1954

U. S. COLUMBIA RIVER POWER SYSTEM

Report

U. S. DEPARTMENT OF THE INTERIOR

BONNEVILLE POWER ADMINISTRATION

Consisting of

the Bonneville Power

Administration,

& Power Components of

the Bonneville Dam Project,

the Columbia Basin Project

(Grand Coulee Dam),

the Hungry Horse Project,

the Detroit Project

(Detroit Dam &

Big Cliff Dam),

& the McNary

Dam Project

THE U. S. COLUMBIA

U. S. DEPARTMENT OF THE INTERIOR

BONNEVILLE POWER ADMINISTRATION

RIVER POWER SYSTEM

PORTLAND 8, OREGON

Contents

Letter of Transmittal

January 1, 1955

The Honorable
The Secretary of Interior
Washington, D. C.

Dear Mr. Secretary:

Operations of the U. S. Columbia River Power System from July 1, 1953 through June 30, 1954, are covered in the 17th annual report of the Bonneville Power Administration, respectfully submitted as required by Section 9 (c) of the Bonneville Project Act.

The report embraces the Administration's management, operating and financial responsibilities. It also gives an official accounting of the joint trusteeship for power components of Federal multipurpose dams under jurisdiction of the Corps of Engineers and the Bureau of Reclamation, for which the Administration is designated as marketing agency.

Substantial additions to the generating capacity on the Federal system and comparatively favorable streamflows in the Columbia River Basin combined to set a new record of 20.2 billion kilowatt-hours of energy generated in fiscal year 1954. Gross operating revenues were $45,317,693, the highest for any year of the system's operation. These figures reflect a 15 percent increase over fiscal 1953 in energy generated and 15.68 percent in gross revenues.

Net revenues for the year decreased 9.72 percent due largely to high costs of new dams going into service. Hungry Horse dam was completed in 1954 and operations started at Albeni Falls, McNary, Detroit and Big Cliff dams. Increases in the cost of transmission facilities, and operation and maintenance activities, reflected the growth of the Administration's transmission system.

As of June 30, 1954, the Federal gross investment allocated to commercial power operations for both generation and transmission was $1,240,790,232. The invested capital was reduced to an unpaid balance of $842,596,730 as of June 30, 1954 by cumulative repayments to that date of $170,409,916, equal to 16.82 percent of the total investment. Repayment of the capital investment in the Bonneville Power Administration transmission system is approximately $55,400,000 ahead of schedule.

At the end of the fiscal year Bonneville Power Administration was operating 6,377 circuit miles of transmission lines and 158 substations, an increase of 670 miles of transmission lines and 13 substations over the previous year. Through the interconnected systems of the Northwest grid and the Administration's customer substations, these transmission facili-

ties supplied over 58 percent of the total energy generated by major utilities of the region. In addition to supplying power requirements of the Administration's 116 industrial, non-pool utility and Federal customers, it delivered approximately 3.9 billion kilowatt-hours of energy to meet requirements of Northwest Power Pool utilities.

Additions to the Federal system generation in fiscal year 1954 totaled 540,500 kilowatts, nameplate rating, while non-Federal utilities in the area served by the Administration added a nameplate rating total of 249,200 kilowatts.

Brief comment should be made on several significant management and policy phases of the Administration's program.

The power partnership policy of President Dwight D. Eisenhower under guidance of the Department of Interior has aroused great activity and interest in the Pacific Northwest. Bonneville Power Administration is offering full cooperation to all utilities of the region, both publicly and privately owned, in planning for integration of proposed non-Federal projects with the Federal power system.

The unprecedented interest in the power partnership policy is reflected by 41 applications for power projects in the Pacific Northwest which have been filed by non-Federal utilities with the Federal Power Commission. These applications represent a potential addition of over 8,000,000 kilowatts, exclusive of several proposed Canadian storage projects which could add between 1,000,000 and 1,500,000 kilowatts of generating capacity to the Columbia

River system in the United States.

There is every reason to believe the power requirements of the Pacific Northwest can be met through the new generation contemplated under the partnership program and construction of recommended Federal multipurpose projects such as Libby dam.

An important achievement is represented by the new formula developed within the Bonneville Power Administration whereby its present basic wholesale rate of $17.50 per kilowatt-year continues until December 1956 in spite of greatly increased construction costs for recent additions to the Federal system. Although it is recognized that an increase will eventually be necessary to meet increased costs, there is every assurance that such increases will be moderate.

Internal changes began with a management survey of Bonneville Power Administration's organization in February 1954. This has resulted in simplification of the organizational structure and substantial operation and management economies.

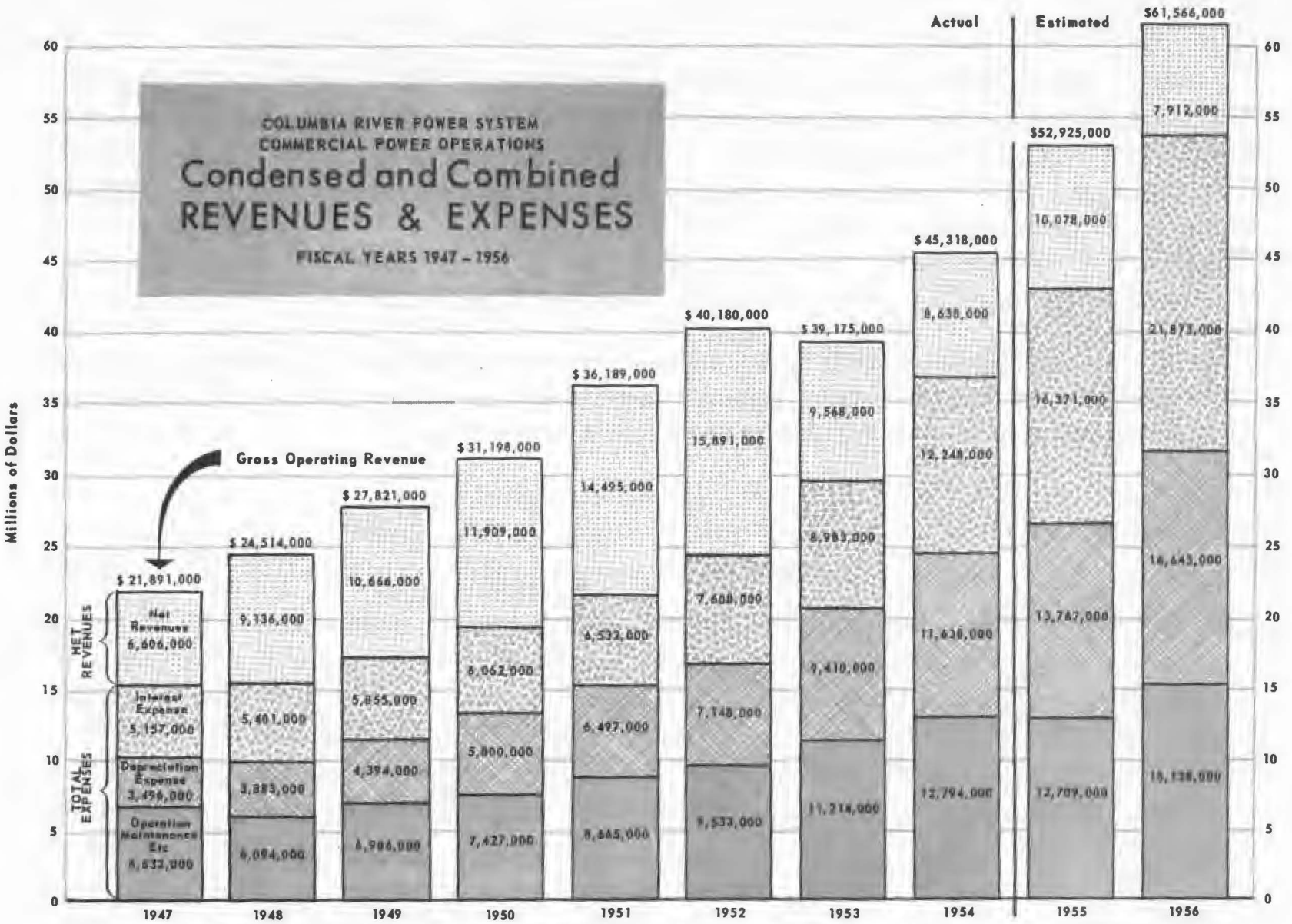
Bonneville Power Administration and other department agencies in the Portland area occupied the new Department of Interior building, 1001 N. E. Lloyd Boulevard, as the fiscal year closed. The move not only has increased the efficiency of the administration's operations but has brought about closer working relationships with related bureaus. Since the end of the fiscal year, payroll, voucher audit, personnel, transportation, office supply, communication and other administrative services of the department agencies have been operated on a consolidated basis.

In conclusion it may be said that Bonneville Power Administration is not alone in being able to report notable progress toward the long-range goal of power development for the Pacific Northwest. Never in the history of the region has a more optimistic, comprehensive and promising approach been made to solution of the Pacific Northwest's power problems than in the current work of the Columbia Basin Inter-Agency Committee, the Northwest Governors' Power Policy Committee, the Interstate Compact Commission, the Washington State Power Commission, the Puget Sound Utilities Council, and other regional and local groups.

These efforts, buttressed by the demonstrated willingness of all Federal, state and local groups concerned to cooperate as partners for the solution of these problems, should have a tremendous impact on the welfare and economy of the region.

Sincerely,

Wm. A. Pearl
Administrator



NOTES: The estimates of gross operating revenue for fiscal years 1955 and 1956 are based on an assumption that median water conditions will prevail. These estimates are based also on the Administration's present wholesale rates.

Gross revenues in 1953 were reduced from 1952 as a result of adverse water conditions during the winter months of fiscal year 1953, despite the fact that the system received some benefits in 1953 from initial generation at the Hungry Horse Project and the operation of the storage capacity of the Albeni Falls Project.

The McNary Dam and Detroit-Big Cliff projects started commercial power operations in fiscal year 1954. The Lookout Point-Dexter project will start commercial power operations in 1955 and the Chief Joseph and Chandler projects will start operations in fiscal year 1956.

Financial Results of Operations

Table I presents a condensed summary for fiscal years 1953 and 1954 and a cumulative total to June 30, 1954 of the results of commercial power operations of the Columbia River power system of the Federal Government.

New High for Gross Revenues

Gross operating revenues of $45,317,693 in 1954 were the highest for any year of the system's operations. However, the increase of $6,142,484 in gross revenues was more than offset by the increase of $7,072,366 in total costs, with the result that surplus net revenues declined $929,882, or 9.72 percent to a total of $8,637,710 for 1954 from the net of $9,567,592 for the preceding year. Cumulative surplus net revenues from commercial power operations rose to $101,774,950 as of June 30, 1954, an amount equal to 29 percent of cumulative gross revenues of $349,746,787.

Costs Increase

The increase of $7,072,366 in total costs for 1954 over 1953 reflects largely the costs of additional generating capacity placed in service for the first time in 1954. Total costs

include all the expenses of operation, maintenance, administration, marketing, depreciation, interest, etc., in accordance with generally accepted cost accounting practice and may be summarized as follows:

Total commercial power costs

Project	1954	1953	Increase or (Decrease)
Bonneville Dam	$ 2,600,719	$ 2,538,219	$ 62,500
Columbia Basin	6,618,232	6,967,217	(348,985)
Hungry Horse Dam	2,926,817	1,035,367	1,891,450
Albeni Falls Dam	233,911	–	233,911
McNary Dam	1,331,618	–	1,331,618
Detroit-Big Cliff Dams	1,114,744	–	1,114,744
Generation subtotal	14,826,041	10,540,803	4,285,238
Transmission (Bonneville Power Administration)	21,853,942	19,066,814	2,787,128
Total	$36,679,983	$29,607,617	$7,072,366

Four Additional Dams These figures reflect the completion of the Hungry Horse Dam in 1954 and the commencement of operations in that year at four additional dams, Albeni Falls, McNary, Detroit and Big Cliff. The increase in transmission costs reflects the growth of the Bonneville Power

TABLE I

Columbia River power system
Condensed summary of revenues and expenses 1/
Operating projects only

	Fiscal year 1953	Fiscal year 1954	Total to June 30, 1954
Operating revenues:			
Sales of electrical energy	$38,383,475	$44,127,409	$341,714,546
Other electric revenue	791,734	1,190,284	8,032,241
Total operating revenues	$39,175,209	$45,317,693	$349,746,787
Expenses of operation, maintenance, etc.	$10,856,179	$12,804,967	$ 95,540,185
Provision for depreciation	9,410,048	11,638,135	65,930,844
Interest expense	8,983,109	12,248,197	84,883,402
Miscellaneous deductions, net	358,281	(11,316)	1,617,406
Total deductions	$29,607,617	$36,679,983	$247,971,837
Surplus net revenues from operations	$ 9,567,592 2/	$ 8,637,710 2/	$101,774,950 3/

1/ Commercial power operations only.

2/ Before adjustments applicable to prior years: $272,753 debit in 1954; $263,740 credit in 1953.

3/ Prior years' adjustments are reflected in the individual items in the total column; hence, the net of $101,774,950 is after giving effect to such adjustments.

Administration's transmission system although almost precisely half of the increase in transmission costs reflects inclusion in 1954 of nonrecurring costs. The latter represent the write-off of the capital investment in projects, rights-of-way, etc., abandoned on account of changes in plans over the past several years due to shifts in loads, changes in sources of supply, and similar factors.

Operating Revenues Grow Gross commercial power operating revenues of the Columbia River power system reached a new peak of $45,317,693 in fiscal year 1954, an increase of $6,142,484 or 15.68 percent over the total of $39,175,209 for fiscal year 1953. The increase reflects (1) favorable streamflows in the Columbia River Basin in 1954 as against below average streamflows in the preceding year and (2) the operation of additional generating capacity on the Federal system.

Generators Added Generating capacity in service in 1953 included only the Bonneville and Grand Coulee powerplants plus two of the four units at the Hungry Horse Dam. Additional generators placed in service in fiscal year 1954 were the remaining two generators at Hungry Horse Dam, the two units at Detroit Dam, the one unit at Big Cliff Dam, and four of the scheduled total of 14 units at McNary Dam. In most cases these additional generator units were in service only a part of fiscal year 1954.

Power Sales Summarized Table II summarizes by customer categories the source of revenue in each of the past five fiscal years and in total to June 30, 1954.

TABLE II

Columbia River power system
Revenue by class of customer operating projects only

Class of customer	1949 and prior	1950	1951	1952	1953	1954	Total to June 30, 1954	1954 Percentage (dollar revenue)
Industry:								
Aluminum	$ 75,416,310	$12,133,254	$13,523,276	$13,376,207	$13,545,562	$15,944,356	$143,938,965	35.18
Other 1/	18,437,765	2,677,580	3,774,798	4,650,425	4,715,747	5,417,177	39,673,492	11.96
Publicly owned utilities	20,612,420	8,409,428	9,947,909	12,973,025	13,882,890	14,882,997	80,708,669	32.84
Privately owned utilities	38,630,918	7,587,963	8,525,609	8,526,775	6,239,276	7,882,879	77,393,420	17.39
Other operating revenue	4,589,782	389,291	417,436	653,714	791,734	1,190,284	8,032,241	2.63
Total operating revenue	$157,687,195	$31,197,516	$36,189,028	$40,180,146	$39,175,209	$45,317,693	$349,746,787	100.00

1/ Includes sales to Federal agencies.

Sales to the aluminum industry in 1954 were $15,944,356, representing 35. percent of the year's total revenue. Other industries accounted for 11.96 percent, thus making total industrial sales equal to 47.14 percent of the total for the year.

Sales to industries in both the aluminum and other categories reached an all-time high in 1954, a record made possible largely by the sale of substantial amount of nonfirm

interruptible power based upon favorable streamflow conditions prevailing during the year. Sales to publicly owned utilities also registered a new high in 1954 and accounted for 32.8 percent of the year's gross business.

Sales to privately owned utilities were 17.39 percent of the total in 1954 and increased substantially over 1953. They did not come up to the levels of 1951 and 1952 when considerably larger portions of the total energy supply were available for this group of customers. Sales to this class of customer increased approximately $1,640,000, or about 26 percent over 1953 as against an increase of $1,000,000 or 7 percent for the sales to publicly owned utilities.

Other operating revenue arising from operations other than the sales of electrical energy accounted for 2.63 percent of the year's gross operating revenue and were substantially higher than in any prior year.

Statement of Financial Condition

The report on the audit of the Columbia River power system by the Comptroller General of the United States is appended as part of this report. Schedule 3 of the Auditors' Report is a statement of the combined assets and liabilities of the projects in the Columbia River power system, including those in operation and under construction as of June 30, 1954. This year for the first time the combined balance sheet includes (1) projects under construction and (2) the project totals for all purposes, commercial power, irrigation, flood control and navigation, rather than commercial power only as was the case for the balance sheets presented in the Auditors' Reports for preceding years.

Assets Exceed $1.6 Billion

The total assets of the system, including assets for all of the multiple purposes, exceeded $1,600,000,000 net of the accrued provisions for depreciation in an amount of more than $69,000,000. The principal component of the assets is the fixed plant investment of $1,577,000,000. This total includes $212,000,000 of fixed assets for multiple-purpose projects under construction but not in operation and not allocated among purposes. Of the remaining fixed assets of $1,365,000,000 for operating projects, more than $990,000,000 has been allocated to commercial power, $274,000,000 to irrigation, $53,000,000 to navigation, and $48,000,000 to flood control.

Details by project appear on schedule 4 of the Auditors' Report, but a condensed summary of the allocation of the fixed plant investment among purposes appears in table III.

Schedule 3, of the Auditors' Report, shows a gross Federal investment of $1,866,000,000, including power and other purposes. The total consists of the capital investment, the investment in expenses and operation, maintenance, etc., and the gross interest accumulation on the commercial power investment. The latter item, which totals nearly $138,000,000 and is repayable from commercial power operations, is summarized by project in table IV. The gross Federal investment for all purposes has been reduced to a net unpaid balance of $1,504,000,000 by the return of more than $340,000,000 of cash receipts from commercial power operations, by cash receipts returned in repayment of irrigation, and by the elimination of nonreimbursable expense of flood control and navigation functions. The depreciated book value of the fixed assets, together with unexpended appropriations, inventories and other assets, is substantially in excess of the net unpaid Federal investment.

TABLE III

Columbia River power system
Summary of amount and allocation of investment in fixed assets
(Plant accounts)
as of June 30, 1954
Operating projects only

Project	Total	Allocation	
		Nonpower	Power
Bonneville Power Administration	$ 335,171,962		$335,171,962
Bonneville Dam	86,947,927	$ 27,329,300	59,618,627
Columbia Basin	481,932,267	274,422,597	207,509,670
Hungry Horse	106,933,312	20,810,894	86,122,418
Albeni Falls	27,611,778	258,722	27,353,056
McNary Dam	261,344,511	24,942,819	236,401,692
Detroit-Big Cliff	65,750,950	27,250,314	38,500,636
Total	$1,365,692,707	$375,014,646 1/	$990,678,061
Less combined reserve for depreciation			63,777,062
Total less reserve			$926,900,999

1/ Segregation of nonpower total by purpose:

	Specific facilities	*Allocation of joint facilities*	*Total*
Irrigation	*$203,119,390*	*$ 70,303,207*	*$273,422,597*
Navigation	*28,062,083*	*25,323,244*	*53,385,327*
Flood control	*–*	*48,206,722*	*48,206,722*
Total	*$231,181,473*	*$143,833,173*	*$375,014,646*

TABLE IV

Columbia River power system
Summary of interest on Federal investment
allocated to commercial power
As of June 30, 1954
operating projects only

Interest during construction, to be returned during repayment period as part of the Federal investment:		
Transmission system	$ 4,697,557	
Bonneville Dam	2,332,775	
Columbia Basin	9,727,004	
Hungry Horse	4,708,542	
McNary Dam	14,751,905	
Albeni Falls	700,068	
Detroit-Big Cliff	2,542,532	
Subtotal		$39,460,383
Interest on costs at projects allocated to future river regulation, to be returned as part of repayment of future downstream projects:		
Columbia Basin	12,934,026	
Hungry Horse	433,144	
Albeni Falls	124,616	
Subtotal		$13,491,786
Interest charged to operations — repaid currently		
Transmission system	31,097,858	
Bonneville Dam	18,065,858	
Columbia Basin	31,976,741	
Hungry Horse	2,351,923	
McNary Dam	615,480	
Albeni Falls	154,496	
Detroit-Big Cliff	621,046	
Subtotal		$84,883,402
Gross interest accumulation		$137,835,571

Nine Projects in Operation

Of the gross Federal investment of $1,866,000,000, projects in operation account for $1,643,000,000 and those under construction but not in operation represented $223,000,000 of the total. The total of $1,643,000,000 for operating projects consists of $1,240,800,000 allocated to commercial power. Details by project of the Federal investment in operating projects and the status of repayment of the investment appear in schedule 5 of the Auditors' Report and are summarized in table V of this report.

Repayment of Federal Investment

As of June 30, 1954 the gross Federal investment allocated to commercial power operations for both generation and transmission was $1,240,790,232, exclusive of such portion of the investment of multiple-purpose projects under construction but not in operation as of June 30, 1954 as may be allocated to commercial power. This gross investment includes funds appropriated and requisitioned for both construction and operation, including maintenance, administration, marketing, etc. Also included are indirect items such as WPA expenditures and other funds, properties, or services received from other Federal agencies, plus a gross interest accumulation computed at the rate of 2 1/2 percent per annum on the unamortized balances of the investment.

Invested Capital Reduced

The status of the repayment of the commercial power investment in operating projects for the system as a whole is summarized in table V. The gross Federal investment of $1,240,790,232 includes $170,155,673 for expenses of operation, maintenance, interest, etc.,

TABLE V

Columbia River power system
Summary of Federal investment in operating projects allocated to commercial power and status of repayment as of June 30, 1954

Operating projects only 1/

	Gross investment	Repayments	Net investment
Investment in current expenses:			
Operation, maintenance, etc. 2/	$ 85,272,271	$ 85,272,271	– 0 –
Interest 3/	84,883,402	84,883,402	– 0 –
Total current expenses	$170,155,673	$170,155,673	– 0 –
Investment in capital assets:			
Electric plant, inventories, etc. 4/	$1,013,006,646	$170,409,916	$842,596,730
Unexpended appropriations	57,627,913		57,627,913
Total capital investment	$1,070,634,559	$170,409,916	$900,224,643
Total Federal investment	$1,240,790,232	$340,565,589	$900,224,643

1/ Bonneville Dam, Columbia Basin project, Hungry Horse Dam, Albeni Falls Dam, Detroit-Big Cliff Dams, McNary Dam and Bonneville Power Administration. Does not include Chief Joseph Dam, The Dalles Dam and Lookout Point-Dexter Dams which were under construction but not in operation as of June 30, 1954.

2/ Table I shows expenses of operation, maintenance, etc. in the amount of $95,540,185 and miscellaneous deductions of $1,617,406, or an expense total of $97,157,591 as against the total of $85,272,271 shown above. The data on Table 1 are accrued cost accounts including non-cash exchange account transactions and the capital costs of abandoned projects written off to expense. These items account for the difference in the total shown on Table 1 from the total shown in this table which is prepared on a cash payout basis. For the same reason, this table uses as gross repayments only the cash receipts of $340,565,589 as against total accrued operating revenues of $349,746,787 shown on Table 1. The difference between the accrued revenues and cash receipts consists of adjustments for uncollected accounts receivable and non-cash exchange account transactions included in accrued revenue.

3/ The Columbia River power system does not receive appropriations for payment of interest, but imputes and includes in its accounts provisions for interest expense and returns receipts to the Treasury in repayment of such expenses.

4/ Includes interest during construction of $39,460,383 which will be repaid to the Treasury as part of the capital cost of electric plant, and $13,491,786 of interest charged to future downstream regulation recoverable from operations of future downstream hydroelectric plants.

all of which expenses have been repaid, leaving a gross capital investment of $1,070,634,559. Elimination of unexpended appropriations of $57,627,913 reduces the gross invested capital to $1,013,006,646, consisting largely of the fixed electric plant investment but including small amounts for inventories and other items. The invested capital was reduced to an unpaid balance of $842,596,730 as of June 30, 1954 by cumulative repayments to that date of $170,409,916, equal to 16.82 percent of the total invested capital. These repayments of expenses and capital were made from the total cash receipts of the power system returned to the U. S. Treasury. Such receipts are applied first to the repayment of the expenses of operation, maintenance, interest, etc., with the remainder applied to the return of the capital investment.

Net Power Investment As of June 30, 1954 the amount and repayment of the commercial power capital investment of the individual projects were as follows:

Project	Power capital investment	Repaid as of June 30, 1954	Percent repaid	Net power investment
Bonneville Power Administration	$ 347,767,945	$ 90,064,194	25.90	$257,703,751
Bonneville Dam	59,813,926	21,790,983	36.43	38,022,943
Columbia Basin	221,462,229	51,031,697	23.04	170,430,532
Hungry Horse	87,184,051	2,855,592	3.28	84,328,459
Albeni Falls	26,941,232	302,979	1.13	26,638,253
McNary Dam	231,322,397	3,535,258	1.53	227,787,139
Detroit - Big Cliff	38,514,866	829,213	2.15	37,685,653
Totals	$1,013,006,646	$170,409,916	16.82	$842,596,730

Cost Account Basis The foregoing data are derived from the cost accounts maintained in accordance with the Federal Power Commission's Uniform System of Accounts for Electric Utilities. On a statutory repayment basis the status of repayment is the same as shown in the above tabulation for all projects except the Columbia Basin project. In the case of the latter, (1) commercial power revenues must pay operation and maintenance costs of the Grand Coulee Dam and powerplant allocated to irrigation for cost accounting purposes, (2) interest expense is computed at a rate of 3 percent per annum rather than at a rate of 2 1/2 percent per annum used in the cost accounts and on a somewhat different investment base from that used in the cost accounts, and (3) other differences between the cost and payout accounts such as the exclusion of interest during construction from the accounts for payout purposes.

Repayment Repayment of the capital investment for the Bonneville Power Administration is approximately $55,400,000 ahead of schedule and the repayment of the power capital investment of the Bonneville Dam project is approximately $9,600,000 ahead of schedule, a total repayment of nearly $65,000,000 in excess of scheduled requirements as of June 30, 1954. Repayment of the power capital investment of the Columbia Basin project is considered to be on schedule, although repayments have exceeded substantially the schedule contemplated in the initial repayment plan. However, the original plan was subsequently modified and the possibility of further revision is under consideration. Pending agreement upon the new payout schedule for this project, all payments to date are considered as in accordance with scheduled requirements. The small percentage of repayment on the other projects reflects the fact that Hungry Horse and Detroit-Big Cliff were not completed until 1954 and Albeni Falls and McNary will not be completed until subsequent to 1954.

U S. COLUMBIA RIVER POWER SYSTEM TRANSMISSION GRID

U. S. DEPARTMENT OF THE INTERIOR · BONNEVILLE POWER ADMINISTRATION

As of June 30, 1954

Summary of Operations

Energy Production Energy generated at 6 Federal plants for the Administration totaled 20.2 billion kilowatt-hours during fiscal year 1954. This was an increase of 15 percent over fiscal year 1953 and an increase of 8.8 percent over fiscal year 1952. The marked increase over the 1953 fiscal year was a result of the addition of 9 units during the 1954 fiscal year at Big Cliff, Detroit, Hungry Horse and McNary and reflects the comparatively low streamflow in the first half of the 1953 fiscal year.

New System Peak A new system peak was reached for the hour 5-6 p.m. on January 20, 1954, before the generator at Big Cliff and the fourth generator at McNary were in operation. Coincident demand on Bonneville, Detroit, Grand Coulee, Hungry Horse and McNary plants was 3,301,000 kilowatts, an increase of 15 percent over the previous fiscal year's maximum demand of 2,867,000 kilowatts occurring during August 1952.

Nameplate Rating Exceeded Since the fall of 1946 maximum system demands have continuously exceeded the nameplate rating of installed generators. Energy produced at Federal plants for the Adminis-

tration is shown by years in table VI with peak demand and energy data in the accompanying chart. Prepared on a quarterly basis the chart shows the general trends of the Bonneville Power Administration system-load growth and development.

Backbone Transmission Grid

Bonneville Power Administration's transmission grid forms the backbone of the interconnected transmission system of public and private utilities in the Pacific Northwest. As a result electric-energy receipts and deliveries on Bonneville's transmission system cover many complex transactions in addition to receipts from Federal powerplants and deliveries by sales.

The integrated transmission grid makes possible the fullest utilization of power facilities in the area through diversity in peaking and water capabilities and diversity of system-load conditions. Substantial quantities of energy are received and delivered as transfers from other utilities.

Storage Transactions

Transactions also involve storage by the Administration in non-Federal reservoirs as well as storage by non-Federal utilities in the Grand Coulee reservoir. Disposition of energy includes deliveries from storage in Grand Coulee or to storage in other reservoirs, energy transfers for the Bureau of Reclamation from Grand Coulee, energy used by the Administration and energy losses in transmission and transformation.

TABLE VI

Generation at Bonneville, Detroit, Grand Coulee and Hungry Horse plants for Bonneville Power Administration, fiscal years 1939 – 1954

(Thousands of kilowatt-hours)

Fiscal years ending June 30	Big Cliff generation	Bonneville generation	Detroit generation	Grand Coulee generation	Hungry Horse generation	McNary generation	Total generation for BPA
1939		34,874					34,874
1940		208,426					208,426
1941		894,177		7,455			901,632
1942		1,807,309		741,844			2,549,153
1943		2,801,480		2,816,956			5,618,436
1944		3,488,874		5,750,949			9,239,823
1945		3,391,127		5,660,446			9,051,573
1946		2,674,834		3,561,329			6,236,163
1947		3,695,255		5,058,482			8,753,737
1948		3,991,860		6,894,047 1/			10,885,907
1949		3,868,558		9,057,230 1/			12,925,788
1950		3,689,309		10,451,524 1/			14,140,833
1951		3,793,276		12,679,108 1/			16,472,384
1952		4,462,935		14,092,466 1/			18,555,401
1953		4,227,463	2,149 2/	13,277,143 1/	126,477 2/		17,633,232
1954	8,324	4,406,265	416,372 3/	13,885,832 1/	682,134	796,906	20,195,833
Total	8,324	47,436,022	418,521	103,934,811	808,611	796,906	153,403,195

1/ Includes energy transferred for Bureau of Reclamation.

2/ Includes energy for testing operations.

3/ Does not include 7,466,000 kwh for condensers at Detroit.

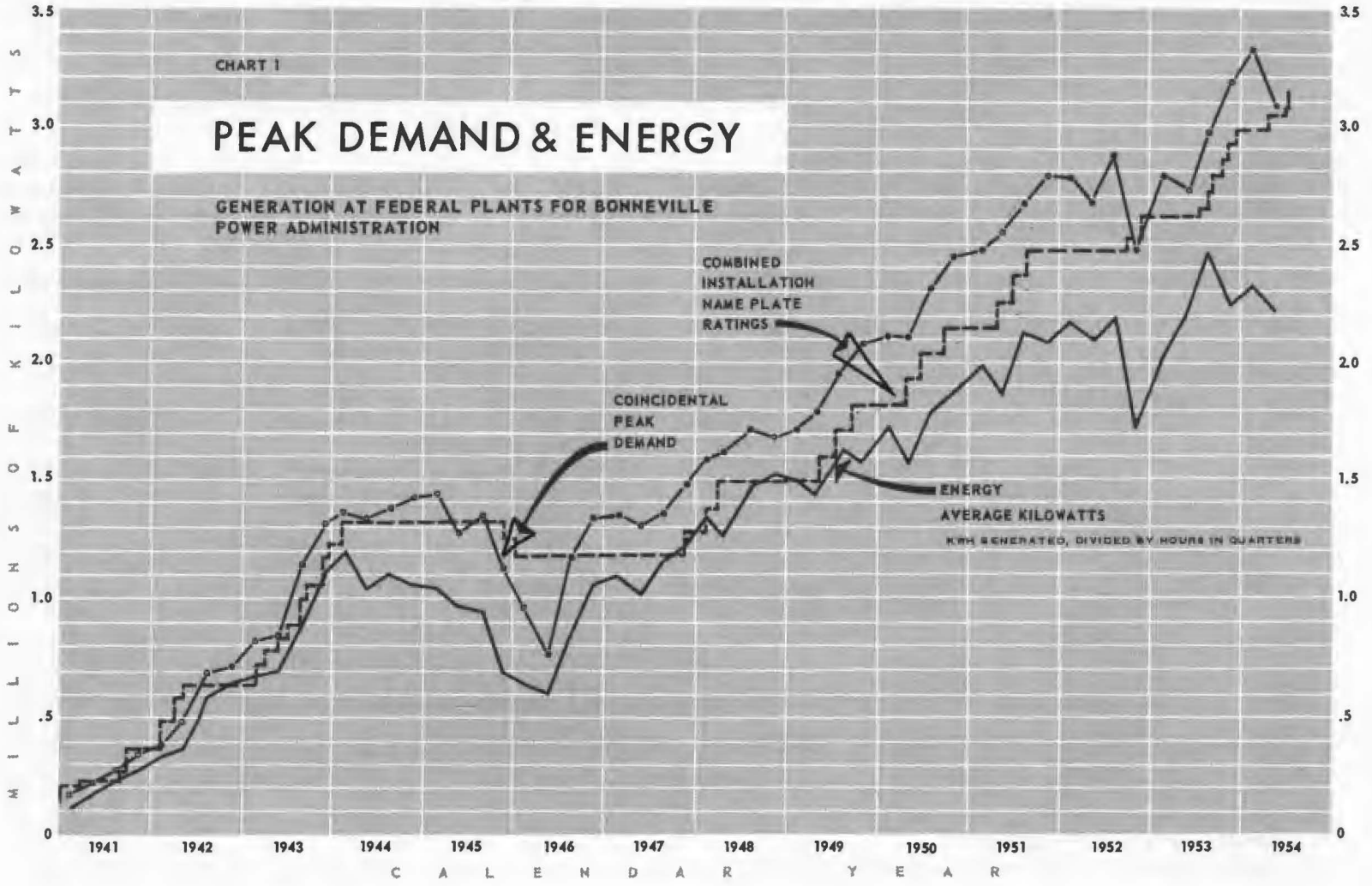


CHART 1
PEAK DEMAND & ENERGY
GENERATION AT FEDERAL PLANTS FOR BONNEVILLE POWER ADMINISTRATION
COMBINED INSTALLATION NAME PLATE RATINGS
COINCIDENTAL PEAK DEMAND
ENERGY AVERAGE KILOWATTS
KWH GENERATED, DIVIDED BY HOURS IN QUARTERS
MILLIONS OF KILOWATTS
3.5
3.0
2.5
2.0
1.5
1.0
.5
0
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
CALENDAR YEAR

Energy Receipts and Deliveries

Table VII, electric-energy account, summarizes energy receipts and deliveries for fiscal year 1954.

Energy sales to customers of the Bonneville Power Administration totaled 18.8 billion kilowatt-hours during fiscal year 1954, an increase of 14.5 percent over the previous year.

Sales of electric energy to other utilities, both publicly and privately owned, totaled 8.7 billion kilowatt-hours, an increase of 9.5 percent over the previous fiscal year. Deliveries to industrial plants and Federal agencies totaled 10.1 billion kilowatt-hours, an increase of 19.1 percent.

With better than minimum waterflow in the Columbia during the first six months of the year and favorable water conditions during the last 6 months it was possible to deliver almost 3 billion kilowatt-hours of interruptible energy to industrial customers. This was an increase of 6.6 percent over the 1953 fiscal year when unfavorable water conditions cut off interruptible deliveries during 4 months of the year.

Composite Average Rate 2.40 Mills

The Administration has delivered 142,617,635,000 kilowatt-hours of energy at a composite average rate of 2.40 mills per kilowatt-hour during the 16 years of operation ending June 30, 1954. Sales to publicly owned utilities for this period were 28.8 billion kilowatt-hours at an average of 2.81 mills. Privately owned utilities received 32.8 billion kilowatt-hours at an average rate of 2.34 mills, and industries 80.9 billion kilowatt-hours at an average rate of 2.27 mills.

TABLE VII

Electric energy account, fiscal year ended June 30, 1954

Energy received (thousands of kilowatt hours):	
Energy generated for Bonneville Power Administration	
Big Cliff	8,324
Bonneville	4,406,265
Detroit	416,372 1/
Grand Coulee	13,885,832 2/
Hungry Horse	682,134
McNary	796,906
Total	20,195,833
Power purchased and interchanged in	2,739,695
Total received	22,935,528
Energy delivered (thousands of kilowatt hours):	
Sales	18,764,627
Power interchanged out	2,640,274
Used by Administration	25,231
Total delivered	21,430,132
Energy losses in transmission and transformation	1,505,396
Losses as percent of total energy received	6.6%
Maximum demand on generating plants (kilowatts)	
January 20, 1954, 5-6 p.m. Pacific Standard Time	3,301,000
Load factor, total generated for Bonneville Power Administration	69.8%

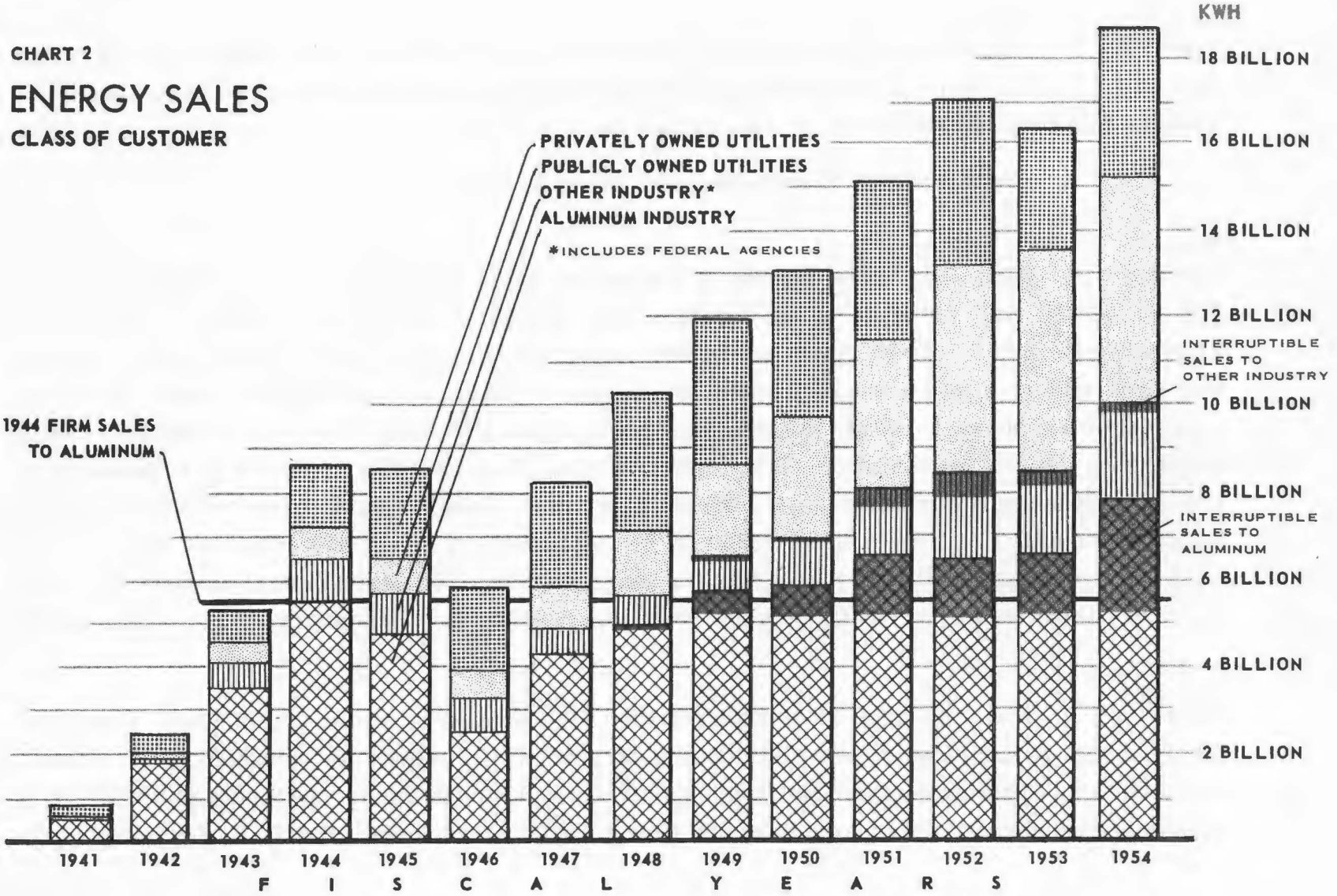
1/ Does not include 7,466,000 kwh for condensers at Detroit.

2/ Includes 57,292,833 kwh transferred over BPA transmission facilities for Bureau of Reclamation.

CHART 2

ENERGY SALES

CLASS OF CUSTOMER



Sales to Industry Power sales to aluminum plants were 66.7 billion kilowatt-hours at an average rate of 2.17 mills. Sales to industries other than aluminum including sales to Federal agencies were 14.2 billion kilowatt-hours at an average of 2.76 mills.

Sales by class of customer are shown in table VIII.

Rate Schedules More than three-fourths of the energy sales for the year were made under the C-4 wholesale rate schedule at an average rate of 2.14 mills per kilowatt-hour. This is the kilowatt-year rate for firm power delivered anywhere from the transmission system and is also used with special measured demand provisions for sales of interruptible power. Sales are generally made under this rate to industries operating at high load factor and to utilities having substantial generating facilities. Other sales were made principally under the E schedule to utilities purchasing all or substantially all of their power requirements from the Administration. Sales under the F schedule were made to the utilities and industries requiring power at low load-factor use and under the H schedule for dump, exchange, or experimental purposes. A summary of energy sales for the fiscal year 1954 classified by rate schedules is shown in table IX.

Customers Served The Administration was serving 114 customers at the end of fiscal year 1954. There were 78 publicly owned distributors of power, 17 industrial customers, 12 Federal agencies and 7 privately owned utilities. There were five customer changes during the year: Hanna Nickel Smelting Co. and Bonners Ferry, Idaho, were added, the U. S. Engineer Corps

TABLE VIII

Electric energy sales by class of customer

Fiscal years 1939 – 1954

(Thousands of kilowatt-hours)

Fiscal years ending June 30	Industry		Publicly owned utilities	Privately owned utilities	Total
	Aluminum	Other industries 1/			
1941 and prior	522,982	4,829	35,242	536,555	1,099,608
1942	1,845,249	79,155	142,491	357,704	2,424,599
1943	3,588,848	507,196	435,289	739,076	5,270,409
1944	5,453,893	1,022,477	727,642	1,467,304	8,671,316
1945	4,667,381	964,724	823,822	2,057,203	8,513,130
1946	2,492,985	799,378	635,531	1,902,990	5,830,884
1947	4,212,413	626,688	1,044,784	2,377,887	8,261,772
1948	4,902,465	646,913	1,560,754	3,180,993	10,291,125
1949	5,665,746	881,454	2,080,833	3,343,091	11,971,124
1950	5,863,465	1,023,830	2,839,913	3,311,972	13,039,180
1951	6,544,702	1,537,580	3,414,245	3,578,212	15,074,739
1952	6,471,694	1,943,241	4,803,210	3,793,699	17,011,844
1953	6,546,677	1,947,129	5,110,297	2,789,175	16,393,278
1954	7,862,085	2,253,331	5,127,298	3,521,913	18,764,627
Total to June 30, 1954	66,640,585	14,237,925	28,781,351	32,957,774	142,617,635

1/ Includes Federal agencies.

Energy deliveries to customers of the Bonneville Power Administration
Fiscal year ended June 30, 1954

Customers	Energy deliveries for year 1/ kilowatt-hours
PUBLICLY OWNED UTILITIES	
MUNICIPALITIES	
Bandon, Oregon	12,372,000
Bonners Ferry, Idaho	12,000
Canby, Oregon	9,184,800
Cascade Locks, Oregon	9,028,800
Centralia, Washington	11,882,854
Cheney, Washington	11,956,000
Drain, Oregon	8,529,600
Ellensburg, Washington	33,668,000
Eugene, Oregon	49,328,000
Forest Grove, Oregon	34,195,200
Grand Coulee, Washington	17,294,400
McMinnville, Oregon	41,449,200
Milton, Oregon	14,640,000
Monmouth, Oregon	9,201,018
Seattle, Washington	421,077,388
Springfield, Oregon	25,267,265
Tacoma, Washington	874,922,248
Total municipalities (17)	1,584,008,773
PUBLIC UTILITY DISTRICTS	
Benton County PUD# 1	110,730,000
Central Lincoln PUD	106,262,814
Chelan Co. PUD #1	171,106,001
Clallam Co. PUD #1	82,505,480
Clark Co. PUD #1	362,342,000
Clatskanie PUD	15,906,361
Cowlitz Co. PUD #1	382,659,807
Douglas Co. PUD #1	95,223,089
Ferry Co. PUD #1	9,393,953
Franklin Co. PUD #1	72,999,917
Grant Co. PUD #2	176,653,261
Grays Harbor Co. PUD #1	226,474,000
Kittitas Co. PUD #1	5,899,113
Klickitat Co. PUD #1	59,445,162
Lewis Co. PUD #1	104,491,540
Mason Co. PUD #3	103,740,000
Northern Wasco Co. PUD	13,116,000
Okanogan Co. PUD #1	73,299,914
Pacific Co. PUD #2	67,230,215
Pend Oreille Co. PUD #1	35,446,366
Skamania Co. PUD #1	20,168,866
Snohomish Co. PUD #1	576,278,226
Stevens Co. PUD #1	16,370,600
Tillamook PUD	68,268,200
Wahkiakum Co. PUD #1	12,081,701
Total public utility districts (25)	2,968,092,586
COOPERATIVES	
Benton-Lincoln Elec. Coop.	56,440,944
Benton Rural Elec. Assn.	32,171,409
Big Bend Elec. Coop.	23,751,759
Blachly-Lane Co. Elec. Coop.	11,958,480
Central Electric Coop.	11,015,964
Chelan Co. Electric Coop.	823,500
Clearwater Power Co.	30,913,300
Columbia Basin Elec. Coop.	7,741,380
Columbia Co. REA	16,986,150
Columbia Power Coop.	4,296,800
Coos-Curry Elec. Coop.	36,680,014
Douglas Electric Coop.	31,356,372
Eastern Oregon Elec. Coop.	2,145,600
Flathead Elec. Coop.	12,216,072
Hood River Elec. Coop.	12,856,800
Idaho Co. L & P Assn.	8,489,250
Inland Power & Light Co.	58,085,400
Kootenai REA	9,746,990
Lane Co. Elec. Coop.	29,778,112

Customers	Energy deliveries for year 1/ kilowatt-hours
Lincoln Elec. Coop. – Montana	5,143,728
Lincoln Elec. Coop. – Washington	14,183,348
Midstate Electric Coop.	2,712,060
Missoula Elec. Coop.	5,495,372
Nespelem Valley Elec. Coop.	7,057,250
Northern Lights, Inc.	10,838,100
Okanogan Co. Elec. Coop	3,355,100
Orcas Power & Light Co.	6,553,000
Pend Oreille Elec. Coop.	6,661,602
Portland State Extension Center	23,364
Ravalli Co. Elec. Coop.	5,916,250
Salem Electric	29,814,200
Sandy Electric Coop.	3,129,120
Tanner Mutual P&L Assn.	363,369
Umatilla Elec. Coop. Assn.	20,786,179
Vera Irrigation Dist. #15	16,590,000
Wasco Electric Coop.	20,523,600
West Oregon Elec. Coop.	18,596,228
Total cooperatives (37)	575,196,166
Total publicly owned utilities	5,127,297,525
PRIVATELY OWNED UTILITIES	
British Columbia Elec. Co.	–
California Oregon Power Co.	994,433
Interconnected Pool 2/	655,336,576
Montana Power Co.	380,485,000
Mountain States Power Co. 3/	325,402,000
Pacific Power & Light Co.	611,843,000
Portland General Electric Co.	1,212,830,000
Puget Sound Power & Light Co.	6,696,000
Washington Water Power Co.	150,270,000
WWP - Kootenay Lake	178,056,000
Total privately owned utilities (7)	3,521,913,009

Customers	Energy deliveries for year 1/ kilowatt-hours
FEDERAL AGENCIES (13)	1,186,276,691
INDUSTRIES	
ALUMINUM	
Aluminum Co. of America	
Vancouver Plant	1,504,593,338
Wenatchee Plant	475,462,115
Kaiser Alum. & Chem. Corp.	
Spokane Alum. Fab.	263,680,479
Spokane Alum. Red.	2,862,364,833
Tacoma Alum. Red.	552,212,863
Reynolds Metals Co.	
Longview	850,581,149
Troutdale	1,353,190,278
INDUSTRIES	
OTHER	
Carborundum Company	107,950,000
Crown Zellerbach	104,751,797
Electro-Metallurgical Co.	151,529,563
Hanna Nickel Smelting Co.	204,000
Keokuk Electro-Metals Co.	76,089,666
Pacific Carbide and Alloys Co.	33,829,139
Pacific Northwest Alloys	100,097,707
Pennsylvania Salt Mfg. Co.	156,442,902
Rayonier, Corp.	22,570,000
Victor Chemical Works	313,590,000
Total industries (17)	8,929,139,829
Total sales of electric energy (116) 4/	18,764,627,054

1/ Includes energy deliveries carried on exchange accounts.

2/ Includes MSP Co., PP&L Co., PGE Co., PSP&L Co. and WWP Co.

3/ Mountain States Power Co. merged with Pacific Power & Light Co. in May 1954. Full fiscal year data shown under Mountain States Power Co., not counted as customer.

4/ 114 customers as of June 30, 1954; service to two customers discontinued during year.

TABLE IX

Electric energy sales by rate schedules

Fiscal year ending June 30, 1954

Rate schedule	Energy thousands of kilowatt-hours	Revenue	Mills per kilowatt-hour
C–3, C–4:			
Industries	9,846,648	$20,570,066	2.09
Utilities	4,660,869	10,426,739	2.24
Subtotal	14,507,517	30,996,805	2.14
F–2, F–3, F–4:			
Industries	18,171	111,262	6.12
Utilities	61,470	281,881	4.59
Subtotal	79,641	393,143	4.94
A–4: Utilities	16,893	55,558	3.29
E–3, E–4: Utilities 1/	3,201,969	10,150,067	3.17
Experimental, H–2, H–3 and exchange; Industries and Utilities	958,607	2,396,517	2.50
Total sales	18,764,627	$43,992,090	2.34
Reconciliation with accounting records		+ 134,954	
Other electric revenues		1,089,244 2/	
Total operating revenues		$45,216,288 2/	

1/ Including federal agency pumping service.

2/ Preliminary; subject to audit adjustments.

discontinued service at McNary, Portland State Extension Center discontinued service, and Mountain States Power Co. merged with Pacific Power & Light Co.

Additions to the Federal system in fiscal year 1954 have a nameplate rating of 540,500 kilowatts. Hungry Horse project units 3 and 4 with a combined rating of 142,500 kilowatts were brought into operation by the Bureau of Reclamation. The Corps of Engineers completed Detroit Dam on the North Santiam River in Oregon with initial operation of two generators having a total nameplate rating of 100,000 kilowatts. The Big Cliff reregulating dam downstream with an 18,000-kilowatt generator was also completed, permitting peaking operations to start at Detroit in November 1953. The first four generators, with combined rating of 280,000 kilowatts, were placed in service by the Corps of Engineers at McNary Dam.

Federal projects existing, under construction, and authorized for construction by the Corps of Engineers and the Bureau of Reclamation are shown in table X. With all these projects operating as a system, existing generating capacity, excluding the 10 McNary units not yet in operation, would provide 2,637,000 average kilowatts of nominal prime power. Generating capacity under construction including the 10 McNary units would provide an additional 1,815,000 kilowatts, and authorized projects would add 2,259,000 kilowatts.

Existing storage capacity including Albeni Falls reservoir is 9,532,000 acre-feet. An additional 336,000 acre-feet will be provided by Lookout Point reservoir now under construction and 5,805,000 acre-feet by currently authorized projects.

TABLE X

General specifications – existing and authorized projects
installations and capabilities correspond to a coordinated system operation

	Location	Stream	Plant installations: Number of units	Plant installations: Total capacity kilowatts 1/	Nominal prime power kilowatts 2/	Pool elevation (feet)	Usable storage (acre-feet)	Average head (feet)	Initial date in service	Principal purpose 4/
EXISTING PROJECTS										
Bonneville	Wash.–Ore.	Columbia	10	518,400	458,000	72.0	–	59	June 1938	P, N.
Grand Coulee	Washington	Columbia	18	1,944,000	1,631,000	1,288.0	5,072,000	326	Sept. 1941	P, I, FC, N.
Hungry Horse	Montana	S. Fk. Flathead	4	285,000	187,000	3,560.0	2,982,000	364	Oct. 1952	P, I, FC, N.
Detroit	Oregon	N. Santiam	2	100,000	29,000	1,569.0	323,000	299	July 1953	P, I, FC, N.
McNary	Wash.–Ore.	Columbia	14	980,000	583,000	340.0	–	83	Nov. 1953	P, I, N.
Big Cliff	Oregon	N. Santiam	1	18,000	10,000	1,206.0	–	91	June 1954	P.
				3,845,400	2,898,000		8,377,000			
PROJECTS UNDER CONSTRUCTION										
Lookout Point	Oregon	M. Fk. Willamette	3	114,000	36,000	929.0	336,000	228	Dec. 1954	P, I, FC, N.
Albeni Falls	Idaho	Pend Oreille	3	42,600	29,000	2,062.5	1,155,000	24	Jan. 1955	P, FC, N.
Dexter	Oregon	M. Fk. Willamette	1	15,000	12,000	695.0	–	53	Apr. 1955	P.
Chandler	Washington	Yakima	2	12,000	11,000	620.0	–	118	Sept. 1955	P, I.
Chief Joseph	Washington	Columbia	16	1,024,000	815,000	946.0	–	169	Sept. 1955	P, I.
The Dalles	Wash.–Ore.	Columbia	16	1,119,000	651,000	160.0	–	87	Nov. 1957	P, N.
				2,326,600	1,554,000		1,491,000			
AUTHORIZED PROJECTS										
Libby	Montana	Kootenai	6	600,000	264,000	2,459.0	5,010,000	267	–	P, FC, N.
Ice Harbor	Washington	Snake	3	195,000	137,000	440.0	–	97	–	P, I, N.
Lower Monumental	Washington	Snake	3	180,000	130,000	533.0	–	92	–	P, I, N.
Little Goose	Washington	Snake	3	195,000	139,000	633.0	–	99	–	P, N.
Lower Granite	Washington	Snake	3	165,000	114,000	715.0	–	80	–	P, N.
Priest Rapids 8/	Washington	Columbia	18	954,000	735,000	550.0	5/	146	–	P, FC, N.
John Day 8/	Wash.–Ore.	Columbia	13	1,105,000	675,000	255.0	5/	94	–	P, I, FC, N.
Roza	Washington	Yakima	2	11,250	6,000	1,220.6	–	140	–	P, I.
Hills Creek	Oregon	M. Fk. Willamette	2	30,000	14,000	1,543.0	291,000	220	–	P, I, FC, N.
Cougar 6/ 8/	Oregon	S. Fk. McKenzie	1	25,000	14,000	1,683.0	182,000	418	–	P, I, FC, N.
Green Peter 6/ 8/	Oregon	M. Santiam	2	81,000	22,000	984.0	322,000	315	–	P, I, FC, N.
White Bridge 7/ 8/	Oregon	M. Santiam	1	15,000	9,000	670.0	–	93	–	P.
				3,556,250	2,259,000		5,805,000			
					–28,000 3/					
Total 24 projects				9,728,250	6,683,000		15,673,000			

1/ Name-plate rating.
2/ Average capability during an 8-month storage release period (Sept. 1936 through April 1937).
3/ Pumping requirements of 28,000 average kilowatts for 450,000 acres of the Columbia Basin Project.
4/ P – Power; I – Irrigation; FC – Flood Control; N – Navigation.
5/ Authorization provides for flood control storage of 2,100,000 acre-feet at Priest Rapids and 2,000,000 acre-feet at John Day.
6/ Power facilities are not authorized.
7/ White Bridge is not authorized but is required for reregulating purposes with installation of generating units at Green Peter.
8/ Legislation is under consideration providing for non-Federal financing of these projects.

Projects Complete by November 1961

All contemplated generation and storage capacity for the projects under construction will be in service by November 1961 under present schedules. Service dates for the authorized projects are not scheduled as no funds are appropriated for their construction. Upon completion, all these multipurpose projects would provide a total of 15.7 million acre-feet of usable storage and 6.7 million kilowatts of prime power.

Non-Federal Additions

Additions to generating facilities of non-Federal utilities in the area served by the Administration for fiscal year 1954, have a nameplate rating of 249,200 kilowatts. A 90,000-kilowatt unit was installed at the Ross plant of the city of Seattle, and the final 50,000-kilowatt unit was installed at the Cabinet Gorge plant of Washington Water Power Company. Reconstruction of the Portland General Electric Company's Sullivan plant was completed with installation of the last 1,200-kilowatt unit. Yale project with rating of 108,000 kilowatts was completed on the Lewis River by Pacific Power & Light Company. Future additions presently scheduled by non-Federal utilities in this area are shown in table XI.

Northwest Power Pool

Generation during fiscal year 1954 by the principal electric utility systems of the Pacific Northwest is shown in table XII. All of the utilities are members of the Northwest Power Pool. The Utah Power and Light Company and the British Columbia Electric Company are also members of the pool but are not included as their major service areas are outside the Pacific Northwest region.

TABLE XI

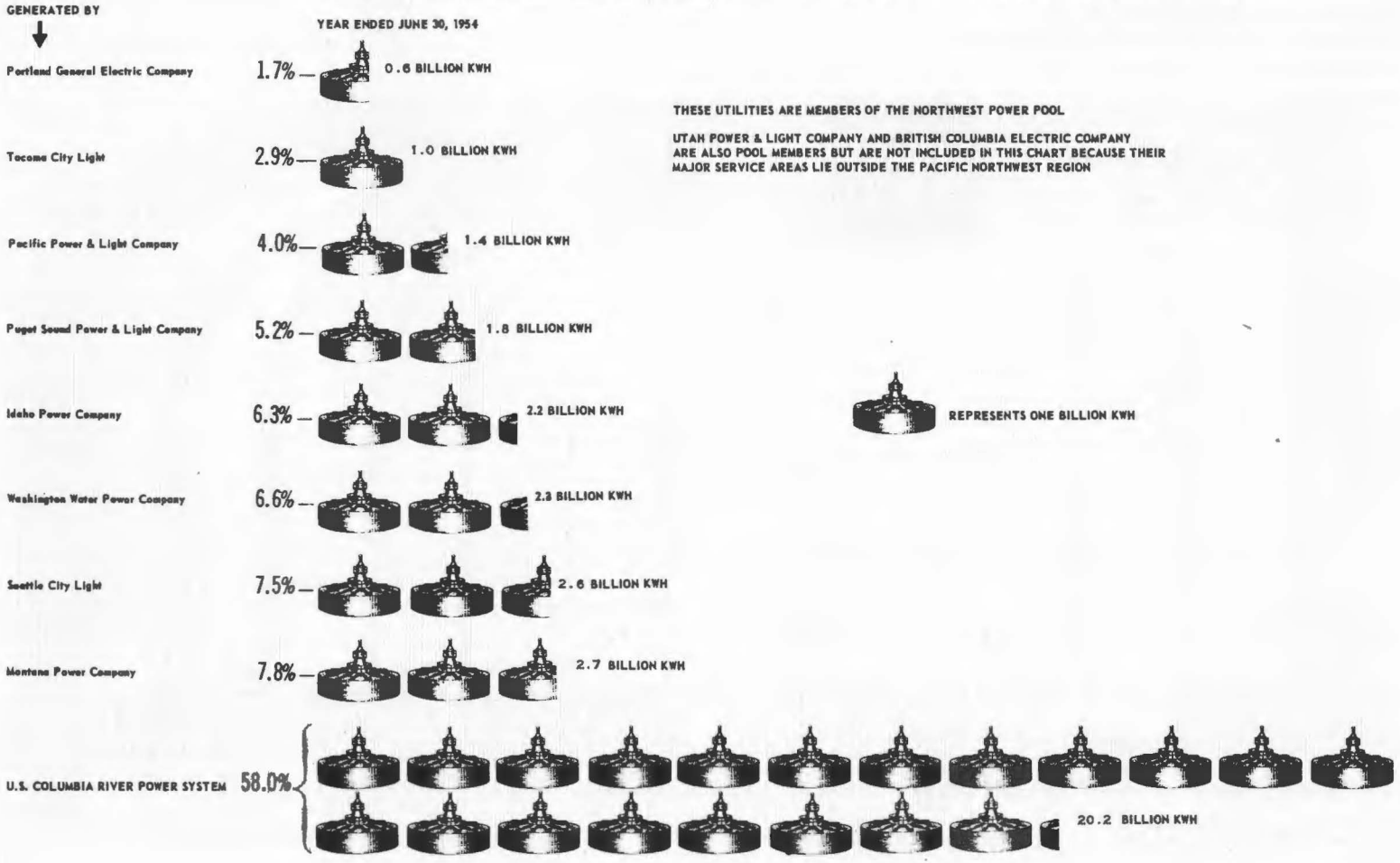
Non – federal utilities
Generator installation schedule
July 20, 1954

Utility	Plant	Stream	Unit number	Name-plate rating thousands of kilowatts	Date in service
Pend Oreille County PUD	Box Canyon	Pend Oreille	2	15	August 1954
			3	15	October 1954
			4	15	November 1954
				45	
Portland General Electric Co.	Oak Grove	Clackamas	Frog Lake Forebay 1/		August 1954
	Timothy Meadows Reservoir	Clackamas	60,000 acre – feet of usable storage 2/		October 1955
Montana Power Co.	Kerr	Flathead	3	56	November 1954
City of Tacoma	Steam Plant No. 2	–	2	25	December 1954
City of Centralia	Yelm	Nisqually	3	5	December 1954
City of Seattle	Ross	Skagit	4	90	July 1957
	Gorge	Skagit	Increased height of dam 3/		July 1957

1/ Will add 18,000 kilowatts of peaking capacity.
2/ Will add 10,000 kilowatts of prime power at downstream plants.
3/ Will increase gross head by 88 feet and peaking capability by 47,000 kilowatts.

CHART 3

POWER GENERATED BY NORTHWEST UTILITIES



SOURCE: WEEKLY OPERATING REPORTS, N.W. POWER POOL

CHART 4

NORTHWEST POWER POOL

NET OPERATIONS ENDING JUNE 30, 1954
BPA SUPPLIED 73% OF NET ENERGY REQUIREMENTS

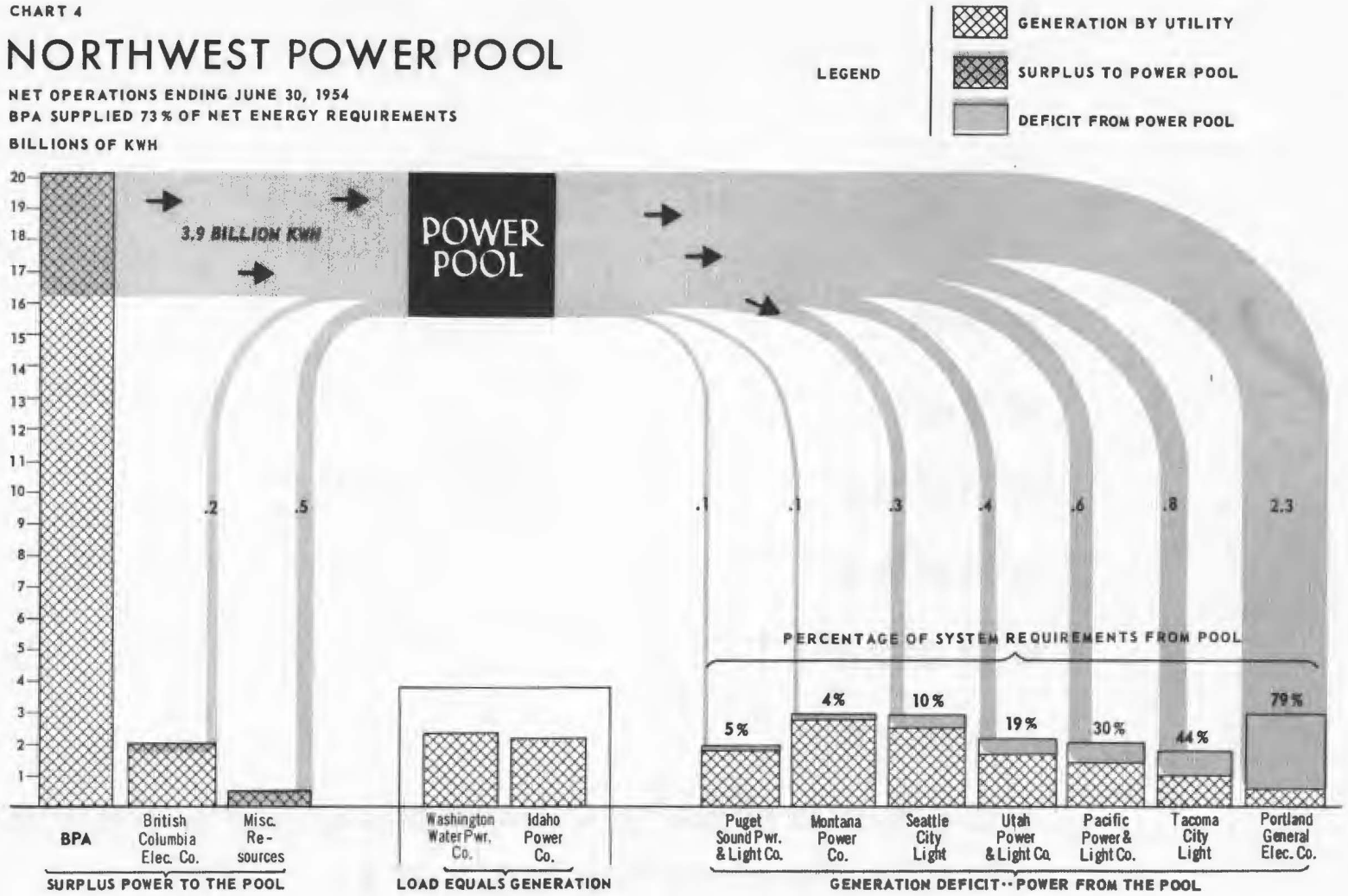


TABLE XII

Generation by the principal electric utility systems of the Pacific Northwest
Fiscal year 1954

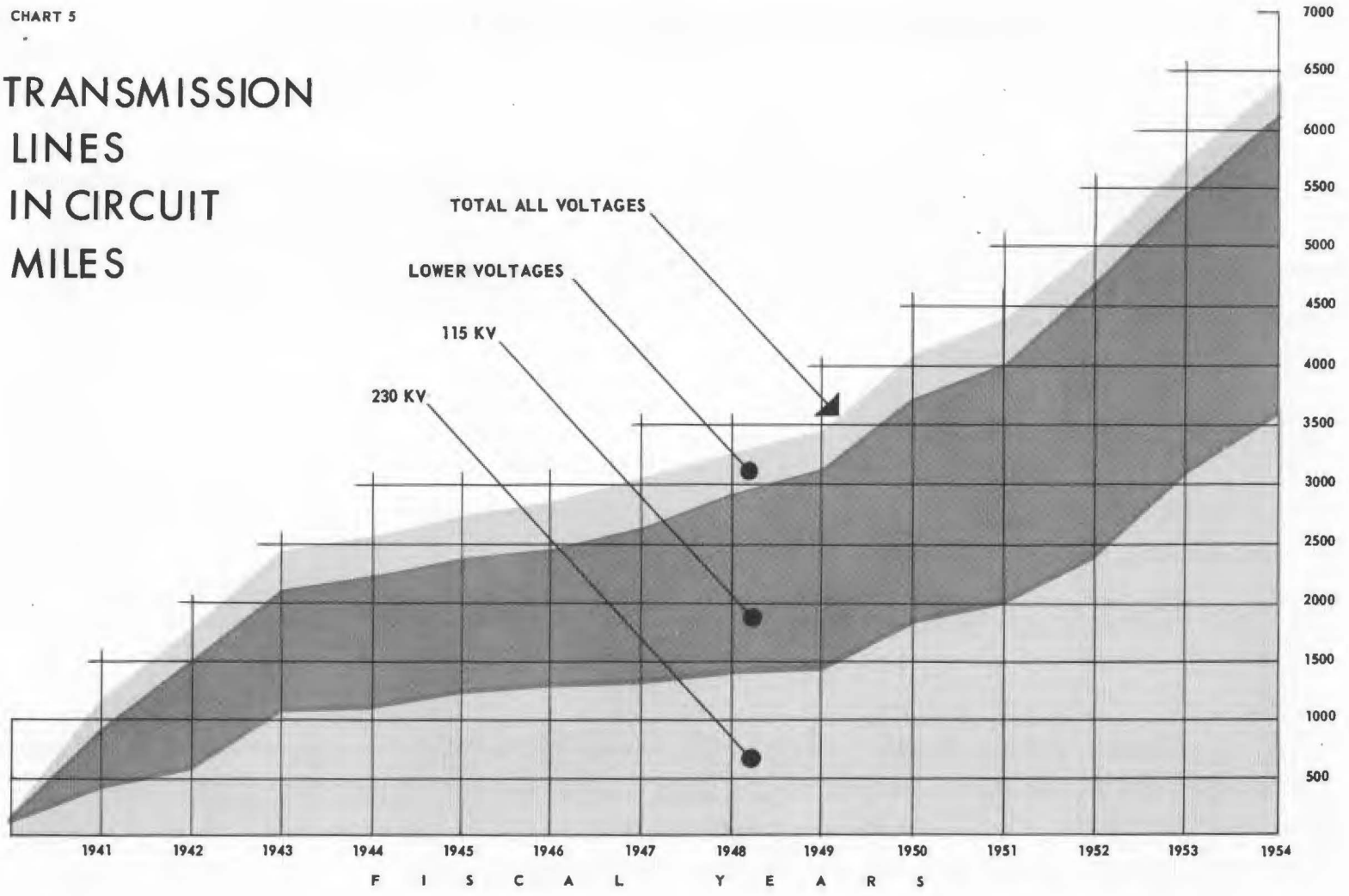
Utilities	Kilowatt-hours	Percent of total generation	Utilities	Kilowatt-hours	Percent of total generation
	Billion	Percent		Billion	Percent
Publicly owned:			Privately owned:		
Bonneville Power Administration ..	20.2	58.0	Puget Sound Power & Light Co.	1.8	5.2
Seattle City Light	2.6	7.5	Washington Water Power Co.	2.3	6.6
Tacoma City Light	1.0	2.9	Pacific Power & Light Co.	1.4	4.0
			Portland General Electric Co.	0.6	1.7
Total publicly owned	23.8	68.4	Montana Power Co.	2.7	7.8
			Idaho Power Co.	2.2	6.3
			Total privately owned	11.0	31.6
Total generation 1/	34.8	100.0			

1/ The above utilities are members of the Northwest Power Pool. Utah Power & Light Co. and British Columbia Electric Co. are also members of the Pool, but are not included above because their major service areas lie outside the Pacific Northwest region.

The Administration supplied 58 percent of the total energy generated by the major utilities of the region. In addition to the power requirements of industries and nonpool utilities served by the Administration approximately 3.9 billion kilowatt-hours of energy were provided for use by other pool utilities to meet their requirements.

CHART 5

TRANSMISSION LINES IN CIRCUIT MILES



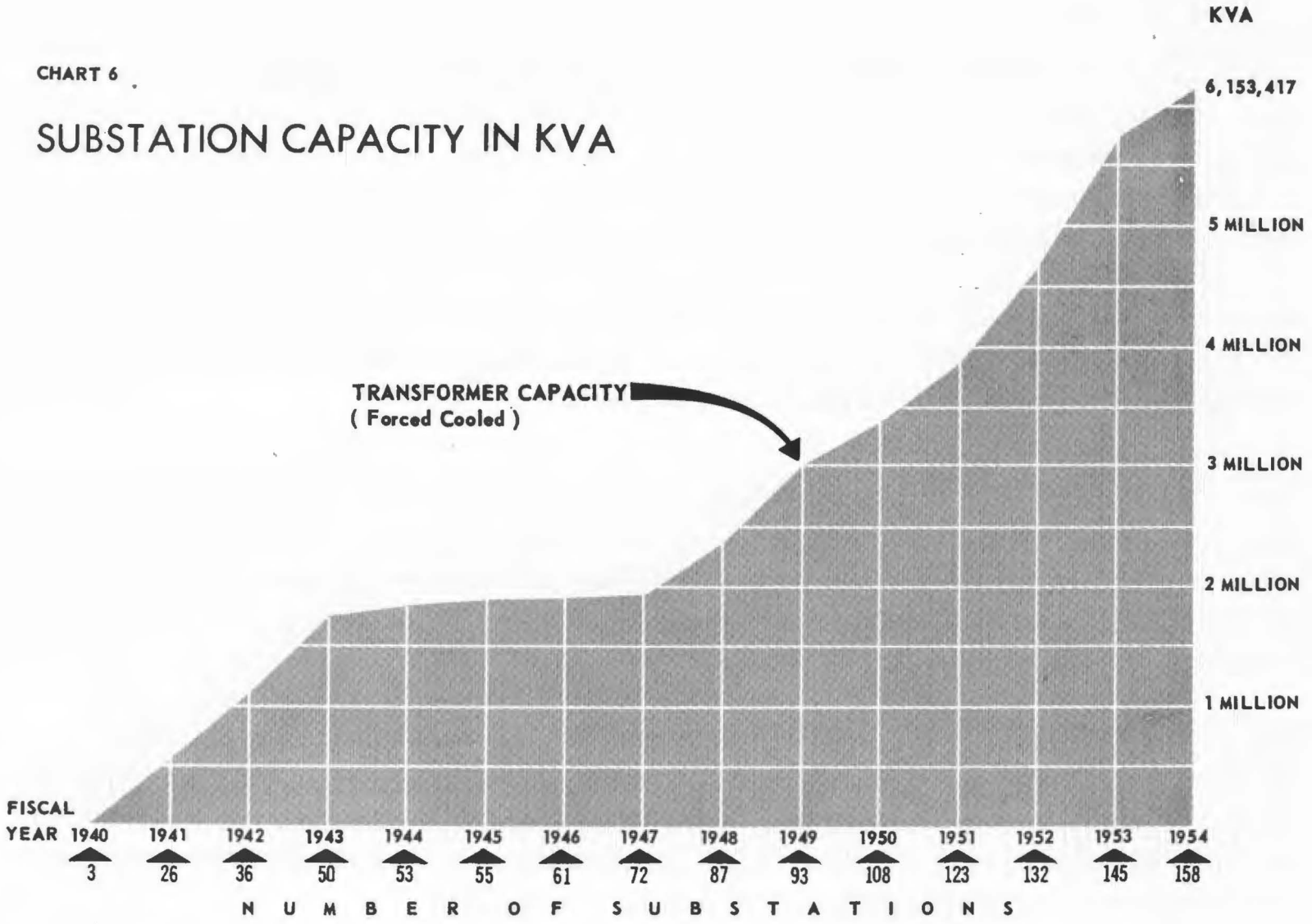
Transmission System Grows A new 96-mile, 230,000 volt transmission line from McNary Dam to the Big Eddy, Oregon, substation was energized in November 1953, providing the transmission facility necessary to integrate the initial power production from McNary Dam with the Bonneville Power Administration system. In December 1953 an additional 77-mile, 230,000 volt line, from Big Eddy to the Troutdale, Oregon, substation was energized, carrying McNary power to the Portland load center. To transmit the power from additional generating units placed in service at McNary Dam the 104-mile, McNary-Maupin 230,000 volt line was energized in June 1954. This line connected to the previously existing circuit from Maupin to the Alvey substation brings McNary generation to the Willamette Valley load center.

Puget Sound Service Energization of the 155-mile, Columbia-Olympia transmission line at 230,000 volts provided additional transmission capacity to the Puget Sound area. This line is connected to an existing Grand Coulee-Columbia line, providing a through circuit from Grand Coulee to Olympia. Installation was started during the year of terminal facilities at Grand Coulee and Olympia to raise the operating voltage of this line to 287,000 volts.

New Customer Service Substations Twelve new customer service substations, ranging in capacity from 3,000 to 150,000 kilovolt-amperes, were energized during this fiscal year. Transformer capacity was increased at the G. H. Bell, Longview, Walla Walla, Redmond and Grandview substations with the addition of forced-cooling equipment to existing transformers.

CHART 6

SUBSTATION CAPACITY IN KVA



Transmission Line Additions During fiscal year 1954 a total of 670 circuit miles of transmission lines were added to the system, giving the Administration a total of 6,377 circuit miles of transmission lines. This total includes 3,627 circuit miles of 230,000 volt line, 2,517 circuit miles of 115,000 volt line, and 233 miles of lower voltage line.

Transformation and Reactive Additions A total of 13 substations were added to the system during this fiscal year, and the substation transformer capacity was increased by 444,333 kilovolt-amperes. With these additions the Administration's system includes 158 substations with 4,609,750 kilovolt-amperes of transformer capacity under self-cooled conditions, and a maximum of 6,153,417 kilovolt-amperes with forced-cooling. Static capacitors, with a capacity of 132,350 reactive kilovolt-amperes were installed, bringing the total on the system to 991,865 reactive kilovolt-amperes.

New Construction Major construction activity during the fiscal year was concentrated on the facilities for bringing power from Chief Joseph Dam to the Puget Sound area, and on additional transmission lines from McNary Dam to the Portland and Willamette Valley load centers. To bring initial power from Lookout Point Dam into the Bonneville system in the fall of 1954, a 115,000 volt transmission line from Lookout Point Dam to the J. P. Alvey substation was constructed. Installation of microwave communication facilities from Portland to Spokane and from Portland to the J. P. Alvey substation was under way during the year, with completion of the facilities scheduled for the fall of 1954. Construction was started in May 1954 on the new power dispatching center in the Portland Department of Interior Building.

Auditors' Report

Columbia

River Power

System

and Related

Activities

FINANCIAL

STATEMENTS

FOR THE

FISCAL YEAR

ENDED

JUNE 30, 19 4

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON 25

B-114858

December 1, 1954

Dear Mr. Secretary:

The Division of Audits, General Accounting Office, has made an audit of the activities of the Bonneville Power Administration and the Bureau of Reclamation, Department of the Interior, and the Corps of Engineers (civil functions), United States Army. In connection with these audits, an examination was made of the accompanying financial statements of the COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES for the fiscal year ended June 30, 1954.

The Columbia River Power System consists of the Bonneville Power Administration, which is the transmitting and marketing agency, and the generating facilities for commercial power purposes of the multiple-purpose projects built and operated (or under construction) by the Bureau of Reclamation, Department of the Interior, and the Corps of Engineers, United States Army, in the Pacific Northwest. The transmission system of Bonneville Power Administration and the hydroelectric plants of these multiple-purpose projects are operated as an integrated power system. In addition to the generation of electric energy, other activities of these multiple-purpose projects consist of the operation of irrigation, flood control, and navigation facilities.

The accompanying financial statements present for the first time on a combined basis all the assets and liabilities of Bonneville Power Administration and the multiple-purpose projects (including those under construction) for which it is the power-marketing agent. In previous years, these financial statements have disclosed on a combined basis only the amounts allocated to commercial power activities for plants in actual operation. For purposes of comparison, combined financial data previously reported for the fiscal year 1953 has been restated to a basis comparable with that for the fiscal year 1954. This restatement consists of including in the combined financial statement (schedule 3) the assets and liabilities for the fiscal year 1953 applicable to nonpower activities (irrigation, flood control, and navigation).

The accounts on which these financial statements, insofar as they relate to commercial power activities, are based have been maintained to the extent practicable in accordance with the uniform system of accounts prescribed by the Federal Power Commission under the Federal Power Act.

The examination of the accompanying financial statements was made in accordance with generally accepted auditing standards and included such tests of the accounting records and such other auditing procedures as were considered necessary in the circumstances. In the opinion of the Division of Audits, General Accounting Office, these financial statements present fairly the assets and liabilities of the Columbia River Power System And Related Activities at June 30, 1954, and the financial results of such operations for the year ended that date in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year, except for the following matters as to which it is not practicable to determine the full effect on the financial statements as of June 30, 1954.

1. A uniform policy has not been followed in all cases by the Bonneville Power Administration and the projects in the accounting treatment of property costs and operating expenses as described in notes 2, 3, and 4 of schedule 13. Although the Administration and the projects differ in their accounting treatment of these costs, the General Accounting Office does not believe that the stated results of commercial power operations have been materially affected for the fiscal year 1954 by these differences. The net loss from irrigation operations at the Columbia Basin Project, however, does not include an allowance for depreciation on any of the irrigation facilities. Interest on the Federal investment also is not considered as an item of cost in determining the results from irrigation operations. If these costs were included as a part of irrigation operations, the net loss for the fiscal year 1954 would be increased by several million dollars.

2. Construction costs of Hungry Horse Project have not been allocated to power and nonpower purposes by the Secretary of the Interior. A tentative allocation of these costs, made by the Bureau of Reclamation as explained in note 3 of schedule 13, has been used in preparing the accompanying financial statements. When a firm allocation of costs is made by the Secretary of the Interior, the accounts and financial statements relating to this project will be adjusted accordingly.

3. Final allocations of the Corps of Engineers construction costs of the Albeni Falls, Detroit-Big Cliff, and McNary Projects have not been made to power and nonpower purposes. As explained in note 3 of schedule 13, tentative allocations of these costs have been made which were used in preparing the accompanying financial statements. When a firm allocation of costs is made, the accounts and financial statements relating to these projects will be adjusted accordingly.

4. Interest and depreciation ($15,438,741) on the part of the cost of joint facilities at Columbia Basin, Hungry Horse, and Albeni Falls Projects allocated to future downstream river regulation have been deferred to future periods on the basis that the amounts will be recovered from the operations of additional downstream hydroelectric plants now under construction or contemplated. While deferment of the charges is consistent with the allocations of costs of the projects, the propriety of excluding the items from current power costs is dependent upon the construction of the contemplated downstream plants.

5. Potential reimbursements, if any, for benefits in fiscal year 1954 accruing to downstream non-Federal power plants from storage at Columbia Basin, Hungry Horse, and Albeni Falls Projects have also not been included in the accompanying financial statements for the reasons set forth in note 9 of schedule 13.

Sincerely yours,

Frank H. Weitzel

Acting Comptroller General
of the United States

The Honorable
The Secretary of the Interior

Enclosures

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

INDEX TO FINANCIAL STATEMENTS

SCHEDULE 1

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES (note 1)

STATEMENT OF COMBINED COMMERCIAL POWER OPERATIONS

FOR THE FISCAL YEARS ENDED JUNE 30, 1954 AND 1953

	1954	1953
OPERATING REVENUES:		
Sales of electric energy	$44,127,409	$38,383,475
Other electric revenues	1,190,284	791,734
Total operating revenues	45,317,693	39,175,209
OPERATING EXPENSES (notes 2 and 3):		
Purchased power	697,339	616,876
Operation:		
Specific power facilities	6,701,152	7,364,308
Joint facilities	784,802	457,302
Maintenance:		
Specific power facilities	2,846,841	2,229,509
Joint facilities	394,857	200,743
Depreciation (note 4):		
Specific power facilities	10,459,189	8,871,154
Joint facilities	1,583,132	810,025
Less amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	404,186*	271,131*
Net loss or gain on sales and abandonment of property (note 11)	1,379,976	12,559*
Total operating expenses	24,443,102	20,266,227
Net operating revenues	20,874,591	18,908,982
INTEREST AND OTHER DEDUCTIONS:		
Interest on Federal investment	20,524,288	12,526,703
Less:		
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	1,776,255*	1,396,872*
Amount charged to construction	6,499,836*	2,146,722*
Miscellaneous income deductions (net)	11,316*	358,281
Total interest and other deductions	12,236,881	9,341,390
Net commercial power revenues	8,637,710	9,567,592
ADJUSTMENTS APPLICABLE TO PRIOR YEARS (net)	272,753*	263,740
Net commercial power revenues after adjustments	$ 8,364,957	$ 9,831,332

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES (note 1)

STATEMENT COMBINING REVENUES AND EXPENSES OF COMMERCIAL POWER OPERATIONS

FOR THE FISCAL YEAR ENDED JUNE 30, 1954

	Combined (to schedule 1)	Eliminations	Bonneville Power Administration (schedule 6)	Bonneville Dam Project (schedule 7)	Columbia Basin Project (schedule 8)	Hungry Horse Project (schedule 9)	Albeni Falls Project (schedule 10)	McNary Dam Project (schedule 11)	Detroit-Big Cliff Project (schedule 12)
OPERATING REVENUES:									
Sales of electric energy	$44,127,409	$ -	$44,127,409	$ -	$ -	$ -	$ -	$ -	$ -
Amounts allocated to generating projects by Bonneville Power Administration (note 6)	-	-	22,102,202*	2,788,289	12,347,430	4,286,210	233,911	1,331,618	1,114,744
Payment for river regulation	-	187,570	-	-	187,570	-	-	-	-
Other electric revenues	1,190,284	-	1,089,244	-	86,990	14,050	-	-	-
Total operating revenues	45,317,693	187,570	23,114,451	2,788,289	12,621,990	4,300,260	233,911	1,331,618	1,114,744
OPERATING EXPENSES (notes 2 and 3):									
Purchased power	697,339	-	697,339	-	-	-	-	-	-
Operation:									
Specific power facilities	6,701,152	-	5,036,385	298,952	1,056,520	131,544	-	109,328	68,423
Joint facilities	784,802	-	-	124,250	281,721	86,261	17,525	236,976	38,069
Payment for river regulation	-	187,570	-	187,570	-	-	-	-	-
Maintenance:									
Specific power facilities	2,846,841	-	2,161,284	230,635	347,616	56,199	-	30,086	21,021
Joint facilities	394,857	-	-	253,666	84,031	6,160	-	38,772	12,228
Depreciation (note 4):									
Specific power facilities	10,459,189	-	7,594,633	567,034	1,448,344	459,588	-	184,041	205,549
Joint facilities	1,583,132	-	-	131,347	547,476	527,155	111,811	116,935	148,408
Less amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	404,186*	-	-	-	236,099*	118,166*	49,921*	-	-
Net loss on sales and abandonment of property (note 11)	1,379,976	-	1,379,976	-	-	-	-	-	-
Total operating expenses	24,443,102	187,570	16,869,617	1,793,454	3,529,609	1,148,741	79,415	716,138	493,698
Net operating revenues	20,874,591	-	6,244,834	994,835	9,092,381	3,151,519	154,496	615,480	621,046
INTEREST AND OTHER DEDUCTIONS:									
Interest on Federal investment	20,524,288	-	5,870,805	995,769	4,391,356	2,124,989	876,980	5,380,072	884,317
Less:									
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	1,776,255*	-	-	-	1,303,473*	348,166*	124,616*	-	-
Amount charged to construction	6,499,836*	-	873,448*	657*	-	-	597,868*	4,764,592*	263,271*
Miscellaneous income deductions (net)	11,316*	-	13,032*	277*	740	1,253	-	-	-
Total interest and other deductions	12,236,881	-	4,984,325	994,835	3,088,623	1,778,076	154,496	615,480	621,046
Net commercial power revenues	8,637,710	-	1,260,509	-	6,003,758	1,373,443	-	-	-
ADJUSTMENTS APPLICABLE TO PRIOR YEARS (net)	272,753*	-	-	-	272,753*	-	-	-	-
Net commercial power revenues transferred to accumulated net revenues	$ 8,364,957	$ -	$ 1,260,509	$ -	$ 5,731,005	$1,373,443	$ -	$ -	$ -

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 3

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES (note 1)

STATEMENT OF COMBINED ASSETS AND LIABILITIES

JUNE 30, 1954 AND 1953

ASSETS	1954	1953
FIXED ASSETS, at original cost, including interest during construction (notes 2 and 3):		
Commercial power	$ 990,678,061	$ 650,549,098
Irrigation	273,422,597	255,929,295
Flood control	48,206,722	19,288,520
Navigation	53,385,327	28,283,837
Multiple-purpose projects under construction	211,691,763	447,885,000
Total	1,577,384,470	1,401,935,750
Less accumulated depreciation (note 4):		
Commercial power	63,777,062	52,999,506
Irrigation	3,056,647	2,630,684
Flood control	409,907	52,952
Navigation	2,061,091	1,705,129
Total	69,304,707	57,388,271
Original cost, net	1,508,079,763	1,344,547,479
INTEREST AND DEPRECIATION CHARGES ON JOINT FACILITIES ALLOCATED TO FUTURE DOWNSTREAM RIVER REGULATION--recoverable from operation of future downstream hydroelectric plants (note 8)	15,438,741	13,189,147
CURRENT ASSETS:		
Unexpended funds in U. S. Treasury appropriated by the Congress for construction and for operation and maintenance (note 5)	76,977,332	57,575,788
Special deposits	1,505,258	5,171,229
Amounts receivable:		
Customers	7,093,775	6,616,108
Other	990,331	905,009
Materials and supplies	10,310,655	9,621,354
Total	96,877,351	79,889,488
OTHER ASSETS AND DEFERRED CHARGES	11,817,104	8,403,807
	$1,632,212,959	$1,446,029,921

LIABILITIES	1954	1953
INVESTMENT OF U. S. GOVERNMENT AND ACCUMULATED NET REVENUES:		
Total investment of U. S. Government (schedule 5)	$1,866,402,214	$1,646,237,965
Less:		
Funds returned to U. S. Treasury:		
Repayment of Federal investment in the power program (schedule 5)	340,565,589	292,781,902
Repayment of Federal investment in the nonpower programs	3,416,013	2,160,138
Total expense of flood control operations	1,647,087	239,306
Total expense of navigation operations	16,379,661	14,547,950
Other nonreimbursable expenses	122,998	120,736
	362,131,348	309,850,032
Net investment of U. S. Government	1,504,270,866	1,336,387,933
Accumulated net revenues:		
Net revenues from commercial power operations since inception, including $8,364,957 and $9,831,332 for the years ended June 30, 1954 and 1953, respectively (schedule 1).	101,774,950	93,409,993
Less net loss from irrigation operations since inception, including loss of $200,915 and $308,925 for the years ended June 30, 1954 and 1953, respectively (schedule 8) (note 3)	2,370,425	2,169,510
	99,404,525	91,240,483
Total	1,603,675,391	1,427,628,416
CURRENT AND ACCRUED LIABILITIES:		
Accounts payable	25,183,566	15,121,483
Employees' accrued leave	2,109,635	2,255,572
Total	27,293,201	17,377,055
DEFERRED CREDITS	928,804	711,011
CONTRIBUTIONS IN AID OF CONSTRUCTION	315,563	313,439
	$1,632,212,959	$1,446,029,921

The accompanying notes (schedule 13) are an integral part of this statement.

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES (note 1)

STATEMENT COMBINING ASSETS AND LIABILITIES

JUNE 30, 1954

ASSETS	Combined (to schedule 3)	Eliminations	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Hungry Horse Project	Albeni Falls Project	McNary Dam Project	Detroit-Big Cliff Project	Chief Joseph Project	The Dalles Dam Project	Lookout Point-Dexter Project
FIXED ASSETS, at original cost, including interest during construction (notes 2 and 3):												
Commercial power (including future downstream river regulation):												
Specific facilities (powerhouses, generating equipment, and transmission plant)	$ 656,254,943	$ -	$335,171,962	$ 38,640,426	$112,166,558	$ 26,395,798	$18,137,000	$110,360,125	$15,383,074	$ -	$ -	$ -
Joint facilities (dam, reservoirs, etc.) allocated to power	334,423,118	-	-	20,978,201	95,343,112	59,726,620	9,216,056	126,041,567	23,117,562	-	-	-
	990,678,061	-	335,171,962	59,618,627	207,509,670	86,122,418	27,353,056	236,401,692	38,500,636	-	-	-
Irrigation:												
Specific facilities	203,119,390	-	-	-	203,119,390	-	-	-	-	-	-	-
Joint facilities	70,303,207	-	-	-	70,303,207	-	-	-	-	-	-	-
	273,422,597	-	-	-	273,422,597	-	-	-	-	-	-	-
Flood control:												
Specific facilities	-	-	-	-	-	-	-	-	-	-	-	-
Joint facilities	48,206,722	-	-	-	-	20,810,894	145,514	-	27,250,314	-	-	-
	48,206,722	-	-	-	-	20,810,894	145,514	-	27,250,314	-	-	-
Navigation:												
Specific facilities	28,062,083	-	-	6,351,099	-	-	-	21,710,984	-	-	-	-
Joint facilities	25,323,244	-	-	20,978,201	1,000,000	-	113,208	3,231,835	-	-	-	-
	53,385,327	-	-	27,329,300	1,000,000	-	113,208	24,942,819	-	-	-	-
Multiple-purpose projects under construction	211,691,763	-	-	-	-	-	-	-	-	91,939,237	35,410,653	84,341,873
Total	1,577,384,470	-	335,171,962	86,947,927	481,932,267	106,933,312	27,611,778	261,344,511	65,750,950	91,939,237	35,410,653	84,341,873
Less accumulated depreciation (note 4):												
Specific facilities:												
Commercial power	55,905,556	-	40,299,107	5,900,991	8,655,450	660,418	-	184,041	205,549	-	-	-
Irrigation (construction facilities)	1,735,856	-	-	-	1,735,856	-	-	-	-	-	-	-
Irrigation (pumping power)	137,610	-	-	-	137,610	-	-	-	-	-	-	-
Flood control	-	-	-	-	-	-	-	-	-	-	-	-
Navigation	640,860	-	-	460,879	-	-	-	179,981	-	-	-	-
Joint facilities:												
Commercial power	7,871,506	-	-	1,415,754	5,424,017	638,365	128,027	116,935	148,408	-	-	-
Irrigation (joint construction and general plant)	1,183,181	-	-	-	1,183,181	-	-	-	-	-	-	-
Flood control	409,907	-	-	-	-	220,576	1,898	-	187,433	-	-	-
Navigation	1,420,231	-	-	1,415,754	-	-	1,479	2,998	-	-	-	-
Total	69,304,707	-	40,299,107	9,193,378	17,136,114	1,519,359	131,404	483,955	541,390	-	-	-
Original cost, net	1,508,079,763	-	294,872,855	77,754,549	464,796,153	105,413,953	27,480,374	260,860,556	65,209,560	91,939,237	35,410,653	84,341,873
INTEREST AND DEPRECIATION CHARGES ON JOINT FACILITIES ALLOCATED TO FUTURE DOWNSTREAM RIVER REGULATION--recoverable from operation of future downstream hydroelectric plants (note 8)	15,438,741	-	-	-	14,688,204	576,000	174,537	-	-	-	-	-
CURRENT ASSETS:												
Unexpended funds in U. S. Treasury appropriated by the Congress for construction and for operation and maintenance (note 5)	76,977,332	-	48,180,291	464,954	4,853,183	494,018	856,477	6,753,832	1,520,206	3,136,231	6,582,605	4,135,535
Special deposits	1,505,258	-	498,539	-	923,375	83,344	-	-	-	-	-	-
Amounts receivable:												
Customers	7,093,775	-	7,093,775	-	-	-	-	-	-	-	-	-
Other	990,331	-	242,928	2,287	81,868	7,690	-	588,501	15,251	-	30,178	21,628
Materials and supplies	10,310,655	-	7,306,382	67,189	1,269,201	184,816	-	1,072,180	13,158	-	274,352	123,377
Total	96,877,351	-	63,321,915	534,430	7,127,627	769,868	856,477	8,414,513	1,548,615	3,136,231	6,887,135	4,280,540
OTHER ASSETS AND DEFERRED CHARGES	11,817,104	-	1,332,793	21,001	5,631,624	25,983	-	199,847	284,584	-	3,472,888	848,384
PAYMENTS TO U. S. TREASURY FOR THE ACCOUNT OF THE CORPS OF ENGINEERS IN EXCESS OF COSTS CHARGED TO POWER OPERATIONS (note 6)	-	18,222,465	18,222,465	-	-	-	-	-	-	-	-	-
	$1,632,212,959	$18,222,465	$377,750,028	$ 78,309,980	$492,243,608	$106,785,804	$28,511,388	$269,474,916	$67,042,759	$95,075,468	$45,770,676	$89,470,797

The accompanying notes (schedule 13) are an integral part of this statement.

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES (note 1)

STATEMENT COMBINING ASSETS AND LIABILITIES (continued)

JUNE 30, 1954

LIABILITIES	Combined (to schedule 3)	Eliminations	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Hungry Horse Project	Albeni Falls Project	McNary Dam Project	Detroit-Big Cliff Project	Chief Joseph Project	The Dalles Dam Project	Lookout Point-Dexter Project
INVESTMENT OF U. S. GOVERNMENT AND ACCUMULATED NET REVENUES:												
Congressional appropriations (including allotments, WPA expenditures, and unexpended appropriations)	$1,687,823,449	$ -	$441,191,039	$ 96,740,059	$497,513,693	$102,358,509	$27,230,085	$247,167,000	$63,102,592	$88,245,760	$41,651,005	$82,623,707
Cost of materials and services furnished by other Federal agencies (net)	11,671,697	-	6,967,019	175,400	3,953,780	493,127	-	-	63,349	-	195	18,827
Interest on Federal investment	165,450,361	-	35,795,415	31,634,363	54,637,771	9,365,555	1,006,191	17,218,719	5,424,680	3,819,947	1,001,625	5,546,095
Revenues transferred to the continuing fund	1,456,707	-	1,456,707	-	-	-	-	-	-	-	-	-
Total investment of U. S. Government.	1,866,402,214	-	485,410,180	128,549,822	556,105,244	112,217,191	28,236,276	264,385,719	68,590,621	92,065,707	42,652,825	88,188,629
Less:												
Funds returned to U. S. Treasury:												
Repayment of Federal investment in the power program (including amounts for operating expenses and interest)	340,565,589	-	179,526,138	48,825,958	99,920,743	5,661,850	475,000	4,565,900	1,590,000	-	-	-
Repayment of Federal investment in the non-power program	3,416,013	-	-	-	3,210,394	205,619	-	-	-	-	-	-
Total expense of flood control operations	1,647,087	-	-	-	-	931,337	10,774	-	704,976	-	-	-
Total expense of navigation operations	16,379,661	-	-	15,784,500	27,212	-	-	567,949	-	-	-	-
Other nonreimbursable expenses	122,998	-	-	-	122,998	-	-	-	-	-	-	-
	362,131,348	-	179,526,138	64,610,458	103,281,347	6,798,806	485,774	5,133,849	2,294,976	-	-	-
Net investment of U. S. Government.	1,504,270,866	-	305,884,042	63,939,364	452,823,897	105,418,385	27,750,502	259,251,870	66,295,645	92,065,707	42,652,825	88,188,629
Accumulated net revenues:												
Net revenues from commercial power operations since inception, including $8,364,957 and $9,831,332 for the years ended June 30, 1954 and 1953, respectively	101,774,950	-	62,394,537	-	38,216,448	1,163,965	-	-	-	-	-	-
Less net loss from irrigation operations since inception, including loss of $200,915 and $308,925 for the years ended June 30, 1954 and 1953, respectively	2,370,425	-	-	-	2,370,425	-	-	-	-	-	-	-
	99,404,525	-	62,394,537	-	35,846,023	1,163,965	-	-	-	-	-	-
Total	1,603,675,391	-	368,278,579	63,939,364	488,669,920	106,582,350	27,750,502	259,251,870	66,295,645	92,065,707	42,652,825	88,188,629
CURRENT AND ACCRUED LIABILITIES:												
Accounts payable	25,183,566	-	6,433,010	92,878	3,259,424	203,454	519,797	6,994,664	271,858	3,009,761	3,117,851	1,280,869
Employees' accrued leave	2,109,635	-	2,109,635	-	-	-	-	-	-	-	-	-
Total	27,293,201	-	8,542,645	92,878	3,259,424	203,454	519,797	6,994,664	271,858	3,009,761	3,117,851	1,280,869
DEFERRED CREDITS	928,804	-	928,804	-	-	-	-	-	-	-	-	-
CONTRIBUTIONS IN AID OF CONSTRUCTION	315,563	-	-	-	314,264	-	-	-	-	-	-	1,299
PAYMENTS TO U. S. TREASURY FOR THE ACCOUNT OF THE CORPS OF ENGINEERS PROJECTS IN EXCESS OF COSTS CHARGED TO POWER OPERATIONS (note 6)	-	18,222,465	-	14,277,738	-	-	241,089	3,228,382	475,256	-	-	-
	$1,632,212,959	$18,222,465	$377,750,028	$ 78,309,980	$492,243,608	$106,785,804	$28,511,388	$269,474,916	$67,042,759	$95,075,468	$45,770,676	$89,470,797

The accompanying notes (schedule 13) are an integral part of this statement.

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES (note 1)

ANALYSIS OF THE TOTAL INVESTMENT OF THE UNITED STATES GOVERNMENT

AND THE NET INVESTMENT IN THE COMMERCIAL POWER PROGRAM FOR OPERATING PROJECTS

FOR THE PERIOD FROM INCEPTION TO JUNE 30, 1954

	Combined	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Hungry Horse Project	Albeni Falls Project	McNary Dam Project	Detroit-Big Cliff Project	Chief Joseph Project	The Dalles Dam Project	Lookout Point-Dexter Project
INVESTMENT OF U. S. GOVERNMENT:											
Congressional appropriations:											
Expended	$1,533,381,757	$377,722,365	$ 84,075,105	$442,684,533	$101,864,491	$26,373,608	$240,413,168	$61,582,386	$85,109,529	$35,068,400	$78,488,172
Unexpended (note 5)	76,477,332[a]	47,680,291[a]	464,954	4,853,183	494,018	856,477	6,753,832	1,520,206	3,136,231	6,582,605	4,135,535
Total	1,609,859,089	425,402,656	84,540,059	447,537,716	102,358,509	27,230,085	247,167,000	63,102,592	88,245,760	41,651,005	82,623,707
Allotments of Public Works Administration funds	70,005,000	10,750,000	12,200,000	47,055,000	-	-	-	-	-	-	-
Expenditures of Works Progress Administration	7,959,360	5,038,383	-	2,920,977	-	-	-	-	-	-	-
Subtotal	1,687,823,449	441,191,039	96,740,059	497,513,693	102,358,509	27,230,085	247,167,000	63,102,592	88,245,760	41,651,005	82,623,707
Cost of materials and services furnished by other Federal agencies (net)	11,671,697	6,967,019	175,400	3,953,780	493,127	-	-	63,349	-	195	18,827
Interest on Federal investment:											
Charged to operations	96,341,813	31,097,858	28,036,787	31,976,741	3,020,458	161,858	947,466	1,100,645	-	-	-
Charged to construction	55,616,762	4,697,557	3,597,576	9,727,004	5,911,953	719,717	16,271,253	4,324,035	3,819,947	1,001,625	5,546,095
Charged to future downstream river regulation	13,491,786	-	-	12,934,026	433,144	124,616	-	-	-	-	-
Revenues transferred to the continuing fund:											
Expended	956,707	956,707	-	-	-	-	-	-	-	-	-
Unexpended	500,000	500,000	-	-	-	-	-	-	-	-	-
Total investment of U. S. Government	1,866,402,214	485,410,180	128,549,822	556,105,244	112,217,191	28,236,276	264,385,719	68,590,621	92,065,707	42,652,825	88,188,629
Less:											
Amounts allocated to:											
Irrigation	284,166,612	-	-	284,166,612	-	-	-	-	-	-	-
Flood control	50,590,356	-	-	-	21,818,701	154,461	-	28,617,194	-	-	-
Navigation	67,947,853	-	41,468,444	1,027,212	-	120,170	25,332,027	-	-	-	-
Construction in progress and other assets not allocated to purposes	222,907,161	-	-	-	-	-	-	-	92,065,707	42,652,825	88,188,629
	625,611,982	-	41,468,444	285,193,824	21,818,701	274,631	25,332,027	28,617,194	92,065,707	42,652,825	88,188,629
Investment allocated to commercial power	1,240,790,232	485,410,180	87,081,378	270,911,420	90,398,490	27,961,645	239,053,692	39,973,427	-	-	-
LESS FUNDS FROM COMMERCIAL POWER OPERATIONS RETURNED TO U. S. TREASURY FOR (note 7):											
Operation and maintenance expenses	85,272,271	58,364,086	8,969,117	16,912,305	454,335	17,525	415,162	139,741	-	-	-
Interest expense charged to operations	84,883,402	31,097,858	18,065,858	31,976,741	2,351,923	154,496	615,480	621,046	-	-	-
Total expense	170,155,673	89,461,944	27,034,975	48,889,046	2,806,258	172,021	1,030,642	760,787	-	-	-
Repayment of capital investment	170,409,916	90,064,194	21,790,983	51,031,697	2,855,592	302,979	3,535,258	829,213	-	-	-
Total funds returned to U. S. Treasury	340,565,589	179,526,138	48,825,958	99,920,743	5,661,850	475,000	4,565,900	1,590,000	-	-	-
Net investment of the U. S. Government in the commercial power program (operating projects only)	$ 900,224,643	$305,884,042	$ 38,255,420	$170,990,677	$ 84,736,640	$27,486,645	$234,487,792	$38,383,427	$ -	$ -	$ -

[a]Exclusive of $500,000 unexpended balance in the continuing fund. This item is included as a part of revenues transferred to the continuing fund.

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 6

UNITED STATES OF AMERICA

DEPARTMENT OF THE INTERIOR

BONNEVILLE POWER ADMINISTRATION

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1954

OPERATING REVENUES:		
Sales of electric energy		$44,127,409
Less amounts allocated to generating projects (note 6):		
Bonneville Dam Project	$ 2,788,289	
Columbia Basin Project	12,347,430	
Hungry Horse Project	4,286,210	
Albeni Falls Project	233,911	
McNary Dam Project	1,331,618	
Detroit-Big Cliff Project	1,114,744	22,102,202
		22,025,207
Other electric revenues		1,089,244
Total operating revenues		23,114,451
OPERATING EXPENSES (notes 2 and 3):		
Purchased power	697,339	
Operation	5,036,385	
Maintenance	2,161,284	
Depreciation (note 4)	7,594,633	
Net loss on sales and abandonment of property (note 11)	1,379,976	16,869,617
Net operating revenues		6,244,834
INTEREST AND OTHER DEDUCTIONS:		
Interest on Federal investment	5,870,805	
Less amount charged to construction	873,448*	
Miscellaneous income deductions (net)	13,032*	4,984,325
Net revenues for the year		$ 1,260,509

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 7

UNITED STATES OF AMERICA

CORPS OF ENGINEERS--U. S. ARMY

BONNEVILLE DAM PROJECT

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1954

	Total	Amounts allocated to Commercial power	Amounts allocated to Navigation
OPERATING REVENUES:			
Receipts from sales of electric energy by Bonneville Power Administration allocated to Bonneville Dam Project applied to the repayment of operating and interest expenses allocated to commercial power (note 6)	$2,788,289	$2,788,289	$ -
OPERATING EXPENSES (notes 2 and 3):			
Operation:			
Specific power facilities	298,952	298,952	-
Specific navigation facilities	33,940	-	33,940
Joint facilities	248,500	124,250	124,250
Payment for river regulation	187,570	187,570	-
Maintenance:			
Specific power facilities	230,635	230,635	-
Specific navigation facilities	36,605	-	36,605
Joint facilities	507,333	253,666	253,667
Depreciation (note 4):			
Specific power facilities	567,034	567,034	-
Specific navigation facilities	40,203	-	40,203
Joint facilities	262,693	131,347	131,346
Total operating expenses	2,413,465	1,793,454	620,011
Net operating revenues	374,824	994,835	620,011*
INTEREST AND OTHER DEDUCTIONS:			
Interest on Federal investment	1,634,984	995,769	639,215
Less amount charged to construction	1,172*	657*	515*
Miscellaneous income deductions (net)	436*	277*	159*
Total interest and other deductions	1,633,376	994,835	638,541
Net expense for the year	$1,258,552	$ -	$1,258,552

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 8

UNITED STATES OF AMERICA

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION--COLUMBIA BASIN PROJECT

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1954

	Total	Amounts allocated to Commercial power	Irrigation	Navigation
OPERATING REVENUES (note 9):				
Receipts from sales of electric energy by Bonneville Power Administration allocated to Columbia Basin Project (note 6)	$12,347,430	$12,347,430	$ -	$ -
Payment for river regulation	187,570	187,570	-	-
Other electric revenues	86,990	86,990	-	-
Irrigation revenues	649,083	-	649,083	-
Total operating revenues	13,271,073	12,621,990	649,083	-
OPERATING EXPENSES (notes 2 and 3):				
Operation:				
Specific power facilities	1,072,602	1,056,520	16,082	-
Specific irrigation facilities	235,133	-	235,133	-
Joint facilities	507,087	281,721	221,353	4,013
Maintenance:				
Specific power facilities	352,907	347,616	5,291	-
Specific irrigation facilities	174,617	-	174,617	-
Joint facilities	151,252	84,031	66,024	1,197
Depreciation (note 4):				
Specific power facilities	1,473,400	1,448,344	25,056	-
Joint facilities	547,476	547,476	-	-
Less amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	236,099*	236,099*	-	-
Total operating expenses	4,278,375	3,529,609	743,556	5,210
Net operating revenues	8,992,698	9,092,381	94,473*	5,210*
INTEREST AND OTHER DEDUCTIONS:				
Interest on Federal investment (note 2)	4,391,356	4,391,356	-	-
Less amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	1,303,473*	1,303,473*	-	-
Miscellaneous income deductions (net)	40,726*	740	41,466*	-
Total interest and other deductions	3,047,157	3,088,623	41,466*	-
Net revenues for the year	5,945,541	6,003,758	53,007*	5,210*
ADJUSTMENTS APPLICABLE TO PRIOR YEARS (Net)	295,486*	272,753*	22,733*	-
Net revenues for the year after adjustments	$ 5,650,055	$ 5,731,005	$ 75,740*	$5,210*
Net revenues after adjustments, distributed to:				
Nonreimbursable navigation expense	$ 5,210*	$ -	$ -	$5,210*
Accounts with water users	125,175	-	125,175	-
Accumulated net revenues	5,530,090	5,731,005	200,915*	-
Total, as above	$ 5,650,055	$ 5,731,005	$ 75,740*	$5,210*

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 9

UNITED STATES OF AMERICA

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION--HUNGRY HORSE PROJECT

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1954

	Total	Amounts allocated to Commercial power	Flood control
OPERATING REVENUES (note 9):			
Receipts from sales of electric energy by Bonneville Power Administration allocated to Hungry Horse Project (note 6)	$4,286,210	$4,286,210	$ -
Other electric revenues	14,050	14,050	-
Total operating revenues	4,300,260	4,300,260	-
OPERATING EXPENSES (notes 2 and 3):			
Operation:			
Specific power facilities	131,544	131,544	-
Joint facilities	106,361	86,261	20,100
Maintenance:			
Specific power facilities	56,199	56,199	-
Joint facilities	6,160	6,160	-
Depreciation (note 4):			
Specific power facilities	459,588	459,588	-
Joint facilities	694,779	527,155	167,624
Less amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	118,166*	118,166*	-
Total operating expenses	1,336,465	1,148,741	187,724
Net operating revenues	2,963,795	3,151,519	187,724*
INTEREST AND OTHER DEDUCTIONS:			
Interest on Federal investment	2,629,296	2,124,989	504,307
Less amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	348,166*	348,166*	-
Miscellaneous income deductions (net)	1,253	1,253	-
Total interest and other deductions	2,282,383	1,778,076	504,307
Net revenues for the year	$ 681,412	$1,373,443	$692,031*

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 10

UNITED STATES OF AMERICA

CORPS OF ENGINEERS--U. S. ARMY

ALBENI FALLS PROJECT

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1954

	Total	Amounts allocated to: Commercial power	Amounts allocated to: Flood control (note a)
OPERATING REVENUES (note 9):			
Receipts from sales of electric energy by Bonneville Power Administration allocated to Albeni Falls Project applied to the repayment of operating and interest expenses allocated to commercial power (note 6)	$233,911	$233,911	$ -
OPERATING EXPENSES (notes 2 and 3):			
Operation of joint facilities	17,987	17,525	462
Depreciation of joint facilities (note 4)	114,761	111,811	2,950
Less amount allocated to future downstream river regulation, recoverable from operation of future downstream hydroelectric plants (note 8)	49,921*	49,921*	-
Total operating expenses	82,827	79,415	3,412
Net operating revenues	151,084	154,496	3,412*
INTEREST DEDUCTIONS:			
Interest on Federal investment	900,113	876,980	23,133
Less:			
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydroelectric plants (note 8)	124,616*	124,616*	-
Amount charged to construction	613,639*	597,868*	15,771*
Total interest deductions	161,858	154,496	7,362
Net expense for the year	$ 10,774	$ -	$10,774

[a]Includes some navigation expenses

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 11

UNITED STATES OF AMERICA

CORPS OF ENGINEERS--U. S. ARMY

McNARY DAM PROJECT

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1954

	Total	Amounts allocated to: Commercial power	Amounts allocated to: Navigation
OPERATING REVENUES:			
Receipts from sales of electric energy by Bonneville Power Administration allocated to McNary Dam Project applied to the repayment of operating and interest expenses allocated to commercial power (note 6)	$1,331,618	$1,331,618	$ -
OPERATING EXPENSES (notes 2 and 3):			
Operation:			
Specific power facilities	109,328	109,328	-
Specific navigation facilities	34,558	-	34,558
Joint facilities	243,053	236,976	6,077
Maintenance:			
Specific power facilities	30,086	30,086	-
Specific navigation facilities	11,355	-	11,355
Joint facilities	39,766	38,772	994
Depreciation (note 4):			
Specific power facilities	184,041	184,041	-
Specific navigation facilities	179,981	-	179,981
Joint facilities	119,933	116,935	2,998
Total operating expenses	952,101	716,138	235,963
Net operating revenues	379,517	615,480	235,963*
INTEREST DEDUCTION:			
Interest on Federal investment	5,994,654	5,380,072	614,582
Less amount charged to construction	5,047,188*	4,764,592*	282,596*
Net interest deduction	947,466	615,480	331,986
Net expense for the year	$ 567,949	$ -	$567,949

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 12

UNITED STATES OF AMERICA

CORPS OF ENGINEERS--U. S. ARMY

DETROIT-BIG CLIFF PROJECT

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1954

	Total	Amounts allocated to: Commercial power	Amounts allocated to: Flood control
OPERATING REVENUES:			
Receipts from sales of electric energy by Bonneville Power Administration allocated to Detroit-Big Cliff Project applied to the repayment of operating and interest expenses allocated to commercial power (note 6)	$1,114,744	$1,114,744	$ -
OPERATING EXPENSES (notes 2 and 3):			
Operation:			
Specific power facilities	68,423	68,423	-
Joint facilities	66,788	38,069	28,719
Maintenance:			
Specific power facilities	21,021	21,021	-
Joint facilities	21,452	12,228	9,224
Depreciation (note 4):			
Specific power facilities	205,549	205,549	-
Joint facilities	335,841	148,408	187,433
Total operating expenses	719,074	493,698	225,376
Net operating revenues	395,670	621,046	225,376*
INTEREST DEDUCTION:			
Interest on Federal investment	1,616,895	884,317	732,578
Less amount charged to construction	516,249*	263,271*	252,978*
Net interest deduction	1,100,646	621,046	479,600
Net expense for the year	704,976	$ -	$704,976

*Deduction

The accompanying notes (schedule 13) are an integral part of this statement.

SCHEDULE 13

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

NOTES TO FINANCIAL STATEMENTS ON SCHEDULES 1 TO 12, INCLUSIVE

1. Composition of the Columbia River Power System and Related Activities

The Columbia River Power System and related activities consists of the Bonneville Power Administration and multiple-purpose projects of the Corps of Engineers and the Bureau of Reclamation for which the Bonneville Power Administration is the power-marketing agent. The transmission system and the hydroelectric plants of these multiple-purpose projects are operated as an integrated power system.

The statement of combined assets and liabilities (schedule 3) for fiscal year 1954 shows all the assets and liabilities, whereas in previous years this statement showed only the amounts allocated to commercial power on plants in actual operation. Amounts included in schedule 3 for fiscal year 1953 have been restated to a basis comparable with the amounts shown for fiscal year 1954. This restatement consists of including the amounts allocated to nonpower activities (irrigation, flood control, and navigation) and the projects that are under construction.

In accordance with various River and Harbor Acts, the Corps of Engineers is responsible for providing navigation and flood control benefits. The River and Harbor Act approved March 3, 1909, provided that no tolls or operating charges are to be collected from any vessel, dredge, or other watercraft for passing through any lock, canal, canalized river, or other work for the use and benefit of navigation belonging to the United States, except for the Panama Canal (33 U. S. C. 5). In providing for flood control at a multiple-purpose project, no direct assessment is made against the beneficiaries for the flood control operations. Accordingly, the navigation and flood control facilities are not revenue-producing.

Most of the larger projects constructed and operated by the Corps of Engineers were justified in reports to the Congress as multiple-purpose developments. The justification of these projects was based on the fact that the estimated annual benefits were at least equal to the estimated annual charges, including interest on and amortization of the Federal investment. In determining the equitable annual charge for each project purpose, the benefits to be derived from operation of the project are considered.

The Albeni Falls, McNary, and Detroit-Big Cliff Projects are included in the System's power operations for the first time in fiscal year 1954. The only power operations at these projects in 1953 consisted of storage operations at Albeni Falls which provided benefits to downstream projects of the System and the commencement of power operations by placing one generator in service for testing purposes at the Detroit Dam power plant in June 1953.

Bonneville Power Administration has been appointed marketing agent for electric energy that is excess to project needs to be generated by the following projects under construction by the Corps of Engineers at June 30, 1954.

Chief Joseph Dam Project
The Dalles Dam Project
Lookout Point and Dexter Dams of the Willamette Basin Project

The Bonneville Power Administration will also market electric energy excess to project needs from the Chandler hydroelectric plant of the Kennewick Division of the Yakima (Irrigation) Project under construction by the Bureau of Reclamation. Construction costs relating to this project are not included in the statements of combined assets and liabilities. Because of the relatively small amounts involved, the omission is not significant.

2. Cost accounting practices

Under governmental accounting procedures the costs of administrative and other services rendered by other Federal agencies are not distributed among or charged to the agencies or projects benefiting from such services. It is not practical to make a constructive determination in all cases of the amounts of such costs applicable to an individual project or agency, but Bonneville Power Administration has recorded actual or estimated costs for many of these services. The Administration includes in its accounts amounts for rentals, materials, and other services furnished without charge by the General Services Administration and other Federal agencies, death and disability claims on account of the Administration's employees paid by the Bureau of Employees' Compensation, Department of Labor, and the amounts applicable to the Administration's operations of the cost of the Civil Service Retirement System. It is not the practice of the Corps of Engineers or the Bureau of Reclamation to include in their accounts amounts incurred by other Federal agencies and not assignable to the projects pursuant to law or administrative policy. Similarly, general administrative expenses of regional offices and of the Washington, D. C., and Denver offices are not included in project property costs and operating expenses by the Bureau of Reclamation and the general administrative expenses of the Office of Chief Engineers, Washington, and division offices of the Corps of Engineers are not included in costs.

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

The Administration and the Corps of Engineers include in property costs and operating expenses provision for accrued annual and sick leave of employees. Such provisions have not been made by the Bureau of Reclamation at the Columbia Basin and Hungry Horse Projects, but at both projects the amounts of wages and salaries paid to employees while on sick or annual leave were charged to property or operating expense accounts.

The Administration and the Corps of Engineers have included interest at the rate of 2.5 percent on the net unpaid Federal investment allocated to all purposes with appropriate charges to expense and to property costs (interest during construction). The accounts for interest at the Columbia Basin and Hungry Horse Projects are maintained on a memorandum basis under an agreement with Bonneville Power Administration for the purpose of providing data for statements on the results of power operations. At the Columbia Basin Project interest is computed at the rate of 2.5 percent only on the property costs and operating expenses allocated to commercial power. Accordingly, interest is not included as an item of expense in determining the net loss from irrigation operations at the Columbia Basin Project. At the Hungry Horse Project interest is computed at the rate of 2.5 percent on the net unpaid investment allocated to all purposes.

3. Allocation of joint costs and expenses

Bonneville Power Administration. All of the property costs and expenses of the Bonneville Power Administration are considered specific commercial power costs.

Bonneville Dam Project. Property, plant, and equipment determined to be jointly useful for power generation and for other purposes, consisting principally of the dam, reservoir, and fishways, has been allocated 50 percent to power and 50 percent to nonpower purposes by the Federal Power Commission under the provisions of the Bonneville Project Act. Operation and maintenance expenses applicable to joint facilities have been allocated to power and to nonpower operations in the same proportion as the related property costs.

Columbia Basin Project. Property, plant, and equipment costs determined to be jointly useful for power generation and for other purposes, consisting principally of the dam, reservoir, and general service facilities, have been allocated 56 percent to commercial power (including future downstream river regulation) and 44 percent to nonpower purposes after assigning $1,000,000 to [illegible] equipment), exclusive of the cost of the 3 generating units and related electrical facilities installed in addition to the original 15 units, have been allocated to commercial power and to irrigation pumping power in proportion to the relative value of the power delivered for each purpose. The cost of the three additional generating units and related electrical facilities has been assigned to commercial power. These allocations have been made by the Secretary of the Interior under the provisions of the Reclamation Project Act of 1939 (43 U.S.C. 485h); however, other methods of allocating costs between commercial power and irrigation pumping power are being considered. The expenses of operating and maintaining the joint facilities have been allocated in the same proportions as the related property costs for the purposes of the presentation of the financial statements of the commercial power operation. The Bureau of Reclamation, however, considers that substantially all of such expenses are costs of commercial power operations.

The memorandum of agreement between the Administration and the Bureau provides that all of the expenses of operating and maintaining the Grand Coulee Dam, reservoir, appurtenant works, and the power plant, except the portions of the latter allocated to irrigation works as pumping power, shall be returned from commercial power revenues together with that portion of the construction costs, including the construction costs of the irrigation works not repayable by water users. It is estimated that over the repayment period for the Columbia Basin Project commercial power revenues will return about $471,200,000 of construction costs and expenses allocated to irrigation.

Hungry Horse Project. An allocation of the construction costs of Hungry Horse Project has not been made by the Secretary of the Interior. A tentative allocation has been made by the Bureau of Reclamation of the estimated total construction costs of $101,660,000, exclusive of interest during construction. That allocation is as follows:

	Direct power	Joint		Total
		Dollars	Percent	
	(in thousands of dollars)			
Downstream power:				
Grand Coulee Dam .	$ -	$20,033	26.32	$ 20,033
Bonneville Dam . .	-	5,172	6.79	5,172
Chief Joseph Dam .	-	3,442	4.52	3,442
McNary Dam	-	9,102	11.96	9,102
Total	-	37,749	49.59	37,749

At site power.	25,536	18,706	24.57	44,242
Total	25,536	56,455	74.16	81,991
Flood control.	-	19,669	25.84	19,669
	$25,536	$76,124	100.00	$101,660

Construction costs, together with related interest and depreciation expenses, allocated to downstream river regulation at the Chief Joseph and McNary Projects are deferred for return from the sale of electric energy to be generated at those projects in future years when the benefits are realized. For the purposes of this report, property costs have been allocated in accordance with the percentages shown in the tabulation above. Operating expenses allocated to flood control for fiscal year 1954 have been limited to the amount budgeted therefor and the balance has been allocated to power, but no part of the operating expenses has been allocated to future downstream river regulation; however, depreciation and interest on this project have been allocated to future downstream river regulation. When an allocation of costs has been made by the Secretary of the Interior it will be applied retroactively and the accounts will be revised to show such allocation.

Albeni Falls and Detroit-Big Cliff Projects

Under the provisions of section 5 to the Flood Control Act of 1944 (16 U. S. C. 825s), the Secretary of the Interior became the marketing agent for surplus energy generated by projects constructed and operated by the Corps of Engineers. The Bonneville Power Administration has been designated the marketing agent for these projects in the Columbia River Basin. The act, however, does not specify who shall make an allocation of the construction costs. Tentative allocations of the joint costs have been made by the Corps of Engineers as follows:

	Percent	
	Albeni Falls	Detroit-Big-Cliff
Commercial power.	97.27	45.90
Flood control and navigation.	2.73	54.10
Total	100.00	100.00

For the purposes of this report, the joint property costs have been allocated in accordance with the above percentages. For the Albeni Falls Project, operation and maintenance expenses applicable to joint facilities have been allocated to commercial power and to nonpower operations in the same proportion as the related property costs. As a result of instructions issued by the Chief of Engineers the operation and maintenance expenses of the joint facilities of the Detroit-Big Cliff Project were allocated 57 percent to power and 43 percent to flood control.

McNary Dam Project. The River and Harbor Act of 1945 (59 Stat. 22) authorized this project and provided that the Department of the Interior market the electric energy in accordance with the terms of the Bonneville Project Act. Under the provisions of the Bonneville Project Act (16 U. S. C. 832f), the Federal Power Commission is authorized to allocate the costs of the property, plant, and equipment to power and nonpower purposes. In an interim report the Commission allocated 97.5 percent of the joint facilities construction costs to commercial power and 2.5 percent to navigation. For the purposes of this report, the joint property costs have been allocated in accordance with these percentages. Operation and maintenance expenses applicable to joint facilities have been allocated to commercial power and to nonpower operations in the same proportion as the related property costs.

4. Depreciation policy

Depreciation of the property of Bonneville Power Administration and Albeni Falls, McNary Dam, and Detroit-Big Cliff Projects of Corps of Engineers and Hungry Horse Project of Bureau of Reclamation has been computed on the straight-line method. Depreciation of most of the property of Bonneville Dam Project (Corps of Engineers) has been computed on the compound interest method using an interest factor of 2.5 percent. Depreciation of the property allocated to commercial power at the Columbia Basin Project (Bureau of Reclamation) has also been computed on the compound interest method using an interest factor of 2.5 percent, except the straight-line method is used for depreciating a small amount of general property. The Bureau of Reclamation makes no provision for depreciation of the property of Columbia Basin Project allocated to irrigation and navigation purposes. In fiscal year 1954 the Bureau of Reclamation adopted a policy of maintaining depreciation accounts only on a memorandum basis.

Estimated service lives of the various classes of property have been determined by engineering studies. No item of property has been assigned a service life in excess of 100 years, except for a maximum of 150 years at the Hungry Horse Project. Costs of land, land rights, surveys, and clearing are included in the base for computing depreciation, except that the Bonneville Power Administration and Corps of Engineers do not make any charge to depreciation expense for amounts paid to former owners for fee title to lands acquired from them. Costs of land, land rights, surveys, and clearing are not included in the base for computing depreciation at the Hungry Horse Project.

As stated in the previous year a uniform depreciation policy, including method and maximum service lives, is under consideration by the Department of the Interior for application by the several power agencies of the Department.

5. Unexpended appropriations

Funds in the United States Treasury represent unexpended appropriations by the Congress as follows:

Appropriations for	Total	Construction	Operation and maintenance	Continuing fund
Bonneville Power Administration	$48,180,291	$47,279,405	$ 400,886	$500,000
Corps of Engineers:				
Bonneville Dam Project.	464,954	10,839	454,115	-
Albeni Falls Project . .	856,477	854,564	1,913	-
McNary Dam Project . .	6,753,832	6,654,795	99,037	-
Detroit-Big Cliff Project	1,520,206	1,502,110	18,096	-
Chief Joseph Project . .	3,136,231	3,136,231	-	-

The Dalles Dam Project.	6,582,605	6,582,605	-	-
Lookout Point-Dexter Project.	4,135,535	4,135,535	-	-
Total.	23,449,840	22,876,679	573,161	-
Bureau of Reclamation:				
Columbia Basin Project.	4,853,183	4,112,695	740,488	-
Hungry Horse Project. .	494,018	442,847	51,171	-
Total.	5,347,201	4,555,542	791,659	-
Grand total.	$76,977,332	$74,711,626	$1,765,706	$500,000

Funds that have been appropriated for construction remain available until expended. Except for the Corps of Engineers, funds appropriated for operation and maintenance may be obligated only for the year for which tbe funds are appropriated. The continuing fund is maintained in the United States Treasury for Bonneville Power Administration to defray emergency expenses and to insure continuous operation. The fund was authorized by the Bonneville Project Act, as amended (16 U.S.C. 832j), to be derived from receipts from sale of electric energy.

Under the Interior Department Appropriation Act, 1955 (68 Stat. 362), additional funds of $24,314,000 for construction and $6,200,000 for operation and maintenance became available to Bonneville Power Administration on July 1, 1954. Appropriations for the Corps of Engineers are not segregated by projects. Tentative project allotments have been made for fiscal year 1955 as follows:

Project	Total	Construction	Operation and maintenance
Bonneville Dam	$ 1,149,296	$ 10,512	$1,138,784
Albeni Falls	3,429,095	3,295,815	133,280
McNary Dam	22,292,500	21,300,000	992,500
Detroit-Big Cliff . . .	602,204	405,836	196,368
Chief Joseph.	20,600,000	20,600,000	-
The Dalles Dam	51,082,000	51,082,000	-
Lookout Point-Dexter .	5,675,300	5,543,000	132,300
Total.	$104,830,395	$102,237,163	$2,593,232

For fiscal year 1955 the Bureau of Reclamation has allotted $14,442,000 (construction, $11,525,000, and operation and maintenance, $2,917,000) to the Columbia Basin Project and $408,600 (construction, $60,000, and operation and maintenance, $348,600) to the Hungry Horse Project.

6. Allocation of revenue from commercial power operations

The allocation of revenue from commercial power operations to the projects has been determined in accordance with memoranda of agreement between the Bonneville Power Administration and the Corps of Engineers for the Corps-constructed and -operated projects, and the Bureau of Reclamation for the Columbia Basin and Hungry Horse Projects.

Bonneville Dam Project. Under the terms of an agreement between the Corps of Engineers and Bonneville Power Administration, the Administration is required to deposit as miscellaneous receipts in the United States Treasury for the account of Bonneville Dam Project, scheduled amounts of the receipts from the sale of power generated at that project, representing the portion of such receipts properly allocable to the return of the reimbursable power costs of Bonneville Dam Project. These amounts are not dependent upon the quantity of electric energy generated and delivered to the Administration by Bonneville Dam Project from year to year but are designed to return the plant costs of Bonneville Dam Project allocated to power, including necessary replacements, over a 50-year period beginning July 1, 1944, together with interest at 2.5 percent per annum and annual operating and maintenance expenses allocated to power.

The Bonneville Project Act provides that rate schedules shall be drawn having regard to the recovery of the cost of producing electric energy at the Bonneville Dam Project, including the amortization of the capital investment allocated to power over a reasonable period of years. Since the repayment plan contemplates the amortization of the cost of power facilities within a shorter period than the estimated service lives of such facilities, the receipts allocated to Bonneville Dam Project to date have exceeded the accumulated power expenses to date (including depreciation of power facilities based upon their estimated service lives). Accordingly, the excess of such payments over costs charged to power operations at the project has been treated in the accounts of Bonneville Power Administration as advance payments to the United States Treasury for the account of the project. These payments have been recorded by the project as excess payments to the United States Treasury by the Administration over costs charged to power operations. The amounts in these accounts will be transferred to the income account in subsequent periods in amounts equivalent to the provisions for depreciation that will be charged to the income account in those subsequent periods when the plant costs allocated to power have been repaid and deposits in the United States Treasury by Bonneville Power Administration for the account of the Bonneville Dam Project will be equal only to power-operating expenses, exclusive of provisions for depreciation.

During 1954 Bonneville Power Administration deposited $3,537,570 in the United States Treasury for the account of Bonneville Dam Project in accordance with the terms of the agreement. Of this amount $2,788,289, equivalent to operating expenses (including depreciation) and interest on the Federal investment allocated to power, has been treated as current year's revenue and the excess, $749,281 ($14,277,738 in total to June 30, 1954), was recorded as excess of payments by Bonneville Power Administration over costs charged to power operations. This excess, together with the amount represented by the provision for depreciation expense, has been applied to the repayment of the capital investment of the Bonneville Dam Project allocated to power.

Of the $3,537,570 deposited for 1954 fiscal year, $3,350,000 was covered into the general fund (miscellaneous receipts) and $187,570 into the reclamation fund in the Treasury. The latter amount constitutes payments for river regulation benefits received from storage operations of the Columbia Basin Project.

Columbia Basin Project. Reclamation laws, as supplemented by the act of August 30, 1935, and Executive Order 8526, require that payments be made, from time to time, into the reclamation fund in the United States Treasury for the account of Columbia Basin Project from revenues received by Bonneville Power Administration from the sale of electric energy equal to the portion of such revenues properly allocable to the project. Under the terms of the agreement of January 31, 1946, between Bonneville Power Administration and the Bu-

reau of Reclamation, entered into to effectuate these requirements, the Administration is required to make payments which in any year are not dependent upon the quantity of energy generated by the project and delivered to the Administration. These payments are designed to pay into the reclamation fund over a period of years, not in excess of the life of the project, the operation and maintenance expenses of the dam and the power plant; the cost, exclusive of interest during construction, of facilities allocated to power; the portion of the cost, exclusive of interest during construction, of facilities allocated to irrigation which exceeds the repayment ability of the water users (estimated, upon completion of the project, to be about $471,200,000); and an annual amount equal to 3 percent of the unrepaid cost, exclusive of interest during construction, allocated to present power production. A schedule of estimated payments is provided in the agreement, but provision is made for annual adjustments of the schedule to show the application of actual payments to the return of such amounts. Provision is made also for payments in excess of the annual amounts set out in the schedule or less than such amounts in the event that prior excess payments have been made. The amounts paid into the reclamation fund for the project each year are not in repayment of specific expenses applicable to specific years but represent lump-sum payments against the total amounts provided for in the agreement. Accordingly, the amount payable for the year ended June 30, 1954, under the terms of the agreement has been treated in the accompanying financial statements as current year's revenues.

Hungry Horse Project. A definitive agreement between the Bonneville Power Administration and the Bureau of Reclamation covering the delivery of energy generated at Hungry Horse Project and the allocation of revenues to that project has not been executed. An interim memorandum of understanding provided for the Administration to deposit in the Treasury of the United States to the credit of the reclamation fund, Hungry Horse Dam Project, $5,067,210 on account of operation of the project to June 30, 1954. Of this amount $781,000 has been allocated to revenues for operation of the project in fiscal year 1953 and the balance ($4,286,210) has been allocated to project revenues for fiscal year 1954.

Albeni Falls, McNary Dam, and Detroit-Big Cliff Projects. A definitive agreement between the Bonneville Power Administration and the Corps of Engineers covering the allocation of revenues to the Albeni Falls, McNary Dam, and Detroit-Big Cliff Projects has not been executed. An interim agreement provided for the Administration to deposit in the Treasury to the account of the projects the following amounts covering operations to June 30, 1954.

Project	Amount
Albeni Falls	$ 475,000
McNary Dam	4,560,000
Detroit-Big Cliff	1,590,000
Total	$6,625,000

Of the above amount $2,680,273, equivalent to operating expenses (including depreciation) and interest on the Federal investment allocated to power, has been treated as current year's revenue and the excess, $3,944,727, was recorded as payments by Bonneville Power Administration in excess of costs charged to power operations. This excess, together with the amount represented by the provision for depreciation expense, has been applied to the repayment of the projects' capital investment allocated to power.

7. Amount and repayment of the investment of United States Government allocated to commercial power (including future downstream river regulation)

All funds expended by the Columbia River Power System and related activities for property, plant, equipment, or other assets and for expenses of operation and maintenance are obtained from congressional appropriations, except that Bonneville Power Administration may use the continuing fund to defray emergency expenses and to assure continuous operation. The continuing fund, however, is regarded as a continuing appropriation and is accounted for in the same manner as other appropriations in reports to the Bureau of the Budget and the Congress.

Receipts from the sale of electric energy or from miscellaneous sources are not available to the power system for expenditure except to the extent of funds transferred to the Administration's continuing fund. To June 30, 1954, receipts transferred to the continuing fund totaled $1,456,707, of which $956,707 had been expended and $500,000 of unexpended and unobligated cash remained in the fund.

The investment of the United States Government allocated to commercial power (including future downstream river regulation) includes, in addition to the congressional appropriations and the continuing fund: (1) allotments from Public Works Administration funds, (2) Works Progress Administration expenditures for clearing of rights-of-way and reservoir areas and similar work, (3) the actual or estimated cost of materials and services furnished by other Federal agencies without charge, less the amount of such items furnished to other agencies by the power system, and (4) interest at 2.5 percent on the net unpaid balance of the Federal investment.

The composition of the investment of the United States Government allocated to commercial power is shown in schedule 5. This schedule shows the total Federal investment in the power system and the status of repayment of that investment.

The capital investment is represented by property, plant, and equipment, materials, supplies, unexpended appropriations and other assets, with interest during construction included in property and plant costs. The remainder of the investment is represented by expenses incurred for operation, maintenance, marketing, administration and other costs, and interest expense, other than interest during construction and interest on the capital investment allocated to future downstream river regulation deferred for recovery from the operations of future downstream hydroelectric plants as explained in note 8. Such deferred interest is a part of the Federal investment, but it is included as an item among the assets of the System as a deferred charge against future power operations.

Plans for repayment of construction costs from power receipts provide for such repayment over a period of years. Neither those plans nor applicable laws require the repayment of specific or fixed amounts in any one year. On the other hand, the repayment schedules contemplate that expenses for operation, maintenance, and interest charged to operations are repayable annually as incurred. Accordingly, for the purpose of schedule 5 it has been determined that power receipts returned to the United States Treasury shall be applied to repayments in the following order of priority: (1) the expenses of operation, maintenance, and other costs of commercial power, (2) interest expense, exclusive of interest during construction and deferred interest on investment allocated to future downstream river regulation on the investment in commercial power, and (3) capital investment in commercial power.

8. Interest and depreciation charges on the cost of joint facilities allocated to future downstream river regulation

Interest and depreciation charges on the portion of the cost of joint facilities of Columbia Basin, Hungry Horse, and Albeni Falls Projects allocated to future downstream river regulation have been deferred to future periods on the basis that these charges will be recovered from the operations of additional downstream hydroelectric plants now under construction or contemplated. The deferment of these charges is consistent with the allocation of costs of these projects.

The downstream hydroelectric plants to which the allocation to future downstream river regulation is related include both Federal and non-Federal plants. The one downstream non-Federal plant for which an allocation of the costs of the Columbia Basin Project was made by the Secretary of the Interior in 1945 did receive river regulation benefits from the project in fiscal year 1954. No part of the deferred charges for interest and depreciation at the Columbia Basin Project for this downstream non-Federal plant, however, was charged to operations in 1954 because no decision has been rendered by the Federal Power Commission on the amounts payable by the plant for river regulation benefits and no revenues on account of such benefits were accrued in the accounts of the Columbia Basin Project.

Downstream non-Federal plants will benefit also from storage operations of Hungry Horse and Albeni Falls Projects, and the Federal Power Commission may determine that such benefits were received in fiscal year 1954 and require payments therefor by the beneficiaries. No allocation of costs of the Hungry Horse and Albeni Falls Projects has been made to downstream non-Federal plants. Accordingly, no part of the depreciation or interest at the Hungry Horse and Albeni Falls Projects has been deferred for river regulation benefits to non-Federal plants and no revenues have been accrued for such benefits.

9. Revenues from downstream non-Federal plants

The Federal Power Act (16 U. S. C. 804f) provides that a licensed project receiving benefits from the upstream improvements of another licensed project or of the Federal Government shall make payments to the upstream project on account of such benefits. It is the responsibility of the Federal Power Commission to determine the amount, if any, that non-Federal power installations in the Columbia River and tributaries will have to pay for downstream benefits received or to be received from the Federal storage projects; namely, Hungry Horse Project, Albeni Falls Project, and Columbia Basin Project (Grand Coulee Dam) of the Columbia River Power System. During the fiscal year 1954 benefits were received by the non-Federal projects, but no revenues have been accrued in the accounts of the Columbia River Power System for such benefits because the Federal Power Commission has not rendered a decision as to the amounts payable, if any, by the beneficiaries.

10. Contingent liabilities

The Administration and the projects are contingently liable under pending litigations which, in some instances, involve claims of substantial amount. In the opinion of legal counsels for the Administration and for the projects, any actual liability which may result from such litigations will not be material in relation to the size and scope of the System's operations.

11. Loss on sale and abandonment of property

The $1,379,976 net loss on sales and abandonment of property on the Statement of Revenues and Expenses of the Bonneville Power Administration for the fiscal year ended June 30, 1954, consists of the following components:

Unrecoverable costs resulting from the abandonment of construction in progress on a cable under Puget Sound between President Point and Richmond Beach to serve the Kitsap area and the Olympic Peninsula in the State of Washington. This underwater cable was abandoned in favor of overland transmission lines around the south end of the Sound	$ 553,010
Costs, including clearing, of unused portions of rights-of-way paralleling existing transmission lines between Chehalis, Kelso, and Vancouver, Washington, for which no utilization is now anticipated. An extra wide right-of-way was originally acquired in anticipation of additional transmission lines between these cities	323,559
Total charges, including cost of closed preliminary surveys and engineering studies, incurred on various projects which have been abandoned or have become inactive due to revision of the construction program	503,407
	$1,379,976

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