300,000 kw.

Effective June 1, 1956, the water conditions required by the amendment to the Sale and Interchange Contract with the Company which were necessary to increase the project dependable capacity to 450,000 kw had occurred, and the contract dependable capacity was established at 450,000 kw. At June 30, 1956, the contract rates of delivery totaled about 372,000 kw, and at December 31, 1956, the total of the contract rates of delivery was about 379,000 kw. The difference between the 379,000 kw and 372,000 kw is accounted for by the fact that a new contract with the city of Roseville had been signed which provided the Company with 7,250 kw. However, the average monthly maximum simultaneous demand on the CVP system capability for the 7 months ended December 31, 1956,

was 289,252 kw. The maximum monthly simultaneous demand for this period was 309,506 kw. Since the increase of the project dependable capacity to 450,000 kw, therefore, there has been about 140,000 kw of dependable capacity which were either not used or set aside as a system capacity reserve.

An official of the Department of the Interior has stated that the CVP system requires a capacity reserve of at least 22,500 kw. Deducting this quantity from the 140,000 kw referred to above, it appears there is about 117,500 kw of project dependable capacity which could be allocated to either existing or potential preference customers.

At December 31, 1956, the Bureau had active requests from preference agencies not then under contract for power deliveries of 5,000 kw. In addition, Ames Aeronautical Laboratory, an existing preference customer, has requested an increase from 50,000 kw to 100,000 kw since the project dependable capacity was increased to 450,000 kw. Also, other existing customers were requesting increases in their allocations of dependable capacity at that date.

At the time of our audit in January 1957, we were informed that the contract with the Colorado River Commission had not been extended and that the question of the extension of this contract had not been finally resolved in the Office of the Secretary of the Interior. The 33,000 kilowatts contracted to the Colorado River Commission, however, are included in the quantities of contract rates of delivery at June 30 and December 31, 1956, stated above. Included in the total contract rates of delivery at June 30 and December 31, 1956, is a quantity of 250,000 kw which represented the contract rate of delivery for the Sacramento Municipal Utility District (SMUD). This quantity represented about 56 percent of the project dependable capacity, respectively, or about 67 and 66 percent of the total contract rates of delivery at those dates. The contract with SMUD provides for possible annual increases in the contract rate of delivery up to 290,000 kw. In contrast, the contract rates of delivery of the other 23 Bureau preference customers averaged about 5,600 kilowatts at December 31, 1956.

#### Recommendation to the Secretary of the Interior

In view of the facts (1) that there are considerable quantities of reserve or unused capacity, (2) that one preference customer receives a very large quantity of project dependable capacity, and (3) that there are several requests for allocations of project dependable capacity from potential preference customers, we recommend that specific policies and procedures relating to the allocation of project dependable capacity to existing or potential customers of the Central Valley Project Power System be established for guidance of Bureau and preference agency officials.

## WATER-SERVICE PLANT CONSTRUCTION AND OPERATION

Construction of initial multiple-purpose water features considered as a part of the comprehensive plan for the development of the Central Valley Basin has been substantially completed by the Bureau of Reclamation and the Corps of Engineers. These features are operational with respect to their multiple-purposes in varying degrees. During the fiscal year ended June 30, 1956, no additional features were placed in operation.

Fundamentally these features consist of dams and reservoirs to control headwaters of major streams in the basin and to store the water for later uses of irrigation, municipal water, and power. There are five major multiple-purpose dams and two afterbay-reregulating dams in operation which provide a total storage capacity of 7,621,000 acre-feet. To distribute the stored portion of the water, there exists an initial network of conveyance canals to transport the water to various locales of irrigation and municipal use. The general plan is that the water will flow to these locales by gravitation, but it is necessary that water pumping plants exist to lift the water to a sufficient elevation that will enable gravitational flows. To accomplish this objective, certain pumping plants have been constructed and are in operation.

The operation and maintenance of the dams and reservoirs have been undertaken by the Bureau in some cases and by the Corps in others. Folsom Dam and Reservoir, although constructed by the Corps, will be operated and maintained by the Bureau as a part of the Central Valley Project. Pine Flat and Isabella Dams and Reservoirs were constructed by the Corps and will be operated and maintained by the Corps. All other dams and reservoirs are being operated by the Bureau; but where operation of the reservoirs for flood control purposes becomes necessary, criteria for flood control operation is established by the Corps of Engineers.

Total water deliveries from the various conveyance canals and distribution systems during the fiscal year ended June 30, 1956, were 1,505,579 acre-feet compared with total deliveries of 1,239,568 acre-feet during the fiscal year ended June 30, 1955.

### FINANCIAL RESULTS FROM WATER OPERATIONS

Results from operation of water-service facilities in the Central Valley Basin during the fiscal year 1956 are shown on schedules 4 and 5, pages 74 and 75, of this report. At June 30, 1956, there was accumulative excess of revenues over deductions from water operations of \$643,726. Irrigation operations showed an excess of revenues over deductions of \$1,620,968, but municipal water-supply operations showed an excess of deductions over revenues totaling \$977,242. Depreciation is not included by the Bureau of Reclamation in determining the results from water-service operations. These results are subject also to the notes to financial statements, pages 82 through 94, of this report.

## FLOOD CONTROL PLANT CONSTRUCTION AND OPERATION

Federal flood control participation in the Central Valley Basin has been undertaken by the Bureau of Reclamation and the Corps of Engineers by construction and operation of multiple-purpose and single-purpose river control projects in the Sacramento and San Joaquin Valleys or by participation in the construction cost of projects which provide capacity for flood protection.

The Bureau's participation in flood control activities in the basin has been through the construction and operation of multiple-purpose dams and reservoirs which provide for the opportune storage of flood waters. However, the principal benefits stated by the Bureau to accrue from the operation of these multiple-purpose dams and reservoirs are for authorized purposes other than flood control.

The Corps also constructs multiple- and single-purpose dams and reservoirs as well as levee systems and other channel rectification work which are designed to supplement reservoir control of flood waters. In total, the principal benefits stated by the Corps to accrue from the operation of its multiple-purpose dams and reservoirs in the Central Valley Basin relate to the purpose of flood control rather than the other authorized purposes of the project. All Corps construction is by authority of Congress. Most Corps' projects are by specific congressional authorizations, but certain small projects, emergency work, and some other types of work are undertaken under certain general congressional authorizations.

The projects of the Bureau and the Corps which provide flood control protection have been designed and constructed generally consistent with the comprehensive plan for flood control protection in the Central Valley Basin. Criteria for operation of both Bureau and Corps dams and reservoirs for flood protection are established by the Corps of Engineers.

The total estimated construction cost at June 30, 1956, of Bureau and Corps projects constructed, under construction, and authorized for construction allocated to flood control is as follows:

Corps of Engineers	\$168,777,000
Bureau of Reclamation	<u>36,816,000</u>
Total	<u>\$205,593,000</u>

The amount shown in the table above for the Corps does not include the estimated construction costs of six multiple-purpose dams and reservoirs which have been authorized for construction by the Corps. Although these projects have been authorized, construction had not been started at the time of our audit, nor had allocations

of the total estimated construction costs been made to the purposes served by these projects. The specific projects and their total estimated construction costs are:

<u>Dam and reservoir</u>	<u>Total estimated construction cost</u>
Success	\$ 13,900,000
Terminus	18,600,000
Black Butte	16,200,000
Hogan	16,900,000
New Melones	55,900,000
Iron Canyon	<u>77,200,000</u>
Total	<u>\$198,700,000</u>

At June 30, 1956, the flood control amounts applicable to projects constructed or under construction by the Corps are summarized as follows:

Multiple-purpose projects	\$ 34,719,000
Single-purpose projects	<u>130,413,000</u>
Total	<u>\$165,132,000</u>

The flood control amounts at June 30, 1956, applicable to projects constructed or under construction by the Bureau were not readily determinable. The Bureau records show \$57,988,000 of the total Central Valley Project plant-in-service amount of \$501,732,810 as allocated to the nonreimbursable purposes which are flood control, navigation, and certain fish and wildlife costs. Individual amounts for each purpose were not readily determinable. Not included in the amount allocated to nonreimbursable purposes, however, is a portion of Central Valley Project construction work in progress which amounted to \$11,891,109 at June 30, 1956. Also, the Bureau's Solano Project was under construction at June 30, 1956, and no allocation of construction costs to that date had been made to flood control, which is a stated purpose of the project. Total construction cost of the Solano Project to June 30, 1956, was \$18,761,149.

#### COST OF FLOOD CONTROL OPERATIONS

The cumulative costs to June 30, 1956, for operating and maintaining single-purpose facilities of the Corps of Engineers for flood damage prevention in the Central Valley Basin amounted to \$18,166,357. (See schedule 7, page 77, and note 13, page 90.) Costs applicable to flood control resulting from operating and maintaining Pine Flat and Isabella Dams and Reservoirs, which are multiple-purpose projects, were not determined by the Corps and

therefore cannot be stated in this report.<sup>1</sup> Additional comments on the Corps' policy relating to the allocation of joint costs and expenses of operation of multiple-purpose projects appear on pages 60 through 62 of this report.

The Bureau of Reclamation allocates all multiple-purpose operating expense to reimbursable project purposes, and no amounts are allocated to the nonreimbursable project purposes. Additional comments on Bureau procedures appear on pages 60 through 62 of this report.

#### BENEFITS FROM FLOOD CONTROL PLANT OPERATION

Flood control benefits for all Bureau of Reclamation and Corps of Engineers projects in the basin are determined by the Corps. The benefits are arrived at primarily by determining the value of preventable damage to property and resultant increased use of the protected land which is brought about by Federal construction of, or participation in, the project. The Corps estimates that the coordinated operation of the completed projects, those in various stages of completion, and those authorized for construction will contribute \$15,814,000 in annual flood control benefits.

At June 30, 1956, completed projects provided annual flood control benefits of \$8,580,000, excluding the benefits provided by the coordinated system of leveed natural waterways including weirs, outfall gates, and leveed by-passes on the lower reaches of the Sacramento River and tributaries. This Corps project has been developed over a period of nearly 50 years under varying economic conditions, and the Corps considers that it is not possible to determine with accuracy the average annual benefits that might be credited to that work.

In part, the Corps supports the economic soundness of this project by the fact that the State of California and other local interests have been willing to invest about 85 million dollars as their share of the project cost.

#### Central Valley Project flood control benefits

Flood control benefits attributable to Shasta and Friant Dams of the Central Valley Project which were constructed and are operated by the Bureau of Reclamation were computed by the Corps of Engineers in 1947. These benefits have not been revised either by the Corps or by the Bureau since that date, except for adjustments in price levels. However, additional flood control benefits were included in the Central Valley Project benefits in 1953 because of the beneficial operation of the partially completed Folsom Dam.

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<sup>1</sup> By letter dated October 2, 1957, the Assistant Chief of Engineers for Civil Works, Corps of Engineers, stated that the District Engineer is being instructed to make the distribution of operation and maintenance costs on the basis of the anticipated percentages to be used in connection with the permanent contracts for these projects.

## NAVIGATION PLANT CONSTRUCTION AND OPERATION

Improvement of Central Valley navigation is one of the authorized purposes in the development of the Central Valley Basin. Navigation activities in the Central Valley Basin are pursued principally on the Sacramento River between the mouth of the river and the town of Colusa about 145 miles upstream and on the San Joaquin River between its mouth and the city of Stockton, California. At the present time a deep water ship channel suitable for navigation by ocean-going vessels is under construction by the Corps of Engineers. The channel parallels the Sacramento River between the mouth and the city of Sacramento. Activity on the Sacramento River currently is confined to shallow-draft or barge-type shipping. Although the San Joaquin River is classified as a navigable river for a considerable distance upstream from the city of Stockton, no significant navigation activity presently is pursued on the river upstream from Stockton.

Tonnage of commercial waterway traffic on the various rivers in the basin for the calendar years 1953 through 1955 was as follows:

<u>River</u>	<u>Calendar year</u>		
	<u>1955</u>	<u>1954</u>	<u>1953</u>
San Joaquin River (including port of Stockton)	2,413,938	2,035,050	1,979,597
Sacramento River (including port of Sacramento)	2,228,431	2,172,451	1,972,059
Middle River	18,787	19,645	24,884
Old River	202,627	212,126	227,836
Mokelumne River	<u>18,743</u>	<u>95,330</u>	<u>31,672</u>
Total	<u>4,882,526</u>	<u>4,534,602</u>	<u>4,236,048</u>

Corps of Engineers estimates, included in the January 1956 planning report on the Sacramento River Deep Water Ship Channel now under construction by the Corps, indicate that the completion of that project will add 2,690,000 tons of traffic by the year 1961 and 4,098,000 and 5,099,000 tons by 1985 and 2010, respectively.

Navigation is enhanced by the Corps and the Bureau by construction of dams and levees and by channel dredging and snagging. The following tabulation summarizes at June 30, 1956, the Corps' and the Bureau's tentative construction cost allocation to navigation for multiple-purpose projects in operation and under construction and the estimated costs at June 30, 1956, of single-purpose navigation projects in operation and under construction:

	<u>Projects</u>	
	<u>Multiple-purpose</u>	<u>Single-purpose</u>
Corps of Engineers	\$ -	\$52,042,000
Bureau of Reclamation	<u>12,940,000</u>	<u>-</u>
Total	<u>\$12,940,000</u>	<u>\$52,042,000</u>

As stated on page 21 of this report, existing cost allocations of the multiple-purpose projects are tentative and allocations in the above summary are subject to revision.

The Bureau's stated contribution to the improvement of navigation results primarily from the construction and operation of Shasta Dam and Reservoir. Friant and Folsom Dams and Reservoirs also are stated to contribute, on a smaller scale, to improvement of navigation. By release of water from these reservoirs, principally Shasta, navigable depths are maintained and damage to navigation structures from marine forces is reduced.

The Corps contribution to navigation improvement in the basin results from the construction of single-purpose navigation projects and particularly the Sacramento River Deep Water Ship Channel presently under construction at an estimated cost of \$37,500,000. This amount is included in the total estimated construction cost of single-purpose navigation projects shown in the table above as \$52,042,000.

All authorized navigation projects in the Central Valley Basin are presently constructed or under construction.

#### COST OF NAVIGATION OPERATIONS

The cumulative costs to June 30, 1956, incurred by the Corps of Engineers for operating and maintaining navigation plant in the Central Valley Basin amounted to \$13,618,361. (See schedule 7, page 77, and note 13, page 90.)

The Bureau of Reclamation allocates all multiple-purpose operating expense to reimbursable project purposes, and no amounts are allocated to the nonreimbursable project purposes. Additional comments on Bureau procedures appear on pages 60 through 62 of this report.

#### BENEFITS FROM NAVIGATION PLANT OPERATIONS

Navigation benefits which are expected to result from the construction and operation of projects by the Bureau of Reclamation and the Corps of Engineers are computed by the Corps. The estimated annual benefits resulting from navigation projects completed or under construction are summarized as follows:

	<u>Navigation benefits</u>
Corps of Engineers:	
Sacramento River Deep Water Ship Channel	\$1,758,000
Stockton Channel (benefits attributable to work authorized in 1950)	<u>370,000</u>
Total	<u>2,128,000</u>
Bureau of Reclamation:	
Central Valley Project	<u>1,325,400</u>
Total	<u>\$3,453,400</u>

Benefits for several Corps of Engineers projects are not available. These projects are old and have been in operation for a number of years. One project, the Sacramento River Shallow-Draft Channel, has been authorized for construction and maintenance since 1899. Other projects in which benefits are not available are (1) Stockton Channel authorized before 1950, (2) Middle River, (3) Mokelumne, (4) Old River, and (5) San Joaquin River Shallow-Draft Channel. The Corps has informed us that the total benefits from the Stockton Deep Water Ship Channel have not been evaluated recently but would be in the order of \$2,000,000 a year.

#### Central Valley Project navigation benefits

Based on our review of the latest construction cost allocation study available to us prepared by the Bureau of Reclamation, we believe that allocation of the construction cost of the Central Valley Project to navigation is subject to question.

The tentative allocation of Central Valley Project construction costs was made in accordance with the separable costs--remaining benefits method of cost allocation which is described in appendix B of this report. One of the steps involved in determining the amount of construction cost to be allocated to a particular purpose, in accordance with this method, is to determine what specific costs of the project can be identified solely with a particular project purpose under review. This phase in the allocation procedure is identified as determining the separable cost. Our review showed that the Bureau had not identified any project construction costs which were incurred solely for the navigation purpose; statements of Bureau officials, which we reviewed, indicated that without the navigation purpose other project functions would require very closely the same quantity of storage and related releases, so that the elimination of the navigation purpose from the project would not result in any significant changes in the existing project facilities.

Since the Corps determined that \$1,325,400 of estimated annual benefits to navigation interests would result from the

operation of the Central Valley Project, the separable costs--remaining benefits method of allocation of construction costs would necessitate an allocation of some costs to that purpose. As it had been determined that no separable cost could be assigned to the navigation purpose, only a portion of the joint costs which relate to all purposes of the project could be allocated to navigation. This portion of joint costs allocable to navigation in the study reviewed by us was determined by the Bureau to be \$12,940,000.

The navigation benefits used in the construction cost allocation reviewed by us were computed in 1947 based on studies and analyses made in 1943, which in turn utilized statistics, some of which were obtained prior to World War II. Since 1943 many changes in economic considerations which would affect the validity of the amount of annual benefits assumed for the purpose of the Bureau's allocation studies have occurred. After about 15 years from the date of the completion of the original study, traffic has not developed proportionately as estimated, especially with respect to agricultural commodities. Also there have been price level changes since the date of completion of the original study in 1943.

## ACCOUNTING AND FINANCIAL POLICIES

### DEVELOPMENT OF ACCOUNTING SYSTEMS

The accounting systems in use by the Corps of Engineers (Civil Functions) and the Bureau of Reclamation are based on recognized accounting principles with the accounts for power operations maintained to the extent practicable in accordance with the uniform system of accounts prescribed for public utilities by the Federal Power Commission under the Federal Power Act (16 U.S.C. 825b).

The systems of both the Corps and the Bureau are based on accrual accounting and distinguish between capital and revenue expenditures. Because the accounting systems of the Corps and the Bureau have many similarities, comparable financial data for meaningful consolidated financial statements of assets and liabilities and results from operations can be obtained. However, before the accounting records can provide such financial data with reasonable accuracy, policy decisions that are comparable and consistent between the agencies must be reached on cost accounting practices, allocations to purposes of construction costs and operating expenses of multiple-purpose projects, interest on Federal investment in commercial power facilities, and depreciation on plant in service.

General agreement has been reached between the Corps of Engineers, the Department of the Interior, and the Federal Power Commission and concurred in by the General Accounting Office on the use of simple interest during construction and the proportionate method of accounting for the operation of joint facilities on multiple-purpose projects. The Corps of Engineers has reached decisions on certain other major accounting and financial policies, but decisions have not been made thereon by the Department of the Interior.

### COST ACCOUNTING PRACTICES

The Corps of Engineers and the Bureau of Reclamation do not bear the costs applicable to their activities of administrative and other services rendered by other Federal agencies not assignable to projects pursuant to law or administrative policy. These services include amounts for rentals and other services furnished without charge by General Services Administration and other Federal agencies, death and disability claims on account of the Corps and Bureau employees paid by the Bureau of Employees' Compensation, Department of Labor, and the amounts applicable to their operations of the cost of the Civil Service Retirement System.

The administrative costs of the Office of the Chief of Engineers and of division offices are paid from the appropriations to the Corps for general expenses and are not distributed to construction, operation and maintenance, and other programs. Likewise,

the costs of the Commissioner's Office, Washington, D.C., and a part of the costs of the Commissioner's Office, Denver, and the regional offices of the Bureau of Reclamation are paid from an appropriation to the Bureau for general administrative expenses and are not distributed to projects as a cost.

Provisions for accrued annual and sick leave of employees are included in property costs and operating expenses by the Corps of Engineers. Such provisions have not been made by the Bureau of Reclamation, but the amounts of salaries and wages paid to employees while on annual or sick leave are charged to property or operating expense accounts.

Expenditures for preliminary surveys and investigations are included in property costs by the Bureau of Reclamation but not by the Corps of Engineers.

ALLOCATION TO POWER AND OTHER PURPOSES  
OF JOINT COSTS AND EXPENSES OF OPERATION

Costs and expenses of operating and maintaining multiple-purpose projects consist of amounts that can be identified directly to a specific purpose and amounts that are common to all purposes served by the project. The operating and maintenance expenses that can be identified to specific purposes are charged directly to those purposes, and the expenses common to all purposes require allocation. Costs and expenses common to purposes served by a multiple-purpose project may be classified as follows:

1. Depreciation and interest on investment in plant, property, and equipment jointly useful to the several purposes.
2. Operation and maintenance expenses common to all purposes, such as supervision and administration, camp expenses, reservoir operations, and similar activities.

The Corps of Engineers and the Department of the Interior have not established comparable policies and practices for allocating to purposes the joint costs and expenses of operation and maintenance. The Corps Programming and Accounting Manual provides that actual operation and maintenance expenses will be allocated to functions served in a manner consistent with the basic allocation. This manual provision refers to letters of instruction which provide the basis and guides for district offices in making allocations of an applicable share of the operation and maintenance costs that are common to all functions to power and nonpower purposes. Accounting instructions, however, do not provide a basis for the allocation of depreciation expense for the annual depreciation for multiple-purpose projects.

The Interior Department Appropriation Act, 1953 (66 Stat. 445), approved July 9, 1952, contained the following provision:

"Sums appropriated herein which are expended in the performance of reimbursable functions of the Bureau of Reclamation shall be returnable to the extent and in the manner provided by law."

Interior Department appropriation acts for succeeding years have contained identical provisions. Under this provision in the appropriation acts, the regional director allocated expenses at the Central Valley Project to nonreimbursable purposes (flood control and navigation). Effective with fiscal year 1956, the Bureau in Region II changed its policy, and the expenses of the fiscal year 1956 for operating and maintaining the multiple-purpose facilities of Central Valley Project were allocated to and recorded directly in operation and maintenance expense accounts relating to reimbursable purposes of the project. However, adjustments were made, where applicable, in the allocations of estimated construction costs to nonreimbursable purposes to provide for estimated annual operation and maintenance expense.

The Bureau has not provided depreciation on plant in service, and this cost of operation has not been considered in the allocation of operating costs and expenses to purposes.

Recommendation to the Secretary of the Interior  
and the Chief of Engineers

The fairness of the amounts determined for results from operations is dependent upon the reasonableness of the allocations to purposes of costs and expenses. The Corps and the Department of the Interior have not established comparable policies and practices on these allocations. In our report dated December 21, 1956, on the audit of the Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects for the fiscal year ended June 30, 1955 (see p. 90), we recommended that policies be adopted which would provide a sound and consistent basis for allocating joint costs and expenses as follows:

- "1. Allocation to power and nonpower purposes of provisions for depreciation on plant, property, and equipment common to more than one purpose on the basis of the capital cost allocation.
- "2. Limit the computation and recording of interest on investment to commercial power and municipal and industrial water supply purposes and to charge as a cost of operations on the basis of the capital cost allocation to these two purposes.
- "3. Allocation to purposes of current operation and maintenance expenses on the basis of current use of the facilities."

This recommendation has been adopted in part by the Corps of Engineers, but decisions thereon by the Department of the Interior have not been made. We were informed by the Administrative Assistant Secretary of the Interior on November 26, 1956, that these matters and other related problems are receiving current consideration by the Department. Until these matters are resolved by the respective agencies, agreement on comparable policies cannot be reached. Accordingly, we repeat our recommendation contained in our previous report.

#### PROVISIONS FOR DEPRECIATION OF FACILITIES

Accounting procedures of the Corps of Engineers provide for depreciation of multiple-purpose projects including power at rates based on the estimated service lives of the depreciable assets included in the plant-in-service accounts. The straight-line method of depreciation is prescribed for use, and rates are applied to the cost of the multiple-purpose plant in service. The Corps accounting procedures do not prescribe depreciation on the flood control and navigation projects which do not include power as a purpose.

Transfers to plant in service are made for specific features, subfeatures, or units serving a project purpose, plus the related portion of joint facilities, including interest during construction, on the basis of completion to the point of actual availability to serve the project purpose. In the case of power development at multiple-purpose projects, transfers to plant in service are made on the basis of each generating unit scheduled initially as a part of a continuing construction schedule. The in-service date for plant in service will be considered as the first of the month following the availability to serve the project purpose.

The instructions in the Programing and Accounting Manual of the Corps provide that retroactive adjustments not be made where completed construction has been transferred to plant in service and interest and depreciation computations have been entered in the accounts in accordance with prior instructions.

The Bureau of Reclamation has not had a well-defined and continuing policy for recording depreciation on plant in service as an element of cost of operations. Under the present policy, provisions for replacements,<sup>1</sup> as shown by the average rate and

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<sup>1</sup>As computed by the Bureau, the "provisions for replacements" are designed to provide only for replacements of those items of plant in service which would have to be replaced during the repayment period, generally 50 years. Accordingly, the practice of the Bureau does not conform to the generally understood concept associated with the term "Accumulated provisions for replacements" of periodic provisions based on estimated replacement costs of all fixed properties in service, and it has none of the characteristics of depreciation accounting.

repayment studies, are entered in the accounting records, and amounts for depreciation of plant in service are to be maintained in memorandum records.

As stated in Accounting Principles Memorandum No. 1 (section VIII on Property Accounting) issued by the Comptroller General on November 26, 1952, agencies which carry on public utility activities should control all fixed assets through their accounts with appropriate provisions for depreciation. Depreciation should be recorded as a part of the process of determining the cost of carrying out the various functions or purposes, regardless of the method employed in financing the activity.

Certain assets, such as land and land rights, exclusive of fee acquisition, canal excavation and grading of roads, relocation of existing facilities, and intangibles, are not depreciable in the normal sense. Their usefulness, however, is contingent on the life of the projects, and for this reason some form of amortization should be recognized in the accounts.

Recommendation to the Secretary of the Interior  
and the Chief of Engineers

Our prior report dated December 21, 1956, on the audit of Central Valley, Folsom Reservoir, Kings River, and Isabella Projects for the fiscal year ended June 30, 1955, contained a recommendation as follows:

"To obtain comparable financial data on water resource programs, we recommend that the Chief of Engineers and the Secretary of the Interior establish jointly, and apply consistently, a policy on depreciation that will provide (1) recording in the books of account a cost of producing services and (2) the amounts attributable to reduction in service lives of plant, based on principles, as follows:

- "1. The computation of depreciation provisions under the straight-line method with a maximum service life of 100 years.
- "2. The application of the policy to depreciable plant in service, whether or not revenues are derived from rendering of the service.
- "3. The absorption, as depreciation or amortization of costs of land and land rights (exclusive of acquisition costs in fee), canal excavations, excavation and grading of roads, relocations of existing facilities, and intangibles.

- "4. Joint facilities and common facilities to be considered as plant in service in the ratio of installed capacity to total capacity based on a planned installation schedule of generators that are installed under an uninterrupted construction program of the project. For certain projects, such as projects having substantial power storage benefits in addition to at-site generation, modifications may be required in this formula to obtain a proper determination of depreciation and interest expense.
- "5. The provision in the accounts for depreciation on plant in service not (and not to be) operated permanently by the Government.
- "6. Depreciation be computed from the first of the month succeeding the date the facilities are placed in service.
- "7. Adjustments be made for the deficient and unrecorded depreciation in the past, wherever the amounts are material and would have a significant effect in determining the results of operating and maintaining the facilities.
- "8. The presentation in the financial statements of the accumulated provisions for depreciation as a deduction from plant in service."

Certain of the principles relating to depreciation have been adopted by the Corps of Engineers for multiple-purpose projects including power. Decision by the Department of the Interior on depreciation has not been reached. We have been informed that these decisions cannot be reached until recommendations of the Interior Cost Allocation and Financial Practices Committee have been received and considered by the Department.

Inasmuch as the policy on depreciation has not been completely adopted, the recommendation on depreciation is repeated in this report.

#### INTEREST ON THE FEDERAL INVESTMENT

The accounting procedures issued by the Corps of Engineers in fiscal year 1956 provide for recording interest at the rate of 2.5 percent on the net unrecovered Federal investment in multiple-purpose projects which include reimbursable purposes. Interest on the investment is to be computed during the construction period on accumulated costs, excluding previous interest costs, and the interest is recorded as a part of the construction costs as interest during construction. During the operation of the project, the

basis for computation of interest will be the unrecovered investment in the project, and that interest will be charged as an expense of operations.

Interest during construction ceases and interest during operations commences at the first of the month following the availability of the facilities to serve the project purpose.

The instructions issued on January 17, 1956, by the Corps provide that retroactive adjustments will not be made where completed construction has been transferred to plant in service, and interest and depreciation computations have been entered in the accounts in accordance with prior instructions. These prior instructions provided for compounding annually interest during construction and for considering the power facilities, including applicable joint facilities, in service at the time the first generator is placed in commercial operation.

The Bureau of Reclamation provides in power rates for return of interest at the rate of 3 percent on the commercial power investment from dates placed in actual revenue-producing service, and the interest is entered as an expense in the accounting records of the Bureau. Interest during construction is calculated on the interest-bearing investment on certain projects, including the Central Valley Project; however, it is not entered in the accounting records.

At June 30, 1956, the Corps had recorded interest on the Federal investment during the construction of Folsom Dam and Reservoir. The amount recorded was \$4,105,005. Construction of Folsom Dam and Reservoir was substantially completed during fiscal year 1956 and was transferred to the Bureau for operation and maintenance. Construction costs totaling \$61,689,700, excluding interest during construction, were transferred to and recorded by the Bureau. Although the records of the Corps show that the cost of interest during construction in the amount of \$4,105,005 was transferred to the Bureau, the records of the Bureau show that the transfer of the cost of interest during construction was not acknowledged and recorded.

The Bureau of Reclamation records interest on the Federal investment in municipal water-supply facilities, in the same manner as for commercial power on projects where the Secretary of the Interior has required municipal water-supply investment to be repaid with interest. This interest is computed at a rate furnished by the Secretary of the Treasury.

Neither the Corps nor the Bureau computes and records interest on Federal investment in single-purpose projects or in multiple-purpose projects that do not include power for a purpose (or other reimbursable purposes in the case of the Corps and in municipal

water supply where not required by the Secretary of the Interior in the case of the Bureau). Legislation dealing with reclamation projects does not provide specifically for investment without interest on Federal irrigation projects, but the legislative history indicates that interest on the Federal investment was not intended.

Recommendation to the Secretary of the Interior  
and the Chief of Engineers

In our report dated December 21, 1956, on the audit of the Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects for the fiscal year ended June 30, 1955, we recommended that the Secretary of the Interior and the Chief of Engineers adopt a policy for recording interest on the Federal investment based on the following principles:

"The interest cost for each year should be determined on the net Federal investment in the project applicable to power or municipal water-supply purposes at the beginning of the year and on the accrued Federal expenditures, plus transfers of property from other Federal agencies, less any funds returned to the United States Treasury, for the fiscal year. Computations of interest should be based on the average monthly expenditures plus property transfers for the month, less any funds returned to the Treasury. During the construction period interest should not be computed on a compound basis.

"The rate of interest should be based on the long-term borrowing rate for several years and determined in consultation with the Secretary of the Treasury, unless otherwise provided by law.

"Interest applicable to the investment in facilities to the 'in service' dates should be charged to construction costs as interest during construction; and interest cost thereafter should be classified as an operating expense."

Present accounting procedures of the Corps of Engineers incorporate most of the principles stated above. We have been informed that the Department of the Interior cannot reach final decisions on interest on the Federal investment until recommendations of the Interior Cost Allocation and Financial Practices Committee have been received and considered by the Department.

Since final decisions on the matter of interest on the Federal investment have not been reached, the recommendation thereon is repeated.

## REPAYMENT OF THE GOVERNMENT'S INVESTMENT

Financial and statistical data on reimbursable operations prepared by the Corps of Engineers and the Bureau of Reclamation do not disclose clearly the actual repayment of investment of the United States Government from the funds derived from the operations in relation to the scheduled repayment or theoretical return of funds which would be sufficient to repay the Federal investment within the administratively determined repayment period.

Financing is a separate subject from cost accounting. The financial statements dealing with the determination of net income should not be used to show repayment information. Nor should scheduled or actual repayments be construed as a cost of operation to be substituted for provisions for depreciation. Comparison of actual repayment history with scheduled or theoretical repayment requirements can better be obtained from memorandum records, although all actual financial or statistical data, to the extent applicable, should be obtained from the official accounting records.

### Recommendation to the Secretary of the Interior and the Chief of Engineers

Our report dated December 21, 1956, on the audit of the Central Valley, Folsom Reservoir, Kings River, and Isabella Reservoir Projects for the fiscal year ended June 30, 1955, contained a recommendation as follows:

"Scheduled repayments of the investment of the United States Government in relation to the actual repayments from funds derived from operations or theoretical return of funds which would be sufficient to repay the Federal investment with the administratively determined repayment period should be disclosed to readers of the financial statements. We believe that data on status of repayment of investment should be supplemental to financial statements based on accounting for costs. Accordingly, we recommend that the Corps of Engineers and the Department of the Interior design statements specifically for the purpose of showing clearly the status of repayment of capital investment and provide information for reviews and evaluations of rates."

Until such time as agreements are reached on allocations and applications of project revenues to the Government's investment, it will not be possible to show the status of repayment of the capital investment in power and provide information for reviews and evaluations of rates as contemplated in the above recommendation. Accordingly, the recommendation is repeated.

## SCOPE OF AUDIT

Our audit of the offices of the Bureau of Reclamation and the Corps of Engineers having responsibility for water resources development programs in the Central Valley Basin, California, included reviews of activities and selected examinations of financial transactions in the following manner:

1. We reviewed the basic laws authorizing the activities and the pertinent legislative history to ascertain the purposes of the activities and their intended scope.
2. We ascertained the policies adopted by the Bureau and the Corps and reviewed the policy for conformance with basic legislation.
3. We reviewed the procedures followed by employees of the Bureau and the Corps to determine the effectiveness of the procedures.
4. We did not make a detailed audit, but we examined certain selected transactions to the extent we deemed appropriate for the purposes of this report. Our examination was made with due regard for the nature and volume of transactions and the effectiveness of internal control. The examinations of transactions were conducted at the Sacramento, California, regional office of the Bureau of Reclamation and the Sacramento, California, district office of the Corps of Engineers.

## OPINION OF FINANCIAL STATEMENTS

The accompanying statement of assets and liabilities (schedule 1) and statements of power operations and nonpower operations (schedules 2 through 10) are based on the accounting records of the Bureau of Reclamation and the Corps of Engineers. These financial statements present for the first time on a combined basis the assets and liabilities and the results of operations of the Bureau of Reclamation and the Corps of Engineers in the Central Valley Basin, California.

In our opinion the accompanying financial statements do not present fairly the financial position at June 30, 1956, and the financial results of operations for the fiscal year then ended, mainly for the conditions set forth below, the effect of which cannot now be determined:

1. Allocations of project construction costs to power and nonpower purposes have not been finally determined and, until these allocations are made, it will not be possible to make accurate assignment of provisions for depreciation and accruals of interest on the Federal investment to the several purposes, including power.
2. Agreement has not been reached between the Bureau of Reclamation and the Corps of Engineers on allocation of annual joint operation and maintenance expenses to the power and nonpower purposes. The Corps of Engineers has not made any allocation of joint operation and maintenance expenses to the several purposes at the Kings River and Isabella Reservoir Projects.
3. A uniform policy has not been established by the Department of the Interior and the Corps of Engineers for computing interest on the Federal investment.
4. A uniform policy has not been established by the Department of the Interior and the Corps of Engineers for recording depreciation of plant, property, and equipment in service, and provisions for depreciation on plant in service has not been recorded by either the Bureau of Reclamation or the Corps of Engineers in the Central Valley Basin Projects.
5. Revenues received by the Corps of Engineers on account of leasing reservoir lands have not been reduced by the amounts paid or to be paid to states in lieu of taxes.

**FINANCIAL STATEMENTS**

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)

CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAM

STATEMENT OF ASSETS AND LIABILITIES (note 1)

JUNE 30, 1956

Assets	Together	Bureau of Reclamation	Corps of Engineers	Liabilities	Together	Bureau of Reclamation	Corps of Engineers
<b>PLANT, PROPERTY, AND EQUIPMENT:</b>				<b>INVESTMENT OF U.S. GOVERNMENT AND ACCUMULATED EXCESS OF REVENUES OVER DEDUCTIONS:</b>			
Completed works (note 2)	\$571,684,278	\$504,316,680	\$67,367,598	Congressional appropriations (net) (note 9)	\$762,069,068	\$513,608,174	\$248,460,894
Construction work in progress (note 3)	120,195,265	30,923,536	89,271,749	Cost of property and services furnished by other Government agencies (net) (note 10)	5,372,276	67,054,556	61,682,280
Service facilities, less accumulated depreciation recorded in the amount of \$82,793 (note 4)	816,856	816,856	-	Interest on Federal investment (note 11)	14,218,707	10,113,702	4,105,005
Total	692,696,411	536,057,072	156,639,347		781,660,051	590,776,432	190,883,619
	3,457,176	1,573,564	1,883,612	<b>Less:</b>			
				Funds returned to U.S. Treasury (note 12)	108,605,616	108,120,536	485,080
<b>COSTS OF EXAMINATIONS AND SURVEYS, INCLUDING ADVANCE PLANNING (note 5)</b>				Net cost of non-revenue-producing programs (schedule 2) (note 13)	31,784,718	-	31,734,718
				Net investment of U.S. Government	140,390,334	108,120,236	32,269,178
				Accumulated excess of revenues over deductions (schedule 2):	641,269,717	482,653,896	158,613,821
				Power operations	60,930,519	60,930,519	-
				Water operations	613,726	613,726	-
				Nonoperating and unclassified	1,412,178	1,456,679	44,701
<b>CASH AND WORKING ASSETS:</b>				Total excess of revenues over deductions	62,986,423	63,033,124	46,701
Unexpended funds in U.S. Treasury appropriated by the Congress for construction and operation and maintenance (note 6)	22,066,076	15,875,009	6,191,067	Total	704,256,140	545,689,020	152,567,120
Deposit funds	1,184,306	1,184,306	-	<b>MATURED INSTALLMENTS OF FIXED OBLIGATIONS FOR USE OF FACILITIES (note 14)</b>			
Accounts receivable:				CURRENT AND ACCRUED LIABILITIES (note 15):			
Power customers	1,495,504	1,495,504	12,500	Accounts payable, including accrued payroll and contractors' earnings	3,014,154	2,263,060	750,434
Water customers	1,068,767	1,056,267	10,108	Other current and accrued liabilities	1,463,354	1,183,508	279,648
Other	333,130	323,022	10,108	Total current and accrued liabilities	4,477,508	3,447,168	1,030,340
Materials and supplies	769,152	769,152	-	ADVANCE COLLECTIONS AND OTHER DEFERRED CREDITS (note 16)			
Prepayments and advances	468,506	83,006	385,500	ACCUMULATED PROVISIONS FOR REPLACEMENT AND DEPRECIATION (note 17)	2,797,635	2,797,635	-
Total	27,385,441	20,786,266	6,599,175	CONTRIBUTIONS IN AID OF PROJECT DEVELOPMENT AND CONSTRUCTION (note 18)	5,769,723	5,769,723	-
				Total liabilities and investment of U.S. Government	9,723,890	94,211	9,629,679
<b>OTHER DEBITS:</b>				Total assets	\$728,665,097	\$559,437,958	\$169,227,139
Other work in progress	405,370	405,370	-				
Other deferred debits (note 7)	4,532,613	427,608	4,105,005				
Deferred and unmatured receivables (note 8)	188,078	188,078	-				
Total	5,126,061	1,021,056	4,105,005				

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAMSTATEMENT OF CUMULATIVE NET REVENUES AND NET COSTS OF OPERATIONSFOR THE FISCAL YEAR ENDED JUNE 30, 1956

	Cumulative to June 30, 1955	Fiscal year 1956 Excess of revenues over expenses or net costs	Prior year adjust- ments	Cumulative to June 30, 1956
<u>REVENUE-PRODUCING PROGRAMS:</u>				
Power	\$55,427,468	\$5,659,008	-\$155,957	\$60,930,519
Water:				
Irrigation	941,912	1,096,118	-417,062	1,620,968
Municipal and industrial	-596,098	-134,447	-246,697	-977,242
Total	345,814	961,671	-663,759	643,726
Nonoperating and unclassified:				
Nonoperating	-146,408	11,394 <sup>a</sup>	345,015	210,001
Folsom Dam and Reservoir	4,499	-	-4,499	-
Pine Flat Dam and Reservoir	637,650	507,387	-2,833	1,142,204
Isabella Dam and Reservoir	100,448	15,065	-55,540	59,973
Total	596,189	533,846	282,143	1,412,178
Total revenue-producing programs	\$56,369,471	\$7,154,525	-\$537,573	\$62,986,423
<u>NET COSTS OF NON-REVENUE-PRODUCING PROGRAMS (schedule 7) (note 13)</u>				
Flood control				\$18,166,357
Navigation				13,618,361
Total non-revenue-producing programs				\$31,784,718

<sup>a</sup>Represents excess of revenues over expenses of nonoperating activities for Central Valley Project of \$10,748 (schedule 6) and interest and penalties of \$646 at Orland Project.

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAMSTATEMENT OF RESULTS FROM POWER OPERATIONSCENTRAL VALLEY PROJECTFOR THE FISCAL YEARS ENDED JUNE 30, 1956 AND 1955

	<u>Fiscal year ended June 30</u>	
	<u>1956</u>	<u>1955</u>
<u>REVENUES:</u>		
Sales of electric energy:		
Private electric utilities	\$3,670,470	\$2,296,094
State agencies	4,158,955	3,711,374
Public authorities	1,544,170	1,437,694
Cooperative utilities	<u>37,579</u>	<u>15,543</u>
Total outside sales	9,411,174	7,460,705
Project use and sales to other projects	<u>451,037</u>	<u>660,105</u>
Total sales of electric energy	9,862,211	8,120,810
Rents and other revenues	<u>126,279</u>	<u>211,511</u>
Total operating revenues	<u>9,988,490</u>	<u>8,332,321</u>
<u>DEDUCTIONS:</u>		
Production expenses:		
Direct expense	486,169	381,159
Allocated from multiple-purpose operations (schedule 8)	197,697	24,519
Purchased power	9,933	212,817
Transmission expenses:		
Wheeling charges	1,255,809	1,321,695
All other	312,559	294,790
Customers' accounting and collecting	39,890	31,933
Power-marketing expenses	7,361	3,923
Administrative and general expenses:		
Direct expense	46,678	148,690
Allocated from multiple-purpose operations (schedule 8)	245,893	23,613
Property losses chargeable to operations	<u>4,246</u>	<u>4,246</u>
Total operation and maintenance expenses	2,606,235	2,447,385
Provision for replacement (note 17)	397,600	429,000
Interest on the Federal investment (note 11)	<u>1,325,647</u>	<u>1,024,246</u>
Total deductions	<u>4,329,482</u>	<u>3,900,631</u>
<u>EXCESS OF REVENUES OVER DEDUCTIONS FROM POWER OPERATION--TO SCHEDULE 2</u>	<u>\$5,659,008</u>	<u>\$4,431,690</u>

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAMSTATEMENT OF RESULTS FROM IRRIGATION OPERATIONSCENTRAL VALLEY PROJECTFOR THE FISCAL YEARS ENDED JUNE 30, 1956 AND 1955

	<u>Fiscal year ended June 30</u>	
	<u>1956</u>	<u>1955</u>
<u>REVENUES:</u>		
Rental of water	\$3,504,857	\$2,987,920
Rental of buildings	4,744	6,726
Miscellaneous	8,748	28,899
Interest and penalties	<u>9,634</u>	<u>3,557</u>
Total operating revenues	<u>3,527,983</u>	<u>3,027,102</u>
<u>DEDUCTIONS:</u>		
Storage system:		
Allocated from multiple-purpose operations (schedule 8)	158,314	92,259
Primary pumping:		
Allocated from multiple-purpose operations (schedule 8)	14,831	800,798
Direct expense (note 19)	609,525	-
Carriage system:		
Direct expense	877,523	448,320
Allocated from multiple-purpose operations (schedule 8)	81,100	393,219
Water users' accounting, collection, and water marketing:		
Direct expense	137,488	79,172
Allocated from multiple-purpose operations (schedule 8)	18,464	38,202
Administrative and general expenses:		
Allocated from multiple-purpose operations (schedule 8)	322,453	339,592
Property losses chargeable to operations	<u>16,167</u>	<u>3,712</u>
Total operation and maintenance expenses	<u>2,235,865</u>	<u>2,195,274</u>
Provision for replacement (note 17)	<u>196,000</u>	<u>173,700</u>
Total deductions	<u>2,431,865</u>	<u>2,368,974</u>
<u>EXCESS OF REVENUES OVER DEDUCTIONS--TO SCHEDULE 2</u>	<u>\$1,096,118</u>	<u>\$ 658,128</u>

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAMSTATEMENT OF RESULTS FROM MUNICIPALAND INDUSTRIAL WATER OPERATIONSCENTRAL VALLEY PROJECTFOR THE FISCAL YEARS ENDED JUNE 30, 1956 AND 1955

	Fiscal year ended June 30	
	<u>1956</u>	<u>1955</u>
<u>REVENUES:</u>		
Rental of water	\$371,054	\$351,188
Miscellaneous income	-	1,822
Interest and penalties	<u>21</u>	<u>655</u>
Total operating revenues	<u>371,075</u>	<u>353,665</u>
<u>DEDUCTIONS:</u>		
Allocated from multiple-purpose operations (schedule 8):		
Storage system	3,516	2,849
Primary pumping	56,960	43,482
Carriage system	131,891	94,084
Water-marketing expense	868	2,865
Administrative and general expenses	51,041	23,276
Property losses chargeable to operations	<u>146</u>	<u>146</u>
Total operation and main- tenance expense	244,422	166,702
Provision for replacement (note 17)	22,800	13,400
Interest on the Federal invest- ment (note 11)	<u>238,300</u>	<u>251,300</u>
Total deductions	<u>505,522</u>	<u>431,402</u>
<u>EXCESS OF DEDUCTIONS OVER REVENUES--</u> <u>TO SCHEDULE 2</u>	<u>\$134,447</u>	<u>\$ 77,737</u>

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAMSTATEMENT OF REVENUES AND DEDUCTIONSFROM OTHER (NONOPERATING) ACTIVITIESCENTRAL VALLEY PROJECT (note 20)FOR THE FISCAL YEARS ENDED JUNE 30, 1956 AND 1955

	Fiscal year ended	
	June 30	
	<u>1956</u>	<u>1955</u>
<u>REVENUES:</u>		
Grazing and farming lands	\$ 7,655	\$ 8,730
Special use permits	-	20
Miscellaneous	3,471	17,097
Fees from guided tours--Shasta Dam	-	12,088
Vista house concession--Shasta Dam	-	9,010
Rail-line operations--Redding/Corum	-	6,974
Total revenues	<u>11,126</u>	<u>53,919</u>
<u>DEDUCTIONS:</u>		
Grazing and farming lands expenses	378	1,143
Miscellaneous	-	14
Guided service and visitors' facilities	-	41,949
Rail-line operations--Redding/Corum	-	32,550
Marine service--Shasta Lake	-	19,199
Technical data for Chief Engineer	-	6,388
Administration and general expenses	-	21,533
Total deductions	<u>378</u>	<u>122,776</u>
<u>EXCESS OF REVENUES OVER DEDUCTIONS</u>	<u>\$10,748</u>	<u>\$-68,857</u>

(-) Excess of deductions over revenues.

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAMSTATEMENT OF NET COSTS OF FLOOD CONTROLAND NAVIGATION OPERATIONS (note 13)CUMULATIVE TO JUNE 30, 1956

	<u>Total</u>
<u>FLOOD CONTROL:</u>	
Sacramento River Reclamation District #537	\$ 41,909
San Joaquin River Reclamation District #2075	31,629
Merced County Stream Group	47,690
Farmington Dam and Reservoir	26,816
Bethel Island--Along Piper Slough	1,568
Reconnaissance and Condition Survey	8,032
Inspection of Completed Works	15,014
Emergency Flood Control Activities	9,732,652
Inactive Projects	<u>8,261,047</u>
Cumulative costs per books, June 30, 1956, to schedule 2	<u>\$18,166,357</u>
<u>NAVIGATION:</u>	
Sacramento River	\$ 7,419,309
Sacramento River Deep Water Ship Channel	187,840
Sacramento River and Tributaries	10,000
Sacramento River Mining Debris Dams	397,330
San Joaquin River	3,428,180
Stockton and Mormon Channels	172,701
Sursun Bay Channel	1,063,127
Sursun Channel	134,650
Old River	289,667
Yuba River	460,557
Inactive Projects	<u>55,000</u>
Cumulative costs per books, June 30, 1956, to schedule 2	<u>\$13,618,361</u>

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)

CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAM

STATEMENT OF EXPENSES OF MULTIPLE-PURPOSE OPERATIONS

AND DISTRIBUTION TO PURPOSES

CENTRAL VALLEY PROJECT (note 19)

FOR THE FISCAL YEARS ENDED JUNE 30, 1956 AND 1955

	<u>Fiscal year ended June 30</u>	
	<u>1956</u>	<u>1955</u>
<u>EXPENSES:</u>		
Storage system:		
Shasta Dam and Reservoir	\$ 176,768	\$ 94,960
Friant Dam and Reservoir	84,807	72,504
Folsom Dam and Reservoir	32,675	527
Martinez Reservoir	464	339
Nimbus fish hatchery	<u>54,926</u>	<u>-</u>
Total storage system	<u>349,640</u>	<u>168,330</u>
Primary pumping:		
Folsom Pumping Plant	15,329	6,553
Contra Costa Canals Pumping Plants	66,349	60,392
Tracy Pumping Plant (note 19)	<u>-</u>	<u>783,888</u>
Total primary pumping	<u>81,678</u>	<u>850,833</u>
Carriage system:		
Columbia-Mowry system (note 19)	-	7,147
Contra Costa Canal	148,752	125,924
Delta-Cross Channel	7,568	8,043
Delta-Mendota Canal (note 19)	-	305,523
Sacramento River	20,688	30,394
American River	3,689	346
San Joaquin River	29,582	27,259
Toyan pipe line	<u>2,712</u>	<u>1,699</u>
Total carriage system	<u>212,991</u>	<u>506,335</u>
Collection and water-marketing expenses	<u>19,332</u>	<u>41,067</u>
Administrative and general expenses	<u>619,387</u>	<u>443,214</u>
Total multiple-purpose expenses	<u>\$1,283,028</u>	<u>\$2,009,779</u>

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAMSTATEMENT OF EXPENSES OF MULTIPLE-PURPOSE OPERATIONSAND DISTRIBUTION TO PURPOSES (continued)CENTRAL VALLEY PROJECT (note 19)FOR THE FISCAL YEARS ENDED JUNE 30, 1956 AND 1955

	<u>Fiscal year ended June 30</u>	
	<u>1956</u>	<u>1955</u>
<u>DISTRIBUTIONS TO PURPOSES:</u>		
Power operations:		
Storage system	\$ 187,810	\$ 17,620
Primary pumping	9,887	6,553
Carriage system	-	346
Administrative and general expenses	<u>245,893</u>	<u>23,613</u>
Total power operations	<u>443,590</u>	<u>48,132</u>
Irrigation operations:		
Storage system	158,314	92,259
Primary pumping	14,831	800,798
Carriage system	81,100	393,219
Collection and water-marketing expenses	18,464	38,202
Administrative and general expenses	<u>322,453</u>	<u>339,592</u>
Total irrigation operations	<u>595,162</u>	<u>1,664,070</u>
Municipal and industrial water-supply operations:		
Storage system	3,516	2,849
Primary pumping	56,960	43,482
Carriage system	131,891	94,084
Collection and water-marketing expenses	868	2,865
Administrative and general expenses	<u>51,041</u>	<u>23,276</u>
Total municipal and industrial water-supply operations	<u>244,276</u>	<u>166,556</u>
Flood control operations (note 19):		
Storage system	-	41,019
Carriage system	-	14,466
Administrative and general expenses	<u>-</u>	<u>31,937</u>
Total flood control operations	<u>-</u>	<u>87,422</u>
Navigation operations (note 19):		
Storage system	-	14,244
Carriage system	-	4,559
Administrative and general expenses	<u>-</u>	<u>3,263</u>
Total navigation operations	<u>-</u>	<u>22,066</u>
Nonoperating (note 19):		
Administrative and general expenses	<u>-</u>	<u>21,533</u>
Total distributions of multiple-purpose expense	<u>\$1,283,028</u>	<u>\$2,009,779</u>

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAMSTATEMENT OF REVENUES AND EXPENSES--KINGS RIVER PROJECTFOR THE FISCAL YEARS ENDED JUNE 30, 1956 AND 1955

	Fiscal year ended June 30	
	<u>1956</u>	<u>1955</u>
<u>BUREAU OF RECLAMATION:</u>		
Rental of irrigation water	\$544,953	\$567,760
Marketing and general administrative expenses	<u>544</u>	<u>876</u>
Excess of revenues over expenses	<u>544,409</u>	<u>566,884</u>
<u>CORPS OF ENGINEERS (CIVIL FUNCTIONS):</u>		
Operation and maintenance expenses:		
Joint facilities (note 21):		
Dams and reservoirs	47,468	30,538
Service facilities	31,428	13,976
Condition and operation studies	21,748	14,220
Channel and river control	<u>1,081</u>	<u>212</u>
	101,725	58,946
Recreation	9,984	201
Supervision and administration (note 21)	<u>27,190</u>	<u>19,970</u>
Total operation and main- tenance expenses	138,899	79,117
Grazing and farm rentals and other nonoperating income (note 22)	<u>101,877</u>	<u>62,195</u>
Net expenses	<u>37,022</u>	<u>16,922</u>
<u>EXCESS OF REVENUES OVER EXPENSES</u>	<u>\$507,387</u>	<u>\$549,962</u>

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION AND CORPS OF ENGINEERS (CIVIL FUNCTIONS)  
CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAM

STATEMENT OF REVENUES AND EXPENSES--ISABELLA RESERVOIR PROJECT  
FOR THE FISCAL YEARS ENDED JUNE 30, 1956 AND 1955

	Fiscal year ended June 30	
	<u>1956</u>	<u>1955</u>
<u>CORPS OF ENGINEERS (CIVIL FUNCTIONS):</u>		
Sale and storage of water	\$ <u>57,646</u>	\$ <u>115,629</u>
Operation and maintenance expenses (note 21):		
Joint facilities:		
Dams and reservoirs	25,680	19,871
Service facilities	10,056	8,449
Condition and operation studies	<u>13,414</u>	<u>11,585</u>
	49,150	39,905
Recreation	800	432
Supervision and administration (note 21)	<u>5,495</u>	<u>5,097</u>
Total operating expenses	55,445	45,434
Grazing and farm rentals and other nonoperating income (note 22)	<u>12,864</u>	<u>23,158</u>
	<u>42,581</u>	<u>22,276</u>
<u>EXCESS OF REVENUES OVER EXPENSES</u>	\$ <u>15,065</u>	\$ <u>93,353</u>

The accompanying explanatory notes and comments on the financial statements on pages 82 through 94 are an integral part of this schedule.

BUREAU OF RECLAMATION

AND

CORPS OF ENGINEERS (CIVIL FUNCTIONS)

CENTRAL VALLEY BASIN WATER RESOURCES DEVELOPMENT PROGRAM

EXPLANATORY NOTES AND COMMENTS ON THE FINANCIAL STATEMENTS

1. Basis for preparation

The financial statements include the amounts recorded by the Bureau of Reclamation, Department of the Interior, for the Central Valley, Kings River, Kern River, Orland, and Solano Projects. Financial statements also include amounts recorded by the Corps of Engineers (Civil Functions), Department of the Army, for all projects in the Central Valley Basin. At June 30, 1956, the most significant of these projects are Folsom, Pine Flat, and Isabella Reservoir Projects, which are multiple-purpose projects, and the Sacramento River and San Joaquin River flood control and navigation projects.

The comprehensive plan for the construction of the initial features of the Central Valley Project, as set forth in House Document 191, Seventy-third Congress, second session, and modified by Rivers and Harbor Committee Document 35, Seventy-third Congress, second session, was authorized and adopted by the Emergency Relief Appropriation Act of 1935 (49 Stat. 115), and amended by the First Deficiency Appropriation Act, fiscal year 1936 (49 Stat. 1622), and the River and Harbor Act of 1937 (50 Stat. 844). Authorizations by the Congress also have provided for construction by the Corps of Engineers of reservoir projects which have irrigation and power benefits in the Central Valley Basin. These authorizations, as supplemented and amended, constitute the program of the Bureau of Reclamation and the Corps of Engineers (Civil Functions) in the Central Valley Basin that is represented in the financial statements.

Except for Folsom Reservoir, each agency operates the facilities constructed by it. The operation of the Folsom Reservoir is the responsibility of the Bureau of Reclamation. Construction of irrigation facilities, power plants and transmission lines, and the marketing of power not needed in the operation of the projects are the responsibility of the Bureau of Reclamation.

2. Completed works

Completed works of the Bureau of Reclamation and the Corps of Engineers are classified on the basis of the functional use of facilities, as follows:

	<u>Together</u>	<u>Bureau of Reclamation</u>	<u>Corps of Engineers</u>
Multiple-purpose	\$230,132,140	\$230,132,140	\$ -
Power	106,349,370	106,349,370	-
Irrigation	167,835,170	167,835,170	-
Flood control	54,321,437	-	54,321,437
Navigation	<u>13,046,161</u>	<u>-</u>	<u>13,046,161</u>
	<u>\$571,684,278</u>	<u>\$504,316,680</u>	<u>\$67,367,598</u>

The Bureau's multiple-purpose plant is stated to be operated for all purposes shown in the table above and, in addition, is operated for the purpose of supplying municipal water. The amount of multiple-purpose plant in service shown above was not allocated by the Bureau to the various end purposes served at June 30, 1956.

Interest during construction is not included as a cost of the facilities for commercial power and municipal water-supply purposes in any of the amounts shown above.

The amount shown above for irrigation does not include an allocated amount of power plant in service which would represent the use of power facilities for water pumping.

Completed works of the Bureau and Corps are stated generally at original costs to each agency.

### 3. Construction work in progress

Accumulated costs for construction work in progress are classified as follows:

<u>Plant</u>	<u>Together</u>	<u>Bureau of Reclamation</u>	<u>Corps of Engineers</u>
Multiple-purpose	\$ 82,259,215	\$22,643,465	\$59,615,750
Electric	538,583	538,583	-
Irrigation	7,741,488	7,741,488	-
Flood control	26,740,587	-	26,740,587
Navigation	<u>2,915,412</u>	<u>-</u>	<u>2,915,412</u>
	<u>\$120,195,285</u>	<u>\$30,923,536</u>	<u>\$89,271,749</u>

Costs accumulated in construction-work-in-progress accounts ultimately will be transferred to plant-in-service or other accounts.

Multiple-purpose plant construction work in progress of the Corps of Engineers represents principally Pine Flat Dam and Reservoir (\$38,768,971) and Isabella Dam and Reservoir (\$20,696,057). The Kings River and Isabella Reservoir Projects were completed during fiscal years 1954 (Kings River) and 1953 (Isabella Reservoir),

but transfers of the construction costs have not been made by the Corps of Engineers to plant-in-service accounts.

Interest during construction on the costs allocable to commercial power and municipal water-supply purposes has not been recorded at June 30, 1956, by the Bureau of Reclamation.

#### 4. Service facilities, less accumulated depreciation

Service facilities consist of cranes, trucks, automobiles, tractors, warehouses, office buildings, construction camps, and other equipment and facilities used in carrying out construction activities.

Depreciation is provided on most of these assets and miles traveled, hours used, percentages of expenditures or programed amounts are some of the methods used to distribute these provisions to construction-work-in-progress and other cost accounts.

#### 5. Costs of examinations and surveys, including advance planning

Expenditures by the Bureau of Reclamation for examinations, surveys, and studies of proposed projects, formulation of plans, and preparation of designs and specifications and similar activities referred to as investigations costs are classified in the records as project investigations of abandoned or unprogramed works and amounted to \$1,573,564 at June 30, 1956. These expenditures have been made from allotments of appropriations for construction and rehabilitation. Of the above amount, \$23,143 represents investigations of a potential power plant at the Bureau's Solano Project. The remaining amount of \$1,550,421 represents investigations of various units of the Central Valley Project.

Construction funds appropriated to the Corps of Engineers for planning and design in advance of actual construction are included as a part of the property costs of the projects. At June 30, 1956, expenditures for such planning and design totaled \$1,883,612 and was represented by:

Multiple-purpose reservoirs	\$1,866,555
Flood control channel project	<u>17,057</u>
Total	<u>\$1,883,612</u>

A difference in policy exists between the Bureau and the Corps, however, relating to the treatment of preliminary survey and investigations costs. It is Bureau procedure that, with the beginning of construction or rehabilitation of a unit, or extension, of a project by an allocation of funds appropriated by the Congress for construction and rehabilitation, the general investigations costs applicable to such unit or extension are transferred to and become a part of the total construction cost. On the other

hand, the costs of the Corps of Engineers for preliminary surveys and investigations of projects are not included in the financial statements and such costs are not considered by the Corps to be a part of the costs of projects.

6. Unexpended funds in the United States Treasury appropriated by the Congress for construction and operation and maintenance

Unexpended funds in accounts with the United States Treasury and with disbursing officers at June 30, 1956, are classified as follows:

	<u>Balances</u>	<u>Available for</u>		<u>Obligation</u>	<u>Not available</u>
		<u>Payment of liabilities</u>	<u>Liquidation of obligations</u>		
Bureau of Reclamation:					
Construction and rehabilitation	\$14,650,994	\$1,776,169	\$ 6,791,788	\$6,083,037	\$ -
Operation and maintenance	<u>1,224,015</u>	<u>487,491</u>	<u>291,362</u>	<u>-</u>	<u>445,162</u>
	<u>15,875,009</u>	<u>2,263,660</u>	<u>7,083,150</u>	<u>6,083,037</u>	<u>445,162</u>
Corps of Engineers:					
General construction, and operation and maintenance	<u>6,191,067</u>	<u>750,493</u>	<u>2,949,967</u>	<u>2,490,607</u>	<u>-</u>
	<u>6,191,067</u>	<u>750,493</u>	<u>2,949,967</u>	<u>2,490,607</u>	<u>-</u>
<b>Total</b>	<u>\$22,066,076</u>	<u>\$3,014,153</u>	<u>\$10,033,117</u>	<u>\$8,573,644</u>	<u>\$445,162</u>

Funds appropriated to the Bureau of Reclamation for operation and maintenance may be obligated only for the year for which the funds are appropriated. All other funds appropriated to the Bureau of Reclamation and the funds appropriated to the Corps of Engineers, both construction and operation and maintenance, remain available until expended.

The records of the Corps of Engineers are not established primarily to control allotments of general construction and operation and maintenance funds for projects in the Central Valley Basin only and to the exclusion of other projects not in the Basin. For this reason, a classification of Corps funds similar to the classification presented in the table above for funds appropriated

to the Bureau was not readily determinable. As noted above, however, both operation and maintenance and general construction funds appropriated to the Corps will remain available until expended. Therefore, the distinction between general construction and operation and maintenance funds appropriated to the Corps is less meaningful than such classification of Bureau funds.

#### 7. Other deferred debits

The Corps of Engineers computed interest during the construction of Folsom Dam and Reservoir. The amount was computed to be \$4,105,005 and was recorded in the records of the Corps. At the time Folsom Dam and Reservoir was transferred by the Corps to the Bureau of Reclamation, the cost of interest during construction, as well as the other costs of construction of Folsom Dam and Reservoir, was recorded in the records of the Corps as transferred to the Bureau. The records of the Bureau show that the cost of interest during construction was not accepted although all other construction costs were accepted.

The amount of interest during construction (\$4,105,005) has been reclassified as a deferred debit pending appropriate action by the Bureau.

#### 8. Deferred and unmatured receivables

Operation and maintenance expenses and interest and penalties on delinquent installments of construction repayment contracts have been recorded by the Bureau of Reclamation as due from the facility users of the Orland Project in the amounts of:

Operation and maintenance expenses	\$166,363	
Penalties and interest	<u>12,966</u>	\$179,329
Noncurrent unmatured receivables		<u>8,749</u>
Total		<u>\$188,078</u>

The contracts for repayment of construction costs provide that the \$179,329 will be repaid by the facility users in future years.

The noncurrent unmatured receivables consist of charges on which the time of collection has been extended or deferred.

#### 9. Congressional appropriations (net)

For the fiscal year 1956, congressional appropriations (net) have been allotted to Bureau of Reclamation projects in the Central Valley Basin for purposes as follows:

<u>Purposes</u>	<u>Fiscal year 1956</u>
Construction and rehabilitation	\$25,063,000
Operation and maintenance	<u>5,439,850</u>
Total	30,502,850
Rescissions and lapses	<u>491,035</u>
Congressional appropriations (net)	<u>\$30,011,815</u>

Cumulative congressional appropriations (net) to June 30, 1956, for construction and operation and maintenance of Bureau projects in the Central Valley Basin amounted to \$513,608,174.

The Corps of Engineers made cumulative allotments for construction and operation and maintenance to June 30, 1956, to projects in the Central Valley Basin as follows:

	<u>Cumulative to June 30, 1956</u>
Multiple-purpose projects	\$123,155,434
Flood control projects	101,485,967
Navigation projects	<u>23,819,493</u>
Total	<u>\$248,460,894</u>

A classification of the Corps allotments (net) (\$248,460,894) between general construction and operation and maintenance allotments was not determined because the records of the Corps are not established primarily to control allotments for general construction and operation and maintenance funds for projects in the Central Valley Basin only and to the exclusion of other projects not in the basin. (See note 6, p. 85.)

Congressional appropriations (net) in the financial statements for the Central Valley Basin program at June 30, 1956, are classified as to status as follows:

	<u>Together</u>	<u>Bureau of Reclamation</u>	<u>Corps of Engineers</u>
Unobligated	\$ 9,326,198	\$ 6,835,590	\$ 2,490,608
Unliquidated	10,033,119	7,083,150	2,949,969
Expended	<u>742,709,751</u>	<u>499,689,434</u>	<u>243,020,317</u>
Total	<u>\$762,069,068</u>	<u>\$513,608,174</u>	<u>\$248,460,894</u>

The amounts shown in the table above include funds appropriated (net) for general construction and operation and maintenance.

10. Cost of property and services furnished by other Government agencies (net)

Costs of equipment, materials and supplies, and services transferred to or from other projects within the Bureau of Reclamation, or other Federal agencies, without a transfer of funds are recorded by the Bureau and the Corps as a part of the investment of the United States Government.

The cost of property and services (net) furnished to the Bureau and the Corps is comprised of:

	<u>Together</u>	<u>Bureau of Reclamation</u>	<u>Corps of Engineers</u>
Appropriation transfer warrants:			
Costs of Bureau's Denver office for fiscal years 1947 and 1948 and transfers to U.S. Geological Survey for fiscal years 1947-50	\$2,731,210	\$ 2,731,210	\$ -
Nonappropriation transfer warrants:			
Costs of materials and equipment transferred principally from or to other projects (net)	2,641,066	2,633,646	7,420
Transfer of cost of Folsom Dam and Reservoir from Corps to Bureau (see note 7, p. 86)	-	61,689,700	-61,689,700
Total	<u>\$5,372,276</u>	<u>\$67,054,556</u>	<u>-\$61,682,280</u>

11. Interest on the Federal investment

Interest on the Federal investment amounting to \$10,113,702 has been recorded by the Bureau of Reclamation for the Central Valley Project at June 30, 1956. This amount is represented by interest of \$9,076,913 (\$1,325,647 in fiscal year 1956) on investment in power facilities and interest of \$1,529,500 (\$238,300 in fiscal year 1956) on investment in municipal water-supply facilities less \$492,711 recorded by the Bureau representing an amount due from the United States on the assumption that the annual provision for replacement of facilities will be invested to produce interest revenue. In determining the interest on the investment, the computations by the Bureau were based on the amounts for plant in actual service at 3 percent per annum for power and 2.5 percent

per annum on municipal water supply. To June 30, 1956, the Bureau has not recorded interest on the Federal investment during construction and prior to placing the completed plant into actual service.

It is the policy of the Bureau to compute annual provisions for replacement of power facilities of the Central Valley Project on a 3 percent sinking fund basis. Provisions for replacement of municipal water supply and irrigation facilities are computed on a straight-line basis. The effect of this policy, as it relates to the provision for replacement of power facilities, is that, at the end of the administratively determined repayment period, the replacement of facilities has been provided for in an amount which is equal to the total estimated cost of replacement, less interest compounded at 3 percent on the annual amounts provided from the time when operations began. This practice assumes that the annual provisions will be invested to produce interest revenue or that the interest cost on the general debt of the Federal Government will be reduced.

The Corps of Engineers computed and recorded the cost of interest during the construction of Folsom Dam and Reservoir in the amount of \$4,105,005. Responsibility for operation of Folsom Dam and Reservoir was transferred from the Corps to the Bureau, and all construction costs, including the amount of interest during construction (\$4,105,005), were recorded on the records as transferred to the Bureau. However, the records of the Bureau show that the cost of interest during construction was not accepted by the Bureau. (See note 7, p. 86)

## 12. Funds returned to United States Treasury

Funds returned to the United States Treasury by the Bureau of Reclamation as shown by the accounting records of the projects at June 30, 1956, are classified as follows:

	Net change fiscal year <u>1956</u>	Cumulative to <u>June 30, 1956</u>
Reclamation fund:		
Collections by the Bureau of Reclamation, exclusive of power revenues	\$ 4,628,379	\$ 24,592,343
Power revenues	<u>9,393,636</u>	<u>83,447,533</u>
	14,022,015	108,039,876
Other collections, deposited in general fund of the Treasury	<u>278</u>	<u>80,660</u>
Total funds returned to U.S. Treasury	<u>\$14,022,293</u>	<u>\$108,120,536</u>

Collections by the Bureau, exclusive of power revenues, include amounts collected by the Bureau from rental of water at the Corps-constructed and Corps-operated Kings River Project. These collections, which amounted to \$1,193,929 at June 30, 1956, were deposited by the Bureau in the reclamation fund.

Funds returned to the United States Treasury by the Corps of Engineers to June 30, 1956, as shown by the accounting records, are classified as follows:

<u>Project</u>	<u>Total</u>
Isabella	\$254,606
Pine Flat	163,293
Folsom	4,822
All other	<u>62,359</u>
	<u>\$485,080</u>

The amounts in the tabulation above consist principally of collections received from the sale and storage of water and receipts from leasing of reservoir areas for farming and grazing purposes.

### 13. Net cost of non-revenue-producing programs

The non-revenue-producing programs of the Corps of Engineers in the Central Valley Basin are established to provide flood protection, essentially by construction, operation, rehabilitation and maintaining flood control dams and reservoirs, and river bank levee and by-pass systems, and to foster navigation, essentially by dredging of navigation channels. The cumulative net cost of these programs to June 30, 1956, amounted to \$31,784,718. Of this amount, \$18,166,357 and \$13,618,361, respectively, are applicable to the flood control and navigation programs. Costs applicable to flood control resulting from operating and maintaining Pine Flat and Isabella Dams and Reservoirs, which are multiple-purpose projects, were not determined by the Corps and therefore no part of these costs is included.

We have not analyzed the accounts to obtain the cost of flood control and navigation operations for fiscal year 1956 nor tabulated the costs by appropriate cost account classification. For this reason, the fiscal year 1956 costs for flood control and navigation operations are not shown in the financial statements presented with this report.

The records of the Bureau of Reclamation show that there was no allocation of a portion of the annual operation and maintenance expense for the fiscal year 1956 to the Bureau's non-revenue-producing programs. The non-revenue-producing functions of the Bureau are identified as flood control, navigation, fish and wildlife, and recreation.

The Bureau's policy for the fiscal year 1956 was to adjust allocations of total estimated construction cost, which were prepared for administrative needs relating to repayment, to provide for estimated average annual operation and maintenance costs. This policy differs with the Bureau's policy for fiscal years 1953 through 1955, which provided for allocation of a portion of the actual operation and maintenance expense for each year to the non-revenue-producing functions.

Cumulative expenses to June 30, 1955, of the Bureau's non-revenue-producing functions were redistributed to the revenue-producing functions during the fiscal year 1956 as follows:

	<u>Total</u>
Power	\$ 32,248
Irrigation	354,793
Municipal water supply	<u>9,281</u>
Total	<u>\$396,322</u>

14. Matured installments of fixed obligations for use of facilities

Through long-term contracts, water users organizations have contracted to repay a part of the Government's investment in irrigation facilities, other than those irrigation facilities that are repayable from water rentals. The status of these contracts in the Central Valley and Orland Projects of the Bureau of Reclamation at June 30, 1956, is:

Repayment contracts	\$65,974,610
Less unmaturred charges	<u>64,334,409</u>
Repayment contracts matured	<u>\$ 1,640,201</u>

15. Current and accrued liabilities

Accounts payable of the Bureau of Reclamation include the amounts accrued for earnings of construction contractors that have not been paid or transferred to special deposits as contract hold-backs; accrued payrolls; and unpaid amounts due to or earned by vendors or suppliers (including other projects or the Bureau) in connection with the purchase of equipment under other than a construction contract, the acquisition of real estate, transportation, freight, and miscellaneous payables.

Other accrued and current liabilities of the Bureau of Reclamation at June 30, 1956, are comprised of:

Contract holdbacks pending satisfactory completion of contracts	\$ 935,548
Taxes withheld, including employers' FICA tax and bond deductions	227,354
Other special deposits	<u>20,606</u>
Liabilities to be paid from special deposits	<u>\$1,183,508</u>

Accounts payable of the Corps of Engineers include (1) the amounts accrued for earnings of construction contractors that have not been paid or transferred to the local disbursing officers' accounts as contract holdbacks and (2) unpaid amounts due to or earned by vendors or suppliers in connection with the purchase of equipment under other than a construction contract, the acquisition of real estate, transportation, freight, and miscellaneous payables.

16. Advance collections and other deferred credits

Advance collections and other deferred credits by the Bureau of Reclamation as shown by the accounting records are summarized as follows:

	<u>Amount</u>
Collections in advance on water rental and operation and maintenance charges	\$2,350,974
Miscellaneous deferred credits	<u>446,661</u>
Total	<u>\$2,797,635</u>

Collections received from water users and unapplied balances from operations to be applied on water rental charges totaled \$2,350,974 at June 30, 1956. These advances may be applied either on water rental charges during construction or on water rental charges during operation and maintenance. Revenue billings made in advance of the operating year are also included in this balance.

Included in the miscellaneous deferred credits is an amount of \$384,839 which represents the unexpended balance at June 30, 1956, of an advance to the Bureau from the Corps for cleanup work at Folsom Dam and Reservoir in the amount of \$385,500. The balance of \$61,822 to total to miscellaneous deferred credits of \$446,661 includes, primarily, receipts from sale of property, equipment, and other assets for which additional information is required to effect final disposition.

17. Accumulated provisions for replacement and depreciation

The accumulated provisions for depreciation and replacement by the Bureau of Reclamation for the Central Valley Project to June 30, 1956, are classified as follows:

	<u>Total</u>	<u>Plant classification</u>	
		<u>Multiple- purpose</u>	<u>Electric</u> <u>Irrigation</u>
Accumulated provisions for:			
Depreciation	\$ 488,453	\$ 488,453	\$ -    \$ -
Replacement	<u>5,281,270</u>	<u>1,336,892</u>	<u>3,780,628</u> <u>163,750</u>
Total	<u>\$5,769,723</u>	<u>\$1,825,345</u>	<u>\$3,780,628</u> <u>\$163,750</u>

Depreciation is provided by the Bureau of Reclamation on transportation and other equipment, and the amount in the above tabulation is the accumulated provisions to June 30, 1956.

The provisions for replacements are designed to provide for the amounts that will be written off from plant-in-service accounts as a result of the replacements during the repayment period. Provisions during fiscal year 1956 totaling \$616,400 were charged to power operations (\$397,600), irrigation operations (\$196,000), and municipal water operations (\$22,800).

18. Contributions in aid of project development and construction

Contributions in cash, property, or services for project development and construction are received by the Bureau of Reclamation from states, municipalities, associations, and individuals. The principal contributions received by the Bureau of Reclamation to June 30, 1956, are as follows:

Payments by the Division of Highways, State of California, for one half of the excess cost incurred by the Bureau in construction of the Contra Costa Canal highway crossing	\$21,388
Payment by the Department of Fish and Game, State of California, for construction of pipeline from Friant Dam to the end of U.S. right of way along the San Joaquin River	66,692
Contribution by the Orland Water Users' Association toward the cost of investigating the proposed Millsite Dam	1,800
Miscellaneous contributions	<u>4,331</u>
Total	<u>\$94,211</u>

Contributions totaling \$9,629,679 to June 30, 1956, have been received by the Corps of Engineers, principally from the State of California. The contributions by the State of California have been used primarily to defray the cost of flood protection along the Sacramento River and tributaries.

#### 19. Multiple-purpose operations expense

For the fiscal years 1953 through 1955 the Bureau of Reclamation classified Tracy Pumping Plant and Delta-Mendota Canal (including the Columbia-Mowry system) as multiple-purpose facilities in expectation that municipal water as well as irrigation water would be delivered by means of these facilities. The expense of operating and maintaining these facilities, therefore, was classified by the Bureau as multiple-purpose expense, and distributions of this expense to irrigation were shown on the records as an indirect expense.

During the fiscal year 1956 the Bureau classified the facilities mentioned above as single-purpose irrigation because there has been no municipal water deliveries to June 30, 1956. As a result, the decrease in multiple-purpose expense for distribution during the fiscal year 1956 compared with fiscal year 1955 (schedule 8, p. 78) has been substantially offset by an increase in irrigation operations direct expense during fiscal year 1956 (schedule 4, p. 74)

#### 20. Nonoperating revenues and deductions

Effective with the fiscal year 1956, the revenues and revenue deductions resulting from guided tours at Shasta Dam, the Shasta Dam vista house concession, operation of the Redding to Corum railroad, and operation of marine service on Shasta Lake were reclassified as multiple-purpose operating revenues and revenue deductions.

#### 21. Allocation of joint expenses

Expenses by the Corps of Engineers at the Kings River and Isabella Reservoir Projects for operating and maintaining joint facilities and supervision and administrative expenses have not been allocated to purposes to June 30, 1956. Both projects serve the purposes of flood control and irrigation, and provisions have been made at the Kings River Project for future power development.

#### 22. Credits to operations

Rentals from leases of reservoir lands and other nonoperating revenues have been received by the Corps of Engineers at the Folsom, Kings River (Pine Flat), and Isabella Reservoir Projects. Under the provisions of the Flood Control Act of 1941, as amended (33 U.S.C. 701C-3), 75 percent of the moneys received during any fiscal year on account of lands acquired for flood control, river and harbor, and allied purposes are to be returned to the state in which the lands are located. The amounts paid to states are not entered in the accounting records at district offices but are disbursed and recorded at the Office of the Chief, Washington, D.C.

**APPENDIXES**

AUTHORIZATIONS FOR WATER RESOURCES DEVELOPMENTIN THE CENTRAL VALLEY BASINEARLY AUTHORIZATIONS IN THE CENTRAL VALLEY BASIN

Prior to authorization in 1935 for construction of the initial features of the Central Valley Project, works of improvement had been undertaken by the Corps of Engineers on the main stem and tributaries of both the Sacramento and the San Joaquin Rivers. These improvements related to navigation and were concerned primarily with removal of snags; construction of brush jetties, restraining barriers, and wing dams; and securing a navigable low-water channel, with certain depths and widths, in specified sections of the rivers through dredging, cutting off sharp bends, and closing side channels.

The early navigation improvements on the Sacramento River and tributaries were adopted by river and harbor acts commencing with the act of March 3, 1875 (18 Stat. 456), and provided for channel work on the Sacramento, Feather, Yuba, Bear, and American Rivers. The existing project was authorized by river and harbor acts commencing with the act of March 3, 1899 (30 Stat. 1121), and, as modified by later acts, particularly the act of July 24, 1946 (60 Stat. 634), provided for construction of a ship channel 30 feet deep and 200 to 300 feet wide from deep water in Suisun Bay to Washington Lake, construction of a harbor and turning basin at Washington Lake, a connective canal with navigation lock from the harbor to the Sacramento River, and other channel work on the river to about 180 miles above Sacramento, California.

On the San Joaquin River the first improvements were authorized by river and harbor acts commencing with the act of August 14, 1876 (19 Stat. 132). The plan of improvement under these early authorizations did not become definite until about 1881. These early acts provided for general channel improvements on the San Joaquin River, including improvements for Stockton and Mormon Channels. The existing project, although related to work performed under these early acts, was supplemented and modified by river and harbor acts through the act of May 17, 1950 (64 Stat. 163). These acts provided for securing a navigation channel with a minimum low-water depth of 30 feet from the mouth of the San Joaquin at New York Slough up to Mormon Channel at Stockton, California, a distance of about 41 miles, and other channel work above that point and in Stockton and Mormon Channels. The act of May 17, 1950, modified the project and authorized extensive channel and harbor work in the area around Stockton, California.

Other early improvements on certain tributaries of both the Sacramento and the San Joaquin Rivers have been authorized by various river and harbor acts. These improvements have been directed primarily toward securing a navigable channel in certain stretches

of these rivers, mainly through construction of wing dams and brush jetties, removal of snags, and occasional dredging. These works of improvement relate primarily to the Feather River, Mokelumne River, and the Middle River and connecting channels.

#### INITIAL AUTHORIZATION OF CENTRAL VALLEY PROJECT

Construction of the Central Valley Project was initiated under authority of the Emergency Relief Appropriation Act, 1935 (49 Stat. 115), and was subsequently authorized under a Finding of Feasibility by the Secretary of the Interior, approved by the President on December 2, 1935. The principal engineering features of the project as outlined in the report, and which comprised the initial features of the project, consisted of:

- Kennett Dam (later changed to Shasta Dam), reservoir, power plants, transmission lines, and substation
- Contra Costa Canal
- San Joaquin pumping system
- Friant Dam and Reservoir
- Friant-Kern Canal
- Madera Canal

These features had an estimated total construction cost of \$170,000,000.

The San Joaquin pumping system feature of the project as described in the feasibility report contemplated the transferral of water from the Sacramento River to the San Joaquin River and upstream on the San Joaquin through a system of small dams and pumps. This plan was later altered to the use of a pumping plant at Tracy, California, and a single gravity canal to Mendota, referred to as the Delta-Mendota Canal.

Construction of the initial features was started in 1937, and by 1951 all the initially authorized features were essentially complete and in operation. The first unit of the project to be placed in operation was the Contra Costa Canal, which is operated primarily for the delivery of water for municipal and industrial use in the eastern area of Contra Costa County. Water was first delivered to the distribution system of the Contra Costa Canal in August 1940 for delivery to the city of Pittsburg, California, when the canal was only partially completed. All water delivered from the canal is distributed by the Contra Costa County Water District. Water was first diverted from Friant Dam into the Madera Canal in June 1944 and into the Friant-Kern Canal in March 1949 for delivery to irrigation customers in the San Joaquin Valley. The first large movement of water from Shasta Reservoir to the San Joaquin Valley began in August 1951, when the first pump at Tracy delivered water to the Delta-Mendota Canal. Delivery of water from Shasta Reservoir south some 500 miles through the Central Valley

of California to the southern San Joaquin Valley requires the coordinated operation of storage reservoirs, canals, power plants, transmission lines, and pumping plants. The first two generating units at the Shasta Power Plant, of 75,000 kilowatts each, were placed in operation in July 1944.

DEVELOPMENT OF COMPREHENSIVE PLANS  
FOR THE CENTRAL VALLEY BASIN  
BY THE CORPS OF ENGINEERS  
AND THE BUREAU OF RECLAMATION

Under authority of the Flood Control Acts of 1936 (49 Stat. 1570) and 1938 (52 Stat. 1215), the Corps of Engineers submitted survey reports to the Congress on most of the important flood-producing streams in the Sacramento-San Joaquin River basin. Based on the recommendations contained in these survey reports (published as various House and Senate documents), the Flood Control Acts of 1941 (55 Stat. 638) and 1944 (58 Stat. 887) authorized extensive flood control improvements for construction by the Corps of Engineers. The authorizations consisted of 11 multiple-purpose reservoirs on major streams, 5 flood control reservoirs on minor streams, and related and supplemental levee and channel improvements.

During this same period the Bureau of Reclamation, under the authority of the Federal reclamation laws, undertook extensive investigations along many of the rivers and streams in the Central Valley Basin preliminary to obtaining authorizations for constructing works for the development of these water resources.

Through the interagency agreement providing for joint action among the various Federal agencies, representatives of the Corps of Engineers, Bureau of Reclamation, Federal Power Commission, and Bureau of Agricultural Economics, Department of Agriculture, held a meeting at Sacramento, California, on July 16, 1943, and agreed that the Bureau of Reclamation and the Corps of Engineers each should prepare a report for the entire basin instead of individual reports on each of the numerous streams of the Sacramento-San Joaquin River basin, as had been done in the past. The report by the Corps of Engineers was to present a comprehensive plan for flood control, and the report by the Bureau was to present a comprehensive plan for water resource development.

On February 1, 1945, the Corps of Engineers issued their report entitled "Comprehensive Flood Control Survey Report on Sacramento-San Joaquin Basin Streams, California." This report updated and expanded all previous investigations made by the Corps and combined authorized and proposed new projects into a coordinated and comprehensive basin plan of flood protection and related water uses. The proposed plan contemplated construction of 19 multiple-purpose and 6 flood control reservoirs; 7 hydroelectric generating plants and 2 afterbay dams with power facilities;

revision and extension of certain existing levees and appurtenant works; and additional supplemental levees, channel improvements, and other related facilities at a total estimated cost of \$438,335,000.

On November 9, 1945, the Commissioner of Reclamation transmitted to the Secretary of the Interior his report on a comprehensive plan for water resource development in the Central Valley Basin. The Bureau's proposed plan included 38 major dams and reservoirs together with related canals, laterals, and drains; 28 hydroelectric power plants with supplementing fuel-electric plants, transmission and feeder lines, and substations; and other related works at a total estimated cost of \$1,810,800,000.

The comments of the Secretary of the Interior on the proposed report on the basin by the Chief of Engineers noted that the report was directed primarily toward flood control improvements, whereas the report by the Bureau was directed primarily toward development of irrigation, hydroelectric power production, and other beneficial uses of water in California, including flood control. The Secretary stated also that flood control was not the primary purpose of any truly comprehensive plan for the Central Valley Basin and that the primary concern of an adequate plan for the area must be to collect and distribute water. He stated further that flood control must be regarded in the case of the Central Valley Basin as secondary in importance to the necessity of conserving and distributing water.

The further comments by the Secretary of the Interior opposed division of agency responsibility for Federal development and control of the water resources of the Central Valley Basin, California. The Secretary proposed that certain projects authorized for construction by the Corps be either reauthorized by the Congress for construction and operation by the Bureau of Reclamation or that the operation and maintenance of these projects be transferred to the Bureau, upon completion of construction by the Corps, and that the related power facilities at all projects be constructed by the Bureau of Reclamation.

The comments of the Secretary of War on the proposed report by the Commissioner of Reclamation also brought out basic differences between these two Federal agencies in their respective plans for the development of the water resources of the Central Valley Basin. These differences related primarily to the relative importance of flood control and irrigation and stemmed largely from the laws and administrative procedures under which the Corps of Engineers and the Bureau of Reclamation operate.

The reports by the Corps and the Bureau were amended in supplementary reports by these two agencies dated July 27 and July 26, 1948, respectively, prior to their submission to Congress. These supplementary reports, however, did not materially

alter the original plan by these two agencies or their concept for development of the water resources of the basin.

On June 2, 1945, the President requested the Secretary of War to submit his report on the Central Valley Basin to him through the Director of the Bureau of the Budget, with a memorandum setting forth clearly the differences both as to plan of development and as to policy between the recommendations of the War Department and those of the Department of the Interior. Similar instructions were issued to the Secretary of the Interior. In a letter to the President, dated July 29, 1948, the Secretary of the Interior summarized the differences as to policy and administration between the Corps and the Bureau as their respective viewpoints concerning mainly:

1. The relative importance of irrigation and flood control.
2. The most efficient means of attaining coordinated operation of the various project works.
3. The applicability of reclamation law to projects constructed and operated by the Corps of Engineers.
4. The proper construction and operating agency for the various structures.

In his letter the Secretary of the Interior proposed the establishment of a definite and thoroughly understood Federal policy to guide the construction, operation, and administration of Federal works in the Central Valley to eliminate confusion and inefficiency and to provide for the maximum effectiveness of Federal participation in water resource development of the Central Valley.

On August 15, 1949, the President wrote similar letters to the Secretary of the Army and the Secretary of the Interior stating that the related reports by the two departments on the basin did not contain sufficient information with respect to engineering and economic feasibility to justify their approval as a comprehensive valley plan and that, aside from the authorizations for the projects specified in paragraph (c) of his letter, the other projects proposed in the reports were to be considered as an inventory of possible future work to be thoroughly investigated to justify construction authorization. The projects specified in the President's letter as projects which the reports demonstrated a need for authorization were:

1. The New Melones, Tuloch, and Pine Flat hydroelectric power plants by the Bureau of Reclamation, as adjuncts to authorized dam and reservoir projects.
2. A number of miscellaneous levee and channel improvement projects for flood control purposes by the Corps of Engineers.

The President further proposed transfer of existing construction authorization for certain multiple-purpose projects from the Corps of Engineers to the Bureau of Reclamation and the transfer of certain other projects to the Bureau for operation and maintenance after completion of construction by the Corps.

The President established a policy in his letter to be used as a guide in the construction, operation, and administration of future Federal works in the Central Valley, by providing that additional proposed projects not now authorized which are found feasible on the basis of detailed project reports will be approved for authorization in accordance with the Folsom formula, i.e., multiple-purpose dams are the responsibility of the Bureau of Reclamation, and dams and other works exclusively for flood control are the responsibility of the Corps of Engineers. The functional division of responsibility outlined by the President has been accepted by the Corps and the Bureau as a guide to further Federal development in the Central Valley of California.

The comprehensive reports by the Bureau and the Corps have been submitted to the Congress and were published as Senate document 113, Eighty-first Congress, and House document 367, Eighty-first Congress, respectively.

#### AUTHORIZATION FOR AMERICAN RIVER DEVELOPMENT

The construction of Folsom Dam and Reservoir was originally authorized by the Flood Control Act of 1944 (58 Stat. 887) to be constructed by the Corps primarily as a flood control project at an estimated cost of \$18,474,000. This authorization provided for a dam with a reservoir capacity of 355,000 acre-feet. Although part of this capacity was earmarked for irrigation, the authorization did not include provision for construction of irrigation or power facilities. After the project was authorized and before any appropriations had been made for construction, it was agreed by the Federal agencies concerned and the State of California that the project should be enlarged and built as a multiple-purpose project for flood control, irrigation, power, and other beneficial uses, with a reservoir capacity of 1,000,000 acre-feet.

In a special message to Congress on January 12, 1948, the President recommended that the Congress expand the present authorization for construction of Folsom Dam. The President recommended:

1. The transfer of Folsom Dam and Reservoir, upon completion by the Corps, to the Bureau for operation and maintenance as a coordinated unit of the Central Valley Project under the Federal reclamation law.
2. Construction by the Bureau of a power plant, afterbay, and necessary transmission lines.

3. Construction by the Bureau of irrigation canals and related works needed to deliver water from the reservoir to irrigation districts, cities, and suburban areas.

The reauthorization and enlargement of the Central Valley Project to include the American River development in the act of October 14, 1949 (63 Stat. 852), authorized the construction of Folsom Dam and related works substantially in accordance with the earlier recommendations of the President. The act directed the Secretary of the Interior to cause the operation of the authorized works to be coordinated and integrated with the operation of existing and future features of the Central Valley Project.

The act of October 14, 1949, further authorized the Secretary of the Interior through the Bureau of Reclamation to conduct investigations, surveys, and studies for the purpose of developing plans for disposing of the water and electric power which would be made available by the project, including a study of the water resources of the entire American River watershed.

Construction of Folsom Dam and Reservoir, by the Corps of Engineers, was started in 1948. These features were transferred to the Bureau for operation and maintenance on May 15, 1956.

#### AUTHORIZATION OF PINE FLAT DAM AND RESERVOIR

Construction by the Corps of Engineers of the Pine Flat Dam and Reservoir on the Kings River was authorized by the Flood Control Act of 1944 (58 Stat. 901) for flood control and other purposes for the Kings River and Tulare Lake Basin, California. Although the development of power at the dam was not included in the authorization, provisions were made for the installation of penstocks for possible future development of power.

The authorization for the project contained the following provisions:

"That the Secretary of War shall make arrangements for payment to the United States by the State or other responsible agency, either in lump sum or annual installments for conservation storage when used: provided further, that the division of costs between flood control, and irrigation and other water uses shall be determined by the Secretary of War on the basis of continuing studies by the Bureau of Reclamation, the War Department, and the local organizations."

The War Department Civil Appropriation Act, 1947 (60 Stat. 160), included \$1,000,000 for the initiation of construction of the project, but provided that none of the appropriation should be used until the Secretary of War had received reports as to the

division of costs between flood control, irrigation, and other water uses from the Bureau of Reclamation and local organizations and, with the concurrence of the Secretary of the Interior, had made a determination as to what the allocation should be. In addition the President asked the Director of the Budget to impound the funds appropriated for construction of the project, pending allocation of costs and the making of the repayment arrangements.

In a letter dated January 31, 1947, to the President transmitting a report on the division of costs of the Kings River Project (published as H. Doc. 136, 80th Cong.), the Secretary of War determined that the division of costs to irrigation should be set at an amount not to exceed \$14,250,000, the exact amount to be agreed upon between the Bureau of Reclamation and the local agencies concerned. The Secretary of War proposed that the Kings River Project be constructed immediately and operated initially for flood control but not operated for irrigation until agreement had been reached between the Bureau of Reclamation and local water users on the division of costs and on repayment arrangements. The Secretary of War recommended that the funds appropriated by the War Department Civil Appropriation Act, 1947, be released from impoundment by the Bureau of the Budget. This recommendation and the proposals by the Secretary of War were concurred in by the Secretary of the Interior, and the funds were released for initiation of construction of the project.

Construction of the project was started in April 1947 and was substantially completed in June 1954. The project was operated for flood control during fiscal years 1955 and 1956 and for irrigation under interim contracts with the Kings River Conservation District.

#### AUTHORIZATION OF ISABELLA DAM AND RESERVOIR

Construction of the Isabella Dam and Reservoir on the Kern River was authorized by the Flood Control Act of 1944 (58 Stat. 901) for flood control and other purposes in the San Joaquin Valley, California. The authorization provided for construction, operation, and maintenance of the project by the Corps of Engineers primarily for flood control and for water conservation purposes. Although development of commercial power at the dam was not included in the authorization of the project, benefits accrue to downstream hydroelectric power plants of private utility companies as a result of the existence of Isabella Dam and Reservoir. The project as authorized is a unit in the comprehensive plans proposed by the Corps of Engineers and the Bureau of Reclamation for the development of the water resources of the Sacramento-San Joaquin Basin.

Construction of project works was started in March 1948 and the dam was completed in April 1953. Operation of the reservoir was initiated in fiscal year 1954 to provide the flood protection and conservation benefits for which it was designed.

#### AUTHORIZATION OF SACRAMENTO VALLEY IRRIGATION CANALS

The construction of the Sacramento Valley irrigation canals was authorized by the act of September 26, 1950 (64 Stat. 1036), as an integrated part of the Central Valley Project of California. The principal features of the project authorized by the act comprise the Tehama-Colusa Canal located on the west side of the Sacramento River, together with all necessary pumping plants and appurtenant works to irrigate lands in Tehama, Glenn, and Colusa Counties, and the Chico Canal located on the east side of the Sacramento River, together with all necessary pumping plants and appurtenant works to irrigate lands in Tehama and Butte County, or such alternate canals and pumping plants as in the opinion of the Commissioner of Reclamation and the Secretary of the Interior may be necessary to provide an adequate water supply to meet the irrigation, industrial, domestic, and other beneficial requirements of water for these lands.

Section 5 of the act provided:

"That no expenditure of funds shall be made for construction of this project until the Secretary of the Interior, with the approval of the President, has submitted to the Congress, with respect to such works, a completed report and finding of feasibility under the provisions of the Federal reclamation laws."

In accordance with the requirements of this section of the act, the Secretary of the Interior, on January 19, 1953, transmitted to the Congress his report and findings (H. Doc. 73, 83d Cong.) on the Sacramento canals unit of the Central Valley Project. The report stated that the Sacramento canals unit had engineering feasibility, provided that the proposed Trinity River division, upon which the canals unit is dependent for a firm water supply, will be authorized and constructed. This report by the Secretary of the Interior satisfied the requirements of section 5 of the authorizing act and cleared the Sacramento canals unit for construction as an integrated part of the Central Valley Project.

The revised plan of development for the Sacramento canals unit at an estimated cost of \$54,396,000 is comprised of three main conveyance canals diverting water from the Sacramento River. In addition to the works of improvement described in section 2 of the act of September 26, 1950, the revised plan provided for the construction of the Corning Canal on the west side of the river beginning near Red Bluff and extending southerly a distance of

about 25 miles to serve lands in southern Tehama County. Water for this canal would be lifted from the Sacramento River by an electrically powered pumping plant.

#### AUTHORIZATION OF THE TRINITY RIVER DIVISION

Construction of the Trinity River Division was authorized by the act of August 12, 1955 (69 Stat. 719), as an addition to and an integral part of the Central Valley Project, California, primarily for the purpose of increasing the supply of water available for irrigation and other beneficial uses in the Central Valley of California. The principal features of the Trinity River Division authorized by the act comprise Trinity Dam, Reservoir, and Power Plant; Lewiston Dam, Reservoir, and Power Plant; Tower House Tunnel, Power Plant, and Diversion Dam; and Matheson Tunnel and Power Plant, at a total estimated cost of \$225,000,000.

The general plan of development provided that Trinity Reservoir on the Trinity River, with a storage capacity of 2,500,000 acre-feet, would store Trinity River waters for diversion into the Sacramento River basin. Lewiston Reservoir, a short distance downstream from Trinity Reservoir, would reregulate flows from Trinity Reservoir for downstream uses, especially for fish purposes, and for diversion through Clear Creek Tunnel and Power Plant into Clear Creek. Whiskeytown Dam on Clear Creek, just below the power plant, would divert water through Spring Creek Tunnel and Power Plant into the existing Keswick Reservoir on the Sacramento River. Under this general plan about 704,000 acre-feet of Trinity River water would be diverted annually to the Sacramento River basin to meet the ultimate needs of 205,400 acres in the recently authorized Sacramento canals unit and for use on other lands in the Central Valley Basin.

Section 1 of the authorizing act directed the Secretary of the Interior to continue:

\*\*\*\* engineering studies and negotiations with any non-Federal agency with respect to proposals to purchase falling water and, not later than eighteen months from the date of enactment of this act, report the results of such negotiations, including the terms of a proposed agreement, if any, that may be reached, together with his recommendations thereon, which agreement, if any, shall not become effective until approved by Congress."

The Committee on Interior and Insular Affairs of the Senate concluded in its report that this provision was not to be considered a commitment on the part of the Congress to the sale of falling water or to any arrangement other than construction and operation of the entire project, including the power features, by the United States, and was not to be understood as an authorization to

waive, in any negotiation for the sale of falling water, any preference in the sale or transmission of power as expressed in section 5 of the Flood Control Act of 1944, the Reclamation Project Act of 1939, or in any other law.

The authorizing act provided that 25 percent of the additional electric energy added to the Central Valley Project Power System as a result of the construction of the Trinity River Division is to be made available, under reclamation law, to preference customers in Trinity County, California. The remainder of the electric energy generated was to be disposed of in accordance with preferences expressed in the Federal reclamation laws. The operation of the works authorized was to be integrated and coordinated with the operation of other features of the Central Valley Project.

#### AUTHORIZATION OF THE SOLANO PROJECT

The Solano Project, under construction by the Bureau of Reclamation, is located on the west side of the Central Valley Basin about 30 miles west and south of the city of Sacramento. The project was authorized by the Secretary of the Interior on January 28, 1949, in accordance with section 9(a) of the Reclamation Project Act of 1939 (53 Stat. 1187). The report and letter of authorization are printed as House Document 65, Eighty-first Congress.

The Solano Project, as presently planned and being constructed, is not considered to be an integrated part of the Central Valley Project, but it is a part of the comprehensive plan for the development of the water resources of the Central Valley Basin. Certain features of the project could be coordinated with existing and potential future works in the Central Valley Basin.

The principal features of the project consist of Monticello Dam, a concrete arch-type structure which will create a storage capacity of 1,600,000 acre-feet, a low diversion dam downstream from Monticello Dam which is designed to divert water into a concrete-lined main conveyance canal 38 miles long with a diversion capacity of 920 cubic feet per second and terminal capacity of 115 cubic feet per second, an irrigation distribution system, and a drainage system. The estimated cost of this project contained in the definite plan report as revised to February 20, 1953, was \$47,111,000. The current estimate of the cost of this project is \$52,410,000.

The principal purposes of the project are to provide for the municipal and industrial water needs of the cities of Vallejo, Benicia, Fairfield, and Suisun in Solano County, California, as well as to supply irrigation water in the county. About 27,200 acre-feet of municipal and industrial water use is expected annually by the year 1990, and it is planned that the project would deliver 216,000 acre-feet annually for irrigation use at

the diversion dam. The project is expected also to provide some flood control benefits. Although provision has been made in the construction of Monticello Dam for the construction of a small power plant, such a power plant is not being constructed at the present time.

#### AUTHORIZATION OF THE ORLAND PROJECT

The Orland Project, constructed by the Bureau of Reclamation, is located about 100 miles north and west of the city of Sacramento in the foothills which form the western extremities of the Central Valley Basin. The project is one of the oldest reclamation projects in the basin and, although it is not an integrated part of the Bureau's Central Valley Project, it contributes to the comprehensive plan for water resource development in the Central Valley Basin.

The Orland Project was authorized under the provisions of the Reclamation Act of June 17, 1902 (32 Stat. 388), which permitted the Secretary of the Interior "\*\*\*\* to make examination and surveys for, and to locate and construct, as herein provided, irrigation works for the storage, diversion, and development of waters \*\*\*." The Secretary of the Interior found the Orland Project feasible and authorized its construction as a consequence of the following documents:

1. Letter dated November 12, 1906, from a Board of Engineers of the United States Geological Survey and the Reclamation Service to the Chief Engineer, United States Geological Survey.
2. Letter dated August 5, 1907, from a Board of Engineers of the Reclamation Service to the Director of the United States Reclamation Service.
3. Letter dated October 5, 1907, from the Acting Director of the Reclamation Service to the Secretary of the Interior recommending that the Orland Project be approved for construction, which recommendation was followed by an endorsement dated October 5, 1907, on the letter, by the Secretary of the Interior.

Construction began on August 27, 1908, and the first water was available in the 1910 season.

The principal features of the project consist of two concrete storage dams which create storage capacities of 51,000 and 50,200 acre-feet of water, three diversion dams, and a carriage, distribution, and drainage system. The operation of these features allows the consummation of the irrigation purpose of the project.

Flood control is not a stated purpose of the project, and hydroelectric power plants have not been constructed as a part of the project.

The total construction cost of the project as recorded in the records of the Bureau at June 30, 1956, is \$2,583,870. In addition, it is estimated that an amount of \$750,000 will be required to be expended to rehabilitate some of the existing features of the project. At June 30, 1956, a contract between the Bureau and the Orland Unit Water Users' Association had been signed covering \$250,000 of this rehabilitation work.

METHODS OF ALLOCATION OF ESTIMATED CONSTRUCTION COSTS  
OF MULTIPLE-PURPOSE PROJECTS TO POWER  
AND OTHER PURPOSES

The allocation of construction costs of multiple-purpose projects to purposes is the division of the costs into amounts considered equitable to charge to each of the project purposes. These allocations are important because the charges to beneficiaries for certain services of the project are determined on the basis of the costs incurred. The rates for sale of power, or lease of power privileges, include interest on the construction costs allocated to the purpose. The fairness in the reporting on financial policies and administration, and on the financial results of operations, is dependent upon the reasonableness of the allocations.

Construction costs of projects for more than a single purpose include joint and specific costs. Joint construction costs include costs of facilities useful for more than a single purpose (e.g., multiple-purpose dams and reservoirs) and must therefore be allocated to the several purposes. Specific construction costs are costs of facilities serving a single purpose (e.g., power plants and irrigation canals) and can therefore be allocated directly to that purpose.

In the past, the several agencies of the Federal Government having water resource development responsibilities have used various methods for allocating joint costs of multiple-purpose projects, the most common being the (1) benefits, (2) alternative-justifiable-expenditure, (3) use-of-facilities, and (4) priority-of-use methods.<sup>1</sup> The Subcommittee on Benefits and Costs prepared

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<sup>1</sup>Benefits method--Based on excess of benefits over specific costs. Joint costs are allocated in the ratio of such excess benefits for each purpose to total such excess benefits for all purposes.

Alternative-justifiable-expenditure method--Based on excess of (1) cost of single-purpose projects (providing benefits equivalent to those of a multiple-purpose structure) or (2) benefits, whichever is lower, over specific costs. Joint costs are allocated in the ratio of such excess costs (or benefits) for each purpose to the total such excess costs (or benefits) for all purposes.

Use-of-facilities method--Based on various measurements of the physical use of the facilities, such as capacity of reservoir or quantity of water released. Joint costs are allocated in the ratio of use for each purpose to total for all purposes.

Priority-of-use method--Based on priority of use of the facilities by purposes. The benefits method of the alternative-justifiable-expenditure method, whichever is lower, is used to determine that part of the joint costs to be assigned to the purpose having top priority of use of the facilities. Remaining joint costs are similarly assigned to each purpose in order of its priority of use of the facilities until all joint costs are allocated.

a report (May 1950) to the Federal Inter-Agency River Basin Committee entitled "Proposed Practices for Economic Analysis of River Basin Projects," commonly referred to as "The Green Book," recommending the separable costs--remaining benefits method<sup>1</sup> of cost allocation. This method has the objective of an equitable distribution of costs among the purposes served by preventing costs allocated to any purpose from exceeding corresponding benefits, by requiring each purpose to carry at least its separable cost, and, within these maximum and minimum limits, by providing for proportional sharing of the savings resulting from multiple-purpose development.

On December 31, 1952, circular No. A-47 relating to water resources projects was issued by the Bureau of the Budget. This circular provided certain standards and procedures to be used by the Executive Office of the President in reviewing proposed water resource project reports and budget estimates to initiate construction of such projects. The circular recognized the absence of uniform standards and procedures in many of the problems related to water resource development and expressed the hope that the circular would encourage the adoption of uniform standards and procedures as a better basis for evaluating the merits of proposed projects. On allocation of costs of multiple-purpose projects, the circular provides:

"The costs of facilities or features of a program or project used jointly by more than one purpose of water resource development shall be allocated among the purposes served in such a way that each purpose will share equitably in the savings resulting from combining the purposes in a multiple-purpose development."

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<sup>1</sup>The separable costs--remaining benefits method of cost allocation differs from the generally recognized benefits method in that the amounts of benefits used as a basis for the allocation in the separable costs--remaining benefits method are limited by the costs of available single-purpose alternative projects. In this respect it resembles closely the alternative-justifiable-expenditure method except that the concept of specific costs for each purpose is replaced by the concept of separable costs for each purpose.

Separable cost for each project purpose of a multiple-purpose project is the difference between the total cost of the multiple-purpose project and the cost of such project with the purpose omitted. Separable costs include more than the direct and specific costs of physically identifiable facilities serving only one purpose. Separable costs include also the added costs of increased size of structures and changes in design for a particular purpose from that required for all other purposes of the project, such as the cost of increasing the storage capacity of a reservoir.

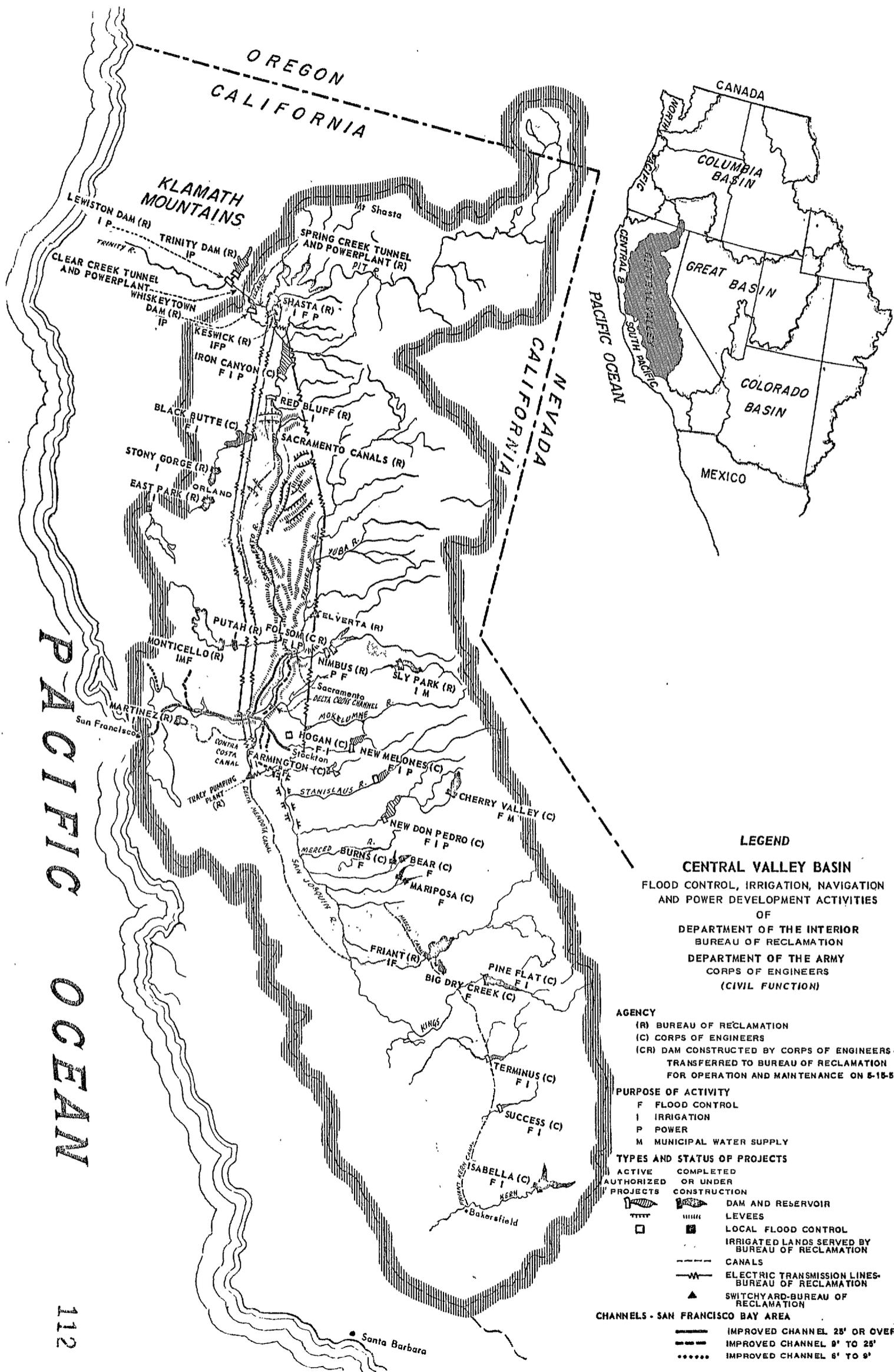
The circular, however, did not suggest or require the use of any specific method of allocation.

By memorandum dated April 2, 1954, to heads of Bureaus and Offices in the Department of the Interior, the Assistant Secretary of the Interior stated that general agreement on cost allocation of multiple-purpose projects had been reached with the Corps of Engineers and the Federal Power Commission. Similarly on March 29, 1954, the Chief of Engineers issued a release to division and district engineers and other interested parties within the Corps of Engineers that contained a similar statement. These communications described acceptable methods for allocation of costs of multiple-purpose projects as:

1. Separable costs--remaining benefits
2. Alternative justifiable expenditure
3. Use of facilities

The separable costs--remaining benefits method was described as preferable for general application. The alternative-justifiable-expenditure method was considered to be acceptable where the necessary basic data to determine separable costs were not available and the time and expense required to obtain the data were not warranted. The use-of-facilities method was considered to be acceptable where the use of facilities is clearly determinable on a comparable basis and where the method would be consistent with the basis of project formulation and authorization. The costs of a multiple-purpose project are to be allocated among the purposes served in a manner that each purpose will share equitably in the savings resulting from combining the purposes in a multiple-purpose development.

The Presidential Advisory Committee on Water Resources Policy in a report dated December 22, 1955, entitled Water Resources Policy stated that it was important that uniform standards be used by all agencies for allocating costs of multiple-purpose projects. The committee, consisting of the Secretary of Agriculture, the Secretary of Defense, and the Secretary of the Interior, endorsed for general use the separable costs--remaining benefits method as previously adopted by Federal agencies. The committee stated that costs represented by expenditures to mitigate damages to existing resources and facilities should be equitably allocated among the project purposes.



APPENDIX C