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

Twenty Years of Growth

1957 REPORT

U. S. COLUMBIA RIVER POWER SYSTEM

Consisting of
the Bonneville Power Administration
and the following projects:
Bonneville Dam, Columbia Basin (Grand Coulee Dam),
Hungry Horse, Albeni Falls, Detroit-Big Cliff,
McNary, Lookout Point-Dexter, Chief Joseph,
The Dalles, Chandler, Ice Harbor,
Cougar, & Hills Creek.

BONNEVILLE POWER ADMINISTRATION

1957 Report

U. S. COLUMBIA RIVER POWER SYSTEM

PORTLAND 8, OREGON

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Letter of Transmittal

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

February 1, 1958

Dear Mr. Secretary:

Twenty years ago last August, the Bonneville Project Act became law. This report, covering the operations of the U. S. Columbia River Power System from July 1, 1956 through July 30, 1957, marks the twentieth anniversary of Bonneville Power Administration.

During this span of twenty years the Administration has sold 219 billion kilowatt-hours of electric energy at an average rate of 2.37 mills per kilowatt-hour, and gross revenues from sales of power have exceeded $500,000,000. The Administration's high-voltage transmission system comprises 7,318 circuit miles of transmission line and 183 substations with a transformer capacity of 10,777,915 kilovolt-amperes.

The U. S. Columbia River Power System after two decades of development has 4,702,000 kilowatts of installed capacity and, upon completion of Federal projects under construction, will have an installed capacity of over 7,700,000.

In accordance with the requirements of subsection 9(c) of the Bonneville Project Act, this twentieth annual report of the Bonneville Power Administration presents an accounting for the transmission and sale of electric energy generated at the Federal multipurpose dams under the jurisdiction of the Corps of Engineers and the Bureau of Reclamation for which the Administration is the power marketing agency. Gross revenues for fiscal year 1957 reached a new peak of $66,399,967 with net revenues of $5,965,732. Industrial customers accounted for 42.89 percent of the revenue dollar, publicly owned utilities 33.20 percent, privately owned utilities 21.76 percent and miscellaneous 2.15 percent.

The gross Federal investment in the operating projects of the U. S. Columbia River Power System, including Bonneville Power Administration transmission facilities allocated to power, was $1,840,841,742 as of June 30, 1957. Gross cash receipts of $512,476,083 returned to the Treasury in repayment of expenses, interest and the capital investment reduced the net investment as of June 30, 1957 to $1,328,365,659, including unexpended appropriations of $24,961,758. Capital repayments as of that date represent 14.82 percent of the invested capital.

Almost 30 billion kilowatt-hours of electric energy was generated at the twelve Federal plants for the Administration during the fiscal year, an increase of 8.6 percent over the previous year. Generator additions to the Federal system during the year had a nameplate rating of 551,000 kilowatts. Non-Federal generating capacity in the area served by the Administration increased by 410,000 kilowatts of nameplate rating during the same period.

A proposed new universal rate structure was drawn up during the year, and presented last November to the Administration's customers for their comments and suggestions. The new schedule proposes to simplify and combine into one demand-energy rate schedule a number of existing schedules. The new schedule should prove particularly useful in meeting problems now encountered in service to nongenerating utilities.

Sales during the year to 114 customers totaled more than 28 billion kilowatt-hours, an increase of 8.6 percent over fiscal year 1956.

A total of 64 percent of the energy generated by major utilities of the region was produced by the U. S. Columbia River Power System. This includes 8.6 billion kilowatt-hours of energy supplied to Northwest Power Pool utilities by the Administration.

Important progress was made during the fiscal year in a number of key policy and management phases of the Administration's program.

Basic procedures and formulas for contractual application of the "wheeling" principal to transmission of non-Federal generation over the Federal high-voltage grid were established and expanded. Long-term contracts for wheeling energy to be produced at Priest Rapids and Rocky Reach Dams and integration with the Northwest Power Pool are in the final stages of negotiation or have already been signed by many of the participating utilities. Development of arrangements for transmitting non-Federal generation by use of the Federal transmission system contributes materially to the economic feasibility of these projects, and provides an excellent example of integrated utility operation.

On the basis of rate level studies made during the past year, it was decided to continue the Bonneville Power Administration basic rate of $17.50 per kilowatt-year to December 20, 1959. Emphasis will continue to be placed on these rate level studies during the coming year in view of the increasing capital investment required per kilowatt of generating capacity. The increasing costs of operation and maintenance as well as project construction and rapidly changing conditions in the marketing of power, particularly secondary or interruptible power, make it imperative that rate level studies be kept on a current basis.

One of the outstanding staff contributions during the year has been the acceleration of studies dealing with integration of non-Federal generating facilities, proposed or under construction, with the U. S. Columbia River Power System. These studies should go far toward realization of the ultimate power potential of the region through operations of the Northwest Power Pool.

I would like in conclusion to acknowledge specifically the cooperation and help of the Secretary's office, the Federal Power Commission, the Corps of Engineers and the Bureau of Reclamation during the past year. It has also been a privilege to work with the Northwest Power Pool members, smaller utilities and related state and local agencies toward solutions for mutual problems in the utility field.

Sincerely,

Wm. A. Pearl
Administrator

Financial Results of Operations

A condensed summary of results of commercial power operations of the U. S. Columbia River Power System is presented in table I for the fiscal years 1956 and 1957, in cumulative total to June 30, 1957 and as a forecast for 1958 and 1959. The data are summarized from cost accounts kept in accordance with the Federal Power Commission's system of accounts for electric utilities.

New High for Gross Revenues

In 1957 gross revenues reached a new peak of $66,399,967, an increase of $5,407,344 or 8.9 percent over 1956. There was some curtailment of industrial interruptible loads during the fall and winter months due to unfavorable water conditions. Generation units added during the year were as follows:

Project	No. of units	Nameplate rating-kilowatts
McNary	2	140,000
Chief Joseph	6	384,000
The Dalles	2	27,000
Total	10	551,000

TABLE I

U. S. COLUMBIA RIVER POWER SYSTEM

Condensed summary of revenues and expenditures 1/
Operating projects only 2/

	Actual			Forecast 4/	
	Fiscal year 1956	Fiscal year 1957	Total to June 30, 1957	Fiscal year 1958	Fiscal year 1959
Operating revenues:					
Sales of electrical energy	$59,789,690	$64,971,975	$517,734,934	$70,500,000	$78,500,000
Other electric revenue	1,202,933	1,427,992	11,470,925	1,400,000	1,500,000
Total operating revenues	$60,992,623	$66,399,967	$529,205,859	$71,900,000	$80,000,000
Expenses:					
Operation, maintenance, etc.	$14,811,937	$16,163,379	$141,173,646	$17,700,000	$19,400,000
Provision for depreciation	18,539,972	20,255,154	121,602,831	22,600,000	25,100,000
Interest expense	21,691,302	24,015,702	161,718,043	27,800,000	30,700,000
Total expenses	55,043,211	60,434,235	424,494,520	68,100,000	75,200,000
Surplus net revenues	$ 5,949,412	$ 5,965,732	$104,711,339 3/	$ 3,800,000	$ 4,800,000

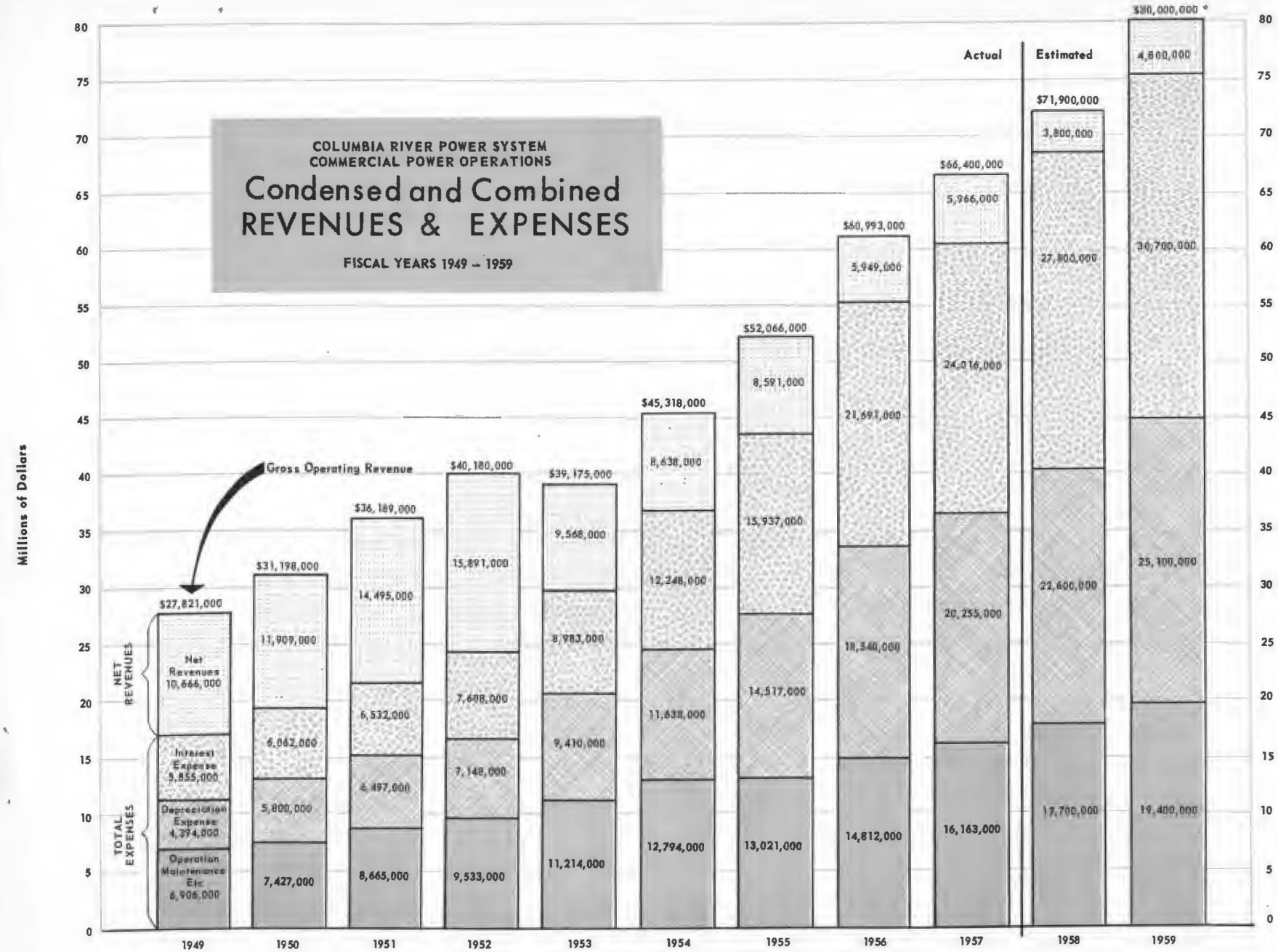
( ) Indicates red figures.

1/ Commercial power operations only.

2/ Projects in operation at June 30, 1957 in addition to the Bonneville Power Administration's transmission system were Bonneville Dam, Columbia Basin (Grand Coulee), Hungry Horse, Albeni Falls, Detroit-Big Cliff, McNary, Lookout Point-Dexter, Chief Joseph, Chandler and The Dalles. Generator installations were complete at all of these projects as of June 30, 1957, except that only ten of the scheduled total of sixteen generator units at Chief Joseph were in operation. Also, at The Dalles only the two small fish-way units and two small service units were in operation at June 30, 1957. Projects under construction with no generator units in service in fiscal year 1957 were Ice Harbor, Cougar, Roza and Hills Creek.

3/ All prior years adjustments are reflected in the individual expense categories in the total column; hence, the net revenues of $104,711,339 as of June 30, 1957, are after giving effect to such adjustments.

4/ The forecast of revenues is based upon an assumption of average water conditions and the forecast of expenses is based upon generator installation schedule "Z" of October 1, 1957.



NOTES: The estimate of gross operating revenue for fiscal years 1957 and 1958 are based on an assumption that median water conditions, adjusted to average 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 generators at the Hungry Horse Project and the operation of the storage capacity of the Albeni Falls Project.

The Chief Joseph and Chandler projects started commercial power operations in fiscal year 1956 and The Dalles and Roza projects are expected to start operations in fiscal year 1958.

Net Revenues Increase

Net revenues were $5,965,732 in 1957 after deducting all expenses of operation, maintenance, depreciation and interest, an increase of $16,320 over fiscal year 1956. Gross revenues for 1957 increased $5,407,344 over the previous year and expenses increased $5,391,024.

Sales up in most Groups

Table II summarizes by customer categories the sources of revenues by fiscal years to and including 1957. Increased sales were made in all categories, except that of aluminum. The sales to the aluminum industry decreased $72,410 from the previous year. Sales to other industries increased $264,462; publicly owned utilities, $2,539,600; and privately owned utilities, $2,450,633.

Summary of Expenses

In recent years the trend of total operation and maintenance expenses has kept pace approximately with the rise of gross revenues, but depreciation and interest expenses have increased much more rapidly. This situation results from the fact that, although the Administration's rate levels have not been increased, a large amount of additional higher-cost capacity has been added to the system.

1957 Revenue Dollar

The chart on page 7 shows the source and disposition of the revenue dollar in fiscal year 1957. Operation and maintenance expenses required 24.34 percent of gross revenues and this relationship has held at approximately 25 percent during the last several years.

TABLE II

U. S. COLUMBIA RIVER POWER SYSTEM

Revenue by class of customers

Fiscal years ended June 30

Class of Customer	1952 and prior	1953	1954	1955	1956	1957	Total to June 30, 1957	1957 Percentage dollar revenue
Industry:								
Aluminum	$114,449,047	$13,545,562	$15,944,356	$16,909,588	$20,098,110	$20,025,700	$200,792,363	30.16
Other 1/	29,540,568	4,715,747	5,417,177	6,821,850	8,186,874	8,451,336	63,133,552	12.73
Publicly owned utilities	51,942,782	13,882,890	14,882,997	17,601,135	19,505,231	22,044,831	139,859,866	33.20
Privately owned utilities	63,271,265	6,239,276	7,882,879	9,926,150	11,999,475	14,450,108	113,769,153	21.76
Other operating revenue	6,050,223	791,734	1,190,284	807,759	1,202,933	1,427,992	11,470,925	2.15
Total operating revenue	$265,253,885	$39,175,209	$45,317,693	$52,066,482	$60,992,623	$66,399,967	$529,205,859	100.00

1/ Includes sales to Federal agencies.

Depreciation expense was equal to 30.50 percent of the gross revenue in 1957 as against 17.79 percent in 1952. Similarly, interest expense in 1957 represented 36.17 percent of gross revenue as against 18.93 percent in 1952.

Net-to-Gross Ratio Declines As a result of the increasing proportions of gross revenues required in recent years to meet depreciation and interest expenses, the ratio of net revenue to gross revenue

has declined steadily. In 1957 the net revenue was 8.99 percent of gross compared with approximately 40 percent ratio in each of the years 1949 to 1952, inclusive, after which the spread narrowed steadily to the current level of 8 to 10 percent. Moreover, it is estimated that for 1958 and 1959 the ratio of net to gross will decline to 5.29 percent and 6.00 percent, respectively.

New Project's Cost Levels Higher These ratios of expenses and net revenues to gross revenues have changed substantially from those of 1952 and immediately preceding years. Up to and including 1952 only the Bonneville and Grand Coulee Dams were in operation but in each succeeding year additional projects; namely, Hungry Horse, Detroit-Big Cliff, Albeni Falls, McNary, Lookout Point-Dexter, Chief Joseph, Chandler and The Dalles have been brought into service. These new projects were built at construction cost levels much higher than those which prevailed when Bonneville and Grand Coulee projects were constructed. Accordingly, they represent a considerably increased capital investment per kilowatt of capacity, a fact revealed by the upward trends of depreciation and interest expense since 1952. Specifically, during the five years following 1952, gross revenues increased 65 percent, kilowatt-hours sold increased 66 percent, and operation and maintenance expenses increased 70 percent, but depreciation expense and interest expense increased by 183 percent and 216 percent, respectively, for these years.

Table I shows total expenses of $60,434,235 in 1957 and $55,043,211 in 1956, an increase of $5,391,024 (9.79 percent). These total costs, which include all expenses of opera-

CHART 1

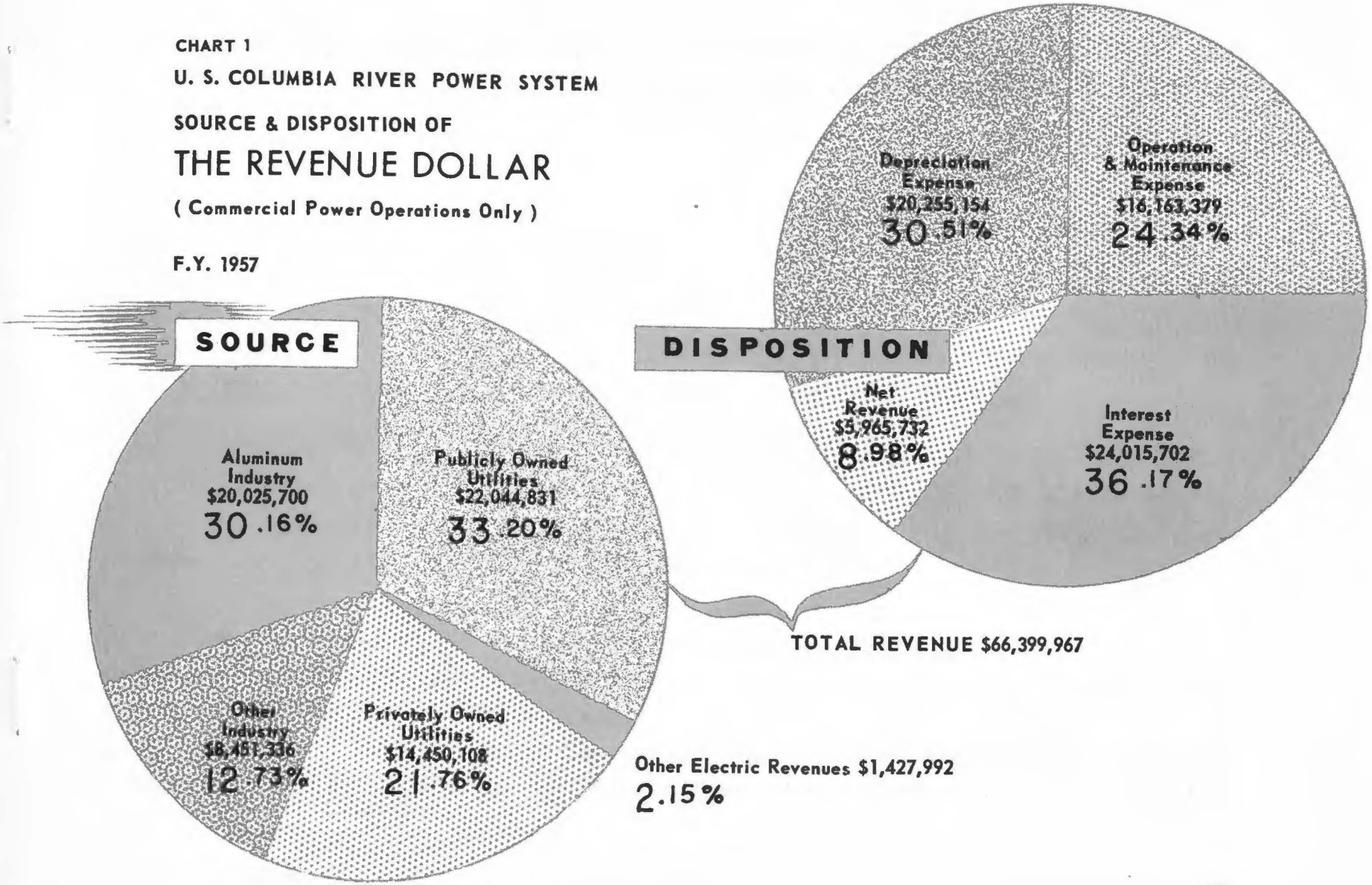
U. S. COLUMBIA RIVER POWER SYSTEM

SOURCE & DISPOSITION OF

THE REVENUE DOLLAR

(Commercial Power Operations Only)

F.Y. 1957



tion, maintenance, administration, depreciation, interest, etc., in accordance with generally accepted cost accounting practice, may be summarized as follows:

Project	Fiscal year 1956	Fiscal year 1957	Increase or decrease
Bonneville	$ 2,458,960	$ 2,508,454	$ 49,494
Columbia Basin (Grand Coulee)	7,666,351	8,163,872	497,521
Hungry Horse	3,417,558	3,376,673	(40,885)
Albeni Falls	1,332,614	1,643,909	311,295
McNary	8,595,643	9,729,000	1,133,357
Detroit-Big Cliff	1,884,032	1,920,940	36,908
Lookout Point-Dexter	1,858,625	1,783,541	(75,084)
Chief Joseph	1,833,053	3,466,408	1,633,355
Chandler	69,688	201,560	131,872
The Dalles	—	110,863	110,863
Generation subtotal	29,116,524	32,905,220	3,788,696
Transmission (Bonneville Power Administration)	25,926,687	27,529,015	1,602,328
Total	$55,043,211	$60,434,235	$5,391,024

The increases at some of the projects are due in part to increased maintenance costs, but some of the increases are due to including adjustments of prior years' expenses in the 1957 fiscal year expense accounts. The increases at McNary and Chief Joseph projects were caused by additional generators placed in service during the year. The increase in the Chandler project was due to the plant being in service only during a part of fiscal year 1956.

Plant Investment Increase

As of June 30, 1952, the U. S. Columbia River Power System had only two hydroelectric generating projects, Bonneville and Grand Coulee, in operation with a total capacity of 2,462,400 kilowatts, but the system has increased by 2,239,600 kilowatts, or 91.0 percent, to a total of 4,702,000 kilowatts as of June 30, 1957. This increase during the past five years represents the completion of Hungry Horse with 285,000 kilowatts, Lookout Point with 120,000 kilowatts, Dexter with 15,000 kilowatts, Detroit with 100,000 kilowatts, Big Cliff with 18,000 kilowatts, Albeni Falls with 42,600 kilowatts, Chandler with 12,000 kilowatts, McNary with 980,000 kilowatts, Chief Joseph with 640,000 kilowatts (representing ten of a scheduled total of sixteen generator units) and The Dalles with 27,000 kilowatts. The 27,000 kilowatts at The Dalles represent two small fishway units. Although the installed capacity thus increased by 91.0 percent, the investment in dams, reservoirs, powerplants, transmission lines, etc., has increased even more. As of June 30, 1957, the investment in fixed assets allocated to power was 192.9 percent greater than the corresponding figure five years earlier. These data are summarized as follows:

	June 30 (Thousands of dollars)		
Operating Projects only	1952	1957	Percent increase
Multipurpose projects:			
Allocated to power	266,562	1,091,031	309.3
Allocated to nonpower	265,433	490,618	84.8
	531,995	1,581,649	197.3
Transmission (100% to power)	249,039	419,386	68.4
Total	781,034	2,001,035	156.2
Power	515,601	1,510,417	192.9
Nonpower	265,433	490,618	84.8
Total	781,034	2,001,035	156.2

Table III shows for each individual project, as of June 30, 1957, the amounts of the fixed plant investment in total and as allocated to power and to nonpower functions making up the June 30, 1957 totals shown in the foregoing tabulation. In the five years from June 30, 1952 to June 30, 1957, the amount of the power investment at the Bonneville and Columbia Basin (Grand Coulee) projects increased by a relatively small amount, the bulk of the increase thus being accounted for by the additional projects that have come into service since 1952 and by additional transmission facilities. For the total system the plant account for the operating projects as of June 30, 1957 was $2,001,035,077 of which $1,510,417,433 was allocated to power and $490,617,644 to nonpower purposes as detailed in footnote 1 of table III. These plant account data include interest during construction except on the nonpower amounts at the Columbia Basin, Chief Joseph and Chandler projects. For a summary of the total amounts of interest included in the power accounts of the operating projects see table IV.

Repayment of Federal Investment

As of June 30, 1957 the gross Federal investment of the U. S. Columbia River Power System allocated to the commercial power activity for both generation and transmission was $1,840,841,742, which amount is exclusive of such portion of the investment made to June 30, 1957 in multipurpose projects under construction but not in operation as may ultimately be allocated to commercial power. This gross investment includes all funds appropriated, net of expired appropriations returned to the Treasury, for both construction and operation, including maintenance, administration, etc. Included also are indirect items such as WPA

TABLE III

U. S. COLUMBIA RIVER POWER SYSTEM

Summary of amount and allocation of investment in fixed assets
(Plant accounts)
as of June 30, 1957

Operating projects only

Project	Total	Allocation 2/ Nonpower 1/	Allocation 2/ Power
Bonneville Power Administration	$ 419,386,054	$ —	$ 419,386,054
Bonneville Dam	86,703,455	27,194,874	59,508,581
Columbia Basin (Grand Coulee)	513,420,261	308,591,021	204,829,240
Hungry Horse	107,574,282	20,667,974	86,906,308
Albeni Falls	31,275,645	286,788	30,988,857
McNary Dam	303,978,954	25,816,845	278,162,109
Detroit-Big Cliff	65,772,144	24,153,159	41,618,985
Lookout Point-Dexter	92,547,552	51,129,756	41,417,796
Chief Joseph	148,830,552	1,151,051	147,679,501
Chandler	14,244,157	10,547,765	3,696,392
The Dalles	217,302,021	21,078,411	196,223,610
Total plant	$2,001,035,077	$490,617,644	$1,510,417,433
Less combined reserve for depreciation			110,887,644
Total less reserve			$1,399,529,789

1/ Segregation of nonpower by purpose:

	Specific facilities	*Allocation of joint facilities*	*Total*
Irrigation	*$245,979,627*	*$ 80,970,910*	*$326,950,537*
Flood control		*86,408,161*	*86,408,161*
Navigation	*42,324,118*	*33,856,796*	*76,180,914*
Other	*1,078,032*	*—*	*1,078,032*
Total	*$289,381,777*	*$201,235,867*	*$490,617,644*

2/ Allocations are tentative or interim except for Bonneville Dam and Columbia Basin Project.

TABLE IV

U. S. COLUMBIA RIVER POWER SYSTEM

Summary of interest on Federal investment allocated to commercial power as of June 30, 1957

Operating projects only

Interest during construction, to be returned during repayment period as part of the Federal investment:	Bonneville Power Administration	$ 6,649,979	
	Bonneville Dam	2,333,827	
	Columbia Basin	9,687,396	
	Hungry Horse	4,708,543	
	McNary	19,771,439	
	Albeni Falls	1,029,564	
	Detroit-Big Cliff	2,593,463	
	Lookout Point-Dexter	2,880,490	
	Chandler	124,808	
	The Dalles	9,275,837	
	Subtotal		69,477,734
Interest charged to operations — repaid currently:	Bonneville Power Administration	50,226,701	
	Bonneville Dam	20,845,492	
	Columbia Basin	56,865,775	
	Hungry Horse	9,126,544	
	McNary	13,937,468	
	Albeni Falls	2,186,942	
	Detroit-Big Cliff	3,633,986	
	Lookout Point-Dexter	2,291,228	
	Chief Joseph	2,470,165	
	Chandler	117,060	
	The Dalles	16,683	
	Subtotal		161,718,044
	Gross interest accumulation		$231,195,778

expenditures and other funds, properties or services received from other Federal agencies, plus a gross interest accumulation at the rate of 2 1/2 percent per annum on the unamortized balance of the investment.

Federal Investment Summarized

The amount and repayment status of the gross Federal power investment as of June 30, 1957 are summarized in table V. The principal components of the gross total of $1,840,841,742 are expenses in the amount of $123,933,335 for operation, maintenance, etc., interest expense of $161,718,044, invested capital of $1,530,228,605 and unexpended (i.e., uninvested) appropriations of $24,961,758.

Unpaid Balance

The gross cash receipts of $512,476,083 returned to the Treasury in repayment of the Federal power investment resulted in a net investment amount as of June 30, 1957 of $1,328,365,659, including unexpended funds of $24,961,758. This balance consists solely of capital, inasmuch as receipts have been applied first to the payment of expenses of operation, maintenance, interest, etc., in the total amount of $285,651,379, leaving receipts of $226,824,704 applied to repayment of the capital investment, representing repayment of 14.82 percent of the invested capital.

As of June 30, 1957, the amount and repayment of the commercial power invested capital of the individual projects were as follows:

Project	Power capital investment 1/	Repaid as of June 30, 1957	Percent repaid	Net power investment 1/
Bonneville Power Administration	$ 440,140,332	$112,143,555	25.48	$ 327,996,777
Bonneville Dam	59,883,099	25,904,231	43.26	33,978,868
Columbia Basin	207,365,383	58,513,519	28.22	148,851,864
Hungry Horse	87,513,455	5,939,161	6.79	81,574,294
Albeni Falls	30,948,092	1,060,769	3.43	29,887,323
McNary	277,459,591	16,999,126	6.13	260,460,465
Detroit-Big Cliff	41,820,544	2,701,807	6.46	39,118,737
Lookout Point-Dexter	41,396,107	1,779,816	4.30	39,616,291
Chief Joseph	146,564,404	1,552,355	1.06	145,012,049
Chandler	3,691,747	201,886	5.47	3,489,861
The Dalles	193,445,851	28,479	.01	193,417,372
Total	$1,530,228,605	$226,824,704	14.82	$1,303,403,901

1/ Exclusive of unexpended funds of $24,961,758 in U. S. Treasury.

Repayment Status The repayment of $226,824,704 on the invested power capital to June 30, 1957 exceeds the estimated scheduled capital repayment requirements by approximately $78.8 million, consisting of approximately $53.5 million in excess of schedule for Bonneville Power Administration and $12.2 million for the Bonneville Dam project and approximately $13.1 million for the other generating projects, except that the Columbia Basin, Chandler and The Dalles projects were considered as just on schedule as of that date. However, these amounts of repayment in excess of schedule are tentative, pending the formalization of the cost allocations and repayment schedules for most of the projects. The foregoing tabulation shows substantial repayment on the capital investment of the Bonneville Power Administration, Bonneville Dam project and Columbia Basin project which have been in operation several years, and only a nominal percentage of repayment for the other projects which have only recently come into service.

TABLE V

U. S. COLUMBIA RIVER POWER SYSTEM

Summary of Federal investment in operating projects allocated to commercial power and status of repayment as of June 30, 1957

Operating projects only 1/

	Gross investment	Repayments	Net investment
Investment in current expenses:			
Operation, maintenance, etc. 2/	$ 123,933,335	$123,933,335	–0–
Interest 3/	161,718,044	161,718,044	–0–
Total current expenses	$ 285,651,379	$285,651,379	–0–
Capital investment:			
Invested capital 4/	$1,530,228,605	$226,824,704	$1,303,403,901
Unexpended (uninvested) appropriations	24,961,758	–	24,961,758
Gross capital investment	1,555,190,363	226,824,704	1,328,365,659
Total Federal investment	$1,840,841,742	$512,476,083	$1,328,365,659

1/ Consists of Bonneville Dam, Columbia Basin Project, Hungry Horse, Albeni Falls, Detroit-Big Cliff, Lookout Point-Dexter, McNary, Chief Joseph, Chandler, The Dalles projects and Bonneville Power Administration. Excluded are Ice Harbor, Cougar and Hills Creek, which were under construction but with no generator units in service as of June 30, 1957.

2/ Table I on an accumalative basis to June 30, 1957, shows expenses of operation, maintenance, etc. in the amount of $141,173,646 as against the total of $123,933,335 shown above. The data on Table I 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 expense shown on Table I 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 actual cash receipts of $512,476,083 as against total accrued operating revenues of $529,205,859 shown on Table I. The difference between the accrued revenues and the cash receipts consist of non-cash exchange account transactions included in accrued revenues and uncollected accounts receivable on hand as of June 30, 1957.

3/ The Columbia River Power System does not make actual payments for interest either from appropriations or revenues, but imputes and includes in its accounts provisions for interest expense and applies receipts returned to the Treasury in repayment of such expenses. For the details of interest included in the power accounts of the operating projects see Table IV.

4/ The invested capital consists primarily of the fixed plant account allocated to power in the amount of $1,510,417,433 including interest during construction, together with inventories and other miscellaneous assets, less funds received from non-Federal sources such as trade creditors represented by Accounts Payable and other current accrued liabilities such as the employees' accrued leave.

As of June 30, 1957

Summary of Operations

Energy Production

Almost 30 billion kilowatt-hours of electric energy was generated at the 12 Federal plants for the Administration during fiscal year 1957. This was an increase of 8.6 percent over fiscal year 1956. One new plant, The Dalles, was connected to the system during the year. In addition, six new units at Chief Joseph and two at McNary were brought into production during the year.

New System Peak

A new system peak was established during the 6-7 p.m. hour on January 25, 1957 before The Dalles plant, the eighth and ninth units at Chief Joseph, and the last two units at McNary were in operation. Maximum coincident demand on the 11 Federal plants was 4,887,000 kilowatts, an increase of 9.1 percent over the previous fiscal year's maximum demand of 4,479,000 kilowatts which occurred on February 1, 1956. Energy produced at Federal plants for the Administration is shown by years in table VI and illustrated in the accompanying chart. Prepared on a quarterly basis, the chart shows the general trends of the Bonneville Power Administration's system-load growth.

TABLE VI

Generation at Federal Plants for the Bonneville Power Administration
Fiscal years 1939-57

By fiscal years

Fiscal years ending June 30	Generation thousands of kwh	Maximum demand kw	Load factor %
1939-1941	1,144,932	210,000	
1942	2,549,153	468,000	62.2
1943	5,618,436	841,000	76.3
1944	9,239,823	1,355,000	77.6
1945	9,051,573	1,427,000	72.4
1946	6,236,163	1,346,000	52.9
1947	8,753,737	1,335,000	74.9
1948	10,885,907	1,610,000	77.0
1949	12,925,788	1,797,000	82.1
1950	14,140,834	2,106,000	76.7
1951	16,472,384	2,535,000	74.2
1952	18,555,401	2,784,000	75.9
1953	17,633,232	2,867,000	70.2
1954	20,195,833	3,301,000	69.8
1955	23,253,186	3,651,000	72.7
1956	27,599,380	4,479,000	70.1
1957	29,984,224	4,887,000	70.0
Total	234,239,986	4,887,000	

By plants

	Generation 1/ Millions of kwh		Date in service 2/	Operating Agency
	F.Y. 1957	Total to 7/1/57		
Albeni Falls	253	511	3-25-55	Army Engrs
Bonneville	4,089	60,164	6-6-38	Army Engrs
Chandler	65	91	2-13-56	USBR
Chief Joseph	4,321	6,235	8-20-55	Army Engrs
Detroit 3/	407	1,645	7-1-53	Army Engrs
Big Cliff	101	307	6-12-54	Army Engrs
Grand Coulee 4/	13,158	144,042	9-28-41	USBR
Hungry Horse	894	3,864	10-29-52	USBR
Lookout Point 3/	386	1,007	12-16-54	Army Engrs
Dexter	72	168	5-19-55	Army Engrs
McNary	6,223	16,191	11-6-53	Army Engrs
The Dalles	15	15	5-13-57	Army Engrs
Total	29,984	234,240		

1/ Includes energy generated in testing new generating units.
2/ Date of commercial operations.
3/ Excludes energy for condenser power at Detroit and Lookout Point.
4/ Includes energy transferred for Bureau of Reclamation.

Receipts and Deliveries 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.

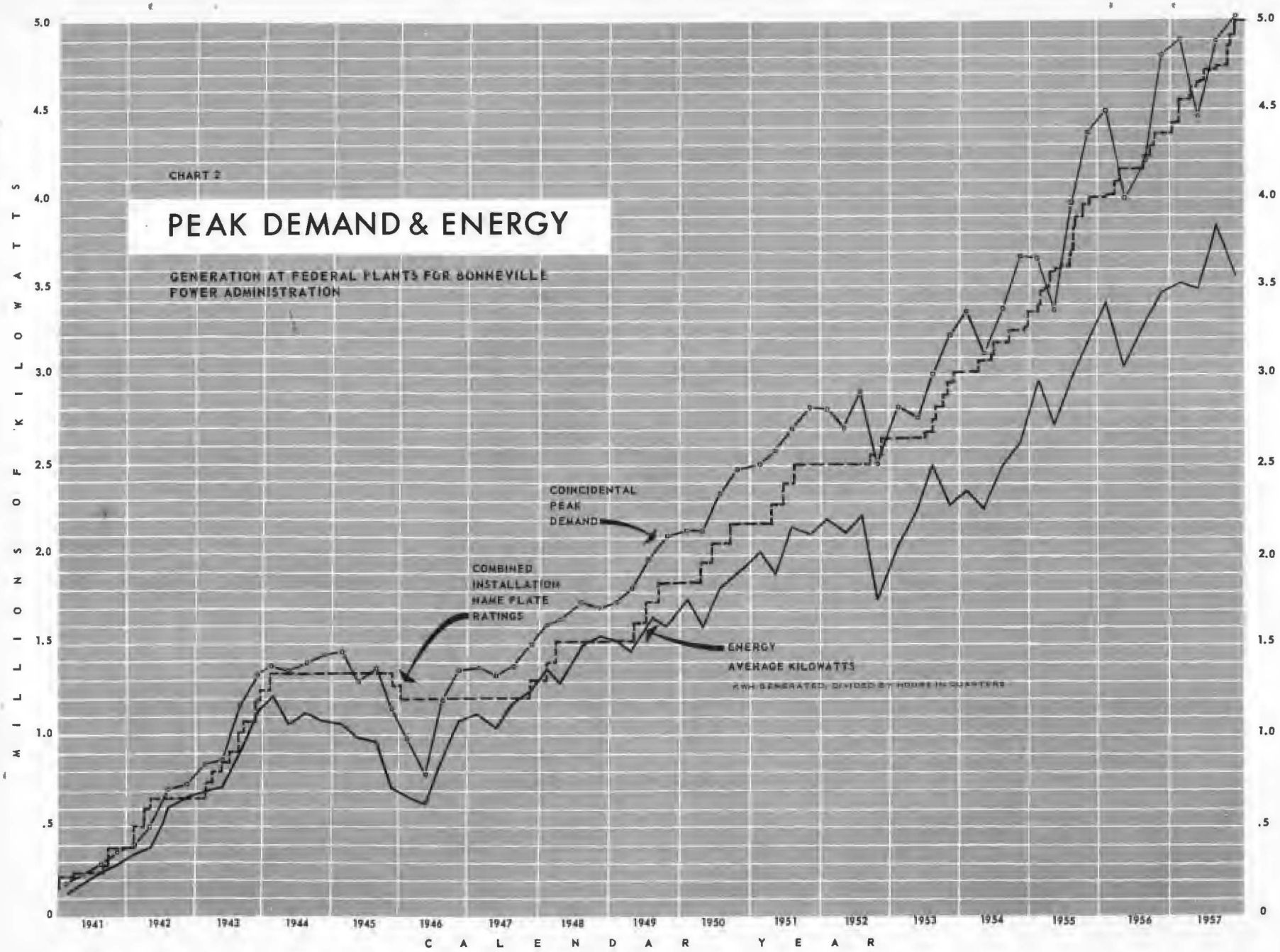


CHART 2
PEAK DEMAND & ENERGY
GENERATION AT FEDERAL PLANTS FOR BONNEVILLE POWER ADMINISTRATION
COINCIDENTAL PEAK DEMAND
COMBINED INSTALLATION NAME PLATE RATINGS
ENERGY
AVERAGE KILOWATTS
KWH GENERATED, DIVIDED BY HOURS IN QUARTERS
MILLIONS OF KILOWATTS
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
CALENDAR YEAR

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.

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 VII, Electric Energy Account, summarizes energy receipts and deliveries for fiscal year 1957.

Sale of 28 Billion Kilowatt-Hours

Energy sales to customers of the Bonneville Power Administration totaled 28 billion kilowatt-hours during the fiscal year 1957, an increase of 8.6 percent over 1956.

Sales of electric energy to other utilities, both publicly and privately owned, totaled 14.5 billion kilowatt-hours, an increase of 17.2 percent. Deliveries to industrial plants and Federal agencies totaled 13.7 billion kilowatt-hours, an increase of 0.8 percent.

During fiscal year 1957, BPA supplied 3.5 billion kilowatt-hours of interruptible energy to industrial customers. This was 82 percent of what these customers would have pur-

TABLE VII

Electric energy account for fiscal year 1957

Energy received (millions of kilowatt-hours):	
Energy generated at Federal plants for BPA 1/	29,984
Power purchased and interchanged in	4,284
Total received	34,268
Energy delivered (millions of kilowatt-hours):	
Sales	28,216
Power interchanged out	4,084
Used by Administration	31
Total delivered	32,331
Energy losses in transmission and transformation	1,937
Losses as percent of total energy received – percent	5.7
Maximum demand on generating plants (kilowatts), January 25, 1957, 6-7 p.m., Pacific Standard Time	4,887,000
Load factor, total generated for BPA, percent	70.0

1/ For detail by plants, see table VI.

chased had total requirements been available, and a decrease of 14.3 percent from fiscal year 1956 deliveries of interruptible energy. The power resources during the winter were inadequate and required a reduction in deliveries of interruptible energy to the industrial customers in order to meet the Administration's firm power commitments and requirements of higher priority customers.

The 3.5 billion kilowatt-hours of interruptible energy sales includes 351 million kilowatt-hours and $703,235 provisional sales to 13 industrial customers. These provisional sales were made possible by generation from storage releases beyond normal operating drawdown of reservoirs. Revenues are held in special deposit accounts to cover replacement of provisional energy during the next two fiscal years if required. During fiscal year 1956 there were no provisional energy sales.

Composite Average Rate of 2.37 Mills

The Administration has sold 218.6 billion kilowatt-hours of electric energy at a composite rate of 2.37 mills per kilowatt-hour during the 19 years of operation ended June 30, 1957. Sales to publicly owned utilities for the 19 years were 49.9 billion kilowatt-hours at an average of 2.80 mills. Privately owned utilities received 49.6 billion kilowatt-hours at an average of 2.29 mills, and industries 119.1 billion kilowatt-hours at 2.22 mills.

Power sales to aluminum plants were 95.2 billion kilowatt-hours at an average of 2.11 mills. These plants characteristically take power at very high-load factors, approaching 100 percent, which results in the exceptionally low average cost on the Administration's C and A rate schedules. Sales to industries other than aluminum, including sales to Federal agencies, were 23.9 billion kilowatt-hours at an average of 2.63 mills.

Energy sales by classes of customers are shown in table VIII.

TABLE VIII

Electric energy sales by class of customer

Fiscal years 1939 – 1957

(Millions of kilowatt-hours)

Fiscal years ending June 30	Industry: Aluminum	Industry: Other industries 1/	Publicly owned utilities	Privately owned utilities	Total
1939 – 1941	523	5	35	537	1,100
1942	1,845	79	143	358	2,425
1943	3,589	507	435	739	5,270
1944	5,454	1,022	728	1,467	8,671
1945	4,667	965	824	2,057	8,513
1946	2,492	800	636	1,903	5,831
1947	4,212	627	1,045	2,378	8,262
1948	4,902	647	1,561	3,181	10,291
1949	5,666	881	2,081	3,342	11,970
1950	5,863	1,024	2,840	3,312	13,039
1951	6,545	1,538	3,414	3,579	15,076
1952	6,472	1,943	4,804	3,794	17,013
1953	6,547	1,947	5,110	2,791	16,395
1954	7,862 2/	2,254	5,127	3,531	18,774 2/
1955	8,352 2/	2,624	6,274	4,578	21,828 2/
1956	10,140	3,422	6,909	5,500	25,971
1957	10,096 2/	3,581 2/	7,970	6,569	28,216 2/
Total to July 1, 1957	95,227 2/	23,866 2/	49,936	49,616	218,645 2/

1/ Includes Federal agencies.

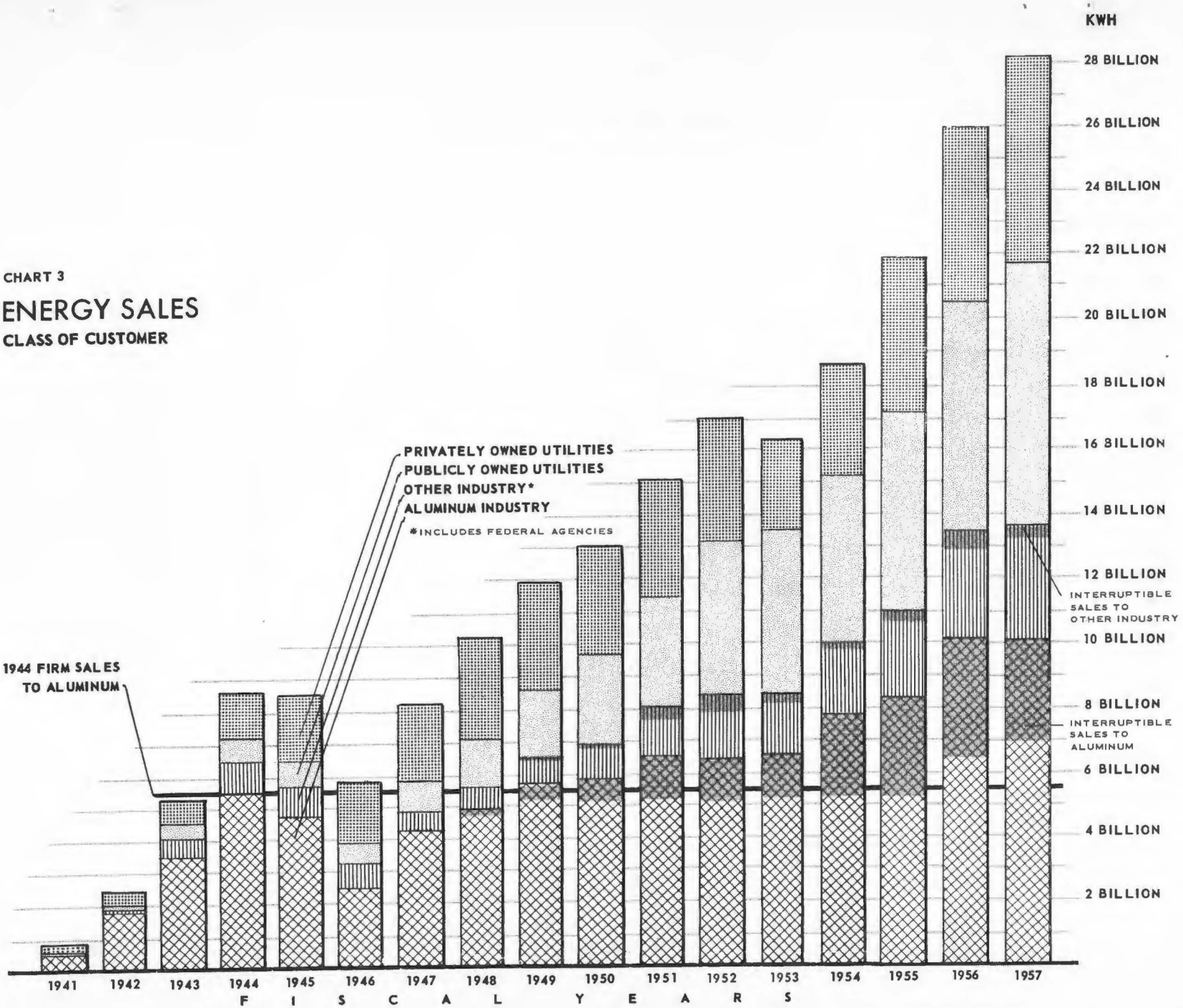
2/ Includes provisional energy sales to industries:

	Aluminum	*Other industries*
FY 1954	*28,355 mwh*	–
1955	*22,956 mwh*	–
1957	*323,509 mwh*	*27,817 mwh*

CHART 3

ENERGY SALES

CLASS OF CUSTOMER



Rate Schedules

During the last fiscal year almost three-quarters of the energy sales were made under the C-4 wholesale rate schedules at an average rate of 2.12 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-4 rate schedule to utilities purchasing all or substantially all of their power requirements from the Administration. At-site power is sold under the A-4 rate. Sales under the F-4 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 1957 classified by rate schedules is shown in table IX.

A special review of the Administration's rate structure by the Ford, Bacon & Davis Company was completed during the 1956 fiscal year. Study of this special report by the staff was continued during this last year.

Special study by the staff was directed during fiscal year 1957 to review of the Administration's entire present wholesale rate structure and to development of a rate by which low-availability secondary energy in excess of that sold under present rates can be marketed.

Customers Served

The Administration was serving 114 customers during the fiscal year 1957 with no changes during the year. There were 76 publicly owned distributors of power, 18 industrial customers, 11 Federal agencies, and 9 privately owned utilities.

TABLE IX

Electric energy sales by rate schedules

Fiscal year 1957

Rate schedule	Energy (thousands of kilowatt-hours)	Revenue 1/	Mills per kilowatt-hour
C–4: Industries	12,352,068 2/	$25,942,951 2/	2.10
Utilities	8,530,229	18,352,171	2.15
Subtotal	20,882,297	44,295,122	2.12
F–4: Industries	14,298	63,487	4.44
Utilities	65,928	290,059	4.40
Subtotal	80,226	353,546	4.41
A–4: Industries	1,081,214 2/	1,807,016 2/	1.67
Utilities	11,818	43,947	3.72
Subtotal	1,093,032	1,850,963	1.69
E–4: Utilities 3/	4,315,673	13,649,520	3.16
Experimental, H–3 and exchange:			
Industries & Utilities	1,844,964	4,612,410	2.50
Total	28,216,192 2/	$64,761,561 2/	2.30

1/ These revenues from sale of electric energy differ from official accounting records in that billing adjustments applicable to only fiscal year 1957 are included.

2/ Includes provisional sales:

	Energy (thousands of kwh)	*Revenue*
C–4	*333,207*	*$673,028*
A–4	*18,119*	*30,207*
	351,326	*$703,235*

3/ Including Federal agency pumping loads.

In order to improve services to these customers, 11 points of delivery were added during the year, bringing the total number of delivery points to 345 at the end of the 1957 fiscal year.

Generation Added

Additions to the U. S. Columbia River Power System in fiscal year 1957 have a nameplate rating of 551,000 kilowatts. The final two units with 140,000 kilowatts total capacity were installed at the McNary project on the Columbia River. Six units with a total capacity of 384,000 kilowatts were installed at Chief Joseph project on the Columbia River, leaving six units to be installed for the completed project. Two units in the fishway at The Dalles project with a total capacity of 27,000 kilowatts were installed. The Corps of Engineers is construction agency for all three of these projects.

Projects Summarized

Projects existing, under construction, and authorized for construction by the Corps of Engineers and Bureau of Reclamation are shown in table X. With completion of the authorized projects the prime capability of this system will be over 6 million kilowatts. The contributions to this total capability by projects existing and under construction are shown by the table; however, the prime capability of the system operated without the authorized projects would be about 4,690,000 kilowatts.

Existing storage capacity usable for power in Federal reservoirs is 9,868,500 acre-feet. An additional 403,000 acre-feet will be provided by Cougar and Hills Creek on which

Energy deliveries to customers of the Bonneville Power Administration
Fiscal year ended June 30, 1957

Customers	Energy deliveries for year 1/ kilowatt-hours
PUBLICLY OWNED UTILITIES	
MUNICIPALITIES	
Bandon, Oregon	18,163,200
Bonners Ferry, Idaho	2,204,400
Canby, Oregon	12,445,000
Cascade Locks, Oregon	11,818,000
Centralia, Washington	2,964,677
Cheney, Washington	17,318,000
Drain, Oregon	10,214,400
Ellensburg, Washington	44,358,000
Eugene, Oregon	189,965,833
Forest Grove, Oregon	41,704,000
Grand Coulee, Washington	17,630,400
McMinnville, Oregon	54,726,000
Milton-Freewater, Oregon	23,369,568
Monmouth, Oregon	13,010,400
Port Angeles, Washington	194,704,624
Seattle, Washington	985,165,245
Springfield, Oregon	52,387,200
Tacoma, Washington	1,332,949,000
Total municipalities (18)	3,025,097,947
PUBLIC UTILITY DISTRICTS	
Benton Co. PUD #1	156,145,523
Central Lincoln PUD	143,111,160
Chelan Co. PUD #1	1,361
Clallam Co. PUD #1	45,912,210
Clark Co. PUD #1	531,638,210
Clatskanie PUD	23,128,257
Cowlitz Co. PUD #1	624,388,100
Douglas Co. PUD #1	122,055,211
Ferry Co. PUD #1	16,223,175
Franklin Co. PUD #1	100,683,558
Grant Co. PUD #2	316,362,519
Grays Harbor Co. PUD #1	328,430,000
Kittitas Co. PUD #1	8,059,850
Klickitat Co. PUD #1	64,924,901
Lewis Co. PUD #1	132,234,651
Mason Co. PUD #3	141,537,600
Northern Wasco Co. PUD	23,204,160
Okanogan Co. PUD #1	79,573,235
Pacific Co. PUD #2	80,239,502
Pend Oreille Co. PUD #1	49,729,664
Skamania Co. PUD #1	27,259,179
Snohomish Co. PUD #1	958,924,570
Tillamook PUD	81,720,000
Wahkiakum Co. PUD #1	13,815,060
Total public utility districts (24)	4,069,301,656
COOPERATIVES	
Benton Rural Elec. Assn.	45,393,984
Big Bend Elec. Coop.	45,430,918
Blachly-Lane Co. Coop. Elec. Assn.	22,044,000
Central Elec. Coop.	16,900,200
Clearwater Power Co.	40,825,100
Columbia Basin Elec. Coop.	10,938,000
Columbia Power Coop. Assn.	11,412,000
Columbia Rural Elec. Assn.	24,668,850
Consumers Power	81,647,000
Coos-Curry Elec. Coop.	77,382,438
Douglas Elec. Coop.	40,766,350
Eastern Oregon Elec. Coop. Assn.	4,047,667
Flathead Elec. Coop.	20,658,336
Hood River Elec. Coop.	17,356,800
Idaho Co. L & P Assn.	12,270,300

Customers	Energy deliveries for year 1/ kilowatt-hours
Inland Power & Light Co.	90,673,074
Kennewick Irrig. Dist.	2,604,800
Kootenai Rural Elec. Assn.	12,879,460
Lane Co. Elec. Coop.	50,901,473
Lincoln Elec. Coop. – Montana	9,046,464
Lincoln Elec. Coop. – Washington	17,574,494
Midstate Elec. Coop.	7,083,552
Missoula Elec. Coop.	10,040,770
Nespelem Valley Elec. Coop.	7,841,750
Northern Lights	26,015,200
Okanogan Co. Elec. Coop.	4,692,800
Orcas Power & Light Co.	11,513,000
Ravalli Co. Elec. Coop.	8,333,393
Salem Electric	41,238,800
Tanner Mutual P & L Assn.	707,033
Umatilla Elec. Coop. Assn.	25,453,499
Vera Irrigation Dist. #15	27,815,200
Wasco Elec. Coop.	27,522,240
West Oregon Elec. Coop.	22,280,943
Total cooperatives (34)	875,959,888
Total publicly owned utilities	7,970,359,491
PRIVATELY OWNED UTILITIES	
British Columbia Elec. Co.	111,972,814
California Oregon Power Co.	14,098,205
California-Pacific Utilities Co.	8,022,194
Idaho Power Co.	94,995,000
Interconnected Pool 2/	1,355,507,018
Montana Power Co.	352,639,000
Pacific Power & Light Co.	1,618,626,307
Portland General Elec. Co.	1,772,079,000
Puget Sound Power & Light Co.	462,705,000
Washington Water Power Co.	778,030,000
Total privately owned utilities (9)	6,568,674,538

Customers	Energy deliveries for year 1/ kilowatt-hours
FEDERAL AGENCIES (11)	1,951,442,435
INDUSTRIES	
ALUMINUM	
Aluminum Co. of America	
Vancouver Plant	1,566,818,128
Wenatchee Plant	1,218,384,163
Anaconda Aluminum Co.	1,081,214,053
Kaiser Alum. & Chem. Corp.	
Spokane Alum. Fab.	333,732,691
Spokane Alum. Red.	2,905,239,243
Tacoma Alum. Red.	652,280,363
Reynolds Metals Co.	
Longview Plant	977,866,166
Troutdale Plant	1,360,849,407
INDUSTRIES	
OTHER	
Carborundum Co.	175,583,513
Crown Zellerbach Corp.	64,191,329
Electro Metallurgical Co.	156,299,761
Hanna Nickel Smelting Co.	430,372,900
Keokuk Electro-Metals Co.	104,059,976
Pacific Carbide and Alloys Co.	41,428,000
Pacific Northwest Alloys	181,066,860
Pennsalt Chemicals Corp.	173,333,000
Rayonier Corp.	28,684,014
Victor Chemical Works	274,311,650
Total industries (18)	11,725,715,217 3/
Total sales of electric energy (114)	28,216,191,681 3/

1/ Includes energy deliveries carried on exchange accounts.

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

3/ Includes 351,325,780 kwh provisional energy sales to industrial customers.

TABLE X

U. S. COLUMBIA RIVER POWER SYSTEM

General specifications –projects existing, under construction and authorized
Installations and capabilities correspont to a coordinated system operation
December 31, 1957

Project	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) 4/	Average head (feet)	Date in service: Initial unit	Date in service: Last unit	Principal purpose 5/
EXISTING											
Bonneville	Wash.-Ore.	Columbia	10	518,400	466,000	74	Pondage	58	June 1938	Dec. 1943	P,N.
Grand Coulee	Washington	Columbia	18	1,944,000	1,552,000	1,288	5,072,000	315	Sept. 1941	Sept. 1951	P,I,FC,N.
Hungry Horse	Montana	S. Fk. Flathead	4	285,000	186,000	3,560	2,982,000	376	Oct. 1952	July 1953	P,I,FC,N.
Detroit	Oregon	N. Santiam	2	100,000	39,000	1,563.5	323,000	285	July 1953	Oct. 1953	P,I,FC,N.
McNary	Wash.-Ore.	Columbia	14	980,000	549,000	340	Pondage	80	Nov. 1953	Feb. 1957	P,I,N.
Big Cliff	Oregon	N. Santiam	1	18,000	11,000	1,206	Pondage	91	June 1954	June 1954	P.
Lookout Point	Oregon	M. Fk. Willamette	3	120,000	34,000	926	336,500	185	Dec. 1954	Apr. 1955	P,I,FC,N.
Albeni Falls	Idaho	Pend Oreille	3	42,600	21,000	2,062.5	1,155,000	16	Mar. 1955	Aug. 1955	P,FC,N.
Dexter	Oregon	M. Fk. Willamette	1	15,000	11,000	695	Pondage	53	May 1955	May 1955	P.
Chief Joseph	Washington	Columbia	12	768,000	768,000	946	Pondage	177	Aug. 1955	Oct. 1957	P,I.
Chandler	Washington	Yakima	2	12,000	11,000	618.5	0	118	Feb. 1956	Feb. 1956	P,I.
The Dalles	Wash.-Ore.	Columbia	4	183,000	156,000	160	Pondage	86	May 1957	Nov. 1957	P,N.
				4,986,000	3,804,000		9,868,500				
UNDER CONSTRUCTION											
Chief Joseph	Washington	Columbia	4	256,000	88,000	946	Pondage	177	Jan. 1958	Dec. 1958	P,I.
The Dalles	Wash.-Ore.	Columbia	12	936,000	518,000	160	Pondage	86	Feb. 1958	Nov. 1960	P,N.
Roza	Washington	Yakima	1	11,250	6,000	1,220.6	Pondage	140	May 1958	May 1958	P,I.
Hills Creek	Oregon	M. Fk. Willamette	2	30,000	16,000	1,543	249,000	210	Nov. 1961	Nov. 1961	P,I,FC,N.
Cougar	Oregon	S. Fk. McKenzie	2	25,000	17,000	1,690	154,000	350	Nov. 1962	Nov. 1962	P,I,FC,N.
Ice Harbor	Washington	Snake	3	270,000	171,000	440	Pondage	97	Dec. 1963	Dec. 1963	P,I,N.
John Day	Wash.-Ore.	Columbia	12	1,200,000	774,000	262	Pondage	101	Oct. 1969	June 1971	P,I,FC,N.
				2,728,250	1,590,000		403,000				
AUTHORIZED											
Libby	Montana	Kootenai	6	516,000	257,000	2,459	5,010,000	265	–	–	P,FC,N.
Lower Monumental	Washington	Snake	3	270,000	169,000	533	Pondage	92	–	–	P,I,N.
Little Goose	Washington	Snake	3	270,000	180,000	633	Pondage	99	–	–	P,N.
Lower Granite	Washington	Snake	3	225,000	146,000	715	Pondage	80	–	–	P,N.
Green Peter	Oregon	M. Santiam	2	81,000	22,000	984	333,000	250	–	–	P,I,FC,N.
White Bridge	Oregon	M. Santiam	1	15,000	9,000	670	Pondage	90	–	–	P.
				1,377,000	783,000		5,343,000				
					–31,000 3/						
Total – 23 projects				9,091,250	6,146,000		15,614,500				

1/ Nameplate rating.

2/ Average capability in a coordinated system during an 8-month storage release period (Sept. 1936 through April 1937).

3/ Pumping requirements of 31,000 kw represents the average power necessary to supply that part of irrigation water at Grand Coulee during the storage release period for 600,000 acres of the Columbia Basin Project.

4/ Storage usable for power production.

5/ P – Power; I – Irrigation; FC – Flood Control; N – Navigation.

construction is under way, and 5,343,000 acre-feet would be provided by Libby and Green Peter projects which are authorized for construction.

All generation and storage capacity, except the John Day project, will be in service by December 1963 under the present schedule. Service dates for the other authorized projects are not scheduled as no funds have been appropriated for their construction.

Non-Federal Additions

Non-Federal generating capacity in the area served by the Administration was increased in fiscal year 1957 by installation of the last of four units at Ross project by Seattle City Light. This unit, which has a nameplate rating of 90,000 kilowatts, began operation on November 19, 1956.

The Puget Sound Power & Light Company added unit No. 7 of 20,000 kilowatts at the Snoqualmie Falls plant shortly after the close of fiscal year 1957. Future additions licensed for construction by non-Federal utilities in this area are shown in table XI. These additions represent an increase of 410,000 kilowatts of nameplate rating over projects in a comparable status one year previously.

Northwest Power Pool

Generation by the principal electric utility systems of the Pacific Northwest during the fiscal year 1957 is shown in table XII. All utilities listed are members of the Northwest Power Pool with the exceptions of the Chelan County and Pend Oreille County Public

TABLE XI

Non-Federal utilities

Generator installation schedule

August 12, 1957

Utility and Plant	Stream	Unit number	Nameplate rating thousands of kilowatts	Date in service
Portland General Electric Co.				
Pelton	Deschutes	1	36	November 1957
		2	36	January 1958
		3	36	February 1958
North Fork	Clackamas	1	19.2	July 1958
		2	19.2	September 1958
Faraday (Addition)	Clackamas	6	19.2	November 1958
City of Seattle				
Diablo (Reconstruction)	Skagit	1 & 2	1/	August 1958
Gorge (Reconstruction)	Skagit	—	2/	August 1959
Pacific Power & Light Co.				
Merwin (Addition)	Lewis	3	45	December 1958
Swift No. 1	Lewis	1,2 & 3	204	December 1958
Cowlitz County PUD				
Swift No. 2	Lewis	1 & 2	70	December 1958
Grant County PUD				
Priest Rapids	Columbia	1	78.85	April 1959
		2	78.85	June 1959
		3	78.85	August 1959
		4	78.85	October 1959
		5	78.85	December 1959
		6	78.85	February 1960
		7	78.85	April 1960
		8	78.85	June 1960
Wanapum	Columbia	1	75	May 1962
		2	75	July 1962
		3	75	September 1962
		4	75	November 1962
		5	75	January 1963
		6	75	March 1963
		7	75	May 1963
		8	75	July 1963

TABLE XI

Non - Federal utilities

Generator installation schedule

August 12, 1957

Utility and Plant	Stream	Unit number	Nameplate rating thousands of kilowatts	Date in service
Puget Sound Power & Light Co.				
Upper Baker	Baker	1 & 2	85	September 1959
Lower Baker (Addition)	Baker	3	55	September 1960
Washington Water Power Co.				
Noxon Rapids	Clark Fork	1	84	September 1959
		2	84	December 1959
		3	84	March 1960
		4	84	June 1960
City of Eugene				
Beaver Marsh	McKenzie	1 & 2	30	July 1960
City of Tacoma				
Mayfield	Cowlitz	1	40	October 1960
		2	40	January 1961
		3	40	April 1961
		4	40	July 1961
Mossyrock	Cowlitz	1	75	April 1963
		2	75	July 1963
		3	75	October 1963
		4	75	December 1963
Chelan County PUD				
Rocky Reach	Columbia	1	101.65	July 1961
		2	101.65	August 1961
		3	101.65	September 1961
		4	101.65	November 1961
		5	101.65	January 1962
		6	101.65	March 1962
		7	101.65	May 1962

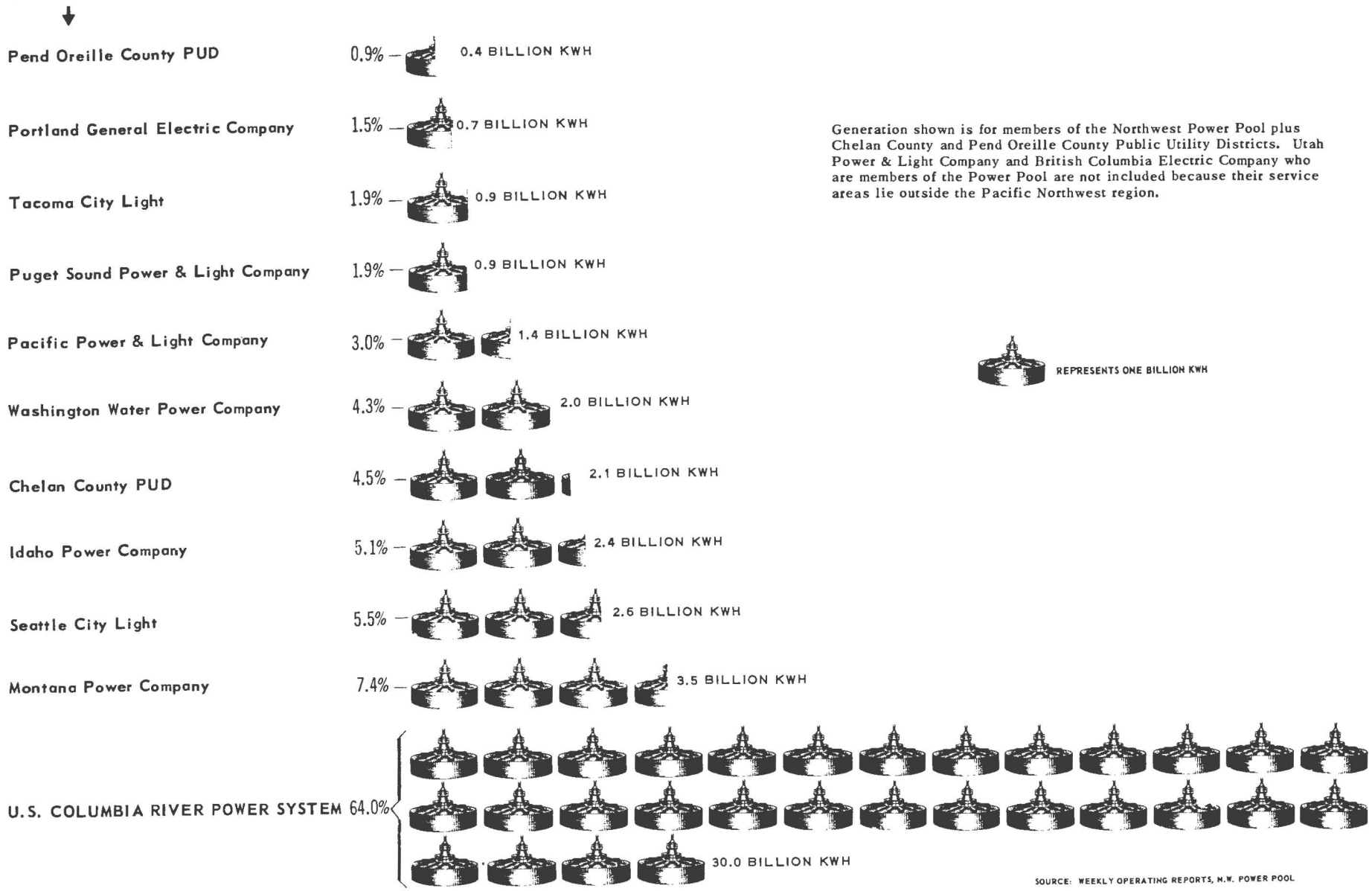
1/ Reconstruction of the turbines will increase peaking capability by 25,000 kilowatts.

2/ Reconstruction of diversion dam will increase gross head by 100 feet and peaking capability by 57,000 kilowatts.

CHART 4

POWER GENERATED BY PRINCIPAL NORTHWEST UTILITIES

YEAR ENDED JUNE 30, 1957



Generation shown is for members of the Northwest Power Pool plus Chelan County and Pend Oreille County Public Utility Districts. Utah Power & Light Company and British Columbia Electric Company who are members of the Power Pool are not included because their service areas lie outside the Pacific Northwest region.

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

TABLE XII

Generation by the principal electric utility systems of the Pacific Northwest
Fiscal year 1957 1/

Utilities	Kilowatt-hours (Billion)	Percent of total generation (Percent)	Utilities	Kilowatt-hours (Billion)	Percent of total generation (Percent)
Publicly owned:			Privately owned:		
Bonneville Power Administration	30.0	64.0	Montana Power Co.	3.5	7.4
Seattle City Light	2.6	5.5	Idaho Power Co.	2.4	5.1
Chelan Co. Public Utility Dist.	2.1	4.5	Washington Water Power Co.	2.0	4.3
Tacoma City Light	0.9	1.9	Pacific Power & Light Co.	1.4	3.0
Pend Oreille Co. Public Utility Dist.	0.4	0.9	Puget Sound Power & Light Co.	0.9	1.9
			Portland General Electric Co.	0.7	1.5
Total publicly owned	36.0	76.8	Total privately owned	10.9	23.2
Total generation	46.9	100.0			

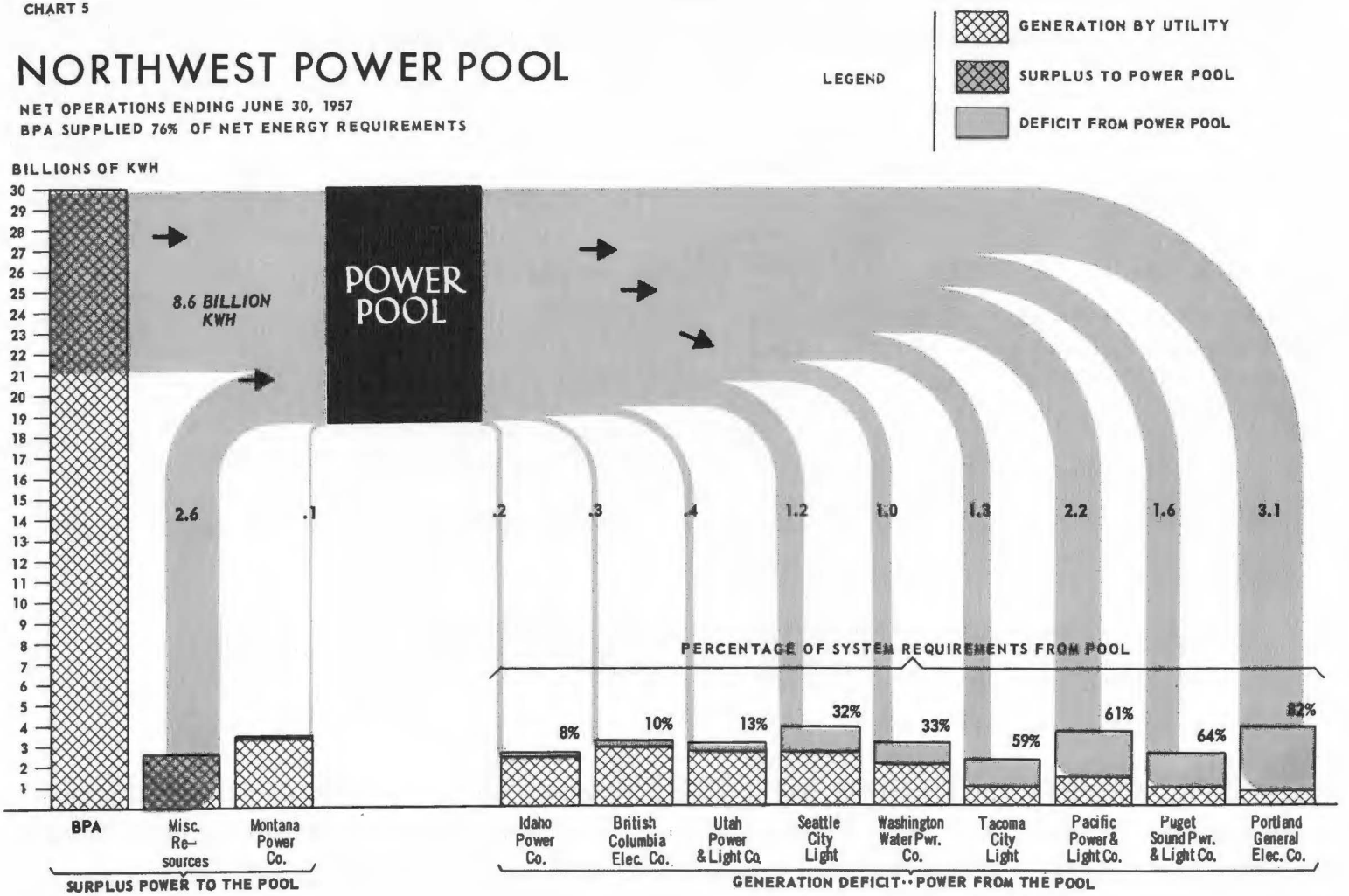
1/ Generation shown is for members of the Northwest Power Pool plus Chelan County and Pend Oreille County Public Utility Districts. Utah Power & Light Company and British Columbia Electric Company who are members of the Power Pool are not included because their service areas lie outside the Pacific Northwest region.

Utility Districts. These two utilities are included because they provided substantial amounts of generation to the pool. The Utah Power and Light Company and the British Columbia Electric Company are members of the pool but are not included as their major service areas are outside the region.

CHART 5

NORTHWEST POWER POOL

NET OPERATIONS ENDING JUNE 30, 1957
BPA SUPPLIED 76% OF NET ENERGY REQUIREMENTS



A total of 64.0 percent of the energy generated by the major utilities of the region was produced by the U. S. Columbia River Power System. In addition to power requirements of utilities and major industries served through the Administration's transmission system, 8.6 billion kilowatt-hours of energy was provided to other pool utilities for meeting their requirements.

Transmission System Additions

Bonneville Power Administration grid was increased during the fiscal year to 7,318 circuit miles of transmission line and 183 substations with a transformer capacity of 10,775,915 kilovolt-amperes.

Total circuit miles of transmission line include 175 of 345,000-volt, 231 of 287,000-volt, 3,884 of 230,000-volt, 2,795 of 115,000-volt lines and 233 circuit miles of lower voltage.

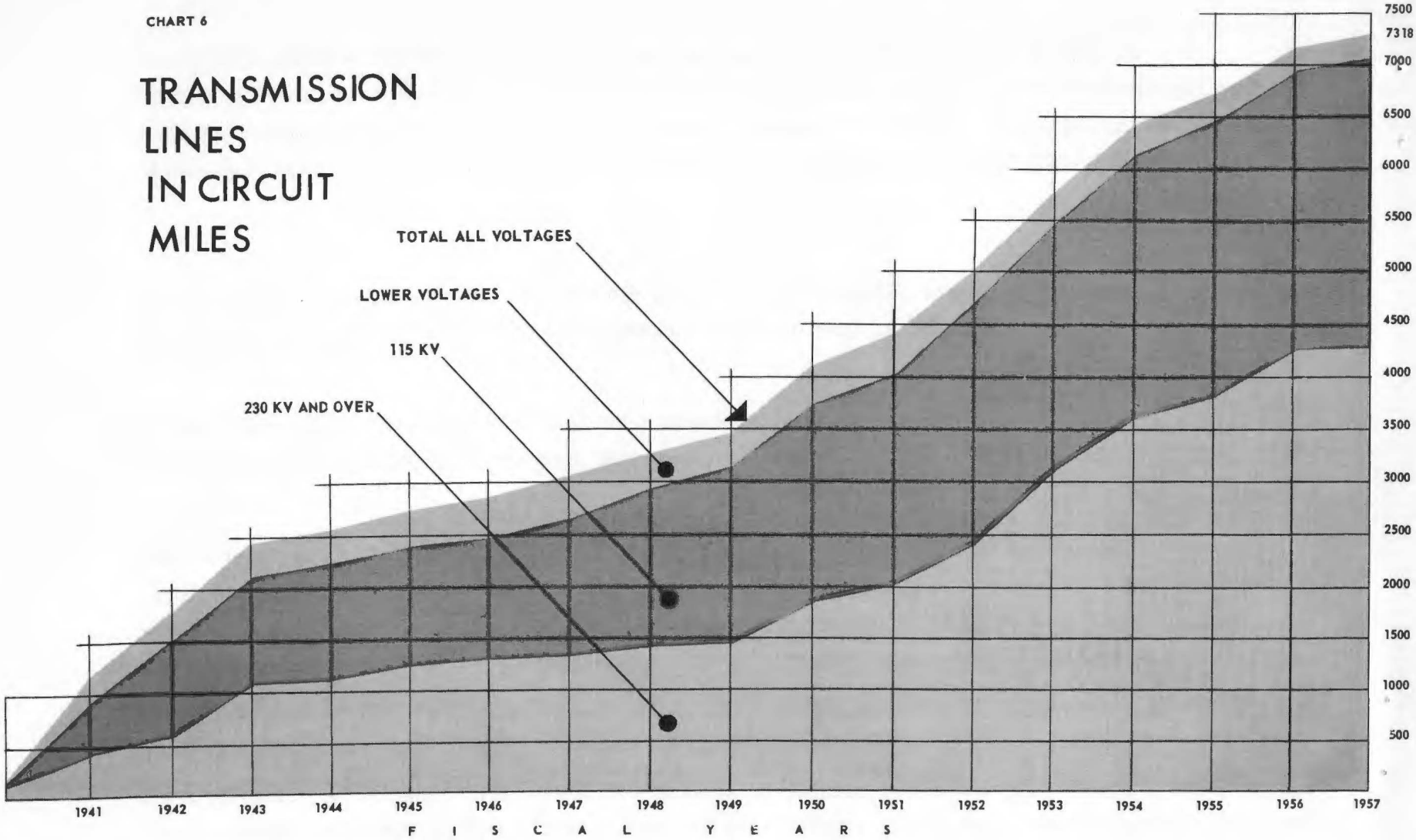
Six new substations ranging from 3,000 to 250,000 kilovolt-amperes were energized during the year and one was retired. Transformers, including force-cooling equipment, ranging from 3,000 to 600,000 kilovolt-amperes were added to 24 existing substations. These additions increased the transformer capacity of the system by 2,767,165 kilovolt-amperes, or 35 percent.

Construction Program

Major grid additions completed during the fiscal year include the McNary-J. D. Ross 345,000-volt transmission line and 600,000-kilovolt-ampere autotransformer banks, serv-

CHART 6

TRANSMISSION LINES IN CIRCUIT MILES



ing Portland-Vancouver load centers; the J. D. Ross-Keeler transmission line and 250,000-kilovolt-ampere Keeler substation serving Portland and upper Willamette Valley; a 250,000-kilovolt-ampere transformer bank at Big Eddy substation for service to The Dalles area; the Olympia-Shelton 230,000-volt transmission line and 250,000-kilovolt-ampere transformer bank No. 2 at Olympia substation, serving the Olympic Peninsula; a 250,000-kilovolt-ampere transformer bank at Columbia substation, serving the north-central Washington area; and the McNary-Franklin 230,000-volt transmission line for service to the Pasco-Richland-Walla Walla area.

Work progressed on schedule on a number of important grid additions under way at the beginning of the fiscal year and continuing into the new fiscal year. These include the Big Eddy-Oregon City-Chemawa 230,000-volt transmission line, reinforcing the power supply to the Willamette Valley; the Alvey-Reston-Fairview 230,000-volt transmission line to augment power flows to southwest Oregon; the Big Eddy-Chenowith-Harvey 115,000-volt circuits to serve the Harvey aluminum plant; the Chief Joseph-Covington 345,000-volt transmission line, reinforcing service to the Puget Sound and Olympic Peninsula areas; and the Chief Joseph-Snohomish 345,000-volt transmission line to supply added service to the Seattle and North Puget Sound area.

New construction that was begun during the fiscal year included the Redmond-Round Butte 230,000-volt transmission line, to integrate new generation from the Pelton project of the Portland General Electric Company with the BPA grid, and a 250,000-kilovolt-ampere Franklin substation for added service to the Pasco-Richland-Walla Walla area.

Columbia

River Power

System

and Related

Activities

FINANCIAL

STATEMENTS

FOR THE

FISCAL YEAR

ENDED

JUNE 30, 1957

Auditors' Report

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON 25

B-114858

December 23, 1957

Dear Mr. Secretary:

The General Accounting Office has made audits of the activities of the Bonneville Power Administration and the Bureau of Reclamation, Department of the Interior, and the Corps of Engineers (Civil Functions), Department of the Army. In connection with these audits, made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67), 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, 1957. The examination of the 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.

The Columbia River Power System consists of the Bonneville Power Administration and the generating facilities for commercial power purposes of the multiple-purpose projects built and operated (or under construction) by the Bureau of Reclamation and the Corps of Engineers in the Pacific Northwest, for which the Administration acts as the transmitting and marketing agency. 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 projects include the operation of irrigation, flood control, and navigation facilities.

The accompanying financial statements present on a combined basis 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. Financial results from commercial power operations are also presented on a combined basis. Insofar as they relate to commercial power activities, the financial statements are based on accounts that 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.

Final allocations of the construction costs of the Hungry Horse and Yakima Projects (Bureau of Reclamation) and the Albeni Falls, Detroit-Big Cliff, McNary Dam, Lookout Point-Dexter, Chief Joseph, and The Dalles Dam Projects (Corps of Engineers) have not been made to power and nonpower purposes. As explained in note 3 of schedule 6, tentative allocations of these costs have been used in preparing the accompanying financial statements. When firm allocations of costs are made, the accounts and financial statements relating to these projects may require adjustment.

Accounting policies for the Bonneville Power Administration and the individual projects comprising the System are not wholly consistent in several important respects. Until the agencies concerned reach agreement on accounting policies for such matters as depreciation on plant in service, interest on the Federal investment, and costs incurred by other

agencies and until construction cost allocations to power and nonpower purposes are firm, an unqualified opinion of the financial statements cannot be rendered. These matters are discussed in notes 2 and 3 of schedule 6.

Except for the effect of the matters referred to in the two preceding paragraphs, the accompanying financial statements present fairly, in the opinion of the General Accounting Office, the assets and liabilities of the Columbia River Power System and Related Activities at June 30, 1957, and the financial results of power 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.

Sincerely yours,

Joseph Campbell

Comptroller General
of the United States

The Honorable
The Secretary of the Interior

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

INDEX TO FINANCIAL STATEMENTS

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STATEMENT OF INVESTMENT AND REPAYMENT OF INVESTMENT IN COMMERCIAL POWER PROGRAM, FOR THE PERIOD FROM INCEPTION TO JUNE 30, 1957	3
STATEMENT COMBINING EXPENSES OF COMMERCIAL POWER OPERATIONS, FOR THE FISCAL YEAR ENDED JUNE 30, 1957 . .	4
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SCHEDULE 1

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

STATEMENT OF COMBINED COMMERCIAL POWER OPERATIONS

FOR THE FISCAL YEARS ENDED JUNE 30, 1957 AND 1956

	1957	1956
OPERATING REVENUES:		
Sales of electric energy by Bonneville Power Administration:		
Publicly owned utilities.	$22,044,831	$19,505,231
Privately owned utilities	14,450,108	11,999,475
Federal agencies	4,867,552	4,382,829
Aluminum industry	20,025,700	20,098,110
Other industry	3,583,784	3,804,045
Sales, at wholesale	64,971,975	59,789,690
Other operating revenues (note 6):		
Payments for downstream river regulation	21,100	-
Project energy--use at site	119,447	149,157
Rental of electric property	1,287,445	1,053,776
	1,427,992	1,202,933
Total operating revenues	66,399,967	60,992,623
OPERATING EXPENSES (notes 2 and 3):		
Purchased power	492,585	868,329
Operation:		
Specific power facilities	9,515,934	8,382,720
Joint facilities	875,938	869,723
Maintenance:		
Specific power facilities	4,049,679	3,571,844
Joint facilities	894,136	989,568
Depreciation:		
Specific power facilities	16,846,185	15,438,670
Joint facilities	3,408,969	3,101,302
Net loss on sales and abandonment of property	429,052	182,906
Total operating expenses	36,512,478	33,405,062
Net operating revenues	29,887,489	27,587,561
INTEREST AND OTHER DEDUCTIONS (note 2):		
Interest on Federal investment	30,501,670	26,285,045
Less amount charged to construction . .	6,485,968*	4,593,743*
Miscellaneous income deductions (net)	93,945*	53,153*
Net interest and other deductions	23,921,757	21,638,149
Net commercial power revenues	$ 5,965,732	$ 5,949,412

*Deduction

The accompanying notes (schedule 6) are an integral part of this statement.

SCHEDULE 2

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

STATEMENT OF COMBINED ASSETS AND LIABILITIES

JUNE 30, 1957 AND 1956

ASSETS	1957	1956
FIXED ASSETS, at original cost, including interest during construction (notes 2 and 3):		
Commercial power	$1,510,417,433	$1,277,289,050
Irrigation	326,950,537	308,851,814
Flood control	86,408,161	86,703,993
Navigation	76,180,914	55,233,412
Other	1,078,032	166,531
Multiple-purpose projects under construction	17,069,010	161,886,507
Total	2,018,104,087	1,890,131,307
Less accumulated depreciation:		
Commercial power	110,887,644	94,236,032
Irrigation	624,050	501,876
Flood control	2,637,962	1,726,034
Navigation	3,782,642	3,079,302
Total	117,932,298	99,543,244
Original cost, net	1,900,171,789	1,790,588,063
CURRENT ASSETS:		
Unexpended funds in U. S. Treasury appropriated by Congress for construction and for operation and maintenance	31,873,675	47,857,933
Special deposits	1,650,005	1,483,333
Accounts receivable:		
Customers	12,139,898	9,719,851
Other	1,066,583	1,101,263
Materials and supplies	6,910,435	6,512,403
Total	53,640,596	66,674,783
OTHER ASSETS AND DEFERRED CHARGES	11,367,007	10,242,273
	$1,965,179,392	$1,867,505,119

LIABILITIES	1957	1956
INVESTMENT OF U. S. GOVERNMENT AND ACCUMULATED NET REVENUES:		
Total investment of U. S. Government (note 5)	$2,400,947,138	$2,230,685,364
Less:		
Funds returned to U. S. Treasury:		
Repayment of Federal investment in the power program	512,476,083	449,691,188
Repayment of Federal investment in the nonpower programs	9,178,159	6,905,003
Total expense of flood control operations	10,172,987	6,962,048
Total expense of navigation operations	24,026,625	21,215,446
Other nonreimbursable expenses	554,406	134,761
	556,408,260	484,908,446
Net investment of U. S. Government	1,844,538,878	1,745,776,918
Accumulated net revenues:		
Net revenues from commercial power operations since inception, including $5,965,732 for the year ended June 30, 1957 (schedule 1)	104,711,339	98,745,607
Less net loss from irrigation operations since inception	3,356,771	3,300,003
	101,354,568	95,445,604
Total	1,945,893,446	1,841,222,522
CURRENT AND ACCRUED LIABILITIES:		
Accounts payable	15,954,223	22,904,428
Employees' accrued leave	2,015,068	1,924,422
Total	17,969,291	24,828,850
DEFERRED CREDITS	887,743	1,041,480
MATURED INSTALLMENTS OF FIXED OBLIGATIONS FOR USE OF IRRIGATION FACILITIES	68,230	63,216
CONTRIBUTIONS IN AID OF CONSTRUCTION	360,682	349,051
	$1,965,179,392	$1,867,505,119

The accompanying notes (schedule 6) are an integral part of this statement.

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

STATEMENT OF INVESTMENT AND REPAYMENT OF INVESTMENT

IN COMMERCIAL POWER PROGRAM (note 4)

FOR THE PERIOD FROM INCEPTION TO JUNE 30, 1957

	Total	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Hungry Horse Project	Albeni Falls Project	McNary Dam Project	Detroit-Big Cliff Project	Lookout Point-Dexter Project	Chief Joseph Project	Yakima Project, Kennewick Division	The Dalles Dam Project	Ice Harbor Project	Cougar Dam Project	Hills Creek Dam Project
NET INVESTMENT IN COMMERCIAL POWER															
INVESTMENT ALLOCATED TO COMMERCIAL POWER:															
Total investment of U. S. Government in construction and operating activities	$2,400,947,138	$588,401,988	$137,521,952	$615,905,193	$121,370,286	$34,309,358	$325,426,170	$73,965,854	$99,314,794	$153,311,450	$14,063,575	$218,222,774	$12,982,955	$2,728,993	$3,421,796
Less amounts allocated to nonpower purposes or unallocated:															
Irrigation	347,960,535	-	-	327,317,118	-	-	-	4,233,135	5,330,988	1,965,619	9,113,675	-	-	-	-
Flood control	94,753,334	-	-	-	23,203,383	186,757	-	22,674,022	48,689,172	-	-	-	-	-	-
Navigation	96,778,835	-	44,714,128	1,042,331	-	145,058	28,583,456	145,717	897,101	-	-	21,251,044	-	-	-
Other purposes	1,478,948	-	-	-	-	-	-	417,416	-	-	1,061,532	-	-	-	-
Construction in progress and other unallocated assets	19,133,744	-	-	-	-	-	-	-	-	-	-	-	12,982,955	2,728,993	3,421,796
	560,105,396	-	44,714,128	328,359,449	23,203,383	331,815	28,583,456	27,470,290	54,917,261	1,965,619	10,175,207	21,251,044	12,982,955	2,728,993	3,421,796
Investment in commercial power, construction, and operating activities	1,840,841,742	588,401,988	92,807,824	287,545,744	98,166,903	33,977,543	296,842,714	46,495,564	44,397,533	151,345,831	3,888,368	196,971,730	-	-	-
LESS FUNDS FROM COMMERCIAL POWER OPERATIONS RETURNED TO U. S. TREASURY:															
Through June 30, 1956	449,691,188	219,768,055	55,632,519	125,428,046	12,962,103	2,375,120	23,658,934	5,290,039	2,700,671	1,700,800	172,798	2,103	-	-	-
During the year ended June 30, 1957:															
By Bonneville Power Administration	62,533,863	23,755,863	3,000,000	12,535,000	3,553,000	1,400,000	10,750,000	1,950,000	1,900,000	3,350,000	220,000	120,000	-	-	-
By generating projects	251,032	-	56*	136,453	14,274	8,200	77,900	7,970	2,097	652	798*	4,340	-	-	-
Accumulated funds returned	512,476,083	243,523,918	58,632,463	138,099,499	16,529,377	3,783,320	34,486,834	7,248,009	4,602,768	5,051,452	392,000	126,443	-	-	-
Net investment in commercial power	$1,328,365,659	$344,878,070	$ 34,175,361	$149,446,245	$ 81,637,526	$30,194,223	$262,355,880	$39,247,555	$39,794,765	$146,294,379	$ 3,496,368	$196,845,287	$ -	$ -	$ -
COMPARISON OF REPAYMENT AND SCHEDULED REPAYMENT OF COMMERCIAL POWER INVESTMENT															
REPAYMENT OF CAPITAL INVESTMENT IN COMMERCIAL POWER:															
Accumulated funds returned (as above)	$ 512,476,083	$243,523,918	$ 58,632,463	$138,099,499	$ 16,529,377	$ 3,783,320	$ 34,486,834	$ 7,248,009	$ 4,602,768	$ 5,051,452	$ 392,000	$ 126,443	$ -	$ -	$ -
Less amounts equivalent to:															
Operation and maintenance expense	123,933,335	81,153,662	11,882,740	22,720,205	1,463,672	535,609	3,550,240	912,216	531,724	1,028,932	73,054	81,281	-	-	-
Interest charged to operations	161,718,044	50,226,701	20,845,492	56,865,775	9,126,544	2,186,942	13,937,468	3,633,986	2,291,228	2,470,165	117,060	16,683	-	-	-
	285,651,379	131,380,363	32,728,232	79,585,980	10,590,216	2,722,551	17,487,708	4,546,202	2,822,952	3,499,097	190,114	97,964	-	-	-
Remainder applied to amortization of capital investment	226,824,704	112,143,555	25,904,231	58,513,519	5,939,161	1,060,769	16,999,126	2,701,807	1,779,816	1,552,355	201,886	28,479	-	-	-
SCHEDULED REPAYMENT OF CAPITAL INVESTMENT AT JUNE 30, 1957, ESTABLISHED BY LAW OR ADMINISTRATIVE POLICY PURSUANT TO LAW	148,017,884	58,618,000	13,748,000	58,513,519	4,398,000	1,030,000	7,222,000	1,895,000	1,166,000	1,197,000	201,886	28,479	-	-	-
Excess of funds returned over scheduled repayment	$ 78,806,820	$ 53,525,555	$ 12,156,231	$ -	$ 1,541,161	$ 30,769	$ 9,777,126	$ 806,807	$ 613,816	$ 355,355	$ -	$ -	$ -	$ -	$ -

*Deduction

The accompanying notes (schedule 6) are an integral part of this statement.

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

STATEMENT COMBINING EXPENSES OF COMMERCIAL POWER OPERATIONS

FOR THE FISCAL YEAR ENDED JUNE 30, 1957

	Combined to schedule 1	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Hungry Horse Project	Albeni Falls Project	McNary Dam Project	Detroit-Big Cliff Project	Lookout Point-Dexter Project	Chief Joseph Project	Yakima Project, Kennewick Division	The Dalles Dam Project
OPERATING EXPENSES (notes 2 and 3):												
Purchased power	$ 492,585	$ 492,585	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operation:												
Specific power facilities	9,515,934	7,022,940	363,240	936,042	174,906	67,465	371,084	122,107	100,275	283,110	42,905	31,860
Joint facilities	875,938	-	86,961	177,547	32,696	45,858	325,041	66,050	55,874	49,397	7,479	29,035
Maintenance:												
Specific power facilities	4,049,679	2,408,746	264,047	675,890	104,361	50,584	186,819	121,756	55,705	162,799	1,141	17,831
Joint facilities	894,136	-	155,706	216,778	35,553	73,333	268,397	8,489	25,049	106,582	1,694	2,555
Depreciation:												
Specific power facilities	16,846,185	10,278,645	606,478	1,566,697	514,655	393,723	1,537,305	416,508	437,051	1,034,083	50,978	10,062
Joint facilities	3,408,969	-	143,371	467,173	450,497	261,695	1,519,182	203,582	170,858	178,178	11,596	2,837
Net loss on sales and abandonment of property	429,052	429,052	-	-	-	-	-	-	-	-	-	-
Total operating expenses	36,512,478	20,631,968	1,619,803	4,040,127	1,312,668	892,658	4,207,828	938,492	844,812	1,814,149	115,793	94,180
INTEREST AND OTHER DEDUCTIONS (note 2):												
Interest on Federal investment	30,501,670	7,510,553	888,951	4,113,256	2,065,419	754,942	5,777,179	982,451	938,730	3,380,472	85,767	4,003,950
Less amount charged to construction	6,485,968*	511,156*	300*	-	-	3,690*	255,507*	3*	1*	1,728,044*	-	3,987,267*
Miscellaneous income deductions (net)	93,945*	102,350*	-	10,489	1,414*	1*	500*	-	-	169*	-	-
Net interest and other deductions	23,921,757	6,897,047	888,651	4,123,745	2,064,005	751,251	5,521,172	982,448	938,729	1,652,259	85,767	16,683
Total expenses and deductions	$60,434,235	$27,529,015	$2,508,454	$8,163,872	$3,376,673	$1,643,909	$9,729,000	$1,920,940	$1,783,541	$3,466,408	$201,560	$ 110,863

*Deduction

The accompanying notes (schedule 6) are an integral part of this statement.

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

STATEMENT COMBINING ASSETS AND LIABILITIES

JUNE 30, 1957

ASSETS	Combined to schedule 2	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Hungry Horse Project	Albeni Falls Project	McNary Dam Project	Detroit-Big Cliff Project	Lookout Point-Dexter Project	Chief Joseph Project	Yakima Project, Kennewick Division	The Dalles Dam Project	Ice Harbor Project	Cougar Dam Project	Hills Creek Dam Project
FIXED ASSETS, at original cost, including interest during construction (notes 2 and 3):															
Commercial power:															
Specific facilities (powerhouses, generating equipment, and transmission plant)	$1,011,538,475	$419,386,054	$ 38,668,968	$111,481,767	$ 27,091,516	$20,371,151	$134,447,991	$22,432,545	$23,509,264	$107,681,762	$ 2,472,500	$103,994,957	$ -	$ -	$ -
Joint facilities (dams, reservoirs, etc.) allocated to power	498,878,958	-	20,839,613	93,347,473	59,814,792	10,617,706	143,714,118	19,186,440	17,908,532	39,997,739	1,223,892	92,228,653	-	-	-
	1,510,417,433	419,386,054	59,508,581	204,829,240	86,906,308	30,988,857	278,162,109	41,618,985	41,417,796	147,679,501	3,696,392	196,223,610	-	-	-
Irrigation:															
Specific facilities	245,979,627	-	-	238,784,717	-	-	-	-	-	1,151,051	6,043,859	-	-	-	-
Joint facilities	80,970,910	-	-	68,806,304	-	-	-	3,774,879	4,963,853	-	3,425,874	-	-	-	-
	326,950,537	-	-	307,591,021	-	-	-	3,774,879	4,963,853	1,151,051	9,469,733	-	-	-	-
Flood control:															
Joint facilities	86,408,161	-	-	-	20,667,974	161,386	-	20,248,261	45,330,540	-	-	-	-	-	-
Navigation:															
Specific facilities	42,324,118	-	6,355,261	-	-	-	22,131,867	-	-	-	-	13,836,990	-	-	-
Joint facilities	33,856,796	-	20,839,613	1,000,000	-	125,402	3,684,978	130,019	835,363	-	-	7,241,421	-	-	-
	76,180,914	-	27,194,874	1,000,000	-	125,402	25,816,845	130,019	835,363	-	-	21,078,411	-	-	-
Other:															
Specific facilities	1,078,032	-	-	-	-	-	-	-	-	-	1,078,032	-	-	-	-
Multiple-purpose projects under construction	17,069,010	-	-	-	-	-	-	-	-	-	-	-	11,422,024	2,353,694	3,293,292
Total	2,018,104,087	419,386,054	86,703,455	513,420,261	107,574,282	31,275,645	303,978,954	65,772,144	92,547,552	148,830,552	14,244,157	217,302,021	11,422,024	2,353,694	3,293,292
Less accumulated depreciation:															
Specific facilities:															
Commercial power	95,700,362	64,472,828	7,674,416	13,107,009	2,218,007	782,322	3,580,303	1,427,173	966,197	1,399,595	62,450	10,062	-	-	-
Irrigation (pumping power facilities)	350,204	-	-	350,204	-	-	-	-	-	-	-	-	-	-	-
Navigation	1,781,567	-	587,743	-	-	-	1,142,584	-	-	-	-	51,240	-	-	-
Joint facilities:															
Commercial power	15,187,282	-	1,785,223	5,365,424	1,973,213	705,105	3,802,190	706,741	427,095	400,770	18,684	2,837	-	-	-
Irrigation	273,846	-	-	-	-	-	-	147,063	126,783	-	-	-	-	-	-
Flood control	2,637,962	-	-	-	680,567	10,717	-	788,841	1,157,837	-	-	-	-	-	-
Navigation	2,001,075	-	1,785,223	-	-	8,328	158,193	5,065	21,337	-	-	22,929	-	-	-
Total	117,932,298	64,472,828	11,832,605	18,822,637	4,871,787	1,506,472	8,683,270	3,074,883	2,699,249	1,800,365	81,134	87,068	-	-	-
Original cost, net	1,900,171,789	354,913,226	74,870,850	494,597,624	102,702,495	29,769,173	295,295,684	62,697,261	89,848,303	147,030,187	14,163,023	217,214,953	11,422,024	2,353,694	3,293,292
CURRENT ASSETS:															
Unexpended funds in U. S. Treasury appropriated by Congress for construction and for operation and maintenance	31,873,675	16,881,292	298,757	4,248,620	69,218	315,015	1,904,197	200,016	560,997	2,256,882	128,008	3,543,968	739,232	496,032	231,441
Special deposits	1,650,005	634,268	-	920,093	21,150	-	-	-	-	55,833	18,661	-	-	-	-
Accounts receivable:															
Customers	12,139,898	12,139,898	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	1,066,583	649,526	5,534	270,134	485	5,190	51,106	661	186	32,061	383	49,982	122	166	1,047
Materials and supplies	6,910,435	5,980,776	109,911	676,391	49,064	25,722	19,357	10,984	6,069	28,129	4,032	-	-	-	-
Total	53,640,596	36,285,760	414,202	6,115,238	139,917	345,927	1,974,660	211,661	567,252	2,372,905	151,084	3,593,950	739,354	496,198	232,488
OTHER ASSETS AND DEFERRED CHARGES	11,367,007	2,182,634	305,187	6,810,521	6,975	-	356,011	398,596	911	16,997	21,361	-	1,267,814	-	-
	$1,965,179,392	$393,381,620	$ 75,590,239	$507,523,383	$102,849,387	$30,115,100	$297,626,355	$63,307,518	$90,416,466	$149,420,089	$14,335,468	$220,808,903	$13,429,192	$2,849,892	$3,525,780

The accompanying notes (schedule 6) are an integral part of this statement.

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

STATEMENT COMBINING ASSETS AND LIABILITIES (continued)

JUNE 30, 1957

LIABILITIES	Combined to schedule 2	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Hungry Horse Project	Albeni Falls Project	McNary Dam Project	Detroit-Big Cliff Project	Lookout Point-Dexter Project	Chief Joseph Project	Yakima Project, Kennewick Division	The Dalles Dam Project	Ice Harbor Project	Cougar Dam Project	Hills Creek Dam Project
INVESTMENT OF U. S. GOVERNMENT AND ACCUMULATED NET REVENUES:															
Congressional appropriations	$2,112,296,487	$513,643,338	$101,066,897	$543,730,170	$103,690,071	$31,056,586	$287,481,600	$63,923,468	$87,499,052	$140,265,355	$13,466,777	$207,806,000	$12,782,173	$2,559,500	$3,325,500
Cost of materials and services furnished by other Federal agencies, net	23,345,794	16,212,767	134,614	5,621,852	448,995	25*	260,185	6,601*	16,915	153,542	354,930	52,562	-	96,000	58
Interest on Federal investment:															
Charged to operations	183,881,577	50,226,701	32,720,813	56,865,775	11,319,267	2,219,217	16,375,227	5,997,870	5,422,769	2,470,165	117,060	146,713	-	-	-
Charged to construction	79,754,077	6,649,979	3,599,628	9,687,396	5,911,953	1,033,580	21,309,158	4,051,117	6,376,058	10,422,388	124,808	10,217,499	200,782	73,493	96,238
Revenues transferred to continuing fund	1,669,203	1,669,203	-	-	-	-	-	-	-	-	-	-	-	-	-
Total investment of U. S. Government (note 5)	2,400,947,138	588,401,988	137,521,952	615,905,193	121,370,286	34,309,358	325,426,170	73,965,854	99,314,794	153,311,450	14,063,575	218,222,774	12,982,955	2,728,993	3,421,796
Less:															
Funds returned to U. S. Treasury:															
Repayment of Federal investment in the power program (including amounts for operating expenses and interest)	512,476,083	243,523,918	58,632,463	138,099,499	16,529,377	3,783,320	34,486,834	7,248,009	4,602,768	5,051,452	392,000	126,443	-	-	-
Repayment of Federal investment in nonpower programs	9,178,159	-	6,769	8,867,154	222,373	5	3,543	10,065	2,836	-	65,007	407	-	-	-
Total expense of flood control operations	10,172,987	-	-	-	2,982,326	32,146	-	2,969,473	4,189,042	-	-	-	-	-	-
Total expense of navigation operations	24,026,625	-	19,609,479	42,331	-	24,923	4,031,477	19,181	77,050	-	-	222,184	-	-	-
Other nonreimbursable expense	554,406	-	-	136,990	-	-	-	417,416	-	-	-	-	-	-	-
	556,408,260	243,523,918	78,248,711	147,145,974	19,734,076	3,840,394	38,521,854	10,664,144	8,871,696	5,051,452	457,007	349,034	-	-	-
Net investment of U. S. Government	1,844,538,878	344,878,070	59,273,241	468,759,219	101,636,210	30,468,964	286,904,316	63,301,710	90,443,098	148,259,998	13,606,568	217,873,740	12,982,955	2,728,993	3,421,796
Accumulated net revenues:															
Net revenues from commercial power operations since inception, including $5,965,732 for the year ended June 30, 1957 (schedule 1)	104,711,339	39,673,250	16,194,924	37,738,387	1,171,652	426,978*	9,565,628	528,636	383,208	249,461*	122,798	9,295	-	-	-
Less net loss from irrigation operations since inception	3,356,771	-	-	2,791,951	-	-	-	559,265	458,102	-	452,547*	-	-	-	-
	101,354,568	39,673,250	16,194,924	34,946,436	1,171,652	426,978*	9,565,628	30,629*	74,894*	249,461*	575,345	9,295	-	-	-
Total	1,945,893,446	384,551,320	75,468,165	503,705,655	102,807,862	30,041,986	296,469,944	63,271,081	90,368,204	148,010,537	14,181,913	217,883,035	12,982,955	2,728,993	3,421,796
CURRENT AND ACCRUED LIABILITIES:															
Accounts payable	15,954,223	5,927,489	122,074	3,432,865	41,525	73,114	1,156,411	36,437	46,963	1,409,420	110,937	2,925,868	446,237	120,899	103,984
Employees' accrued leave	2,015,068	2,015,068	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	17,969,291	7,942,557	122,074	3,432,865	41,525	73,114	1,156,411	36,437	46,963	1,409,420	110,937	2,925,868	446,237	120,899	103,984
DEFERRED CREDITS	887,743	887,743	-	-	-	-	-	-	-	-	-	-	-	-	-
MATURED INSTALLMENTS OF FIXED OBLIGATIONS FOR USE OF IRRIGATION FACILITIES	68,230	-	-	68,230	-	-	-	-	-	-	-	-	-	-	-
CONTRIBUTIONS IN AID OF CONSTRUCTION	360,682	-	-	316,633	-	-	-	-	1,299	132	42,618	-	-	-	-
	$1,965,179,392	$393,381,620	$75,590,239	$507,523,383	$102,849,387	$30,115,100	$297,626,355	$63,307,518	$90,416,466	$149,420,089	$14,335,468	$220,808,903	$13,429,192	$2,849,892	$3,525,780

*Deduction

The accompanying notes (schedule 6) are an integral part of this statement.

COLUMBIA RIVER POWER SYSTEM AND RELATED ACTIVITIES

NOTES TO THE FINANCIAL STATEMENTS

ON SCHEDULES 1 TO 5, INCLUSIVE

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

The Columbia River Power System and Related Activities consist 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 following multiple-purpose projects, together with the transmission system of the Administration, comprise the Columbia River Power System and Related Activities:

Agency and project	Operation of first unit (fiscal year)	Kilowatts: Installed capacity June 30, 1957	Kilowatts: Ultimate installed capacity
Corps of Engineers:			
Bonneville Dam	1938	518,400	518,400
McNary Dam	1954	980,000	980,000
Detroit-Big Cliff	1954	118,000	118,000
Albeni Falls	1955	42,600	42,600
Lookout Point-Dexter	1955	135,000	135,000
Chief Joseph	1956	640,000	1,024,000
The Dalles	1957	27,000	1,119,000
Ice Harbor	-	-	270,000
Cougar Dam	-	-	25,000
Hills Creek Dam	-	-	30,000
Total Corps		2,461,000	4,262,000
Bureau of Reclamation:			
Columbia Basin	1942	1,944,000	1,944,000
Hungry Horse	1953	285,000	285,000
Yakima (Kennewick Division)	1956	12,000	12,000
Total Bureau		2,241,000	2,241,000
Combined total		4,702,000	6,503,000

Ice Harbor, Cougar Dam, and Hills Creek Dam Projects of the Corps of Engineers are under construction. In addition, certain specific irrigation facilities at the Chief Joseph Project, which are included in the project's statement of assets and liabilities, are being constructed by the Bureau of Reclamation.

The Yakima Project has been included in these statements only to the extent of the Kennewick Division. The assets and liabilities of five other divisions have been omitted. Certain costs of the Storage Division, one of those omitted, are allocable directly to the Kennewick Division by tentative Bureau of Reclamation determination. The Roza Division, also one of those omitted, had under construction a small hydroelectric plant of 11,250 kw which is scheduled to commence operation as part of the Columbia River Power System during fiscal year 1958.

2. Accounting policies

Accounting policies for the Bonneville Power Administration and the individual projects comprising the system are not wholly consistent with regard to depreciation, the recording of interest as a charge to expense and to construction work in progress, the inclusion of certain costs incurred by other Federal agencies, and the capitalization of investigations cost.

Depreciation. The straight-line method has been used to compute property depreciation for the Bonneville Power Administration, for all projects of the Corps of Engineers (except Bonneville Dam Project), and for the Hungry Horse and Yakima (Kennewick Division) Projects of the Bureau of Reclamation. The compound-interest method, employing an interest factor of 2.5 percent, has been used in computing depreciation on most of the property of the Bonneville Dam Project and the Columbia Basin Project of the Bureau of Reclamation.

Depreciation has been uniformly provided on depreciable property of commercial power and all other purposes at projects of the Corps of Engineers. Depreciation has been provided on property allocated to power at the Columbia Basin Project of the Bureau of Reclamation, including specific power facilities allocated to irrigation pumping; but no depreciation is provided on other property allocated to irrigation or property allocated to navigation. Depreciable property allocated to both commercial power and flood control purposes has been depreciated at the Hungry Horse Project. Depreciation is provided on property allocated to commercial power at the Yakima Project (Kennewick Division) but is not provided on property of other purposes. All property of the Bonneville Power Administration is allocated to commercial power and is depreciated where appropriate.

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. All costs associated with the acquisition of land and land rights at the Columbia Basin Project have been subjected to depreciation. No costs associated with the acquisition of land and lands rights at the Hungry Horse and Yakima (Kennewick Division) Projects have been depreciated. All costs of acquiring fee title to lands of the Corps projects are excluded from the base for depreciation, although any costs of acquiring intangible rights in land are depreciated. Costs of land and land rights for the Bonneville Power Administration have been included in the base for computing depreciation except for amounts paid to former owners in acquiring fee title.

Interest. The Administration and the Corps of Engineers have included interest at the rate of 2.5 percent on the net Federal investment allocated to commercial power and all other purposes. For the Columbia Basin and Yakima

(Kennewick Division) Projects of the Bureau of Reclamation, interest has been included at a rate of 2.5 percent only on the net Federal investment allocated to commercial power. For the Hungry Horse Project of the Bureau of Reclamation, interest has been included at a rate of 2.5 percent on the net Federal investment in both commercial power and flood control. No interest has been recorded on the investment in specific irrigation facilities of the Foster Creek Division, Chief Joseph Project, currently under construction by the Bureau of Reclamation.

Interest on the Federal investment recorded prior to operations has been charged to property costs (interest during construction).

Costs incurred by other agencies. Bonneville Power Administration has recorded in its accounts actual or estimated costs 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 employees paid by the Bureau of Employee's Compensation, Department of Labor, and the amounts applicable to the Administration's operations of the cost of the Civil Service Retirement System. For the fiscal year 1957, the Administration recorded in its accounts $1,478,598 of such costs, of which $596,126 was included in operating expenses. 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.

Investigations costs. Expenditures for preliminary surveys and investigations are included as a part of construction costs where appropriate by the Administration and the Bureau of Reclamation, but not by the Corps of Engineers.

3. Allocation of joint costs and expenses

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

Bonneville Dam Project. The costs of property, plant, and equipment determined to be jointly useful for power generation and for navigation, consisting principally of the dam, reservoir, and fishways, have been allocated 50 percent to power and 50 percent to navigation by the Federal Power Commission under the provisions of the Bonneville Project Act (16 U.S.C. 832f). Operation and maintenance expenses applicable to joint facilities have been allocated to power and to navigation in the same proportion as the related property costs.

Columbia Basin Project. The costs of property, plant, and equipment 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 downstream river regulation) and 44 percent to irrigation after assigning $1,000,000 to navigation. Specific power facilities (principally powerhouses and generating 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 power delivered for each purpose. The cost of the 3 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). The expenses of operating and maintaining the joint facilities have been allocated in the same proportions as the related property costs for purposes of presenting financial statements on the commercial power operation.

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 of the costs of property, plant, and equipment determined to be jointly useful for power generation and flood control purposes has been made by the Bureau of Reclamation. For purposes of this report, property costs have been allocated 74.32 percent to commercial power (including downstream river regulation) and 25.68 percent to flood control in accordance with the tentative allocation. The expenses of operating and maintaining facilities serving both power and flood control purposes have been allocated in accordance with studies by the Bureau of Reclamation. The application of these studies has resulted in an allocation of 75.68 percent of joint operation and maintenance expense to commercial power and 24.32 percent to flood control.

Albeni Falls, Detroit-Big Cliff, Lookout Point-Dexter, Chief Joseph, and The Dalles Dam Projects. Under the provisions of section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), the Secretary of the Interior became the marketing agent for energy generated by projects constructed and operated by the Corps of Engineers that is excess to project needs. 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 facilities construction costs have been made by the Corps of Engineers as follows:

	Percent				
	Albeni Falls	Detroit-Big Cliff	Lookout Point-Dexter	Chief Joseph	The Dalles
Commercial power	97.37	44.27	25.94	100.00	92.72
Flood control	1.48	46.72	65.66	-	-
Navigation	1.15	.30	1.21	-	7.28
Irrigation	-	7.77	7.19	-	-
Municipal water supply	-	.94	-	-	-
Total	100.00	100.00	100.00	100.00	100.00

For purposes of this report, the joint property costs have been allocated in accordance with the above percentages. At the present time the Corps considers the entire construction costs of the joint facilities at the Chief Joseph Project applicable to commercial power, but, due to related irrigation development by the Bureau of Reclamation, some amount may be assigned to irrigation at a later date.

The expenses of operating and maintaining facilities serving more than one purpose have also been allocated on the basis of tentative allocations arrived at by the Corps of Engineers. The percentages are as follows:

	Percent				
	Albeni Falls	Detroit-Big Cliff	Lookout Point-Dexter	Chief Joseph	The Dalles
Commercial power	98.00	56.91	38.25	100.00	95.00
Flood control	1.13	35.10	54.89	-	-
Navigation	.87	.25	.98	-	5.00
Irrigation	-	6.89	5.88	-	-
Municipal water supply	-	.85	-	-	-
Total	100.00	100.00	100.00	100.00	100.00

As in the case of joint property costs, the Corps considers the entire operation and maintenance expense of joint facilities at the Chief Joseph Project applicable to commercial power.

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, the Federal Power Commission is authorized to allocate the construction costs of joint facilities 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 costs of joint facilities have been allocated in accordance with these percentages. Operation and maintenance expenses applicable to joint facilities have been allocated to commercial power and to navigation operations on the same basis.

Yakima Project (Kennewick Division). An allocation of the costs of the Yakima Project has not been made by the Secretary of the Interior. A tentative allocation of the total costs to date of the Kennewick Division has been made by the Bureau of Reclamation. The costs of property, plant, and equipment determined to be jointly useful for power generation and for irrigation have been allocated between these purposes in accordance with the following percentages:

	Percent		
	Power	Irrigation	Total
Prosser diversion dam:			
Original	-	100.0	100.0
Additions	100.0	-	100.0
Headworks and common facilities	14.6	85.4	100.0
Chandler Canal--1st section:			
Original	-	100.0	100.0
Additions	100.0	-	100.0
Chandler Canal--2nd section:			
Original	-	100.0	100.0
Additions	22.5	77.5	100.0
General plant	71.2	28.8	100.0

In fiscal year 1957, there were no irrigation operations and all expense of operating and maintaining joint facilities was charged to power.

4. Repayment and scheduled repayment of commercial power investment

The Bonneville Power Administration has the responsibility of fixing commercial power rates at a level which will, over a number of years consistent with the requirements of law, insure repayment of the investment in commercial power and the investment in related irrigation activities assigned for repayment from commercial power revenues. Repayment requirements for the Columbia River Power System are found in the varying provisions of the several acts authorizing construction and in the administrative interpretations thereof. Accordingly, System power rates reflect a composite of the requirements of these acts applied to the individual projects and the Administration. An allocation of System power receipts among the generating projects and the Administration, designed to satisfy their respective requirements, is made annually pursuant to agreements reached by the Administration with the Corps of Engineers and the Bureau of Reclamation.

The Statement of Investment and Repayment of Investment in Commercial Power Program (schedule 3) is intended to compare, at this interim date, the repayment of Federal investment in commercial power achieved by current power rate levels with the scheduled repayment established by law or administrative policy pursuant to law. Power receipts returned to the Treasury have been first applied to the repayment of operation and maintenance and interest expenses, with the remainder being applied to amortization of the capital investment in commercial power. On projects in which part of the irrigation investment is assigned for repayment from commercial power revenues, the assistance is assumed to begin after repayment of the commercial power investment. Commercial power rate and repayment requirements are affected by irrigation assistance to the extent that the assistance makes necessary the recovery of commercial power investment in a shorter period of years.

The rate and repayment requirements established by law or administrative policy pursuant to law for the individual projects and the Administration are as follows:

Bonneville Dam Project, Bonneville Power Administration, and McNary Dam Project. The Bonneville Project Act (16 U. S. C. 832f) provides that rate schedules shall be drawn having regard to the recovery of the cost of producing and transmitting electric energy excess to project needs, including the amortization of the capital investment over a reasonable period of years. This provision of the Bonneville Project Act was also applied to McNary Dam Project by the authorizing legislation.

In determining the rate and repayment requirements for the Bonneville Dam Project, the Bonneville Power Administration, and the McNary Dam Project, the "cost of producing and transmitting electric energy" is the same cost, exclusive of depreciation, as that used in preparing these financial statements. The amortization of the capital investment over a reasonable number of years has been administratively determined to be the recovery, during the periods of their respective service lives, of the cost of the power facilities having lives of less than 50 years and the amortization of the remainder of the capital investment in power facilities over a period of 50 years subsequent to the "in service" date of such facilities.

During the year ended June 30, 1957, the Administration deposited sums of $3,000,000, $23,435,070, and $10,750,000 to miscellaneous receipts in the United States Treasury on behalf of the Bonneville Dam Project, the Bonneville Power Administration, and the McNary Dam Project, respectively. Additional sums returned to the Treasury were recorded by the Bonneville Power Administration and applied to repayment of investment. They were (1) an amount of $212,496 credited to the Continuing Fund, (2) an amount of $95,197 remaining in a special fund receipt account, and (3) an amount of $13,100 representing payment made directly to the Federal Power Commission by the Puget Sound Power and Light Company and Public Utility District No. 1 of Chelan County, Washington, as joint licensees for the Rock Island plant, for downstream river regulation benefits obtained from the Columbia Basin and Hungry Horse Projects.

Albeni Falls, Detroit-Big Cliff, Lookout Point-Dexter, Chief Joseph, and The Dalles Dam Projects. Rate and repayment requirements for these projects are governed by section 5 of the Flood Control Act of 1944. The provisions of this section are similar to the corresponding provisions of the Bonneville Project Act and state that rate schedules shall be drawn having regard to the recovery of the cost of producing and transmitting electric energy excess to project needs, including the amortization of the capital investment over a reasonable period of years. The act of July 27, 1954 (68 Stat. 568), authorized the Secretary of the Interior to construct irrigation facilities comprising the Foster Creek Division of the Chief Joseph Project under reclamation law and provided that surplus power revenues should be used to assist in repayment of the irrigation investment.

Rate and repayment requirements for these projects have been determined by Bonneville Power Administration in the same manner as for Bonneville Dam Project, the Administration, and McNary Dam Project except that, in this first year of operation, The Dalles Dam has been considered just on schedule. It has been assumed in the preparation of schedule 3 that the assistance to irrigation investment in the Foster Creek Division of the Chief Joseph Project will not be required until after repayment of the project commercial power investment.

During the year ended June 30, 1957, the Administration deposited sums of $1,400,000, $1,950,000, $1,900,000, $3,350,000, and $120,000 to miscellaneous receipts in the United States Treasury on behalf of the Albeni Falls, Detroit-Big Cliff, Lookout Point-Dexter, Chief Joseph, and The Dalles Dam Projects, respectively. A sum of $8,000 was also recorded in the Albeni Falls Project accounts at June 30, 1957, representing payment made directly to the Federal Power Commission for downstream river regulation benefits obtained from project operations. This payment was made by the Puget Sound Power and Light Company and Public Utility District No. 1 of Chelan County, Washington, as joint licensees for the Rock Island plant.

Hungry Horse Project. Construction of Hungry Horse Dam and Reservoir was authorized by the act of June 5, 1944 (43 U.S.C. 593a). The act made no provision for allocations of cost, rate and repayment criteria, or the application of revenues. There has been a question as to whether the Hungry Horse Project is subject to the requirements of reclamation laws, including the rate and repayment requirements of section 9 of the Reclamation Project Act of 1939. However, identical bills have been introduced in the Senate and House of Representatives (H.R. 3401 and S. 847, 85th Cong., 1st sess.) which would make the Hungry Horse Project subject to Federal reclamation law.

The interest rate and other financial data used by the Bonneville Power Administration in determining the investment to be repaid are consistent with that used in the preparation of the financial statements. Rate and repayment requirements for this project have been determined in the same manner as for Bonneville Dam Project and other projects of the Corps of Engineers.

During the year ended June 30, 1957, the Bonneville Power Administration deposited the sum of $3,553,000 to a suspense account, Hungry Horse Project, in the United States Treasury.

Columbia Basin Project. Reclamation law, as supplemented, and Executive Order 8526 require that payments be made into the reclamation fund of the United States Treasury, for the account of Columbia Basin Project, of such revenues received by Bonneville Power Administration from the sale of electric energy as may be properly allocable to the project. By agreement between Bonneville Power Administration and the Bureau of Reclamation, entered into to effect these requirements, the Administration is making payments which will, together with revenues from other sources credited to power, over a period of 81 years be equal to:

1. Operation, maintenance, and replacement of facilities allocated to commercial power.
2. Interest at 3 percent on unamortized investment in facilities allocated to commercial power.
3. Investment in commercial power facilities.
4. Assistance to irrigators in repaying the investment in irrigation, estimated to require about $443,000,000.

The investment in commercial power to be repaid used by the Bureau of Reclamation in setting Columbia Basin Project rate and repayment requirements differs in several important respects from the investment as presented by the Bureau of Reclamation for use in the financial statements of the Columbia River Power System and Related Activities. For determining rate and repayment requirements, interest has not been capitalized during construction, interest has not been computed on investment in facilities held for future downstream river regulation through fiscal year 1957, and interest during operations has been computed at a rate of 3 percent on the unamortized capital investment. Because of these interest differences, the investment as shown in the financial statements at June 30, 1957, was about $27,000,000 greater than the investment determined by the Bureau of Reclamation to be repayable.

The rate and repayment study by the Bureau of Reclamation indicates that commercial power investment will be repaid in the 33d year after the first unit was placed in service (1975) and that net power revenues after that date will render the assistance necessary to repay the irrigation investment over the remaining 48 years of the project payout period. Inasmuch as the annual payments by Bonneville Power Administration are incorporated in the rate and repayment study itself, repayment at Columbia Basin Project is considered to be just on schedule.

During fiscal year 1957, Bonneville Power Administration deposited $12,535,000 to the reclamation fund in the United States Treasury for the account of Columbia Basin Project.

Yakima Project (Kennewick Division). Rate and repayment requirements for the Kennewick Division of the Yakima Project are governed by the Reclamation Project Act of 1939 and the authorizing act of June 12, 1948 (62 Stat. 382). The latter act provides an over-all payout period of 66 years for the reimbursable investment in power and irrigation, with power revenue assistance to irrigators in repayment of the irrigation investment. It provides also for not less than 2.5 percent interest on the investment in commercial power and authorizes the use of one fifth of such interest to assist in repayment of the irrigation investment.

Repayment of investment in commercial power is expected to require 41 years, and net revenues after that date are to render the assistance necessary to repay the irrigation investment (about $4,300,000) over the remaining 25 years of the project payout period. Inasmuch as the annual payments by Bonneville Power Administration are incorporated in the rate and repayment study itself, repayment is considered to be just on schedule.

During fiscal year 1957, Bonneville Power Administration deposited $220,000 to the reclamation fund in the United States Treasury for the account of Yakima Project (Kennewick Division).

5. Investment of the United States Government

All funds expended on behalf of the Columbia River Power System and Related Activities for the acquisition of electric fixed assets, and for the operation and maintenance of electric facilities, are obtained through congressional appropriation, except that Bonneville Power Administration may use a continuing fund to defray emergency expenses and to assure continuous operation. The continuing 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. To June 30, 1957, receipts transferred to the continuing fund totaled $1,669,203, of which $1,169,203 had been expended and $500,000 remained unexpended. With the exception of the continuing fund, receipts from the sale of electric energy are not available for expenditure and are deposited in the United States Treasury.

Interest, included as a part of the Federal investment, does not represent congressional appropriation of funds to the power system. It is a recorded esti-

mate of the Treasury borrowing costs applicable to the System, arrived at by applying a 2.5 percent interest factor to the net Federal investment in commercial power and certain other purposes. The net cost of materials and services transferred from other Federal agencies, included in the Federal investment, does not represent appropriations to the System but only the recording of actual or estimated costs of such materials and services. (See note 2.)

The total investment shown on the statement of assets and liabilities presents the appropriations, interest, and other resources associated with the acquisition of assets and the operation of facilities on an accumulated basis. The deductions from total investment for funds returned to the United States Treasury and nonreimbursable expenses are also shown on an accumulated basis. Funds returned to the Treasury from commercial power activities apply to repayment of investment used for current operating purposes as well as accumulated investment in fixed assets.

6. Other operating revenues

Payments for downstream river regulation. The Federal Power Act (16 U.S.C. 803f) provides that a licensed project receiving benefits from the upstream improvements of another licensed project or of the Federal Government shall make payments on account of such benefits. It is the responsibility of the Federal Power Commission to determine the amount that non-Federal power installations on the Columbia River and its tributaries will have to pay for downstream benefits received or to be received from storage by Federal projects of the Columbia River Power System. The Commission made a headwater benefit determination on December 27, 1956 (Docket No. E-6384), and on January 25, 1957, received the sum of $21,100 as payment for headwater benefit charges applicable to calendar years 1952 and 1953. This payment was made by the Puget Sound Power and Light Company and Public Utility District No. 1 of Chelan County, Washington, as joint licensees for the Rock Island plant. Of the total amount, $8,000 was attributable to benefits supplied by the Albeni Falls Project and is accrued in the accounts of that project. The balance of $13,100 was attributable to benefits supplied by the Hungry Horse and Columbia Basin Projects and has been accrued in the accounts of the Bonneville Power Administration as marketing agent.

Project energy--use at site. All energy excess to project needs is delivered to, and marketed by, the Bonneville Power Administration. The minor amount of energy remaining is consumed at site in connection with project operations. Revenues stemming from uses of energy at project site for employees' quarters, construction contractors, interdepartmental and similar purposes are recorded in project accounts. The amounts of such revenues recorded by the projects were:

Project	
Bonneville Dam	$ 2,148
Columbia Basin	49,556
Hungry Horse	10,115
McNary Dam	57,292
Lookout Point-Dexter	12
Yakima (Kennewick Division)	166
The Dalles Dam	158
Total	$119,447

Rental of electric property. The Bonneville Power Administration charges rent for transmission facilities used to transfer power for other utilities and industrial customers. Revenues of $1,285,630 were accrued in the Administration accounts in connection with such activities. An additional $1,815 in revenues from rental of electric property was accrued in the accounts of the Yakima Project (Kennewick Division).

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