

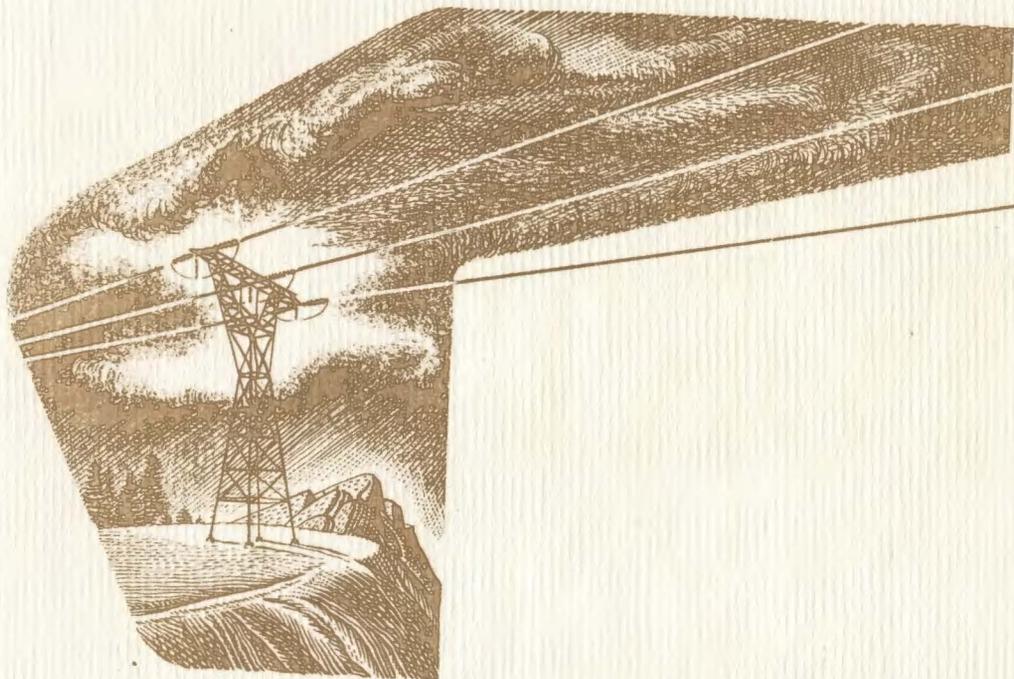
1949

REPORT

ON THE

**Columbia
River Power
System**

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



BONNEVILLE POWER ADMINISTRATION
PORTLAND 8, OREGON

U. S. D E P A R T M E N T O F T H E I N T E R I O R

1948 **REPORT**
ON THE **Columbia River**
Power System

Consisting of **THE BONNEVILLE POWER ADMINISTRATION**
and Power Components of **THE BONNEVILLE DAM PROJECT**
and **THE COLUMBIA BASIN PROJECT (GRAND COULEE DAM)**

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December 31, 1949

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

My dear Mr. Secretary:

Transmitted herewith in accordance with the requirements of Section 9 (c) of the Bonneville Project Act is the twelfth annual report of the Bonneville Power Administration.

This report covers the operations of the Columbia river power system from July 1, 1948 to June 30, 1949. It relates to the management and repayment of the federal investment in the transmission facilities of the Bonneville Power Administration, and the power components of the Bonneville Dam Project of the United States Engineers, Department of the Army, and the Columbia Basin Project of the Bureau of Reclamation, Department of the Interior.

Revenues and receipts returned to the federal Treasury continued to be more than adequate for repayment of the federal investment during fiscal year 1949.

The financial condition of the power system as of June 30, 1949 is excellent. This is reflected in the attached report which is the fifth consecutive annual audit by an outside firm of independent auditors.

In addition to its financial performance, the Administration made substantial progress in other fields, both during the fiscal year and in the six-month period between the year's end and December 30, 1949.

A considerable number of new transmission facilities neared completion at the close of the fiscal year and were energized shortly thereafter. These facilities, which had been under construction during the preceding 24 months, greatly improved service to the Northwest Power Pool and to the heavily populated areas west of the Cascade mountains.



Letter of Transmittal

LETTER OF TRANSMITTAL

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Technical progress, pointed at greater unit savings in construction costs, was marked during the year. Continuing studies of methods for reducing the cost of structures and at the same time increasing their carrying capacity enabled the Administration to show substantial dollar savings in the cost per kilowatt of transmitted power. In spite of rising costs of all kinds, including increases in the hourly rates of labor from 60 to 80 per cent, the cost per kilowatt of transmitted power has been held substantially the same throughout the history of the Administration.

Working relationships between the Administration, its contractors and labor organizations improved in efficiency and understanding. Regular meetings with the contractors' organizations resulted in improvement of construction schedules.

Labor-management committees, established pursuant to the Administration's collective bargaining agreement with the Columbia Power Trades Council, also proved productive and resulted in the development of improved practice in the operation and construction of the system.

As the year advanced, analysis of Congressional authorizations for new multiple purpose projects and of rivers and harbors legislation proposed for enactment made it apparent that the Administration should look to reorganization of its management structure if it were to function efficiently through the next decade. Accordingly, plans were being drafted as the year closed for as completely a decentralized operation as possible.

In spite of these continued gains in the Administration's organizational, financial, and management operations, advancement of the regional power development program as a whole during 1949 was not satisfactory. Lack of power supply has had the effect of virtually nullifying, for a number of years beginning with fiscal year 1949, the objectives of the Bonneville Act.

As has been pointed out in each annual report and Advance Program of the Bonneville Power Administration for the past several years, no new major federal power projects were begun on the Columbia River system between the years 1933 and 1947.

The effects of this failure to make adequate investment in multi-purpose facilities on the Columbia River, commensurate with the region's population growth and industrial needs, caught up with the region in fiscal year 1949.

Although this fiscal year saw the first serious effects of this delay in power development, foreseen and reported in each Advance Program since 1944, it also brought the first substantial hope for ultimate improvement.

With construction work on McNary dam, Hungry Horse dam, and several smaller projects under way, some relief for the region beginning in 1952 may be anticipated when the first storage at Hungry Horse will become available to increase generator production in downstream plants.

Until 1952, however, no significant additions can be made to the firm power capabilities of the federal plants. The region must, therefore, depend upon better than average stream flows to meet the increasing power requirements of its homes, farms and industries. If minimum hydro electric conditions are encountered in the winters of 1950-51 or 1951-52, severe curtailment of power loads will undoubtedly be necessary.

From an administrative standpoint these factors mean that the Bonneville Administration will be unable to make any firm power commitments to public and private utilities for the years prior to availability of energy from Hungry Horse Dam.

LETTER OF TRANSMITTAL

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LETTER OF TRANSMITTAL

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Overloading of transmission facilities which has brought the entire Northwest Power Pool to the brink of instability and has caused frequent region-wide outages will continue until the accelerated construction program of the Administration makes possible relief through the construction of additional circuits.

The intolerable situation which existed in the fall and early winter of 1948-49 was relieved after the close of the fiscal year with the energization of the 230 kilovolt Coulee-Snohomish Line #1 and the 230 kilovolt Bonneville-Troutdale Line in the late fall of 1949.

Such system additions, while furnishing some relief, will still leave the region far short of the reserve transmission capacity recognized in the electric industry as necessary for the maintenance of system stability.

As the program of construction and authorization of additional dams on the Columbia river system developed, policy problems of a long-term nature become defined during fiscal year 1949 in three general categories: (1) problems of integration of physical facilities and control of water by coordinated development and operation of the multiple-purpose dams and reservoirs and the regional transmission grid system; (2) problems of wholesale rates and system payout; (3) problems of management structure. All-out efforts are being directed toward the solution of these problems and it is anticipated that substantial gains may be reported by the end of the succeeding fiscal year.

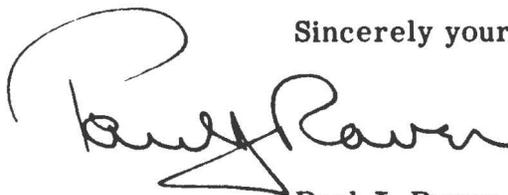
From a long range point of view, and necessary to the continued efficient development of the Columbia River power system, the following recommendations are offered for consideration and action by the Congress and the executive branch:

1. Approval of continued system extensions on the major federal

transmission grid in the Columbia basin to meet generation schedules for projects now under construction and to be constructed on the Columbia river system, and to provide reserve capacity for relieving the growing system instability due to overload.

2. Clarification and revision by the Congress of federal fiscal policies to establish a more flexible and efficient operation of federal power properties, as distinguished from non-revenue producing public works, without weakening controls by the federal legislature. Further clarification is also imperative in allocation of costs to power and the amount and methods of reimbursing expenditures for irrigation and other purposes as the basis for rate determination and advance operations planning. There should be recognition of the federal responsibility for developing power supplies from multiple purpose dams on the Columbia and its tributaries adequate to meet the needs of an expanding economy in the region.
3. Affirmation of a policy that will continue to accelerate federal generation in the Pacific Northwest until power supplies meet existing needs.
4. Recognition of need for a more adequate program of operations and maintenance that takes into consideration the growth of the federal system, and which will bring maintenance up to at least minimum standards required for efficient and economical utility operation.

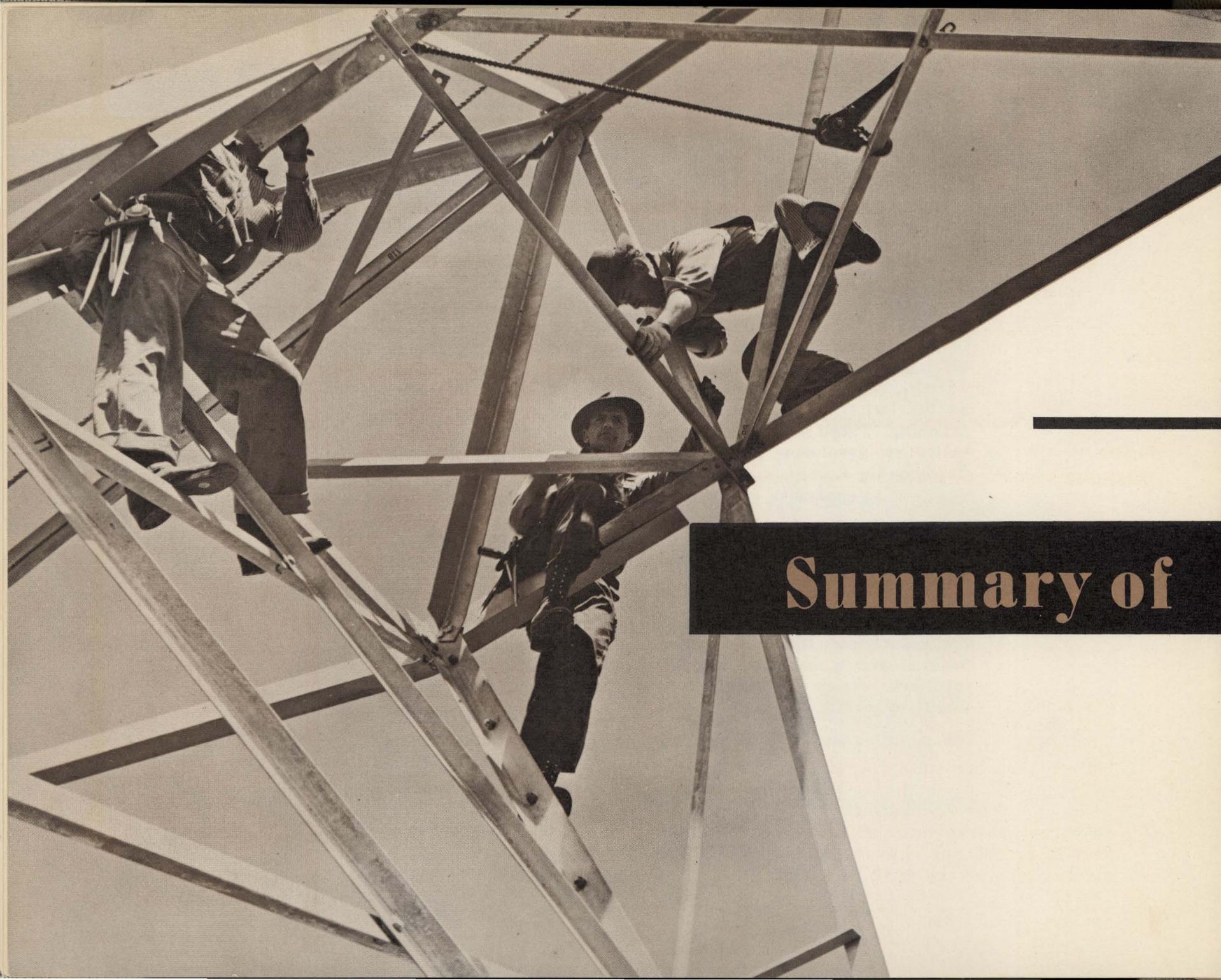
Sincerely yours,

A handwritten signature in cursive script that reads "Paul J. Raver". The signature is written in dark ink and is positioned above the typed name and title.

Paul J. Raver
Administrator

LETTER OF TRANSMITTAL

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Summary of Operations

COLUMBIA RIVER POWER SYSTEM CONDENSED SUMMARY OF REVENUES & EXPENSES

	Fiscal Year 1948	Fiscal Year 1949	Total to June 30, 1949
Operating revenues	\$24,513,710	\$27,821,029	\$157,687,195
Expenses of operation, maintenance, etc.	5,930,753	6,757,317	45,417,541
Provision for depreciation	3,882,539	4,394,224	25,344,118
Interest and other deductions, net	5,564,237	6,003,719	44,190,442
Total deductions	15,377,529	17,155,260	114,952,101
Surplus net revenues from power operations	\$ 9,136,181	\$10,665,769	\$ 42,735,094

Power sales of the Bonneville Power Administration and net revenues continued a steady growth during the fiscal year and power generation on the federal system reached new highs. Extension of transmission facilities to carry new generation to power deficient load centers progressed at an accelerated pace but remained inadequate in terms of reserve capacities.

The accompanying table shows a condensed combined statement of revenues and expenses of the system. The data are commercial cost accounts kept in accordance with the Federal Power Commission system of accounts for electric utilities and have been condensed from the auditors' report.

Energy Production

TABLE I

GENERATION AT BONNEVILLE AND GRAND COULEE PLANTS FOR BONNEVILLE POWER ADMINISTRATION, FISCAL YEARS 1939-1949

Fiscal Years Ending June 30	Bonneville Generation KWH (000)	Grand Coulee Generation KWH (000)	Total Generation for BPA KWH (000)
1939	34,874		34,874
1940	208,426		208,426
1941	894,177	7,455	901,632
1942	1,807,309	741,844	2,549,153
1943	2,801,480	2,816,956	5,618,436
1944	3,488,874	5,750,950	9,239,824
1945	3,391,128	5,660,446	9,051,574
1946	2,674,834	3,561,329	6,236,163
1947	3,695,255	5,058,482	8,753,737
1948	3,991,860	6,894,047	10,885,907
1949	3,868,558	9,057,230	12,925,788
Total	26,856,775	39,548,739	66,405,514

Electric energy produced at Bonneville and Grand Coulee power plants during fiscal year 1949 totaled nearly 13 billion kilowatt-hours. At present, the federal Columbia River power system is the second largest producer of power in the nation, exceeded only by the Tennessee Valley Authority. ^{1/}

The total generation of 12,925,788,000 kilowatt-hours exceeded the peak war year of 1944 by 40 per cent and represented nearly two-thirds of total electrical energy produced in the states of Oregon and Washington, and over 50 per cent of the total produced in the Pacific Northwest region during the 12-month period.

Table I and Chart I, Generation at Bonneville and Grand Coulee plants, show energy production from the beginning of operations to the end of fiscal year 1949, and Table II, Electric Energy Account, presents a summary of total energy receipts, sales, deliveries, and losses.

The tenth generating unit at Grand Coulee, which is the first unit in the right bank powerhouse, was added by the Bureau of Reclamation during May 1949. The addition of this unit brought the total installed generating capacity at the two Columbia River plants to 1,598,400 kilowatts nameplate rating, with safe continuous capacity under favorable operating

^{1/} The largest producer of power among private utility systems in the United States is Consolidated Edison Company of New York, with generation of 11,177,201,000 kilowatt-hours for the calendar year 1948.

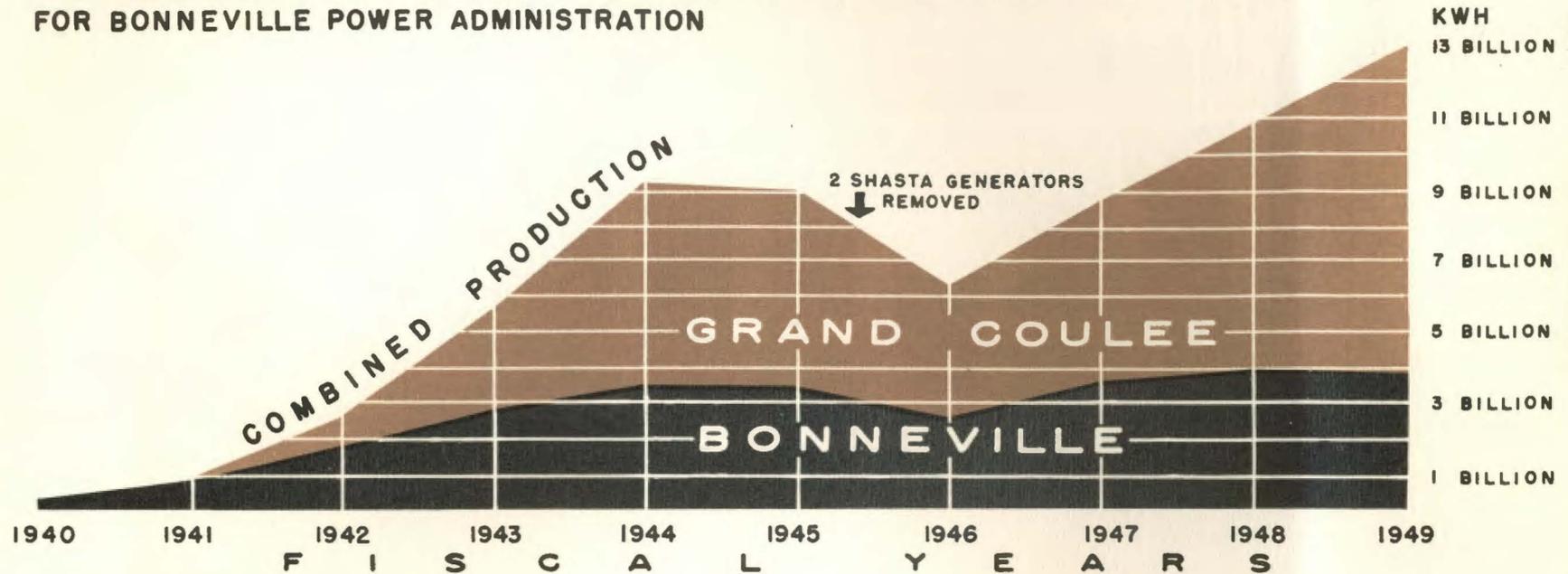
SECOND LARGEST

HALF OF N. W. POWER

NEW GENERATION

GENERATION AT BONNEVILLE & GRAND COULEE

FOR BONNEVILLE POWER ADMINISTRATION



head conditions of 1,764,000 kilowatts. Three more generators were scheduled for service during July 1949, October 1949, and April 1950.

Chart III shows installed generator capacity at the two plants.

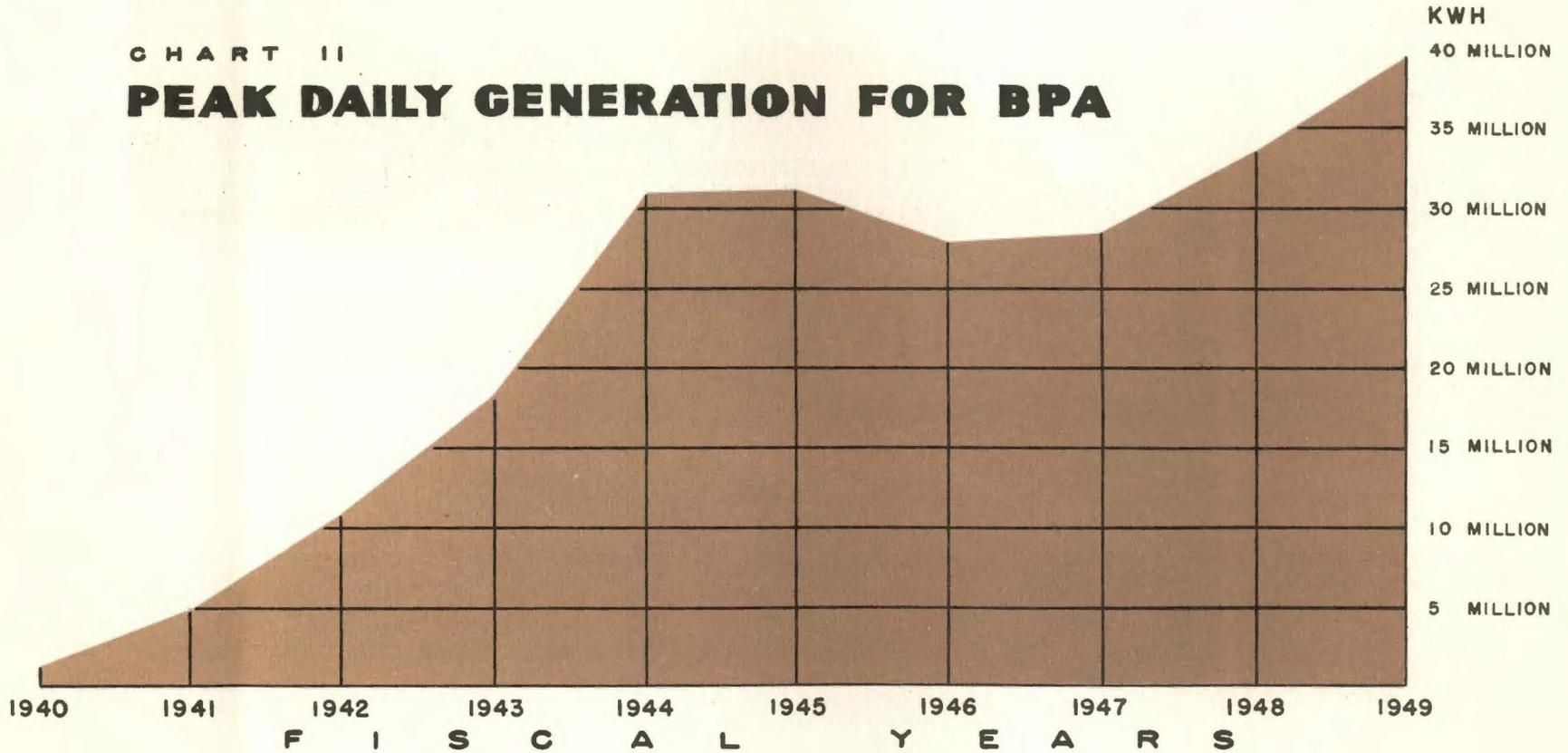
FIRM POWER DEFICIT

Even with these additional generator installations at Grand Coulee dam, there will not be enough firm power to relieve the serious deficit. Only by accelerating the construction of new power producing

plants in the region can a dependable supply of power be made available to meet requirements of the Pacific Northwest by 1957-1958. Even the most rapid construction physically possible of such authorized projects as Hungry Horse, McNary, Detroit and Chief Joseph will not meet on a dependable basis the full requirements of cumulative load growth and new industrial uses of power.

C H A R T I I

PEAK DAILY GENERATION FOR BPA



C H A R T I I I

INSTALLED GENERATOR CAPACITY

GRAND COULEE & BONNEVILLE HYDROELECTRIC PLANTS

NAME PLATE RATINGS

GRAND COULEE

HOUSE UNIT - 10,000 KW
 UNITS LI TO L9 INCL. 8 & 1
 108,000 KW EACH

BONNEVILLE

UNITS 1 & 2 - 43,200 KW EACH
 UNITS 3 TO 10 INCL. - 54,000 KW EACH

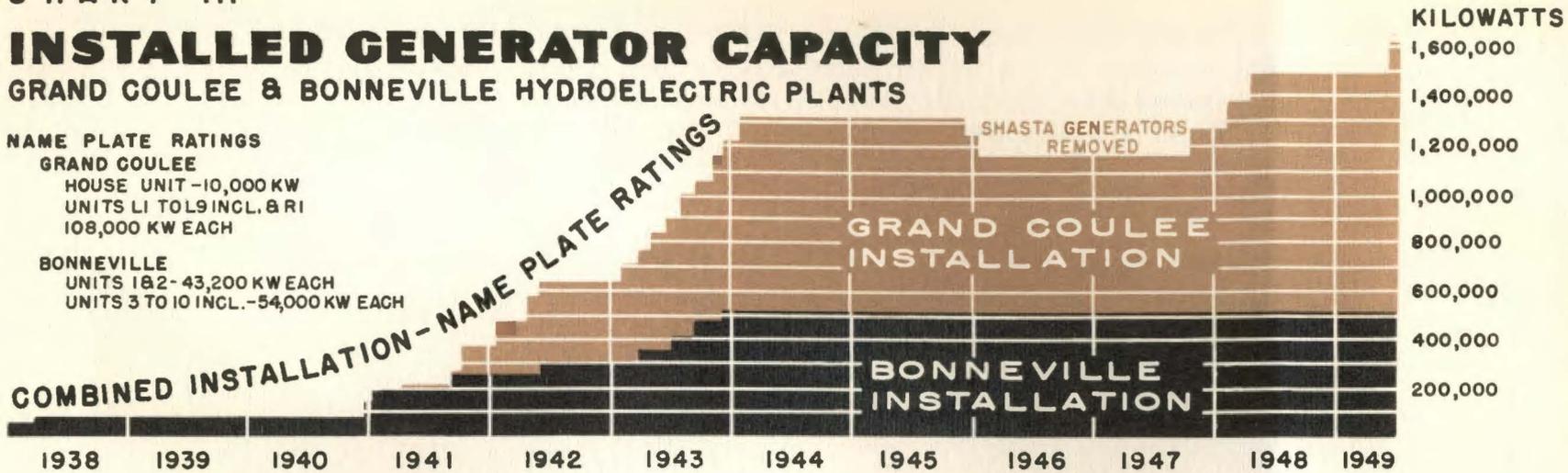


TABLE II

BONNEVILLE POWER ADMINISTRATION
 ELECTRIC ENERGY ACCOUNT
 FISCAL YEAR ENDED June 30, 1949

Energy received (megawatt-hours);	
Energy generated for Bonneville Power Administration	
Bonneville	3,868,558
Grand Coulee	9,057,230
Total	12,925,788
Power purchased and interchanged in	302,950
Total received	13,228,738
Energy delivered (megawatt-hours):	
Sales	11,977,612
Power interchanged out	172,108
Used by Administration	13,881
Total delivered	12,163,601
Energy losses	1,065,137
Per cent of total energy received	8.1
Maximum demand on Bonneville and Grand Coulee plants	
(kilowatts) June 27, 1949, 12 - 1 PM, PST	1,797,000
Load factor	82.1

Energy Deliveries

Energy sales by the Bonneville Power Administration during the fiscal year 1949 amounted to almost 12 billion kilowatt-hours and represented an increase of 16.4 per cent over the preceding year. Sales during Fiscal Year 1949 represented 19.2 per cent of all power delivered since the beginning of operations.

During the Administration's eleven years' operation ending June 30, 1949, the system delivered 62,337,467,000 kilowatt-hours of energy at a composite average rate of 2.46 mills per kilowatt-hour. Sales to publicly owned utilities for the full period were 7.5 billion kilowatt-hours, at an average rate of 2.75 mills. Privately owned utilities received 16.0 billion kilowatt-hours at an average rate of 2.42 mills, and industries 38.8 billion kilowatt-hours at an average rate of 2.41 mills.

Aluminum plants established in the Pacific Northwest primarily to meet production needs of World War II, have continued in operation to supply peace time requirements as well as requirements of the national security program. Power sales to the aluminum industry over the eleven-year period totaled 33.3 billion kilowatt-hours. Total sales to industries other than aluminum, including sales to military establishments, were 5.5 billion kilowatt-hours at an average rate of 3.33 mills.

NEW SALES PEAK

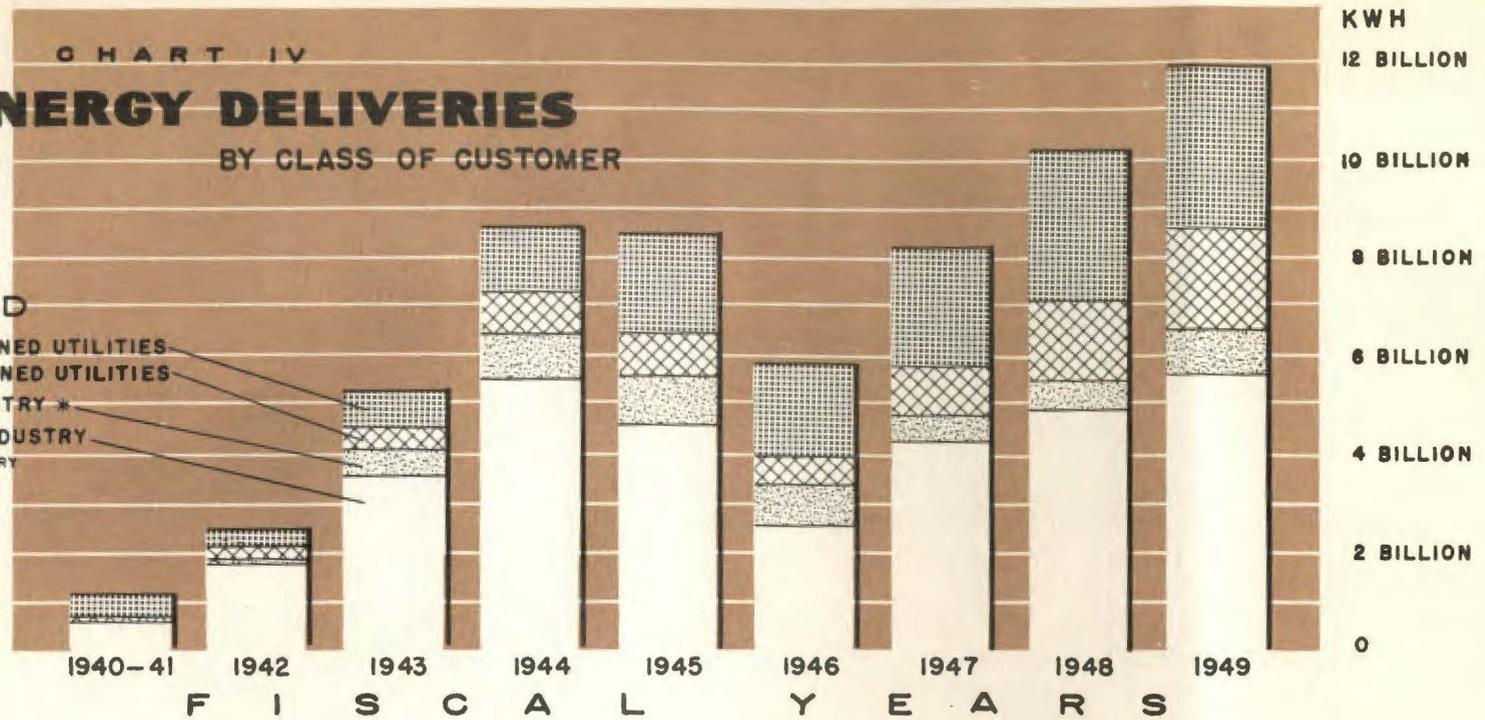
LOW RATES

ALUMINUM SALES

CHART IV
ENERGY DELIVERIES
 BY CLASS OF CUSTOMER

LEGEND

- PRIVATELY OWNED UTILITIES
- PUBLICLY OWNED UTILITIES
- OTHER INDUSTRY *
- ALUMINUM INDUSTRY
- *INCLUDES MILITARY ESTABLISHMENTS



Electrical energy sales by class of customer for each of the years is shown in Table III and Chart IV.

CUSTOMER SERVICE

At the end of fiscal year 1949, the Administration served 96 wholesale customers, of which 67 were publicly owned utilities or co-operatives, 19 were industrial customers, 4 were military establishments, and 6 were privately owned utilities. Eleven customers were added during the year — 1 municipality, 4 public utility districts, 5 cooperatives, and 1 industry. Service to 3 military establishments was discontinued during the year.

DEMAND INCREASES

The maximum coincident demand of the Administration's system on the Bonneville and Grand Coulee plants was 1,797,000 kilowatts occurring on June 27, after addition of the first unit in the Grand Coulee right powerhouse. This demand represented a 12 per cent increase over the system peak during the preceding fiscal year.

TABLE III
ELECTRIC ENERGY SALES BY CLASS OF CUSTOMER
FISCAL YEARS 1939-1949
(Magawatt-hours)

Class of Customer	1941 and prior	1942	1943	1944	1945
Industry:					
Aluminum	522,982	1,845,249	3,588,848	5,453,893	4,667,381
Other Industry	4,811	76,580	464,309	934,588	878,896
Military Establishments	18	2,575	42,887	87,889	85,828
Publicly Owned Utilities	35,242	142,491	435,289	727,642	823,822
Privately Owned Utilities	536,555	357,704	739,076	1,467,304	2,057,203
Total	1,099,608	2,424,599	5,270,409	8,671,316	8,513,130
					Total to June 30 1949
Class of Customer	1946	1947	1948	1949	
Industry:					
Aluminum	2,492,985	4,212,413	4,902,465	5,665,746	33,351,962
Other Industry	739,408	600,131	609,534	849,209	5,157,466
Military Establishments	59,970	26,557	37,379	30,791	373,894
Publicly Owned Utilities	635,531	1,045,199	1,561,612	2,081,819	7,488,647
Privately Owned Utilities	1,902,990	2,377,887	3,176,732	3,350,047	15,965,498
Total	5,830,884	8,262,187	10,287,722	11,977,612	62,337,467

TABLE IV
ENERGY DELIVERIES TO CUSTOMERS OF THE BONNEVILLE POWER ADMINISTRATION
Fiscal Year Ended June 30, 1949

Customers	Energy Deliveries For Year 1/ Kilowatt-hours	Customers	Energy Deliveries For Year 1/ Kilowatt-hours
Publicly Owned Utilities			
Municipalities			
Bandon, Oregon	2,681,958	Benton County PUD #1	51,781,036
Canby, Oregon	5,635,800	Central Lincoln PUD	35,212,152
Cascade Locks, Oregon	6,739,200	Chelan County PUD #1	109,543,180
Centralia, Washington	915,000	Clark County PUD #1	255,456,735
Cheney, Washington	2,022,900	Clatskanie PUD	6,937,828
Drain, Oregon	4,806,000	Cowlitz County PUD #1	252,648,434
Ellensburg, Washington	15,977,000	Douglas County PUD #1	7,473,500
Eugene, Oregon	64,850,709	Ferry County PUD	72,420
Forest Grove, Oregon	19,500,000	Franklin County PUD	34,234,520
Grand Coulee, Washington	15,227,280	Grant County PUD #2	65,669,612
McMinnville, Oregon	32,132,240	Grays Harbor Co. PUD #1	124,351,200
Milton, Oregon	6,717,600	Kittitas County PUD	3,120,000
Monmouth, Oregon	5,668,417	Klickitat Co. PUD #1	22,157,000
Seattle, Washington	164,303,000	Lewis County PUD	53,703,897
Tacoma, Washington	347,995,000	Mason County PUD	21,405,669
		Northern Wasco Co. PUD	172,800
		Okanogan Co. PUD #1	49,291,065
		Pacific County PUD #2	37,633,888
		Pend Oreille Co. PUD #1	4,192,345
		Skamania County PUD	10,383,500
		Tillamook County PUD	3,967,088
		Wahkiakum County PUD #1	8,043,600
		Total Public Utility Districts (22)	1,157,451,469
Total Municipalities (15)	695,172,104		

1/ Includes energy deliveries carried on exchange accounts.

2/ Includes Washington Water Power Co., Pacific Power & Light Co., Puget Sound Power & Light Co., Portland General Electric Co., and Mountain States Power Co.; non-firm energy scheduled to Washington Water Power Co.

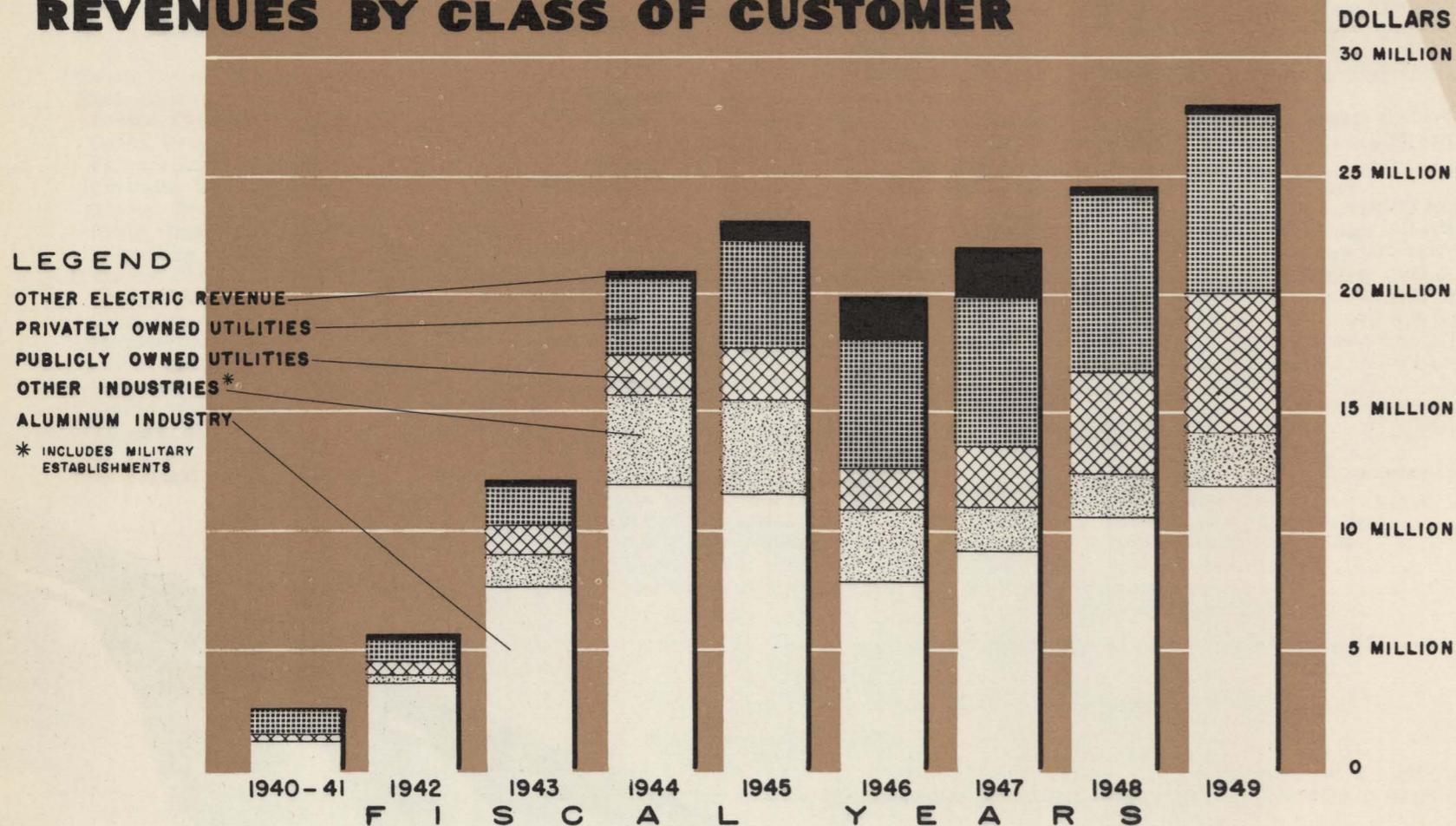
Customers	Energy Deliveries For Year 1/ Kilowatt-hours
Cooperatives	
Benton-Lincoln Elec. Coop.	16,448,232
Benton Rural Elec. Assn.	14,882,614
Big Bend Electric Coop.	6,533,726
Blachly-Lane Co. Elec. Coop.	2,836,400
Central Electric Coop.	2,559,560
Chelan County Elec. Coop.	402,880
Clearwater Valley L & P Assn.	13,859,404
Columbia County REA	6,244,800
Coos-Curry Electric Coop.	4,347,000
Douglas Electric Coop.	10,777,600
Eastern Oregon Elec. Coop.	46,500
Hood River Electric Coop.	7,478,400
Idaho County L & P Assn.	2,532,550
Inland Empire REA	31,258,000
Kootenai County REA	8,103,390
Lane County Electric Coop.	12,327,685
Lincoln Electric Coop.	8,698,260
Nespelem Valley Elec. Coop.	3,181,503
Northeast Clackamas Elec. Coop.	1,074,000
Northern Idaho RERA	3,663,990
Okanogan County Elec. Coop.	1,525,200
Pend Oreille Electric Coop.	2,184,995
Salem Electric Coop.	21,282,200
Stevens County Electric Coop.	10,109,362
Tanner Mutual P & L Assn.	192,814
Umatilla Elec. Coop.	9,653,844
Wasco Electric Coop.	9,316,609
West Oregon Elec. Coop.	6,076,167
Total Cooperatives (28)	217,597,685

Customers	Energy Deliveries For Year 1/ Kilowatt-hours
Other	
Oregon State College	1,845,168
Vera Irrigation Dist. #15	9,752,400
Total Other (2)	11,597,568
Total Publicly Owned Utilities (67)	2,081,818,826
Privately Owned Utilities	
B. C. Elec. Ry. Co.	37,349,714
Mt. States Power Co.	143,727,719
Pacific P & L Co. - Astoria	59,345,000
Portland Gen. Elec. Co.	1,114,926,000
Puget Sound P & L Co.	794,327,100
WWP-PP & L Companies	354,240,831
Inter-Company Pool 2/	846,130,000
Total Privately Owned Utilities	3,350,046,364
Military Establishments (5)	30,791,252

Customers	Energy Deliveries For Year 1/ Kilowatt-hours
Industries	
Aluminum	
Aluminum Co. of America	1,401,281,836
Permanente Metals Co.	
Spokane Alum. Fab.	212,358,000
Spokane Alum. Red.	1,894,084,083
Tacoma Alum. Red.	386,206,000
Reynolds Metals Co.	
Longview	554,886,000
Troutdale	1,216,930,000
Total Industries	6,514,955,272
Other	
Carborundum Company	23,600
Electro-Metallurgical Co.	133,740,000
Pacific Carbide & Alloys	23,107,600
Pennsylvania Salt Mfg. Co.	82,329,600
Miscellaneous (10)	610,008,553
Total Sales of Electric Energy	11,977,611,714



CHART V
REVENUES BY CLASS OF CUSTOMER



Revenues

Total operating revenues of the Columbia River power system (consisting of the Bonneville Power Administration transmission system together with the allocated power components of the Bonneville Dam and the Columbia Basin project) were \$27,821,029 for the fiscal year 1949. This is an increase of \$3,307,319 or 13.5% over the fiscal 1948.

All receipts from operations are returned to the Treasury of the U.S. with the exception of the amounts deposited in the Administration's continuing fund. Thus the financing of operation and construction activities must depend upon annual Congressional appropriations.

Chart V and Table V show total gross operating revenues by fiscal years by class of customer from the beginning of operations to June 30, 1949 of \$157,687,195. As of June 30, 1949, the Bonneville Power Administration had collected and deposited in the Treasury of the U. S. power revenue receipts in the amount of \$144,167,008 and general fund receipts of \$5,146,044, a total of \$149,313,052. Accounts receivable, accrued unbilled revenues, unbilled exchange power sales, miscellaneous adjustments and minor items account for the difference between the latter total, representing cash receipts, and the operating revenue figure of \$157,687,195, an accrued accounting figure.

REVENUES INCREASE

RECEIPTS TO TREASURY

TOTAL REVENUES

TABLE V
REVENUES BY CLASS OF CUSTOMER
Through Fiscal Year 1949

Class of Customer	1944 and Prior	1945	1946	1947	1948	1949	Total to June 30 1949	1949 percentage (dollar revenue)
Industry:								
Aluminum	\$24,350,433	\$11,838,156	\$7,987,226	\$9,045,540	\$10,453,425	\$11,741,530	\$75,416,310	42.20
Other Industry ^{1/}	5,185,494	4,171,469	3,108,749	1,836,349	1,915,884	2,219,819	18,437,764	7.98
Publicly-owned utilities	3,768,642	2,141,635	1,711,822	2,778,765	4,318,120	5,893,436	20,612,420	21.18
Privately-owned utilities	7,152,532	4,752,021	5,209,344	6,127,669	7,633,051	7,756,301	38,630,918	27.88
Other electric revenue	130,123	86,737	1,867,144 ^{2/}	2,102,606 ^{3/}	193,230	209,943	4,589,783	.76
Total operating revenue	\$40,587,224	\$22,990,018	\$19,884,285	\$21,890,929	\$24,513,710	\$27,821,029	\$157,687,195 ^{4/}	100.00

^{1/} Includes military establishments

^{2/} Includes \$1,789,443 of contract cancellations applicable to fiscal year 1946. (The total of \$3,802,415 was apportioned over a period of 12 months.)

^{3/} Includes \$2,012,972 of contract cancellations applicable to fiscal year 1947. (The total of \$3,802,415 was apportioned over a period of 12 months.)

^{4/} As of June 30, 1949, the Administration had collected and deposited in the United States Treasury power revenue receipts totaling \$144,167,008 and general fund receipts of \$5,146,044. Accounts receivable, accrued unbilled revenues, unbilled exchange sales, miscellaneous adjustments and minor items account for the difference between total revenues and total receipts deposited by the Administration with the United States Treasury.

Operating Results

The installation of additional generators at Grand Coulee Dam during fiscal year 1949 coupled with the continued power shortage in the area resulted in a new peak for sales. Revenues exceeded all costs of operation (i.e., operation and maintenance expenses, interest and depreciation expense and miscellaneous charges) by the margin of \$10,665,769 bringing accumulated surplus revenues as of June 30, 1949, to \$42,735,094.

Chart VI indicates the source and disposition of the revenue dollar for the fiscal year 1949. The aluminum industry accounted for 42.20 per cent of the operating revenues while industries other than aluminum contributed 7.98 per cent. Privately owned utilities accounted for 27.88 per cent and publicly owned utilities (PUD's, Cooperatives, Municipalities, etc.) 21.18 per cent.

Operating and maintenance expenses were equal to 22.55 per cent of the revenue dollar while interest and other deductions required 21.58 per cent. Depreciation expenses of 15.79 per cent, amortization of abandoned property of 1.74 per cent and surplus net revenue of 38.34 per cent, a total of 55.87 per cent, represent the percentage of receipts available for repayment of the Federal investment.

NEW SALES PEAK

REVENUE SOURCES

REVENUE DISPOSITION

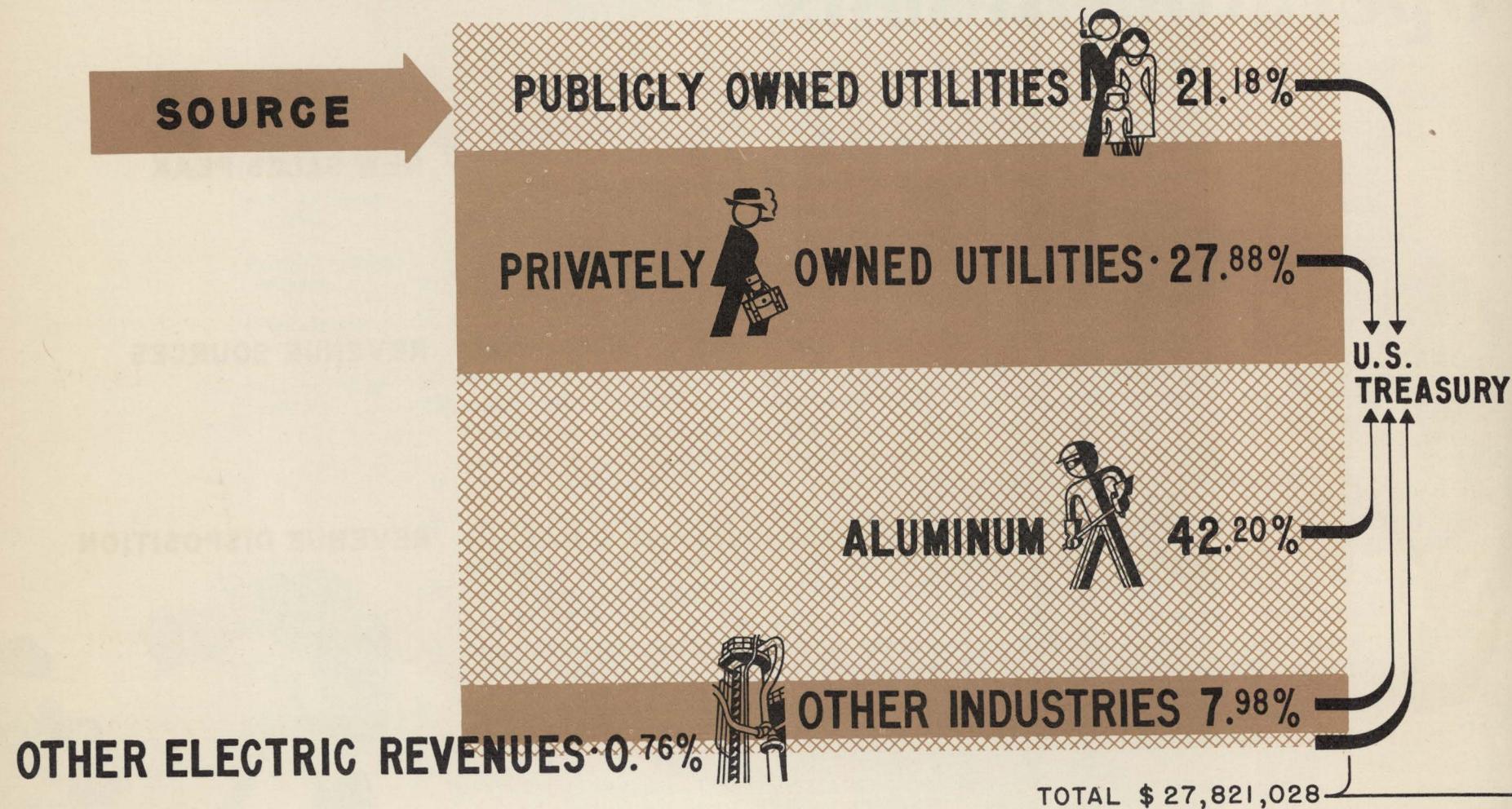
BONNEVILLE POWER ADMINISTRATION
LIBRARY

Department of the Interior

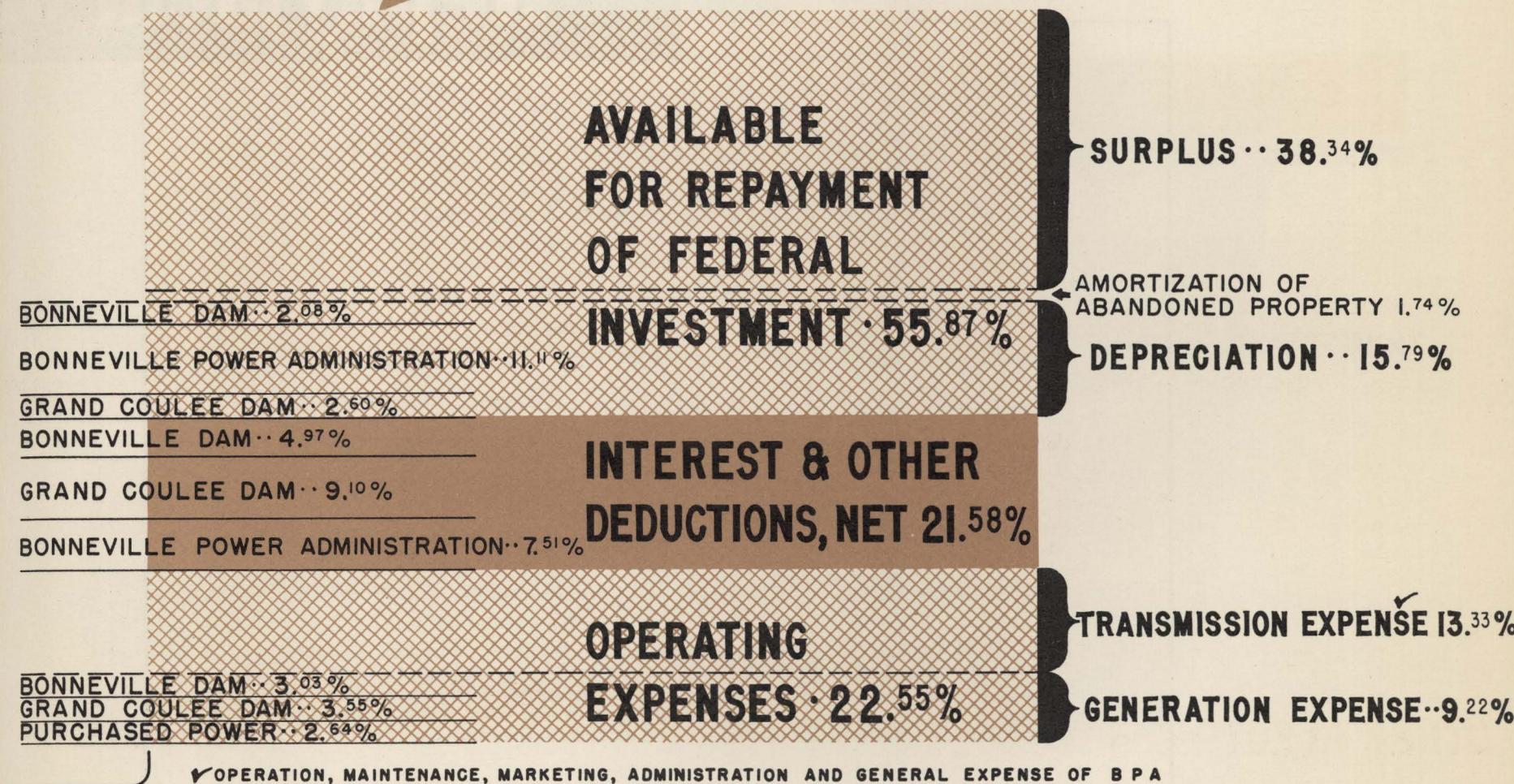
LIBRARY
Portland, Oregon

SOURCE & DISPOSITION OF THE REVENUE DOLLAR

COLUMBIA RIVER POWER SYSTEM · FISCAL YEAR 1949



DISPOSITION



Repayment of Federal Investment

TABLE VI
COLUMBIA RIVER POWER SYSTEM
SUMMARY OF PLANT ACCOUNTS AS OF JUNE 30, 1949

	Total	Allocation	
		Non-power	Power
Bonneville Power Administration . .	\$132,954,407	\$	\$132,954,407
Bonneville Dam	85,678,765	26,851,906	58,826,859
Columbia Basin Project	293,449,115	126,998,608	166,450,507
Total	\$512,082,287	\$153,850,514	\$358,231,773 ^{1/}
Less combined reserve for depreciation			\$ 26,855,850
Total less reserve			\$331,375,923

^{1/} This total of plant investment represents the major component of the gross Federal investment of \$457,155,220, as shown in Schedule I of the Auditors' report, which includes in addition amounts appropriate for cash working capital, material and supplies, operating expenses and other similar items and non-appropriated items such as interest on Federal investments.

The Bonneville Power Administration is required by law to keep cost accounts as well as to show a payout on power operations. Payout requirements exceed the cost requirements inasmuch as the actual return of the investment to the Treasury must be effected within a shorter period of time than the estimated useful life of the projects, which are the periods that are the basis for computing depreciation expenses.

The federal investment in power projects on the Columbia River is considered to be the total of all funds appropriated and requisitioned for both construction and operations together with indirect items such as WPA expenditures and amounts transferred from other federal agencies plus the interest charge on the unrepaid balance. As of that date, this gross federal investment allocated to power amounted to \$457,155,220, including the accumulated interest charge of \$62,302,869. Included in the latter is \$12,337,641 of interest during construction which forms part of the cost of the electric utility plant; \$6,849,353 of deferred interest on the investment in the Columbia Basin (Grand Coulee) project allocated to future downstream river regulation; and \$43,115,875 which is interest expense charged currently to operations. Table VII gives a breakdown of the interest charges. The gross federal investment has been periodically reduced by repayments, i.e., the return of receipts from power operations, to an amount remaining unrepaid of \$308,263,859 as of June 30, 1949.

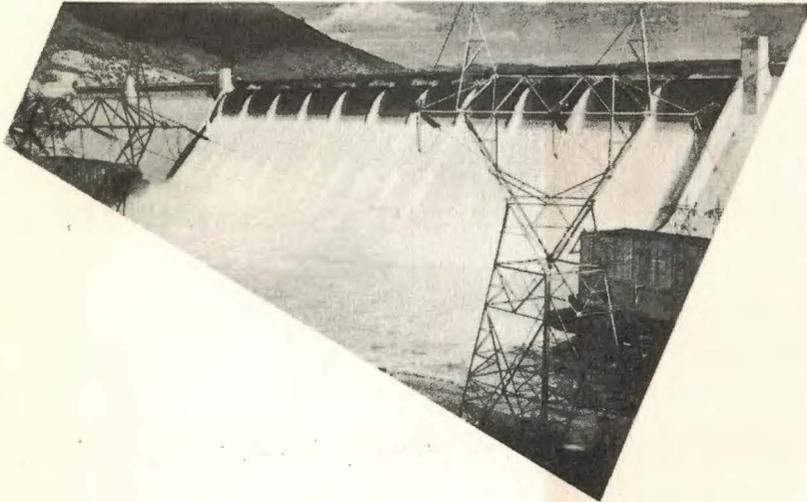
PAYOUT REQUIREMENTS

FEDERAL INVESTMENT

TABLE VII

COLUMBIA RIVER POWER SYSTEM

Summary of Interest* on Federal Investment as of June 30, 1949



Interest during construction—to be returned during repayment period as part of the Federal investment:

Transmission system	\$1,529,655.50	
Bonneville Dam	2,323,650.84	
Columbia Basin Project	8,484,334.41	
Subtotal		\$12,337,640.75

Interest on costs of Columbia Basin Project allocated to future river regulation—to be returned as part of repayment of future downstream projects		6,849,353.23
--	--	--------------

Interest charged to operations — repaid currently :

Transmission system	\$13,481,613.47	
Bonneville Dam	12,674,977.88	
Columbia Basin Project	16,959,283.59	
Subtotal		43,115,874.94

Gross interest accumulation as per Schedule I of Auditor's report for 1949		\$62,302,868.92
--	--	-----------------

* Computed at the rate of 2-1/2 per cent per year.

which constitutes the net investment of the Government in the power system and which will be repaid from future operations.

OPERATING REVENUES

All operating revenues of the Administration are returned to the Treasury of the United States. Thus, in order to finance both operating and construction activities, annual appropriations from Congress are necessary except for amounts deposited in the continuing fund set up by act of Congress for use of the Administrator to defray emergency expenses and insure continuous operation.

The Hoover Commission task force report on "Revolving Funds and Business Enterprises of the Government" stated with respect to the financial statements of the Columbia River power system that the presentation of the investment of the federal government is considered open to criticism and subject to improvement in two respects, namely:

HOOVER REPORT

1. The presentation of the gross federal investment and the gross repayments, both including amounts for current operating and interest expenses, is misleading in that the percentage ratio of the gross repayments to the gross investment might lead the reader to conclude that the project had repaid a greater proportion of the capital investment than is the fact. For example, the gross repayment of \$149,000,000 as of June 30, 1949 is approximately 33 per cent of the gross investment as of that date. However, a much smaller proportion of the capital investment, more nearly in the neighborhood of 19 per cent, has been repaid.

2. Power revenues are required to repay a substantial portion of the investment allocated to irrigation but the financial statements do not indicate the amount of that repayment obligation.

The Administration has been well aware of the first point and has dealt specifically with that problem in its payout reports. Unfortunately, the projects must finance both operations and construction from appropriations, unlike a regular business enterprise that would finance operations from revenues. It is not possible to determine accurately from the normal accounting processes a segregation of the federal investment as between operations on the one hand and construction or capital costs on the other. This arises out of the fact that accounts are kept on an accrued cost basis but the federal investment account is a cash investment. In our payout reports we are able to present an approximation of the breakdown of the repayment as between current ex-

COST SEGREGATION



DOWNSTREAM VIEW OF MAIN CANAL, COLUMBIA BASIN PROJECT

PHOTOGRAPH BY BUREAU OF RECLAMATION

penses and capital costs. Such a breakdown can be accomplished statistically with sufficient accuracy for the purpose but the breakdown cannot be developed directly from the accounts. For example, the operating expenses shown in the certified financial statements include accrued, non-cash items such as exchange account power purchases, depreciation on

equipment used in operations, provision for deferred maintenance, and amortization of loss on abandoned property. The principal non-cash items can be identified and eliminated statistically but the many small items cannot. Therefore, we have handled the reporting on this matter in our payout reports rather than our certified financial statements. The Hoover Commission criticism refers to Federal Business Enterprises of the Government. The answer lies in giving the Bonneville Power Administration legislation enabling it to use its revenues for operation and maintenance. This would eliminate the accounting difficulties enumerated above.

The second criticism by the task force has also been covered by the Administration's payout reports which have discussed and set forth the fact that a substantial portion of costs allocated to irrigation must be repaid from power revenues. This is purely a matter of the requirements of Reclamation Law for the repayment of construction costs and is not a part of the cost of power as determined in accordance with the cost accounting system prescribed by the Federal Power Commission. In other words, the power operations will have to show a substantial net return above straight power costs in order to meet the irrigation subsidy repayment obligation. As already noted, the combined net revenues as of June 30, 1949 were more than \$42,700,000.

SUBSIDY

Whether or not the two points noted by the task force are properly matters for treatment in the cost statements of the power phases of the projects' operations is debatable and their past omission should not be a matter of concern inasmuch as they were fully covered by the payout reports of the Administration. In any event, however, the financial statements set forth in the accompanying Auditors' report have endeavored to meet these criticisms by appropriate footnotes and captions.

CLARIFICATION

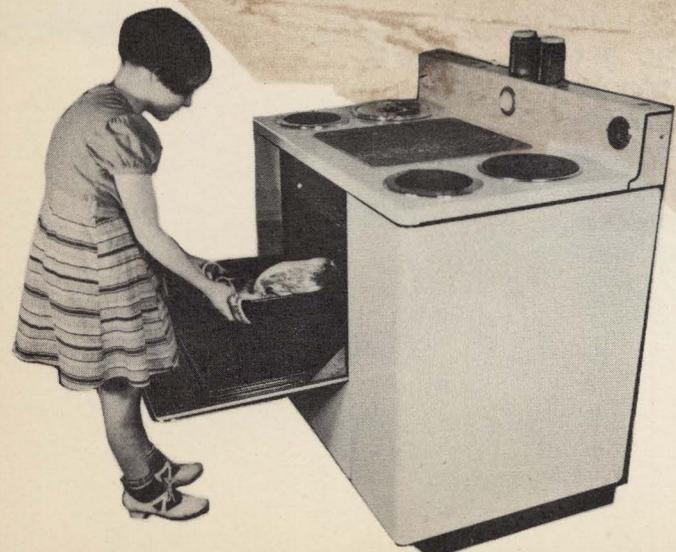


TABLE VIII

RESIDENTIAL AND RURAL SERVICE

Average Use Per Customer and Average Price Per KWH

Year	KWH Per Customer	
	U. S. Total	Oregon and Washington
1938	902	1,410
1939	953	1,467
1940	1,006	1,589
1941	1,044	1,776
1942	1,088	2,024
1943	1,135	2,279
1944	1,225	2,504
1945	1,305	2,801
1946	1,418	3,219
1947	1,546	3,696
1948	1,674	4,160

Year	Price per KWH (Cents)	
	U. S. Total	Oregon and Washington
1938	4.02	2.65 ¹ / ₂
1939	3.87	2.55 ¹ / ₂
1940	3.74	2.27
1941	3.65	2.08
1942	3.57	1.94
1943	3.50	1.84
1944	3.41	1.74
1945	3.32	1.69
1946	3.13	1.58
1947	3.00	1.49
1948	2.92	1.41

Source: Edison Electric Institute.

¹/₂ Partially estimated from State Commission data.

Rates

The basic wholesale rate of \$17.50 per kilowatt-year for Bonneville-Grand Coulee power delivered anywhere from the transmission system has proved very effective in encouraging growth of industries and in insuring wide distribution to residential and commercial customers in the region. Power rates are especially important to industries using electricity at a high load factor and in such quantities as to make it a substantial item in their manufacturing costs. Several optional rates, consistent with the basic \$17.50 rate, are available to municipal, cooperative and other public agencies serving primarily residential and commercial loads.

BASIC RATE

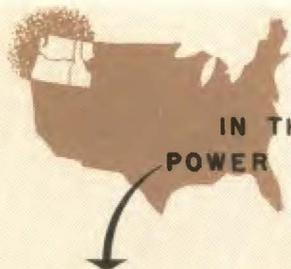
All long-term wholesale power contracts with distributors of Bonneville power contain provisions regarding resale rates and principles of operation to the end that power purchased from the Administration shall be distributed for the benefit of the general public, and particularly of domestic and rural consumers. The direct relationship between increased use of electric energy and lower rates is well illustrated in Table VIII. This shows the trends from 1938 to date of average use and price for residential home and farm service in Oregon and Washington as compared with the national average. Chart VII shows this relationship for all major classes of service for the Pacific Northwest.

BENEFIT TO PUBLIC

The Bonneville Power Administration's wholesale power con-

RATE ADJUSTMENTS

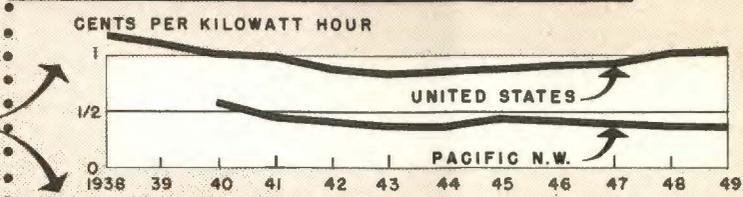
USE & PRICE OF ELECTRIC ENERGY



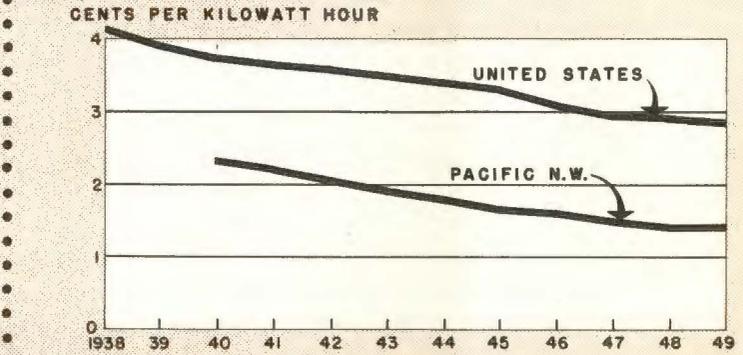
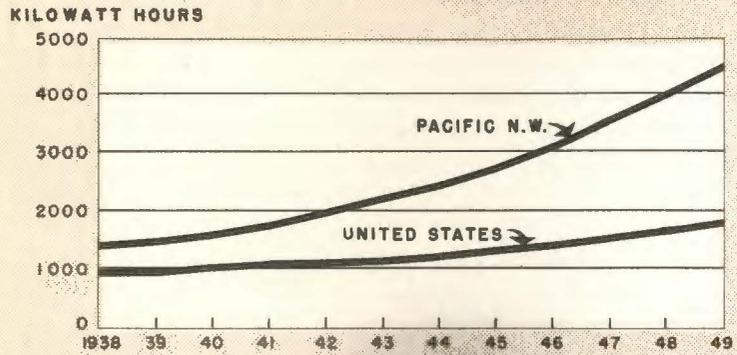
1938-1949

IN THE PACIFIC NORTHWEST
POWER USE IS GREATER ...
POWER PRICES ARE LOWER

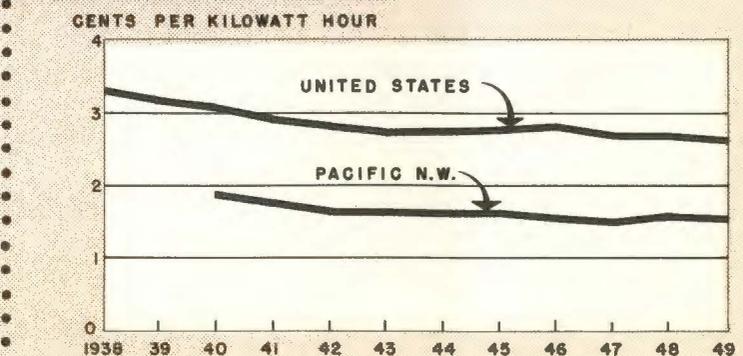
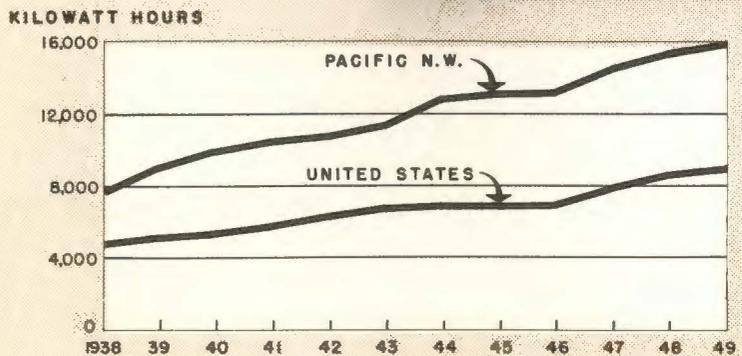
LARGE INDUSTRIES



FARMS AND HOMES



STORES AND SMALL INDUSTRIES



DATA: EDISON ELECTRIC INSTITUTE
1949 VALUES ESTIMATED BY BPA

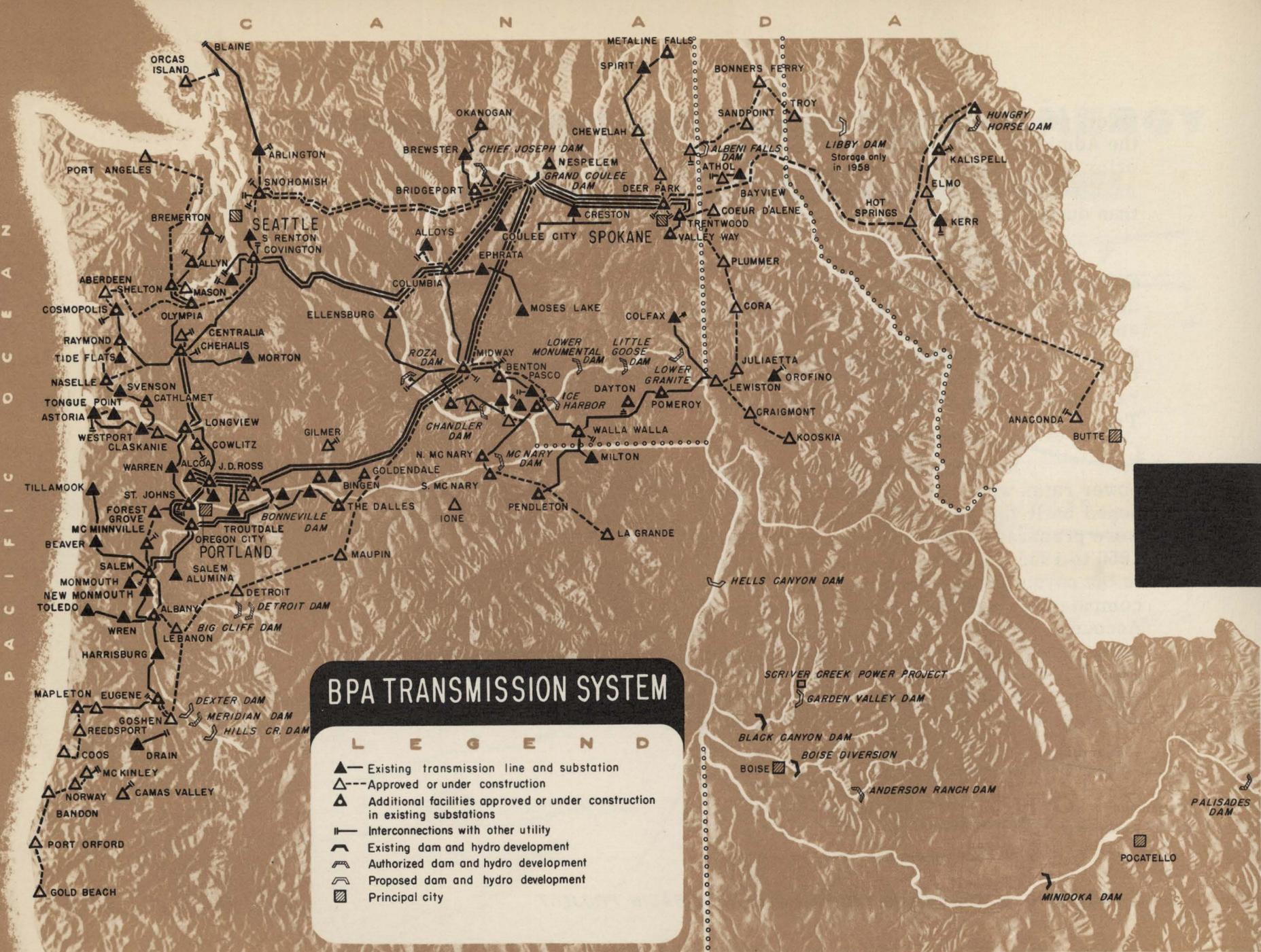
tracts permit equitable rate adjustments at specified five-year periods if the Administration has adopted increased wholesale power rate schedules prior to the adjustment date and the national index of wholesale commodity prices for the six months preceding such date is 25 per cent higher than during the base periods specified in the contracts.

Financial status of the Administration to date demonstrates that present wholesale rates are paying all costs of power operations in accordance with standard cost accounting principles, including interest and depreciation but exclusive of taxes. Sufficient additional net revenues are being realized to make possible a substantial contribution to the irrigation works of the Columbia Basin project—a contribution by the electric rate payer to the irrigation farmer in lieu of tax payments to the federal Treasury.

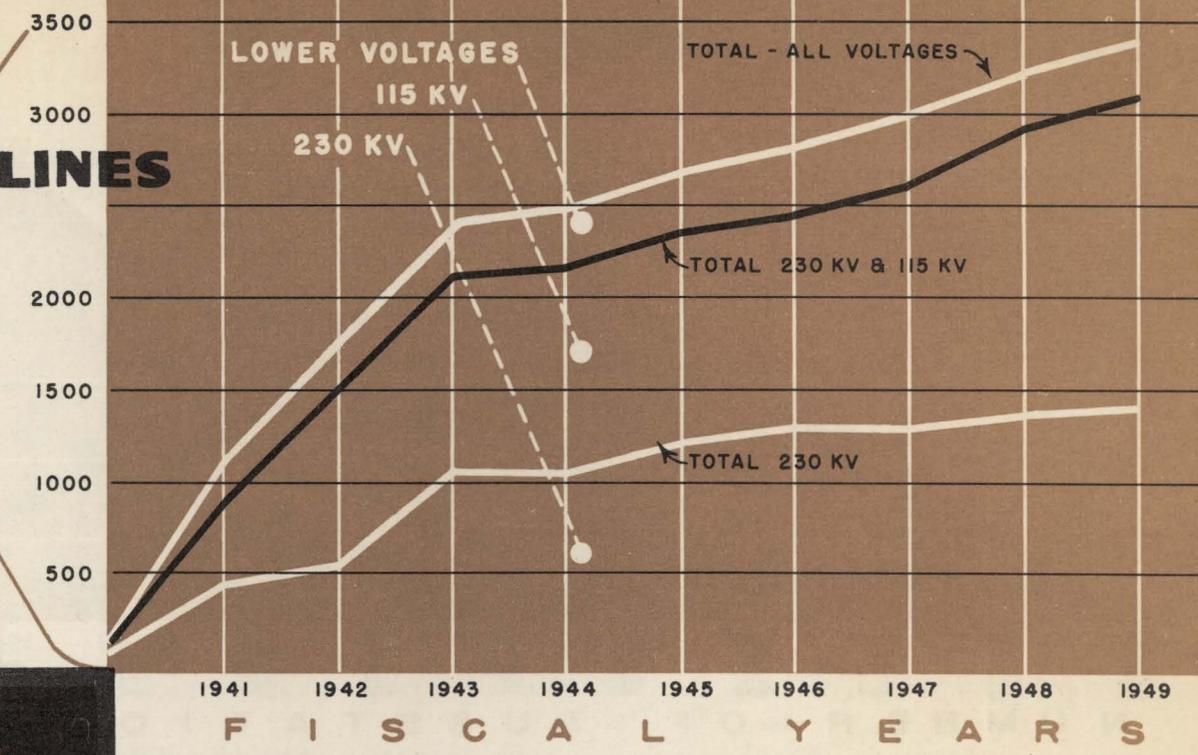
In order to determine whether an increase in the wholesale power rates would be required as of December 20, 1949 or could be postponed until the next rate adjustment date, December 20, 1954, studies were prepared comparing estimated revenues in each of the fiscal years 1950 to 1955, inclusive, with (a) estimated financial requirements pursuant to the payout provisions of the applicable laws and policies, and (b) costs computed in accordance with the Federal Power Commission's System of Accounts. These two studies indicated that present rates would supply adequate revenues in the aggregate through fiscal year 1955 to provide for payout requirements as well as a net surplus in the certified financial statements in each year. Thus it was decided that the wholesale rate on contracts now in force would remain unchanged.

PAYING ALL COSTS

DRY COULEE IRRIGATION SIPHON, COLUMBIA BASIN PROJECT



**CHART VIII
TRANSMISSION LINES
IN CIRCUIT MILES**

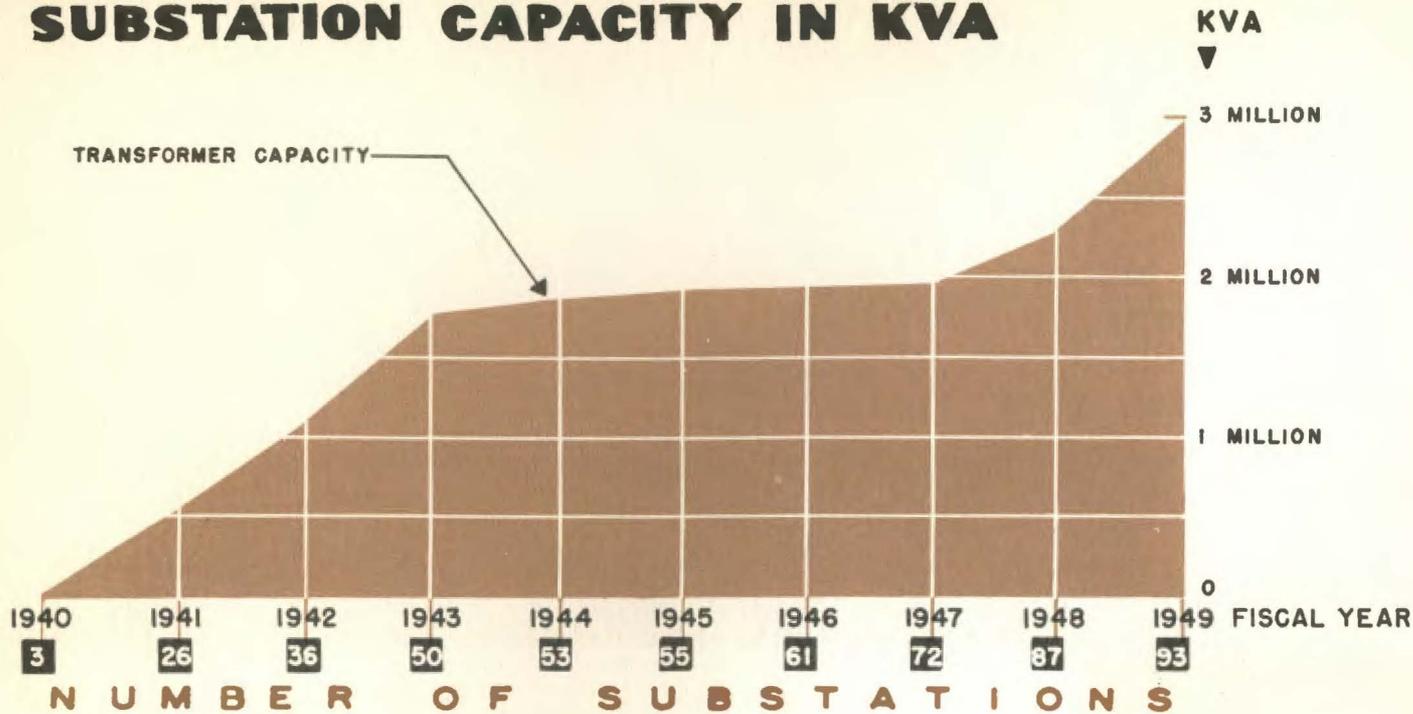


Transmission

During the 1949 fiscal year, 168 circuit miles of high voltage lines and 7 substations were added to the federal transmission system, comprising a total network of 3,451 circuit miles and 93 substations serving Washington, Oregon, Northern Idaho and Western Montana. The system had 1,436 miles of 230,000 volt line, 1,670 miles of 115,000 volt line, and 345 miles of lower voltage line as of June 30, 1949.

SYSTEM NETWORK

SUBSTATION CAPACITY IN KVA



During the year, 141,275 kilovolt amperes in substation transformer capacity were added, bringing the total to 2,457,775 kilovolt amperes under self-cooled conditions and a maximum capacity of 2,964,941 kilovolt amperes under forced-cooled conditions. An additional 215,380 kilovolt amperes of static capacitors during the fiscal year bring the total capacity to 337,480 with synchronous condenser capacity remaining the same, or 287,500 kilovolt amperes.

CRITICAL LINES

Transmission lines to areas where critical power deficits continue or serious distribution problems exist, were given a high priority

in the fiscal year's construction program. Important lines energized during the year included the 30-mile Chehalis-Olympia 230,000 volt and 19-mile Olympia-Shelton 115,000 volt lines, August 5, 1948; Salem-Albany 27-mile 115,000 volt line, December 23, 1948; Eugene-Mapleton 38-mile 115,000 volt line, December 24, 1948; Grandview-Richland 28-mile 115,000 volt line, January 25, 1949; and Franklin-McNary 29-mile 115,000 volt line, May 8, 1949.

TABLE IX
B P A SYSTEM ADDITIONS

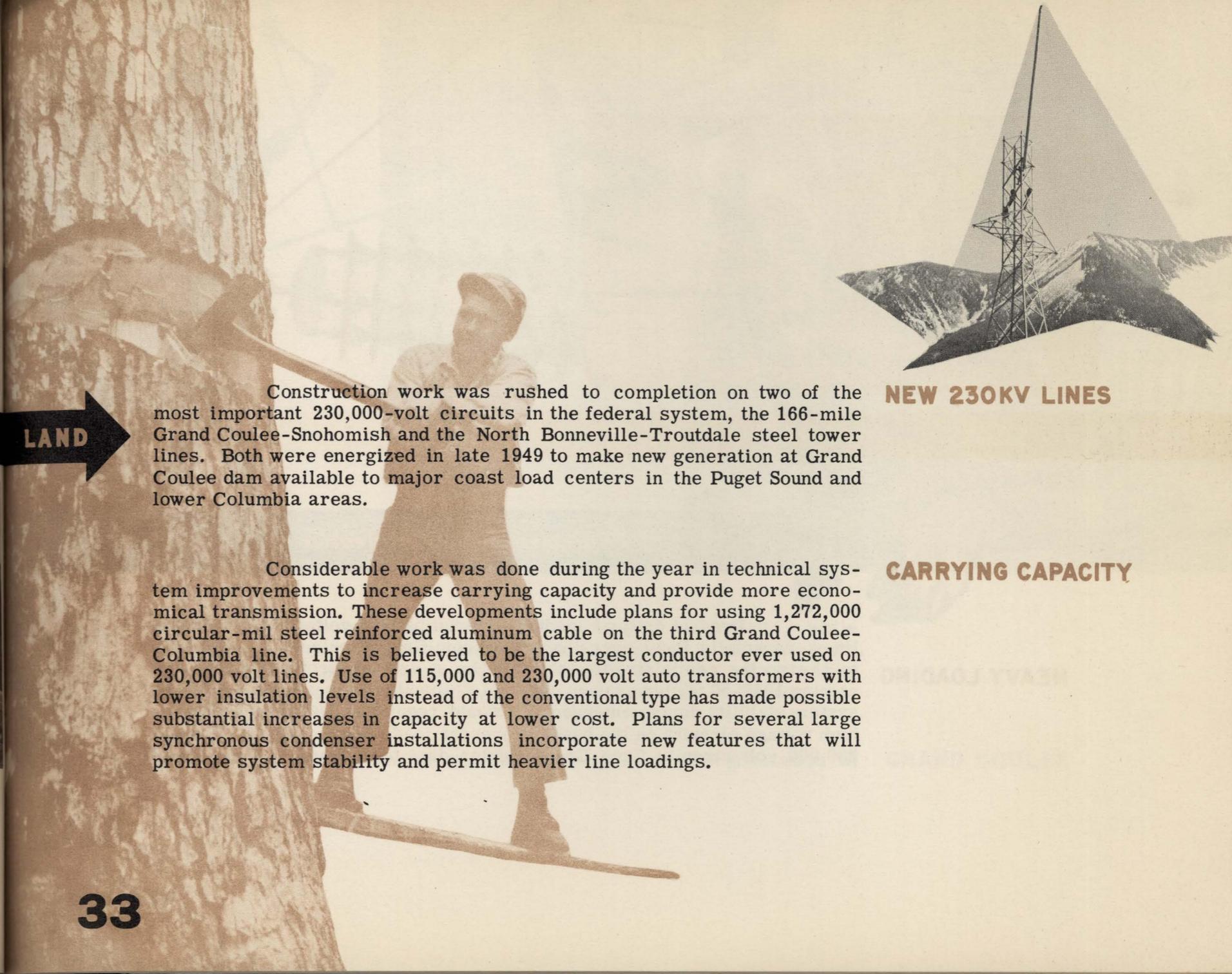
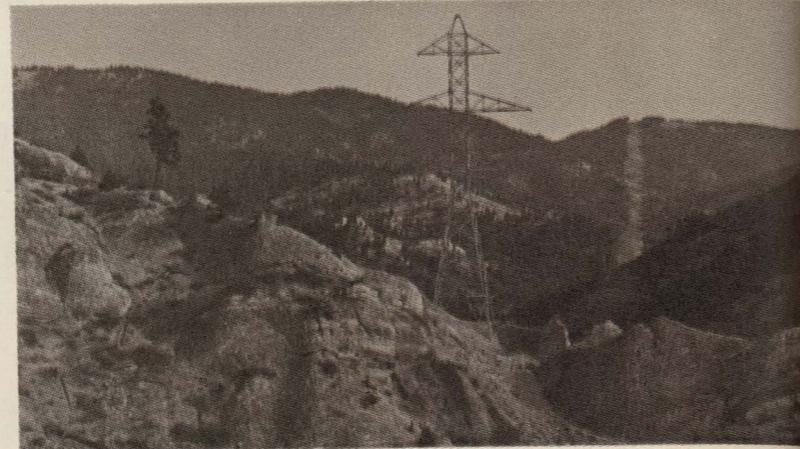
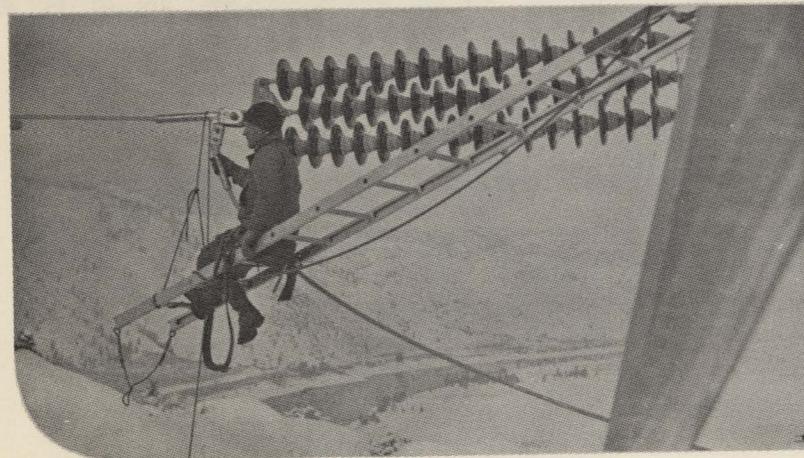
	CIRCUIT MILES			
	230 Kv	115 Kv	Under 115 Kv	Total
Transmission Lines (Circuit Miles);				
Placed in Operation 1949 F.Y.	30.1	137.8	-4.9	163.0
In Operation June 30, 1948	1406.1	1531.9	346.6	3284.6
Total Operated June 30, 1949	1436.2	1669.7	341.7	3447.6
Leased to Others	—	—	3.4	3.4
Grand Total June 30, 1949	1436.2	1669.7	345.1	3451.0
	Installed at End of 1948 F.Y.	F.Y. 1948 Added Removed		Installed at End of 1949 F.Y.
Substations Operated:				
Transformer Capacity Kva*	2,765,933	418,425	219,417	2,964,941
Static Capacitors Kva	122,100	215,380	—	337,480
Synchronous Condensers Kva	287,500	—	—	287,500
Number of Substations	86	9	2	93

* Includes forced cooling but not temporary installations of portable fans.
Includes one 600 kva substation owned but operated by others.



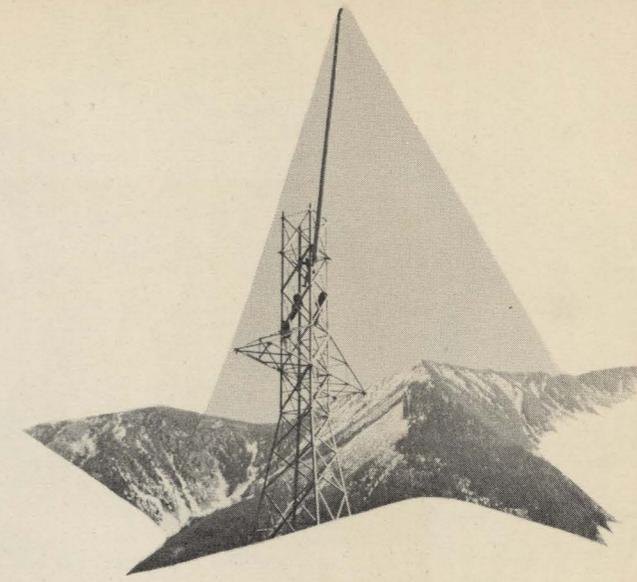


THE GRAND COULEE-SNOHOMISH LINE CROSSES SOME OF THE WEST'S MOST RUGGED LAND



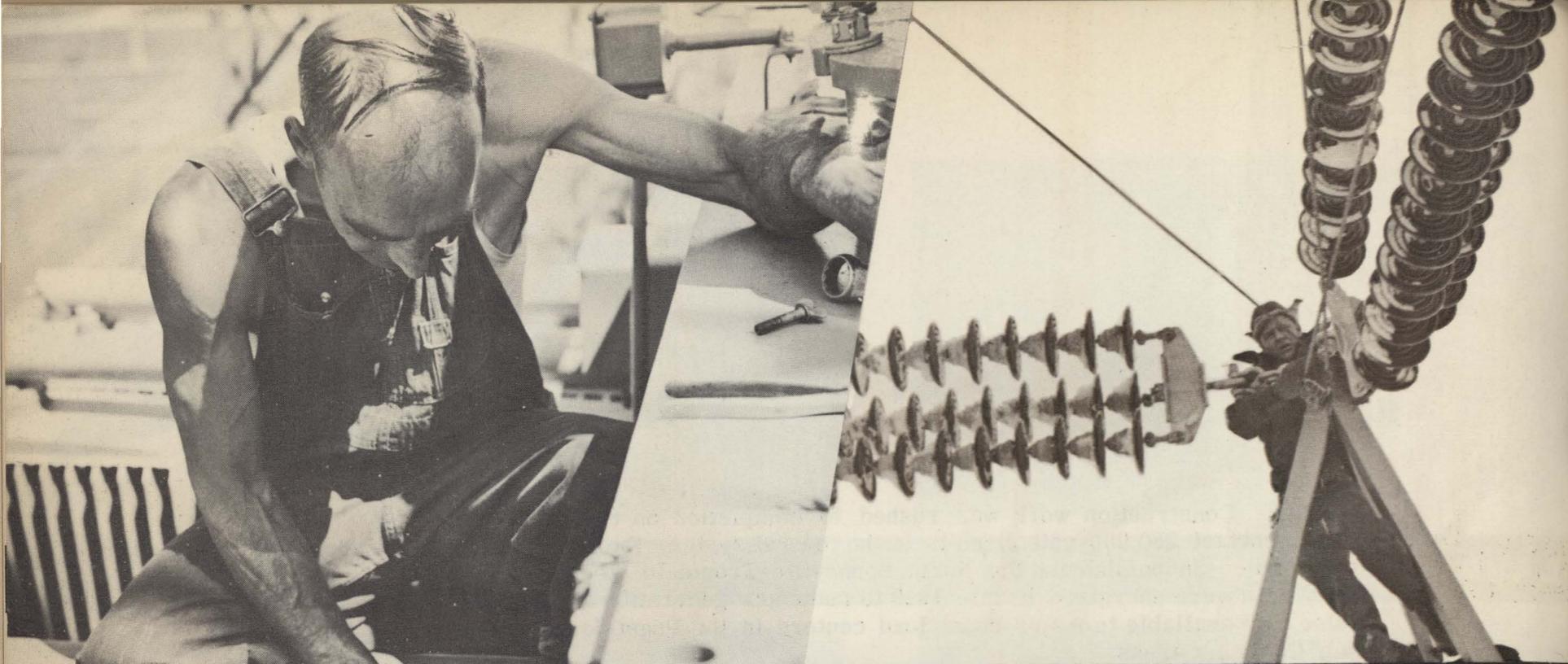
Construction work was rushed to completion on two of the most important 230,000-volt circuits in the federal system, the 166-mile Grand Coulee-Snohomish and the North Bonneville-Troutdale steel tower lines. Both were energized in late 1949 to make new generation at Grand Coulee dam available to major coast load centers in the Puget Sound and lower Columbia areas.

Considerable work was done during the year in technical system improvements to increase carrying capacity and provide more economical transmission. These developments include plans for using 1,272,000 circular-mil steel reinforced aluminum cable on the third Grand Coulee-Columbia line. This is believed to be the largest conductor ever used on 230,000 volt lines. Use of 115,000 and 230,000 volt auto transformers with lower insulation levels instead of the conventional type has made possible substantial increases in capacity at lower cost. Plans for several large synchronous condenser installations incorporate new features that will promote system stability and permit heavier line loadings.



NEW 230KV LINES

CARRYING CAPACITY



Workmen complete electric facilities in all kinds of

HEAVY LOADING

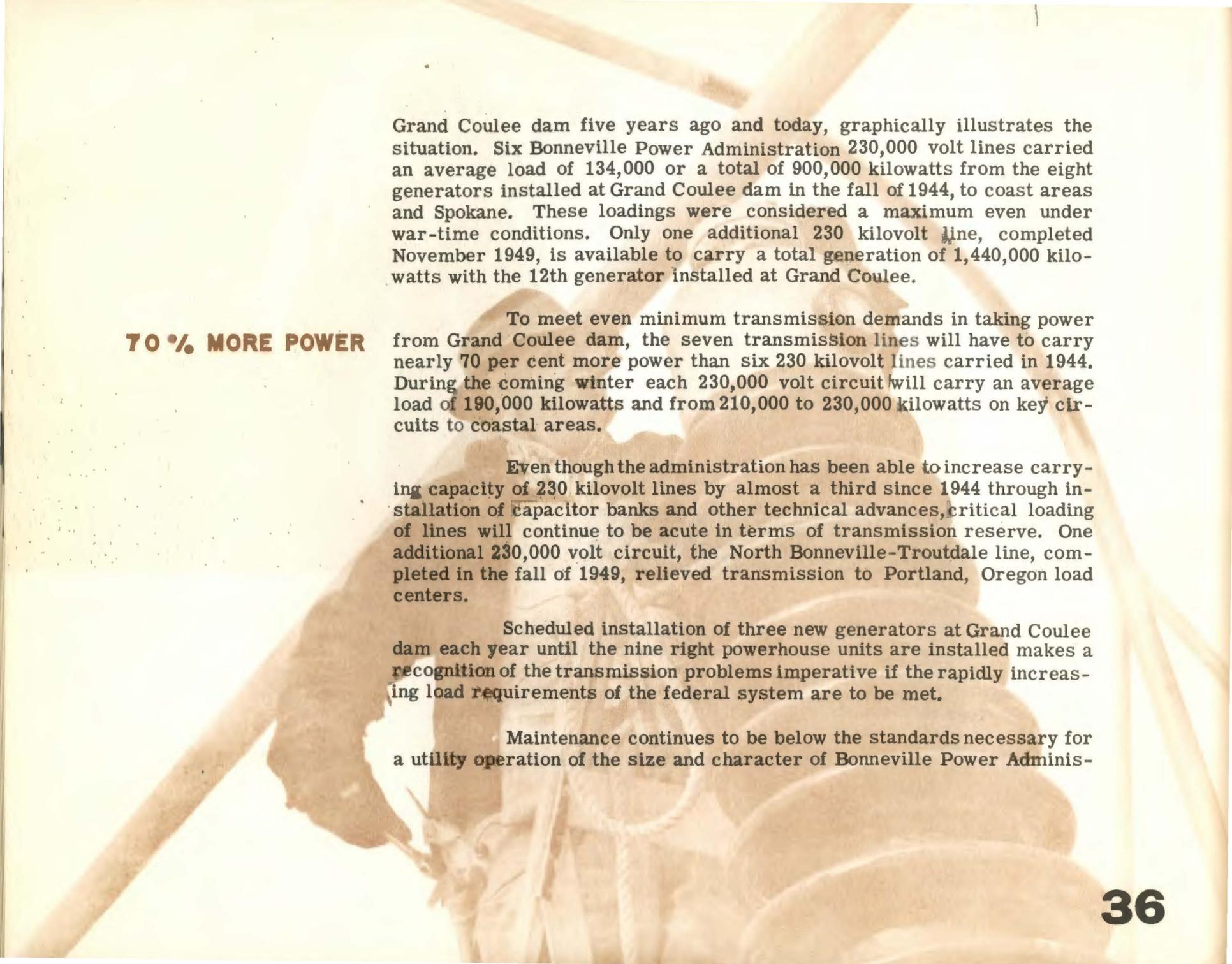
Present critical loading of existing high voltage transmission lines, especially those carrying power from Grand Coulee dam, continues to harass the administration and will be a serious problem during the coming 1949-50 winter season. Normal transmission reserves to insure system stability during emergencies would require at least two additional high voltage circuits on the basis of present loads being carried. Present 230,000 volt circuits from Grand Coulee dam to Spokane and coast load



weather to meet Northwest power demands.

centers are each carrying loads up to 230,000 kilowatts, while 230,000 volt circuits from Bonneville dam to Portland load centers are being loaded to approximately 300,000 kilowatts each. An outage on any one of these critically loaded circuits could seriously disrupt power service over large areas.

A comparison of transmission facilities and generation at **GRAND COULEE**



Grand Coulee dam five years ago and today, graphically illustrates the situation. Six Bonneville Power Administration 230,000 volt lines carried an average load of 134,000 or a total of 900,000 kilowatts from the eight generators installed at Grand Coulee dam in the fall of 1944, to coast areas and Spokane. These loadings were considered a maximum even under war-time conditions. Only one additional 230 kilovolt line, completed November 1949, is available to carry a total generation of 1,440,000 kilowatts with the 12th generator installed at Grand Coulee.

70 % MORE POWER

To meet even minimum transmission demands in taking power from Grand Coulee dam, the seven transmission lines will have to carry nearly 70 per cent more power than six 230 kilovolt lines carried in 1944. During the coming winter each 230,000 volt circuit will carry an average load of 190,000 kilowatts and from 210,000 to 230,000 kilowatts on key circuits to coastal areas.

Even though the administration has been able to increase carrying capacity of 230 kilovolt lines by almost a third since 1944 through installation of capacitor banks and other technical advances, critical loading of lines will continue to be acute in terms of transmission reserve. One additional 230,000 volt circuit, the North Bonneville-Troutdale line, completed in the fall of 1949, relieved transmission to Portland, Oregon load centers.

Scheduled installation of three new generators at Grand Coulee dam each year until the nine right powerhouse units are installed makes a recognition of the transmission problems imperative if the rapidly increasing load requirements of the federal system are to be met.

Maintenance continues to be below the standards necessary for a utility operation of the size and character of Bonneville Power Adminis-

tration. Appropriations for maintenance have not kept pace with rising costs and growth of the system.

Deferring maintenance not only results in operation hazards that would otherwise be avoided, but is costly in terms of equipment breakdowns that could have been prevented by earlier detection. Deferred maintenance is particularly critical where rapid growth and limited construction appropriations prevent the normal installation of reserve capacity in lines and substation equipment. Lack of sufficient reserve capacity makes the effect of any major outage more extensive.

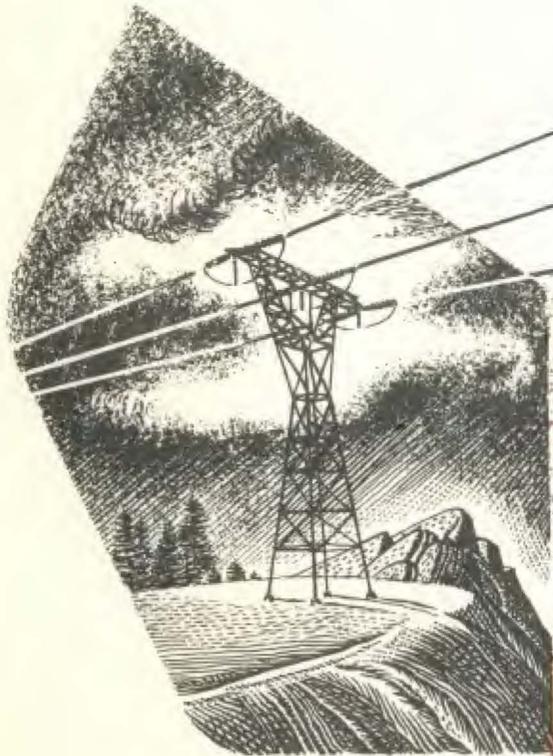
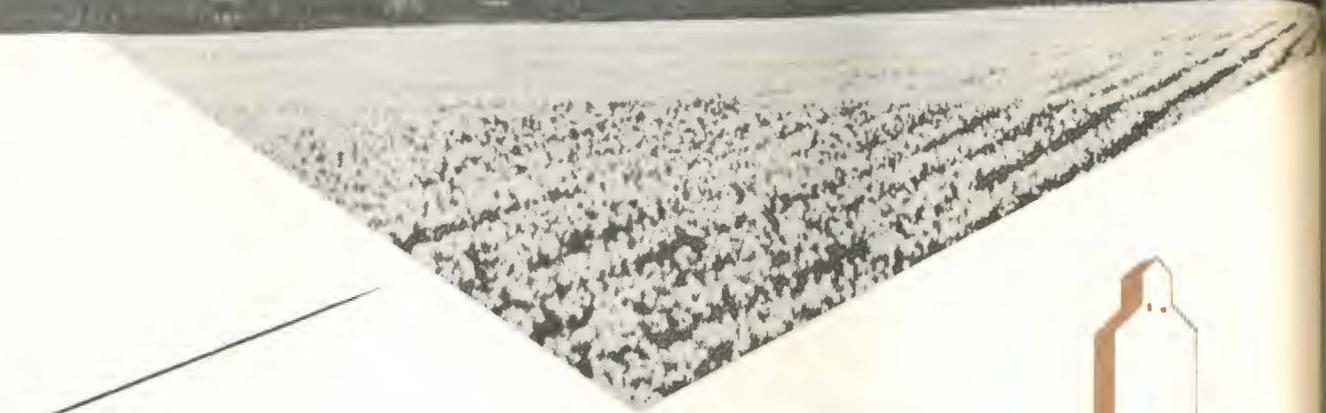
A recent inspection of a synchronous condenser at the Troutdale, Oregon substation revealed the need for extensive insulation work to avoid electrical failure. Earlier checking might have avoided the necessity for removing the condenser from service for twenty days with repair costs in excess of \$12,000. Six other condensers on the system where inspection has not yet been possible may need similar treatment and failure during heavy load periods could result in a loss of over \$20,000 a month in power revenue because of the reduction in load carrying capacity. In addition load curtailment may be necessary each time a condenser unit is taken out of service.

Equally costly are transmission line failures where lack of adequate funds for brush clearing and cutting of danger trees on older right of way are an important factor. Deferment of maintenance on damaged insulators, wood pole cross-arms and other transmission items can easily double the cost to the system in the event of severe lightning strikes on the lines. Maximum system stability and economical operation can only be achieved through a program of adequate maintenance.

OPERATION HAZARDS

COST HEAVY

LINE FAILURES



Regional Power Supply

The Pacific Northwest experienced its most critical power shortage to date during the winter of 1948-49 when peak load requirements exceeded the combined generating capabilities of all utilities in the region. Utilities were forced to curtail peak loads throughout the winter by staggering hours of operation for industrial plants using electricity, and by appealing to the public for conservation of power between the hours of 4:30 to 6:30 p.m. Even with these measures a combination of cold weather and low streamflows during the month of January resulted in occasional drops in frequency and some voltage instability during peak demands in large load centers.

No curtailment of firm energy loads is anticipated during the 1949-50 winter season provided average or better stream flow conditions continue to prevail, and there is no breakdown outage of an important generating or transmission facility. Installation of three generators during calendar year 1949 gave Grand Coulee dam additional peaking capability of 360,000 kilowatts. About 240,000 kilowatts of generating capacity were added by non-federal utility systems during this same year. Completion of the 230 kv Grand Coulee-Snohomish transmission line and the 230 kv North Bonneville-Troutdale line in time to meet the coming winter loads makes it possible to transmit the maximum available federal generation to Puget Sound, Lower Columbia and other load centers.

The total potential power requirements of the region will not be matched with firm power until 1957-58 even if the most advanced schedule of generator installation is followed. Severity of necessary curtail-

MOST SERIOUS SHORTAGE

PROSPECTS 1949-50

POWER REQUIREMENTS

POWER GENERATED BY THE PRINCIPAL ELECTRIC UTILITY SYSTEMS OF THE PACIFIC NORTHWEST

YEAR ENDED JUNE 30, 1949

GENERATED BY PERCENT

Pacific Power & Light Co.	2.6
Portland General Electric Co.	3.1
Tacoma City Light	3.5
Idaho Power Co.	4.4
Seattle City Light	5.3
Washington Water Power Co.	6.1
Puget Sound Power & Light Co.	7.4
Montana Power Co.	11.0
U. S. Columbia River Power System	56.6



LEGEND



ONE BILLION KWH

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

PUBLICLY OWNED	PRIVATELY OWNED
65.4%	34.6%

TOTAL 22.8 BILLION KWH

ment in any year will depend upon how far water supplies may fall below normal and the extent to which new industrial loads fail to materialize because of firm power shortage. The effect of minimum water conditions will be most crucial in the year 1951-52. However, water supplies of average or better will mean little curtailment of present industrial loads.

Pacific Northwest power needs in terms of actual energy use have increased about three-fold during the eight years just passed. More than 22 billion kilowatt-hours were consumed in 1948 as compared to less than 7 billion kilowatt-hours in 1940. By 1958, it is estimated that over 47 billion kilowatt-hours will be needed annually or more than twice the present requirements. The phenomenal increase in power requirements is the result of extremely rapid population growth coupled with expansion of farms, businesses and industries. In 1948, about half of the primary aluminum production of the United States was in the Pacific Northwest and required one-fourth of total Northwest energy.

Since 1940 the Pacific Northwest has experienced an increase in population of 44 per cent as compared with a 13 per cent increase for the nation. Net migration exceeded 1,000,000 between 1940 and 1949. Oregon led all states in growth with an increase of 59 per cent, Washington 48 per cent, and Idaho 13 per cent. Montana's population decreased 7 per cent during this period.

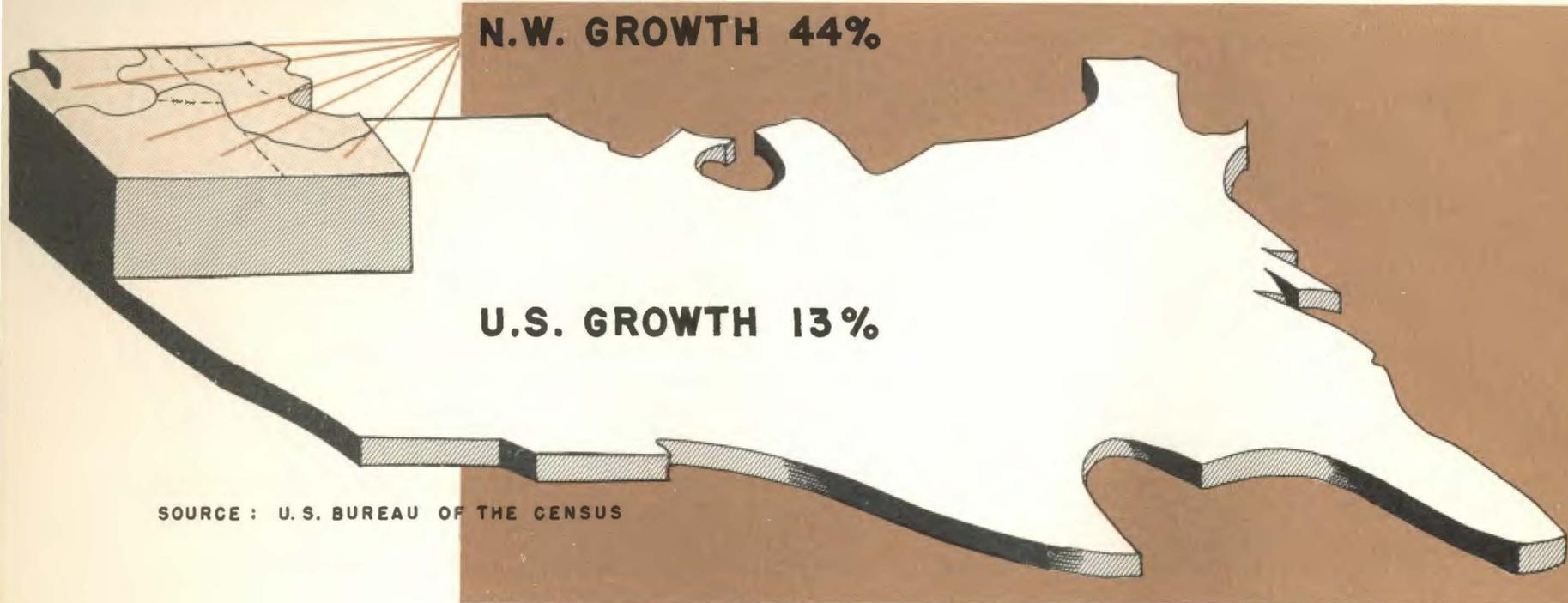
Population increase is only part of the reason for the region's rapid growth in non-industrial power requirements. Farms and business are rapidly finding new uses for power, and electric consumption in the home is steadily increasing as new labor saving devices are added and better lighting introduced. Low-cost power is also primarily responsible for major new power demands from steadily expanding industries, many of which are now limited by available power supplies.

THREE-FOLD INCREASE

POPULATION GROWS

POWER USE EXPANDS

CHART XI
1940-1949 POPULATION GROWTH IN PACIFIC N.W.



SOURCE : U. S. BUREAU OF THE CENSUS

NEEDS OF INDUSTRY

Power requirements of large industries are expected to approach 22 billion kilowatt-hours in the next 10 years compared to over 10 billion kilowatt-hours in 1948. Electric furnace production of phosphate and phosphate fertilizers is estimated to require about 2 billion kilowatt-hours annually by 1958, an additional 3-1/3 billion will be required for other electro-chemical production, and 4 billion will be needed for non-ferrous metal production other than aluminum.

Although large additional amounts of power may be needed for aluminum production, new power supplies will be first allocated to industries that will diversify the present industrial pattern for maximum employment and production. Therefore, present estimates for 1958 do not include increased supplies for the aluminum industry.

Utilities	Billions of Kilowatt-hours	Percent of total generation
Publicly owned:		
Bonneville Power Administration .	12.9	56.6
Seattle City Light	1.2	5.3
Tacoma City Light8	3.5
Total publicly owned	14.9	65.4
Privately owned:		
Puget Sound Power & Light Company	1.7	7.4
Washington Water Power Company .	1.4	6.1
Pacific Power & Light Company . .	.6	2.6
Portland General Electric Company	.7	3.1
Montana Power Company	2.5	11.0
Idaho Power Company	1.0	4.4
Total privately owned	8.7	34.6
Total Northwest Power Pool . . .	22.8	100.0

The above utilities are members of the Northwest Power Pool. Although Utah Power and Light Company and British Columbia Electric Company are also members of the Northwest Power Pool, they are not included above because their major service areas lie outside the Columbia Basin.

TABLE X

ACTUAL GENERATION BY THE PRINCIPAL ELECTRIC UTILITY SYSTEMS OF THE PACIFIC NORTHWEST, FISCAL YEAR 1949

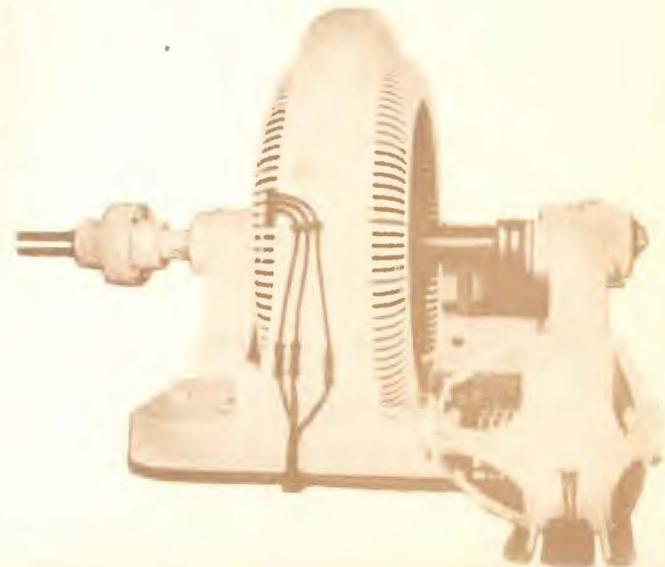


TABLE XI

GENERAL SPECIFICATIONS — EXISTING, AUTHORIZED AND RECOMMENDED PROJECTS

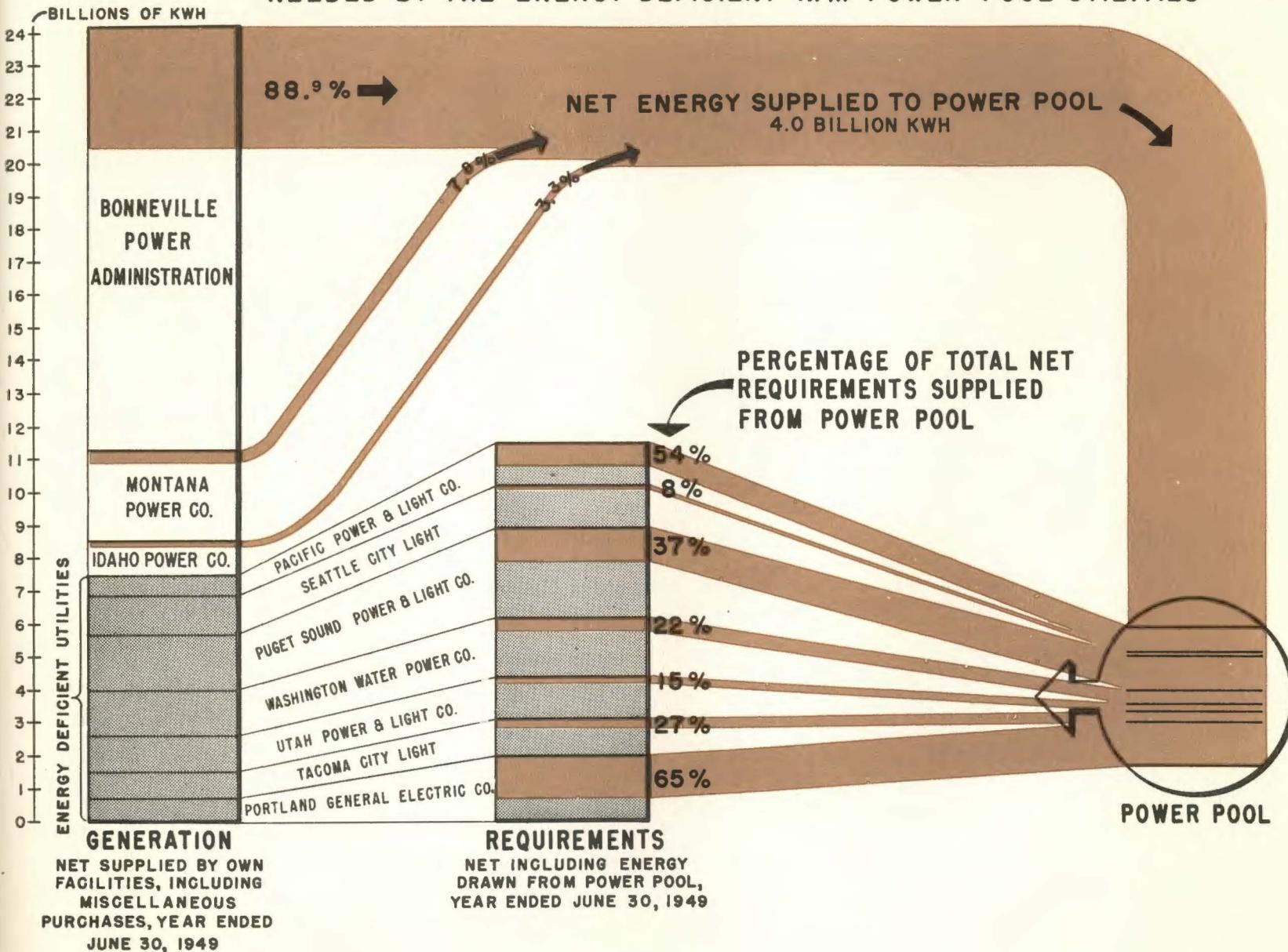
INSTALLATIONS AND CAPABILITIES CORRESPOND TO A COORDINATED SYSTEM OF OPERATION OF ALL PLANTS SHOWN

	Location	Plant Installations ^{1/} Kilowatts	Nominal Prime Power ^{2/} Average Kilowatts	Pool Elevation Feet	Usable Storage Acre-Feet	Average Head Feet	Purpose
Existing Projects							
	Washington	1,944,000 ^{3/}	1,549,000 ^{5/}	1,288.0	5,212,000	330	Power, irrigation and navigation
	Wash.-Ore.	518,400	479,000	72.0		60	Power and navigation
	Idaho	13,400	6,000	4,245.0	95,200	49	Power and irrigation
	do.	1,500	2,000	2,800.0		31	Power and irrigation
	do.	8,000	9,000	2,947.0	14,800	94	Power and irrigation
Projects under Construction							
	Montana	285,000	171,000	3,559.0	2,980,000	377	Power, irrigation, navigation and flood control
	Wash.-Ore.	980,000	627,000	340.0		87	Power and navigation
	Idaho	40,500	7,000	4,196.0	464,200	260	Power, irrigation and flood control
	Oregon ^{4/}	115,000	31,000	929.0	368,000	228	Power, irrigation, navigation and flood control
	do.	100,000	31,000	1,569.0	340,000	299	Power, irrigation, navigation and flood control
	do.	18,000	9,000	1,197.0		81	Power, irrigation, navigation and flood control
Authorized Projects							
	Washington	1,152,000	829,000	937.5		171	Power, irrigation and navigation
	do.	10,000	6,000			140	Power and irrigation
	do.	12,000	10,000			118	Power and irrigation
	Idaho	112,500	39,000	5,620.0	1,200,000	144	Power, irrigation and flood control
	Washington	220,000	158,000	715.0		77	Power and navigation
	do.	260,000	195,000	633.0		96	Power and navigation
	do.	240,000	180,000	533.0		89	Power and navigation
	do.	260,000	190,000	440.0		93	Power and navigation
Recommended Projects							
	Montana	588,000	234,000	2,440.0	4,250,000	300	Power and flood control
	Idaho	42,600	24,000	2,062.5	1,140,000	24	Power
	Washington	1,590,000	733,000	550.0		129	Power, navigation and flood control
	Wash.-Ore.	1,275,000	720,000	255.0		95	Power and navigation
	do.	980,000	691,000	160.0		88	Power and navigation
	Ore.-Idaho	800,000	640,000	2,077.0	3,880,000	510	Power, navigation and flood control
	Idaho	30,000	21,000	4,505.0		400	Power and irrigation
	do.	90,000	42,000	4,060.0		794	Power and irrigation
	do.	60,000	41,000	3,266.0	843,000	280	Power, irrigation and flood control
	Oregon	20,000	10,000	1,510.0	221,000	204	Power, navigation and flood control
	do.	15,000	10,000	695.0		53	Power, navigation and flood control
	do.	25,000	14,000	1,683.0	182,000	418	Power, irrigation, navigation and flood control
	do.	81,000	20,000	984.0	322,000	315	Power, irrigation, navigation and flood control
	do.	15,000	8,000	670.0		93	Power, irrigation, navigation and flood control

^{1/} Name plate ratings^{2/} Average capability during the storage draw-down period^{3/} Twelve of ultimate 18 units are now in operation and 6 units are being manufactured^{4/} Power facilities are not authorized^{5/} Pumping requirements of the Columbia Basin Project have been deducted

BPA SUPPLIED 88.9% OF NET ENERGY

NEEDED BY THE ENERGY DEFICIENT N.W. POWER POOL UTILITIES

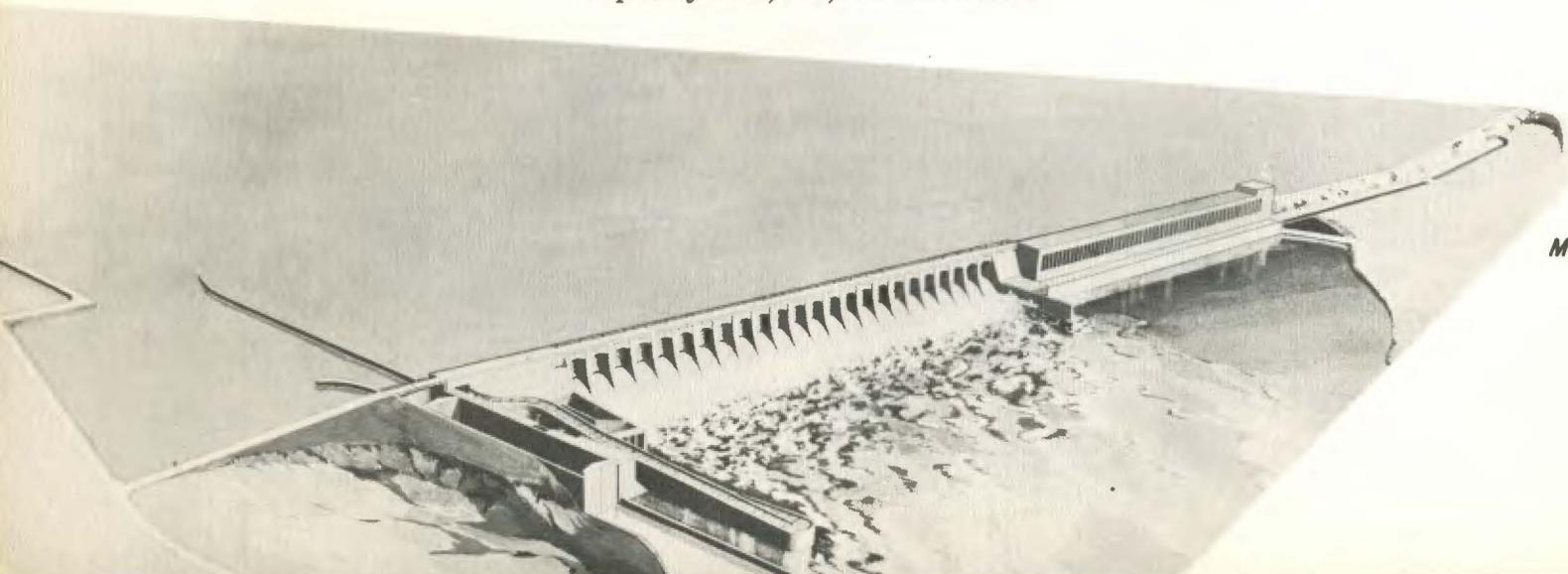


SCHEDULED GENERATION

Present recommendations of the federal government call for 21 new power producing plants to be added to the Columbia River system by 1958. All scheduled installations of new generators at Grand Coulee dam will be completed by the fall of 1951, making the plant the largest power producing project in the world. New plants now under construction include McNary, Hungry Horse, Anderson Ranch, Meridian, Detroit, and Big Cliff. Several other plants are authorized but not yet under construction. These are Chief Joseph, Palisades, Ice Harbor, Lower Monumental, Little Goose, Roza and Chandler, for which appropriations are required to initiate construction. New plants recommended for authorization and construction are Albeni Falls, Hells Canyon, Libby, Garden Valley, Upper Scriver Creek and Lower Scriver Creek, and the power features are to be authorized for Meridian, Dexter and Hills Creek projects. Immediate authorizations are necessary to prevent delays in the recommended construction schedules.

WORLD'S LARGEST

Three of the new plants recommended will rank among the world's largest. Chief Joseph, when completed, will have a total installed capacity of over 1 million kilowatts; McNary's installed capacity will be only slightly less than 1 million kilowatts; and the installed capacity at Hells Canyon will be 800,000 kilowatts. These compare with Hoover Dam's capacity of 1,317,000 kilowatts.



McNARY DAM



Auditors' Report

COLUMBIA RIVER POWER SYSTEM

Consisting of the Bonneville Power Administration
and Power Components of the Bonneville Dam Project
and the Columbia Basin Project (Grand Coulee Dam)

FINANCIAL STATEMENTS

AND

AUDITORS' REPORT

AS OF JUNE 30, 1949

● ARTHUR ANDERSEN & CO.

Accountants and Auditors
Dexter Horton Building
Seattle

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM

Consisting of Bonneville Power Administration and
the Power Components of Bonneville Dam Project
and Columbia Basin Project (Grand Coulee Dam)

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ARTHUR ANDERSEN & CO.
ACCOUNTANTS AND AUDITORS

DEXTER HORTON BUILDING
SEATTLE 4

AUDITORS' REPORT

Dr. Paul J. Raver, Administrator,
Bonneville Power Administration,
Portland, Oregon

Dear Sir:

We have examined the statement of combined assets and liabilities of Bonneville Power Administration, Department of the Interior, and the power components of Bonneville Dam Project, built and operated by the Corps of Engineers, U. S. Army and Columbia Basin Project (Grand Coulee Dam), built and operated by the Bureau of Reclamation, Department of the Interior, hereinafter referred to as COLUMBIA RIVER POWER SYSTEM, as of June 30, 1949; the statements of assets and liabilities allocated to power of each of these projects as of that date; and the related statements of revenues and expenses allocated to power for the fiscal year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances to enable us to render an opinion as to the financial position of the power components of the projects and the results of their power operations.

Property costs and operating expenses of the System do not include costs of administrative and other services rendered by other departments and agencies of the U. S. Government which, under governmental accounting procedures, are not allocated to individual projects. It is not practicable to determine the amounts of such costs applicable to these projects.

Property, plant and equipment of Bonneville Dam Project and Columbia Basin Project at June 30, 1949 include facilities totaling \$188,999,477.60 which have been determined to be jointly useful for power generation and for other purposes. Acting under authority delegated by Congress, determinations have been made, by the Federal Power Commission in the case of Bonneville Dam Project and by the Secretary of the Interior in the case of Columbia Basin Project, that certain proportions of these facilities as set forth in Note 2 of Schedule 6 are allocable to power.

The two projects have maintained their accounts in conformity with these allocations and the designated proportions of Joint facilities, amounting to \$105,390,589.14 at June 30, 1949, are included in power assets in the accompanying financial statements. Operating and interest expenses applicable to Joint facilities have been allocated to power and nonpower activities in the same proportions as the related property costs. We have not examined the bases of these allocations which involve engineering findings and other matters outside our purview as accountants and we take no responsibility with respect to such allocations; however, the fairness of the accompanying power financial statements is subject to the fairness of these underlying allocations.

Interest and depreciation on the portion of Joint facilities at Columbia Basin Project allocated to downstream river regulation have been deferred to future periods on the basis that they will be recovered from the operations of additional downstream hydro plants which, it is contemplated, will be constructed in future years. The deferment of these charges is consistent with the allocation of costs of this project as made by the Secretary of the Interior but the exclusion of these items from present power costs is dependent upon the construction of the proposed downstream plants.

Except for the omission of certain costs as set forth in paragraph two above and subject to the fairness of the allocations of Joint facilities and to the construction of the proposed downstream hydro plants as discussed in paragraphs three and four, respectively, in our opinion, the accompanying statements of assets and liabilities allocated to power and the related statements of revenues and expenses present fairly the position of Columbia River Power System and its power components at June 30, 1949 and the results of their power operations for the fiscal year ended that date, and are in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year and are in accordance with the uniform system of accounts prescribed by the Federal Power Commission pursuant to the Federal Power Act.

Arthur Andersen & Co.

Seattle, Washington

August 26, 1949

UNITED STATES OF AMERICA

SCHEDULE 1

COLUMBIA RIVER POWER SYSTEM
Consisting of Bonneville Power Administration and the Power Components
of Bonneville Dam Project and Columbia Basin Project (Grand Coulee Dam)

STATEMENT OF COMBINED ASSETS AND LIABILITIES ALLOCATED TO POWER (INCLUDING FUTURE DOWNSTREAM RIVER REGULATION) - JUNE 30, 1949 AND 1948

A S S E T S	June 30		L I A B I L I T I E S	June 30	
	1949	1948		1949	1948
ELECTRIC UTILITY PLANT at original cost, including interest during construction (Notes 1 and 2):			INVESTMENT OF U. S. GOVERNMENT:		
Specific power facilities (powerhouses, generating equipment and transmission plant)	\$252,841,183.95	\$213,520,174.10	Congressional appropriations (including amounts for operating expenses), allotments and W. P. A. expenditures, less amounts not requisitioned	\$392,468,118.64	\$340,696,895.89
Joint facilities (dams, reservoirs, fishways, general service facilities, etc.) allocated to power -			Transfers from other Federal projects (net)	2,384,232.13	874,179.88
Present power production	68,847,193.72	67,736,803.63	Interest on Federal investment	62,302,868.92	54,785,570.20
Future downstream river regulation	36,543,395.42	35,945,075.24		\$457,155,219.69	\$396,356,645.97
	\$358,231,773.09	\$317,202,052.97	Less - Funds returned to U. S. Treasury in repayment of Federal investment (including amounts for operating expenses and interest) (Schedule 5)	148,893,914.48	122,668,521.62
Less - Reserve for depreciation (Note 3) -			Net investment of U. S. Government	\$308,261,305.21	\$273,688,124.35
Specific power facilities	\$ 22,429,503.94	\$ 19,736,969.49			
Joint facilities allocated to power -			CURRENT LIABILITIES:		
Present power production	2,872,545.58	2,434,157.41	Accounts payable	\$ 10,695,981.98	\$ 6,541,910.19
Future downstream river regulation	1,553,800.60	1,293,609.52	Due to Central Valley Project	-	1,477,324.12
	\$ 26,855,850.12	\$ 23,464,736.42	Employees' accrued leave	2,014,291.45	1,453,465.53
Original cost less reserve	\$331,375,922.97	\$293,737,316.55		\$ 12,710,273.43	\$ 9,472,699.84
INTEREST AND DEPRECIATION CHARGES ON JOINT FACILITIES ALLOCATED TO FUTURE DOWNSTREAM RIVER REGULATION -- recoverable from operations of future downstream hydro plants	\$ 7,621,681.68	\$ 6,497,401.03	DEFERRED CREDITS AND RESERVES:		
CUSTOMER'S DEPOSIT, see contra	\$ 897,558.91	\$ 897,558.91	Customer's deposit, see contra	\$ 897,558.91	\$ 897,558.91
CURRENT ASSETS:			Other deferred credits	335,139.92	19,570.74
Cash held by Treasury Department disbursing officers	\$ 10,100,275.46	\$ 3,655,817.30	Reserve for deferred maintenance	336,000.00	294,000.00
Contract retentions and other special deposits	2,385,690.24	461,233.13	Contribution in aid of construction -- by State of Washington	175,526.14	175,526.14
Accounts receivable -				\$ 1,744,224.97	\$ 1,386,655.79
Customers -			ACCUMULATED NET REVENUES (Note 1):		
Departments and agencies of U. S. Government	266,721.73	407,702.45	Balance at beginning of year	\$ 32,069,325.21	\$ 22,933,144.04
Other	5,528,135.20	4,711,404.70	Add - Net revenues for the year	10,665,768.82	9,136,181.17
Miscellaneous receivables	205,985.34	290,495.14	Balance at end of year	\$ 42,735,094.03	\$ 32,069,325.21
Materials and supplies	5,806,321.89	4,483,770.01		\$365,450,897.64	\$316,616,805.19
	\$ 24,293,129.86	\$ 14,010,422.73			
DEFERRED CHARGES:					
Losses on abandoned properties (principally rights-of-way and clearing costs), being amortized over five years from dates of abandonment	\$ 323,581.62	\$ 615,415.50			
Clearing accounts and other deferred charges	939,022.60	858,690.47			
	\$ 1,262,604.22	\$ 1,474,105.97			
	\$365,450,897.64	\$316,616,805.19			

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

SCHEDULE 2

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM

Consisting of Bonneville Power Administration and the Power Components
of Bonneville Dam Project and Columbia Basin Project (Grand Coulee Dam)

STATEMENT OF COMBINED REVENUES AND EXPENSES ALLOCATED TO POWER (INCLUDING FUTURE DOWNSTREAM RIVER REGULATION)

FOR THE FISCAL YEARS ENDED JUNE 30, 1949 AND 1948

	Fiscal Year Ended June 30	
	1949	1948
OPERATING REVENUES:		
Sales of electric energy	\$27,611,085.66	\$24,320,480.47
Other electric revenues	209,942.89	193,229.61
Total operating revenues	\$27,821,028.55	\$24,513,710.08
OPERATING EXPENSES (Notes 1 and 2):		
Purchased power	\$ 735,239.31	\$ 927,057.71
Operation -		
Specific power facilities	3,673,153.66	3,125,227.69
Joint facilities allocated to power	168,862.16	211,210.48
Provision for rental and excess installation costs at Shasta Dam of generating facilities formerly leased from Central Valley Project (1949 credit represents adjustment of prior years' provisions)	242,124.02*	335,062.26
Maintenance -		
Specific power facilities	1,462,606.70	1,115,767.69
Joint facilities allocated to power	475,975.50	239,593.42
Reversal of prior years' provisions for deferred maintenance	-	315,000.00*
Depreciation (Note 3)		
Specific power facilities	4,149,589.29	3,614,443.61
Joint facilities allocated to power	350,881.66	395,736.58
Less - Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	106,247.46*	127,641.66*
Amortization of losses on abandoned properties	483,603.67	291,834.03
Total operating expenses	\$11,151,540.47	\$ 9,613,291.81
Net operating revenues	\$16,669,488.08	\$14,700,418.27
INTEREST AND OTHER DEDUCTIONS:		
Interest on Federal investment allocated to power	\$ 7,517,298.72	\$ 6,636,320.31
Less -		
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	1,018,033.19*	868,853.96*
Amount charged to construction	643,848.84*	366,162.10*
Miscellaneous income deductions (net)	148,302.57	162,932.85
Total interest and other deductions	\$ 6,003,719.26	\$ 5,564,237.10
Net revenues	\$10,665,768.82	\$ 9,136,181.17

*Denotes red figure

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

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM

Consisting of Bonneville Power Administration and the Power Components
of Bonneville Dam Project and Columbia Basin Project (Grand Coulee Dam)

STATEMENT COMBINING ASSETS AND LIABILITIES ALLOCATED TO POWER (INCLUDING FUTURE DOWNSTREAM RIVER REGULATION) - JUNE 30, 1949

<u>A S S E T S</u>	Bonneville Power Administration (Schedule 7)	Bonneville Dam Project (Schedule 10)	Columbia Basin Project (Schedule 13)	Eliminations and Adjustments	Combined (To Schedule 1)
ELECTRIC UTILITY PLANT at original cost, including interest during construction (Notes 1 and 2):					
Specific power facilities (powerhouses, generating equipment and transmission plant)	\$132,954,407.38	\$38,174,577.83	\$ 81,712,198.74	\$ -	\$252,841,183.95
Joint facilities (dams, reservoirs, fishways, general service facilities, etc.) allocated to power -					
Present power production	-	20,652,280.90	48,194,912.82	-	68,847,193.72
Future downstream river regulation	-	-	36,543,395.42	-	36,543,395.42
	\$132,954,407.38	\$58,826,858.73	\$166,450,506.98	\$ -	\$358,231,773.09
Less - Reserves for depreciation (Note 3) -					
Specific power facilities	\$ 16,327,218.55	\$ 3,222,622.24	\$ 2,879,663.15	\$ -	\$ 22,429,503.94
Joint facilities allocated to power -					
Present power production	-	824,164.95	2,048,380.63	-	2,872,545.58
Future downstream river regulation	-	-	1,553,800.60	-	1,553,800.60
	\$ 16,327,218.55	\$ 4,046,787.19	\$ 6,481,844.38	\$ -	\$ 26,855,850.12
Original cost less reserves	\$116,627,188.83	\$54,780,071.54	\$159,968,662.60	\$ -	\$331,375,922.97
INTEREST AND DEPRECIATION CHARGES ON JOINT FACILITIES ALLOCATED TO FUTURE DOWNSTREAM RIVER REGULATION -- recoverable from operations of future downstream hydro plants	\$ -	\$ -	\$ 7,621,681.68	\$ -	\$ 7,621,681.68
SPECIAL DEPOSITS:					
Customer's deposit, see contra	\$ 897,558.91	\$ -	\$ -	\$ -	\$ 897,558.91
Payments for amortization in excess of depreciation at Bonneville Dam Project (Note 3, Schedule 9)	7,539,194.28	-	-	7,539,194.28	-
	\$ 8,436,753.19	\$ -	\$ -	\$ 7,539,194.28	\$ 897,558.91
CURRENT ASSETS:					
Cash held by Treasury Department disbursing officers	\$ 4,486,594.67	\$ -	\$ 5,613,680.79	\$ -	\$ 10,100,275.46
Receipts deposited with Treasury Department for transfer to Reclamation Fund for the account of Columbia Basin Project	5,000,000.00	-	-	5,000,000.00	-
Contract retentions and other special deposits	524,843.19	-	1,860,847.05	-	2,385,690.24
Due from Bonneville Power Administration	-	-	5,000,000.00	5,000,000.00	-
Accounts receivable -					
Customers -					
Departments and agencies of U. S. Government	266,721.73	-	-	-	266,721.73
Other	5,528,135.20	-	-	-	5,528,135.20
Miscellaneous receivables	120,397.09	34,356.09	51,232.16	-	205,985.34
Materials and supplies	3,704,344.90	-	2,101,976.99	-	5,806,321.89
	\$ 19,631,036.78	\$ 34,356.09	\$ 14,627,736.99	\$10,000,000.00	\$ 24,293,129.86
DEFERRED CHARGES:					
Losses on abandoned properties (principally rights-of-way and clearing costs), being amortized over five years from dates of abandonment	\$ 323,581.62	\$ -	\$ -	\$ -	\$ 323,581.62
Clearing accounts and other deferred charges	558,133.50	30,900.75	349,988.35	-	939,022.60
	\$ 881,715.12	\$ 30,900.75	\$ 349,988.35	\$ -	\$ 1,262,604.22
	\$145,576,693.92	\$54,845,328.38	\$182,568,069.62	\$17,539,194.28	\$365,450,897.64

The accompanying notes (Schedule 6) together with the notes to the financial statements of the individual projects (Schedules 9, 12 and 15) are an integral part of this statement.

SCHEDULE 3
(Continued)

UNITED STATES OF AMERICA
COLUMBIA RIVER POWER SYSTEM
Consisting of Bonneville Power Administration and the Power Components
of Bonneville Dam Project and Columbia Basin Project (Grand Coulee Dam)

STATEMENT COMBINING ASSETS AND LIABILITIES ALLOCATED TO POWER (INCLUDING FUTURE DOWNSTREAM RIVER REGULATION) - JUNE 30, 1949

<u>L I A B I L I T I E S</u>	<u>Bonneville Power Administration (Schedule 7)</u>	<u>Bonneville Dam Project (Schedule 10)</u>	<u>Columbia Basin Project (Schedule 13)</u>	<u>Eliminations and Adjustments</u>	<u>Combined (To Schedule 1)</u>
INVESTMENT OF U. S. GOVERNMENT:					
Congressional appropriations (including amounts for operating expenses), allotments and W. P. A. expenditures, less amounts not requisitioned	\$163,904,390.60	\$61,386,398.24	\$167,177,329.80	\$ -	\$392,468,118.64
Transfers from other Federal projects (net)	137,567.83	87,900.00	2,158,764.30	-	2,384,232.13
Interest on Federal investment	15,011,268.97	14,998,628.72	32,292,971.23	-	62,302,868.92
	-----	-----	-----	-----	-----
Less - Funds returned to U. S. Treasury in repayment of Federal investment (including amounts for operating expenses and interest)	\$179,053,227.40	\$76,472,926.96	\$201,629,065.33	\$ -	\$457,155,219.69
	75,534,634.96	29,208,000.00	39,151,279.52	5,000,000.00	148,893,914.48
Net investment of U. S. Government	\$103,518,592.44	\$47,264,926.96	\$162,477,785.81	\$ 5,000,000.00	\$308,261,305.21
	-----	-----	-----	-----	-----
CURRENT LIABILITIES:					
Accounts payable	\$ 5,293,829.30	\$ 41,207.14	\$ 5,360,945.54	\$ -	\$ 10,695,981.98
Employees' accrued leave	1,324,974.09	-	689,317.36	-	2,014,291.45
Due to Columbia Basin Project	5,000,000.00	-	-	5,000,000.00	-
	-----	-----	-----	-----	-----
	\$ 11,618,803.39	\$ 41,207.14	\$ 6,050,262.90	\$ 5,000,000.00	\$ 12,710,273.43
	-----	-----	-----	-----	-----
DEFERRED CREDITS AND RESERVES:					
Customer's deposit, see contra	\$ 897,558.91	\$ -	\$ -	\$ -	\$ 897,558.91
Other deferred credits	335,139.92	-	-	-	335,139.92
Reserve for deferred maintenance	-	-	336,000.00	-	336,000.00
Contribution in aid of construction - by State of Washington	-	-	175,526.14	-	175,526.14
	-----	-----	-----	-----	-----
	\$ 1,232,698.83	\$ -	\$ 511,526.14	\$ -	\$ 1,744,224.97
	-----	-----	-----	-----	-----
RESERVE FOR FUTURE POWER COSTS -- Excess of repayment to U. S. Treasury applied to amortization of cost of power facilities over depreciation (Note 4, Schedule 12)					
	\$ -	\$ 7,539,194.28	\$ -	\$ 7,539,194.28	\$ -
	-----	-----	-----	-----	-----
ACCUMULATED NET REVENUES (Note 1):					
Balance at beginning of year	\$ 23,295,728.31	\$ -	\$ 8,773,596.90	\$ -	\$ 32,069,325.21
Add - Net revenues for the year ended June 30, 1949	5,910,870.95	-	4,754,897.87	-	10,665,768.82
	-----	-----	-----	-----	-----
Balance at end of year	\$ 29,206,599.26	\$ -	\$ 13,528,494.77	\$ -	\$ 42,735,094.03
	-----	-----	-----	-----	-----
	\$145,576,693.92	\$24,845,328.38	\$182,568,069.62	\$17,539,194.28	\$365,450,897.64
	-----	-----	-----	-----	-----

The accompanying notes (Schedule 6) together with the notes to the financial statements of the individual projects (Schedules 9, 12 and 15) are an integral part of this statement.

UNITED STATES OF AMERICA

SCHEDULE 4

COLUMBIA RIVER POWER SYSTEM

Consisting of Bonneville Power Administration and the Power Components
of Bonneville Dam Project and Columbia Basin Project (Grand Coulee Dam)

STATEMENT COMBINING REVENUES AND EXPENSES ALLOCATED TO POWER (INCLUDING FUTURE DOWNSTREAM RIVER REGULATION)

FOR THE FISCAL YEAR ENDED JUNE 30, 1949

	Bonneville Power Administration (Schedule 8)	Bonneville Dam Project (Schedule 11)	Columbia Basin Project (Schedule 14)	Eliminations	Combined (Schedule 2)
OPERATING REVENUES:					
Sales of electric energy	\$27,611,085.66	\$ -	\$ -	\$ -	\$27,611,085.66
Less - Amounts allocated to -					
Bonneville Dam Project	2,991,618.50*	2,991,618.50	-	-	-
Columbia Basin Project	8,812,430.00*	-	8,812,430.00	-	-
Payment for river regulation benefits at Bonneville Dam Project	-	-	187,570.00	187,570.00	-
Other electric revenues	209,942.89	-	-	-	209,942.89
Total operating revenues	\$16,016,980.05	\$2,991,618.50	\$9,000,000.00	\$187,570.00	\$27,821,028.55
OPERATING EXPENSES (Notes 1 and 2):					
Purchased power	\$ 735,239.31	\$ -	\$ -	\$ -	\$ 735,239.31
Operation -					
Specific power facilities	2,729,129.48	298,502.53	645,921.65	-	3,673,153.66
Joint facilities allocated to power	-	62,448.48	106,413.68	-	168,862.16
Payment for river regulation benefits	-	187,570.00	-	187,570.00	-
Reversal of excessive prior years' provisions for rental and excess installation costs at Shasta Dam of generating facilities formerly leased from Central Valley Project	-	-	242,124.02*	-	242,124.02*
Maintenance -					
Specific power facilities	978,770.76	317,798.80	166,037.14	-	1,462,606.70
Joint facilities allocated to power	-	163,016.19	312,959.31	-	475,975.50
Depreciation (Note 3) -					
Specific power facilities	3,091,443.79	473,705.76	584,439.74	-	4,149,589.29
Joint facilities allocated to power	-	104,491.92	246,389.74	-	350,881.66
Less - Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	-	-	106,247.46*	-	106,247.46*
Amortisation of losses on abandoned properties	483,603.67	-	-	-	483,603.67
Total operating expenses	\$ 8,018,187.01	\$1,607,533.68	\$1,713,389.78	\$187,570.00	\$11,191,940.47
Net operating revenues	\$ 7,998,793.04	\$1,384,084.82	\$7,286,610.22	\$ -	\$16,669,488.08
INTEREST AND OTHER DEDUCTIONS:					
Interest on Federal investment allocated to power	\$ 2,253,427.84	\$1,390,693.27	\$3,873,177.61	\$ -	\$ 7,517,298.72
Less -					
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	-	-	1,018,033.19*	-	1,018,033.19*
Amount charged to construction	321,642.01*	6,608.45*	315,598.38*	-	643,848.84*
Miscellaneous income deductions (net)	156,136.26	-	7,833.69*	-	148,302.57
Total interest and other deductions	\$ 2,087,922.09	\$1,384,084.82	\$2,531,712.35	\$ -	\$ 6,003,719.26
Net revenues	\$ 5,910,870.95	\$ -	\$4,754,897.87	\$ -	\$10,665,768.82

*Denotes red figure

The accompanying notes (Schedule 6) together with the notes to the financial statements of the individual projects (Schedules 9, 12 and 15) are an integral part of this statement.

SCHEDULE 5

UNITED STATES OF AMERICA

COLUMBIA RIVER POWER SYSTEM
 Consisting of Bonneville Power Administration and the Power Components
 of Bonneville Dam Project and Columbia Basin Project (Grand Coulee Dam)

COMBINING STATEMENT OF FUNDS RETURNED TO U. S. TREASURY IN REPAYMENT

OF FEDERAL INVESTMENT ALLOCATED TO POWER

FOR THE FISCAL YEAR ENDED JUNE 30, 1949

	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Adjustments	Combined
Sales of electric energy	\$27,611,085.66	\$ -	\$ -	\$ -	\$27,611,085.66
Less -					
Increase in uncollected sales, represented by accounts receivable from customers	\$ 675,749.78	\$ -	\$ -	\$ -	\$ 675,749.78
Collections in transit to U. S. Treasury	56,133.32	-	-	-	56,133.32
Noncash (exchange) power sales	763,015.34	-	-	-	763,015.34
	\$ 1,494,898.44	\$ -	\$ -	\$ -	\$ 1,494,898.44
Cash receipts from sales of electric energy deposited in U. S. Treasury	\$26,116,187.22	\$ -	\$ -	\$ -	\$26,116,187.22
Miscellaneous receipts allocated to power	307,292.54	-	111,460.50	-	418,753.04
Total receipts allocated to power deposited in U. S. Treasury	\$26,423,479.76	\$ -	\$ 111,460.50	\$ -	\$26,534,940.26
Allocation of receipts among projects -					
Receipts transferred to the accounts of other projects with the U. S. Treasury	9,345,850.00*	5,533,420.00	3,812,430.00	-	-
Receipts held for transfer to the accounts of other projects with the U. S. Treasury	5,000,000.00*	-	-	5,000,000.00	-
Payment for river regulation benefits	-	187,570.00*	187,570.00	-	-
Amount transferred to Emergency Fund	309,547.40*	-	-	-	309,547.40*
Funds returned to U. S. Treasury in repayment of Federal investment allocated to power	\$11,768,082.36	\$5,345,850.00	\$4,111,460.50	\$5,000,000.00	\$26,225,392.86

*Denotes red figure

UNITED STATES OF AMERICA

SCHEDULE 5
(Continued)

COLUMBIA RIVER POWER SYSTEM
Consisting of Bonneville Power Administration and the Power Components
of Bonneville Dam Project and Columbia Basin Project (Grand Coulee Dam)

COMBINING STATEMENT OF FUNDS RETURNED TO U. S. TREASURY IN REPAYMENT

OF FEDERAL INVESTMENT ALLOCATED TO POWER

FOR THE PERIOD FROM BEGINNING OF OPERATIONS TO JUNE 30, 1949

	<u>Bonneville Power Administration</u>	<u>Bonneville Dam Project</u>	<u>Columbia Basin Project</u>	<u>Adjustments</u>	<u>Combined</u>
Sales of electric energy	\$153,097,413.29	\$ -	\$ -	\$ -	\$153,097,413.29
Less -					
Increase in uncollected sales, represented by accounts receivable from customers	\$ 5,794,856.93	\$ -	\$ -	\$ -	\$ 5,794,856.93
Collections in transit to U. S. Treasury	56,133.32	-	-	-	56,133.32
Noncash (exchange) power sales	3,079,415.08	-	-	-	3,079,415.08
	\$ 8,930,405.33	\$ -	\$ -	\$ -	\$ 8,930,405.33
Cash receipts from sales of electric energy deposited in U. S. Treasury	\$144,167,007.96	\$ -	\$ -	\$ -	\$144,167,007.96
Miscellaneous receipts allocated to power	5,146,044.14	-	532,599.84	-	5,678,643.98
Total receipts allocated to power deposited in U. S. Treasury	\$149,313,052.10	\$ -	\$ 532,599.84	\$ -	\$149,845,651.94
Allocation of receipts among projects -					
Receipts transferred to the accounts of other projects with the U. S. Treasury	67,826,679.68*	30,520,990.00	37,305,689.68	-	-
Receipts held for transfer to the accounts of other projects with the U. S. Treasury	5,000,000.00*	-	-	5,000,000.00	-
Payment for river regulation benefits	-	1,312,990.00*	1,312,990.00	-	-
Amount transferred to Emergency Fund	951,737.46*	-	-	-	951,737.46*
Funds returned to U. S. Treasury in repayment of Federal investment allocated to power	\$ 75,534,634.96	\$29,208,000.00	\$39,151,279.52	\$5,000,000.00	\$148,893,914.48

*Denotes red figure

SCHEDULE 6

COLUMBIA RIVER POWER SYSTEM

NOTES TO FINANCIAL STATEMENTS ON SCHEDULES 1, 2, 3 AND 4

1. CERTAIN COSTS NOT INCLUDED:

Property costs and operating expenses do not include costs of administrative and other services rendered by other departments and agencies of the U. S. Government which, under governmental accounting procedures, are not allocated to individual projects. It is not practicable to determine the amount of such costs applicable to these projects.

2. ALLOCATION OF JOINT COSTS AND EXPENSES:

Property, plant and equipment determined to be jointly useful for power generation and for other purposes, consisting principally of dams, reservoirs, fishways, and general service facilities, has been allocated 50% to power and 50% to nonpower purposes at Bonneville Dam Project and 56% to power (including future downstream river regulation) and 44% to nonpower purposes at Columbia Basin Project in accordance with determinations made by the Federal Power Commission and by the Secretary of the Interior, respectively, acting under authority delegated by Congress. Operation and maintenance expenses applicable to joint facilities have been allocated to power and nonpower operations in the same proportions as the related property costs.

3. DEPRECIATION POLICY:

Depreciation of the property of Bonneville Power Administration, consisting principally of transmission facilities, has been computed on the straight line method and depreciation of the power facilities of the two dams has been computed on the compound interest method using an interest factor of 2.5% in each case based upon the estimated service lives of the various classes of property as determined by engineering studies, except that no property has been assigned a service life of longer than one hundred years which has been assumed to be the maximum economic life of the projects. Land rights and clearing costs allocated to power are being amortized over such one hundred year period. Depreciation of general service facilities at Columbia Basin Project, which is charged to clearing accounts and redistributed to construction and other accounts, has been computed on the straight line method based on the estimated service lives of the various types of facilities. A composite depreciation reserve is maintained for each class of property and the original cost of property retired, less net salvage applicable thereto, is charged to the related reserve.

4. CONTINGENT LIABILITIES:

The projects are contingently liable under pending litigation which, in some instances, involve claims of substantial amounts. In the opinion of counsel for the projects, any actual liability which may result from such litigation will not be material.

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
BONNEVILLE POWER ADMINISTRATION

STATEMENT OF ASSETS AND LIABILITIES - JUNE 30, 1949

<u>A S S E T S</u>						<u>L I A B I L I T I E S</u>
ELECTRIC UTILITY PLANT (principally transmission plant) at original cost, including interest during construction (Note 1)	\$132,954,407.38					INVESTMENT OF U. S. GOVERNMENT:
Less - Reserve for depreciation (Note 2)	<u>16,327,218.55</u>					Congressional appropriations (including amounts for operating expenses), allotments and W. P. A. expenditures, less amounts not requisitioned
Original cost less reserve		\$116,627,188.83				\$163,904,390.60
SPECIAL DEPOSITS:						Transfers from other Federal projects (net)
Customer's deposit, see contra Payments for amortisation in excess of depreciation at Bonneville Dam Project (Note 3)	\$ 897,558.91					137,567.83
						Interest on Federal investment
	<u>7,539,194.28</u>	8,436,753.19				15,011,268.97
CURRENT ASSETS:						-----
Cash held by Treasury Department disbursing officer	\$ 4,486,594.67					\$179,053,227.40
Receipts deposited with Treasury Department for transfer to Reclamation Fund for the account of Columbia Basin Project	5,000,000.00					Less - Funds returned to U. S. Treasury in repayment of Federal investment (including amounts for operating expenses and interest)
Employees' withholding tax and other special deposits	524,843.19					<u>75,534,634.96</u>
Accounts receivable -						Net investment of U. S. Government
Customers -						\$103,518,592.44
Departments and agencies of U. S. Government	266,721.73					
Other	5,528,135.20					CURRENT LIABILITIES:
Miscellaneous receivables	120,397.09					Accounts payable
Materials and supplies	<u>3,704,344.90</u>	19,631,036.78				\$ 5,293,829.30
						Employees' accrued leave
						1,324,974.09
						Due to Columbia Basin Project
						<u>5,000,000.00</u>
						11,618,803.39
DEFERRED CHARGES:						
Losses on abandoned properties (principally rights-of-way and clearing costs), being amortized over five years from dates of abandonment	\$ 323,581.62					DEFERRED CREDITS:
Clearing accounts and other deferred charges	<u>558,133.50</u>	881,715.12				Customer's deposit, see contra
						\$ 897,558.91
						Other
						<u>335,139.92</u>
						1,232,698.83
						ACCUMULATED NET REVENUES (Notes 1 and 3):
						Balance at beginning of year
						\$ 23,295,728.31
						Add - Net revenues for the year ended June 30, 1949
						<u>5,910,870.95</u>
						29,206,599.26

						<u>\$145,276,693.92</u>

						<u>\$145,276,693.92</u>

The accompanying notes (Schedule 9) are an integral part of this statement.

SCHEDULE 8

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
BONNEVILLE POWER ADMINISTRATION
STATEMENT OF REVENUES AND EXPENSES
FOR THE FISCAL YEAR ENDED JUNE 30, 1949

OPERATING REVENUES:		
Sales of electric energy		\$27,611,085.66
Less - Amounts allocated to (Note 3) -		
Bonneville Dam Project	\$2,991,618.50	
Columbia Basin Project	<u>8,812,430.00</u>	11,804,048.50

Other electric revenues		\$15,807,037.16
		209,942.89

Total operating revenues		\$16,016,980.05
OPERATING EXPENSES (Note 1):		
Purchased power	\$ 735,239.31	
Operation	2,729,129.48	
Maintenance	978,770.76	
Depreciation (Note 2)	3,091,443.79	
Amortisation of losses on abandoned properties	<u>483,603.67</u>	8,018,187.01

Net operating revenues		\$ 7,998,793.04
INTEREST AND OTHER DEDUCTIONS:		
Interest on Federal investment	\$2,253,427.84	
Less - Interest charged to construction	321,642.01*	
Miscellaneous income deductions (net)	<u>156,136.26</u>	2,087,922.09

Net revenues		<u>\$ 5,910,870.95</u>

* Denotes red figure

The accompanying notes (Schedule 9) are an
integral part of this statement.

NOTES TO FINANCIAL STATEMENTS ON SCHEDULES 7 AND 8

1. CERTAIN COSTS NOT INCLUDED:

Property costs and operating expenses do not include costs of administrative and other services rendered by other departments and agencies of the U. S. Government which, under governmental accounting procedures, are not allocated to individual projects. It is not practicable to determine the amount of such costs applicable to this project.

2. DEPRECIATION POLICY:

Depreciation has been computed on the straight line method, based upon the estimated service lives of the various classes of property as determined by engineering studies, except that no property has been assigned a service life of longer than one hundred years which has been assumed to be the maximum economic life of the project. Land rights and clearing costs are being amortized over such one hundred year period. A composite depreciation reserve is maintained for each class of property and the original cost of property retired, less net salvage applicable thereto, is charged to the related reserve.

3. ALLOCATION OF REVENUES:

The amounts of revenues from the sale of electric energy allocated to Bonneville Dam Project and to Columbia Basin Project have been determined in accordance with memoranda of agreement between Bonneville Power Administration and the Corps of Engineers, U. S. Army, and the Bureau of Reclamation of the Department of the Interior, respectively.

During 1949 Bonneville Power Administration deposited \$5,533,420.00 with the U. S. Treasury for the account of Bonneville Dam Project in accordance with the terms of the agreement, of which \$2,991,618.50, equivalent to operating expenses (including depreciation) and interest on the Federal investment allocated to power has been treated as current year's revenues and \$2,541,801.50, representing the excess of the amount deposited in repayment of plant costs of that project allocated to power over depreciation, has been treated as an advance repayment of the Federal investment in that project.

Reclamation laws, as supplemented by the Act of August 30, 1935, and Executive Order No. 8526 require that payments be made, from time to time, to the Reclamation Fund for the account of Columbia Basin Project from revenues received by Bonneville Power Administration from the sale of electric energy equal to the portion of such revenues properly allocable to the project. Under the terms of the agreement of January 31, 1946, between the Bureau of

Reclamation and Bonneville Power Administration entered into to effectuate these requirements, the Administration is required to make payments which in any year are not dependent upon the quantity of energy generated by the project and delivered to the Administration, but which are designed to return to the United States over the life of the project the operation and maintenance expenses of the dam and the power plant, the cost, exclusive of interest during construction, of facilities allocated to power, the portion of the cost, exclusive of interest during construction, of facilities allocated to irrigation which exceeds the repayment ability of the water users (estimated, upon completion of the project, to be approximately \$400,000,000 based upon 1948 price levels) and an annual amount equal to 3% of the unamortized cost, exclusive of interest during construction, allocated to present power production. A schedule of estimated payments is provided in the agreement but provision is made for annual adjustments of the schedule to reflect the application of actual payments to the return of such amounts. Provision is made also for payments in excess of the annual amounts set out in the schedule or less than such amounts in the event that prior excess payments have been made. During the year ended June 30, 1948, it was considered that the amounts paid by the Administration to the Reclamation Fund for the account of the project were in reimbursement for specific items of cost and in the financial statements for that year the amount of receipts in excess of the expenses for that year to be repaid from power revenues was treated as deferred power revenues. In the opinion of counsel the amounts covered into the Reclamation Fund for the project each year are not in repayment of specific expenses applicable to specific years but rather represent lump sum payments against the total liability provided for in the agreement. Accordingly, in the accompanying financial statements, the amount payable for the year ended June 30, 1949, \$8,812,430.00, has been treated as the portion of the current year's revenues allocable to the project and the balance at June 30, 1948 of \$7,793,010.29, previously considered as an advance to the project has been charged to accumulated net revenues as of that date.

4. CONTINGENT LIABILITIES:

The project is contingently liable under pending litigation. In the opinion of counsel for the project, any actual liability which may result from such litigation will not be material.

SCHEDULE 10

UNITED STATES OF AMERICA
CORPS OF ENGINEERS - U. S. ARMY
BONNEVILLE DAM PROJECT
STATEMENT OF ASSETS AND LIABILITIES - JUNE 30, 1949

<u>A S S E T S</u>	<u>Total</u>	<u>Deduct - Amounts Allocated to Other Than Power</u>	<u>Amounts Allocated to Power</u>
PROPERTY, PLANT, AND EQUIPMENT at original cost, including interest during construction (Notes 1 and 2):			
Specific power facilities (powerhouse and generating equipment)	\$ 38,174,577.83	\$ -	\$38,174,577.83
Specific navigation facilities (shiplock)	6,199,625.21	6,199,625.21	-
Joint facilities (dam, reservoir, fishways, etc.)	41,304,561.80	20,652,280.90	20,652,280.90
	<u>\$ 85,678,764.84</u>	<u>\$26,851,906.11</u>	<u>\$58,826,858.73</u>
Less - Reserves for depreciation (Note 3) -			
Specific power facilities	\$ 3,222,622.24	\$ -	\$ 3,222,622.24
Specific navigation facilities	299,075.10	299,075.10	-
Joint facilities	1,648,329.90	824,164.95	824,164.95
	<u>\$ 5,170,027.24</u>	<u>\$ 1,123,240.05</u>	<u>\$ 4,046,787.19</u>
Original cost less reserves	<u>\$ 80,508,737.60</u>	<u>\$25,728,666.06</u>	<u>\$54,780,071.54</u>
OTHER ASSETS:			
Due from other projects	51,501.02	17,144.93	34,356.09
Deferred charges	56,187.16	25,286.41	30,900.75
	<u>\$ 80,616,425.78</u>	<u>\$25,771,097.40</u>	<u>\$54,845,328.38</u>
<u>L I A B I L I T I E S</u>			
INVESTMENT OF U. S. GOVERNMENT:			
Congressional appropriations and allotments (including amounts for operating expenses), less amounts not requisitioned	\$ 89,145,743.96	\$27,759,345.72	\$61,386,398.24
Transfers from other Federal projects	175,400.00	87,500.00	87,900.00
Interest on Federal investment	23,014,821.87	8,016,193.15	14,998,628.72
	<u>\$112,335,965.83</u>	<u>\$35,863,038.87</u>	<u>\$76,472,926.96</u>
Less -			
Funds returned to U. S. Treasury in repayment of Federal investment allocated to power (including amounts for operating expenses and interest)	\$ 29,208,000.00	\$ -	\$29,208,000.00
Net expense of non-reimbursable portion of project (including \$957,414.41 for the year ended June 30, 1949)	10,131,779.15	10,131,779.15	-
	<u>\$ 39,339,779.15</u>	<u>\$10,131,779.15</u>	<u>\$29,208,000.00</u>
Net investment of U. S. Government	<u>\$ 72,996,186.68</u>	<u>\$25,731,259.72</u>	<u>\$47,264,926.96</u>
ACCOUNTS PAYABLE	<u>\$ 81,044.82</u>	<u>\$ 39,837.68</u>	<u>\$ 41,207.14</u>
RESERVE FOR FUTURE POWER COSTS -- Excess of repayment to U. S. Treasury applied to amortization of cost of power facilities over depreciation (Note 4):			
Balance at beginning of year	\$ 4,997,392.78	\$ -	\$ 4,997,392.78
Excess of receipts over expenses allocated to power for the year ended June 30, 1949	2,541,801.50	-	2,541,801.50
Balance at end of year	<u>\$ 7,539,194.28</u>	<u>\$ -</u>	<u>\$ 7,539,194.28</u>
	<u>\$ 80,616,425.78</u>	<u>\$25,771,097.40</u>	<u>\$54,845,328.38</u>

The accompanying notes (Schedule 12) are an integral part of this statement.

UNITED STATES OF AMERICA

SCHEDULE 11

CORPS OF ENGINEERS - U. S. ARMY

BONNEVILLE DAM PROJECT

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1949

	<u>Total</u>	<u>Deduct - Amounts Allocated to Other Than Power</u>	<u>Amounts Allocated to Power</u>
OPERATING REVENUES:			
Receipts from sales of electric energy by Bonneville Power Administration allocated to Bonneville Dam Project applied in repay- ment of operating expenses and interest allocated to power (Note 4)	\$2,991,618.50	\$ -	\$2,991,618.50
OPERATING EXPENSES (Notes 1 and 2):			
Operation -			
Specific power facilities	\$ 298,502.53	\$ -	\$ 298,502.53
Specific navigation facilities	33,889.87	35,889.87	-
Joint facilities	124,896.96	62,448.48	62,448.48
Payment for river regulation benefits	187,570.00	-	187,570.00
Maintenance -			
Specific power facilities	317,798.80	-	317,798.80
Specific navigation facilities	78,841.37	78,841.37	-
Joint facilities	326,032.38	163,016.19	163,016.19
Depreciation (Note 3) -			
Specific power facilities	473,705.76	-	473,705.76
Specific navigation facilities	33,602.33	33,602.33	-
Joint facilities	208,983.84	104,491.92	104,491.92
Total operating expenses	\$2,085,823.84	\$478,290.16	\$1,607,533.68
Net operating revenues	\$ 905,794.66	\$478,290.16*	\$1,384,084.82
INTEREST DEDUCTIONS:			
Interest on Federal investment	\$1,876,535.53	\$485,842.26	\$1,390,693.27
Less - Interest charged to construction	13,326.46	6,718.01	6,608.45
Net interest deductions	\$1,863,209.07	\$479,124.25	\$1,384,084.82
Net revenues for the year	\$ 957,414.41*	\$957,414.41*	\$ -

*Denotes red figure

The accompanying notes (Schedule 12) are an integral part of this statement.

BONNEVILLE DAM PROJECTNOTES TO FINANCIAL STATEMENTS ON SCHEDULES 10 AND 11

1. CERTAIN COSTS NOT INCLUDED:

Property costs and operating expenses do not include costs of administrative and other services rendered by other departments and agencies of the U. S. Government which, under governmental accounting procedures, are not allocated to individual projects. It is not practicable to determine the amount of such costs applicable to this project..

2. ALLOCATION OF JOINT COSTS AND EXPENSES:

Property, plant and equipment determined to be jointly useful for power generation and for other purposes, consisting principally of the dam, reservoir and fishways, has been allocated 50% to power and 50% to nonpower purposes in accordance with a determination made by the Federal Power Commission acting under authority delegated by Congress in the Bonneville Project Act. Operation and maintenance expenses applicable to joint facilities have been allocated to power and to nonpower operations in the same proportion as the related property costs.

3. DEPRECIATION POLICY:

Depreciation has been computed on the compound interest method using an interest factor of 2.5% and based upon the estimated service lives of the various classes of property as determined by engineering studies, except that no property has been assigned a service life of longer than one hundred years which has been assumed to be the maximum economic life of the project. Land rights and clearing costs are being amortized over such one hundred year period. A composite depreciation reserve is maintained for each class of property and the original cost of property retired, less net salvage applicable thereto, is charged to the related reserve.

4. ALLOCATION OF REVENUES:

Under the terms of an agreement between the Corps of Engineers, U. S. Army, and Bonneville Power Administration, the Administration is required to deposit in the U. S. Treasury for the account of Bonneville Dam Project, scheduled amounts of the receipts from the sale of power generated at that project, representing the portion of such receipts properly allocable to the return of the reimbursable costs of Bonneville Dam Project. These amounts are not dependent upon the quantity of electric

energy generated and delivered to the Administration by Bonneville Dam Project from year to year but are designed to return to the United States the plant costs of Bonneville Dam Project allocated to power, including necessary additions and replacements, over a fifty year period beginning July 1, 1944, together with interest at 2-1/2% per annum and annual operating and maintenance expenses allocated to power. Since the repayment plan contemplates the amortization of the cost of power facilities within a shorter period than the estimated service lives of such facilities, the receipts allocated to Bonneville Dam Project to date have exceeded the accumulated power expenses to date (including depreciation of power facilities based upon their service lives). Accordingly, the excess of such amortization over depreciation has been treated in the accompanying financial statements as a reserve for future power costs.

During 1949, deposits by Bonneville Power Administration for the account of Bonneville Dam Project amounted to \$5,533,420.00, of which \$2,991,618.50, equivalent to operating expenses (including depreciation) and interest on Federal investment allocated to power, has been reflected as current year's revenues, and \$2,541,801.50, representing the excess of amortization over depreciation, has been included in the reserve for future power costs. The amounts in this reserve will be reflected in the income account in subsequent periods in amounts equivalent to the provisions for depreciation that will be charged to the income account in those subsequent periods when the plant costs allocated to power have been repaid and payments by Bonneville Power Administration to Bonneville Dam Project will only be equal to power operating expenses exclusive of provisions for depreciation.

5. CONTINGENT LIABILITIES:

The project is contingently liable under pending litigation. In the opinion of counsel for the project, any actual liability which may result from such litigation will not be material.

UNITED STATES OF AMERICA

SCHEDULE 13

DEPARTMENT OF THE INTERIOR

COLUMBIA BASIN PROJECT (GRAND COULEE DAM)

STATEMENT OF ASSETS AND LIABILITIES - JUNE 30, 1949

<u>A S S E T S</u>	<u>Total</u>	<u>Deduct - Amounts Allocated to Irrigation and Navigation</u>	<u>Amounts Allocated to Power (Including Future Downstream River Regulation)</u>
PROPERTY, PLANT AND EQUIPMENT at original cost, including interest during construction on facilities allocated to power (Notes 1 and 2):			
Specific power facilities (powerhouses and generating equipment)	\$ 81,712,198.74	\$ -	\$ 81,712,198.74
Joint facilities (dam, reservoir and general service facilities) allocated to -			
Present power production	48,194,912.82	-	48,194,912.82
Future downstream river regulation	36,543,395.42	-	36,543,395.42
Irrigation	61,950,607.56	61,950,607.56	-
Navigation	1,000,000.00	1,000,000.00	-
Specific irrigation facilities (equalizing reservoirs, canals and pumping plant)	62,902,991.30	62,902,991.30	-
Farmland held for resale	1,145,009.38	1,145,009.38	-
	<u>\$293,449,115.22</u>	<u>\$126,998,608.24</u>	<u>\$166,450,506.98</u>
Less - Reserves for depreciation (Note 3) -			
Specific power facilities	\$ 2,879,663.15	\$ -	\$ 2,879,663.15
Joint facilities allocated to -			
Present power production	2,048,380.63	-	2,048,380.63
Future downstream river regulation	1,553,800.60	-	1,553,800.60
Irrigation	1,423,800.19	1,423,800.19	-
	<u>\$ 7,905,644.57</u>	<u>\$ 1,423,800.19</u>	<u>\$ 6,481,844.38</u>
Original cost less reserves	<u>\$285,543,470.65</u>	<u>\$125,574,808.05</u>	<u>\$159,968,662.60</u>
INTEREST AND DEPRECIATION CHARGES ON JOINT FACILITIES ALLOCATED TO FUTURE DOWNSTREAM RIVER REGULATION -- recoverable from operations of future downstream hydro plants	\$ 7,621,681.68	\$ -	\$ 7,621,681.68
CURRENT ASSETS:			
Cash held by Treasury Department disbursing officers	\$ 12,697,571.58	\$ 7,083,890.79	\$ 5,613,680.79
Contract retentions and other special deposits	3,703,156.48	1,842,309.43	1,860,847.05
Due from Bonneville Power Administration	5,000,000.00	-	5,000,000.00
Accounts receivable	135,822.27	84,590.11	51,232.16
Materials and supplies	5,572,579.49	3,470,602.50	2,101,976.99
	<u>\$ 27,109,129.82</u>	<u>\$ 12,481,392.83</u>	<u>\$ 14,627,736.99</u>
DEFERRED CHARGES -- clearing accounts, etc.	\$ 801,246.91	\$ 451,258.56	\$ 349,988.35
	<u>\$321,075,529.06</u>	<u>\$138,507,459.44</u>	<u>\$182,568,069.62</u>

The accompanying notes (Schedule 15) are an integral part of this statement.

SCHEDULE 13
(Continued)

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
COLUMBIA BASIN PROJECT (GRAND COULEE DAM)
STATEMENT OF ASSETS AND LIABILITIES - JUNE 30, 1949

<u>LIABILITIES</u>	<u>Total</u>	<u>Deduct - Amounts Allocated to Irrigation and Navigation</u>	<u>Amounts Allocated to Power (Including Future Downstream River Regulation)</u>
INVESTMENT OF U. S. GOVERNMENT:			
Congressional appropriations (including amounts for operating expenses), allotments, and W. P. A. expenditures, less amounts not requisitioned	\$299,721,978.23	\$132,544,648.43	\$167,177,329.80
Transfers from other Federal projects (net)	2,883,932.40	725,168.10	2,158,764.30
Interest on portion of Federal investment allocated to power	32,292,971.23	-	32,292,971.23
	<u>\$334,898,881.86</u>	<u>\$133,269,816.53</u>	<u>\$201,629,065.33</u>
Less - Funds returned to U. S. Treasury in repayment of Federal investment (including amounts for operating expenses and interest)	39,606,659.83	455,380.31	39,151,279.52
Net investment of U. S. Government	<u>\$295,292,222.03</u>	<u>\$132,814,436.22</u>	<u>\$162,477,785.81</u>
CURRENT LIABILITIES:			
Accounts payable	\$ 11,408,439.95	\$ 6,047,494.41	\$ 5,360,945.54
Employees' accrued leave	1,218,356.40	529,039.04	689,317.36
	<u>\$ 12,626,796.35</u>	<u>\$ 6,576,533.45</u>	<u>\$ 6,050,262.90</u>
RESERVES:			
Reserve for deferred maintenance	\$ 600,000.00	\$ 264,000.00	\$ 336,000.00
Contribution in aid of construction - by State of Washington	313,439.53	137,913.39	175,526.14
	<u>\$ 913,439.53</u>	<u>\$ 401,913.39</u>	<u>\$ 511,526.14</u>
ACCUMULATED NET REVENUES (Notes 1 and 4):			
Balance at beginning of year	\$ 7,793,010.29	\$ 980,586.61*	\$ 8,773,596.90
Add - Net revenues for the year ended June 30, 1949	4,450,060.86	304,837.01*	4,754,897.87
Balance at end of year	<u>\$ 12,243,071.15</u>	<u>\$ 1,285,423.62*</u>	<u>\$ 13,528,494.77</u>
	<u>\$221,072,529.06</u>	<u>\$138,507,459.44</u>	<u>\$182,568,069.62</u>

*Denotes red figure

The accompanying notes (Schedule 15) are an integral part of this statement.

UNITED STATES OF AMERICA

SCHEDULE 14

DEPARTMENT OF THE INTERIOR

COLUMBIA BASIN PROJECT (GRAND COULEE DAM)

STATEMENT OF REVENUES AND EXPENSES

FOR THE FISCAL YEAR ENDED JUNE 30, 1949

	Total	Deduct - Amounts Allocated to Irrigation and Navigation	Amounts Allocated to Power (Including Future Downstream River Regulation)
OPERATING REVENUES:			
Receipts from sales of electric energy by Bonneville Power Administration allocated to Columbia Basin Project (Note 4)	\$8,812,430.00	\$ -	\$8,812,430.00
Sales of water	4,404.05	4,404.05	-
Payment for river regulation benefits	187,570.00	-	187,570.00
Total operating revenues	\$9,004,404.05	\$ 4,404.05	\$9,000,000.00
OPERATING EXPENSES (Notes 1 and 2):			
Operation -			
Specific power facilities	\$ 645,521.65	\$ -	\$ 645,521.65
Specific irrigation facilities	4,404.05	4,404.05	-
Joint facilities	190,024.43	83,610.75	106,413.68
Reversal of excessive prior years' provisions for rental and excess installation costs at Shasta Dam of generating facilities formerly leased from Central Valley Project	242,124.02*	-	242,124.02*
Maintenance -			
Specific power facilities	166,037.14	-	166,037.14
Joint facilities	558,855.91	245,896.60	312,959.31
Depreciation (Note 3) -			
Specific power facilities	584,439.74	-	584,439.74
Joint facilities allocated to power	246,389.74	-	246,389.74
Less - Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	106,247.46*	-	106,247.46*
Total operating expenses	\$2,047,301.18	\$333,911.40	\$1,713,389.78
Net operating revenues	\$6,957,102.87	\$329,507.35*	\$7,286,610.22
INTEREST AND OTHER DEDUCTIONS:			
Interest on portion of Federal investment allocated to power	\$3,873,177.61	\$ -	\$3,873,177.61
Less -			
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	1,018,033.19*	-	1,018,033.19*
Amount charged to construction	315,598.38*	-	315,598.38*
Miscellaneous income deductions (net)	32,504.03*	24,670.34*	7,833.69*
Total interest and other deductions	\$2,507,042.01	\$ 24,670.34*	\$2,531,712.35
Net revenues	\$4,450,060.86	\$304,837.01*	\$4,754,897.87

* Denotes red figure

The accompanying notes (Schedule 15) are an integral part of this statement.

1. CERTAIN COSTS NOT INCLUDED:

Property costs and operating expenses do not include costs of administrative and other services rendered by other departments and agencies of the U. S. Government which, under governmental accounting procedures, are not allocated to individual projects. It is not practicable to determine the amount of such costs applicable to this project.

2. ALLOCATION OF JOINT COSTS AND EXPENSES:

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, has been allocated 56% to power (including future downstream river regulation) and 44% to nonpower purposes in accordance with a determination made by the Secretary of the Interior acting under authority delegated by Congress in the Reclamation Project Act of 1939. Operation and maintenance expenses applicable to joint facilities have been allocated to power and to nonpower operations in the same proportion as the related property costs.

3. DEPRECIATION POLICY:

Depreciation of power facilities has been computed on the compound interest method using an interest factor of 2.5% and based upon the estimated service lives of the various classes of property as determined by engineering studies, except that no property has been assigned a service life of longer than one hundred years which has been assumed to be the maximum economic life of the project. Land rights and clearing costs allocated to power are being amortized over such one hundred year period. Depreciation of general service facilities, which is charged to clearing accounts and redistributed to construction and other accounts, has been computed on the straight line method based upon the estimated service lives of the various types of facilities. A composite depreciation reserve is maintained for each class of property.

No provision has been made for depreciation of nonpower facilities.

4. ALLOCATION OF REVENUES:

Reclamation laws, as supplemented by the Act of August 30, 1935, and Executive Order No. 8526 require that payments be made, from time to time, to the Reclamation Fund for the account of Columbia Basin Project from revenues received by Bonneville Power Administration from the sale of electric energy equal to the portion of such revenues

properly allocable to the project. Under the terms of the agreement of January 31, 1946, between the Bureau of Reclamation and Bonneville Power Administration entered into to effectuate these requirements, the Administration is required to make payments which in any year are not dependent upon the quantity of energy generated by the project and delivered to the Administration, but which are designed to return to the United States over the life of the project the operation and maintenance expenses of the dam and the power plant, the cost, exclusive of interest during construction, of facilities allocated to power, the portion of the cost, exclusive of interest during construction, of facilities allocated to irrigation which exceeds the repayment ability of the water users (estimated, upon completion of the project, to be approximately \$400,000,000 based upon 1948 price levels) and an annual amount equal to 3% of the unamortized cost, exclusive of interest during construction, allocated to present power production. A schedule of estimated payments is provided in the agreement but provision is made for annual adjustments of the schedule to reflect the application of actual payments to the return of such amounts. Provision is made also for payments in excess of the annual amounts set out in the schedule or less than such amounts in the event that prior excess payments have been made. During the year ended June 30, 1948, it was considered that the amounts paid by the Administration to the Reclamation Fund for the account of the project were in reimbursement for specific items of cost and in the financial statements for that year the amount of receipts in excess of the expenses for that year to be repaid from power revenues were treated as deferred power revenues. In the opinion of counsel the amounts covered into the Reclamation Fund for the project each year are not in repayment of specific expenses applicable to specific years but rather represent lump sum payments against the total liability provided for in the agreement. Accordingly, the amount payable for the year ended June 30, 1949 under the terms of the agreement has been treated in the accompanying financial statements as current year's revenues and the balance of accumulated net revenues at June 30, 1948 has been increased by \$7,793,010.29 representing the amount previously considered to be deferred power revenues.

5. CONTINGENT LIABILITIES:

The project is contingently liable under pending litigation which, in some instances, involve claims of substantial amount. In the opinion of counsel for the project, any actual liability which may result from such litigation will not be material.

BONNEVILLE POWER ADMINISTRATION

PAUL J. RAVER, *Administrator*

D. L. MARLETT, *Assistant Administrator*

S. E. SCHULTZ
Chief Engineer

W. A. DITTMER
Power Manager

NORMAN A. STOLL
General Counsel

EARL D. OSTRANDER
Controller

HARRY M. KENIN
Executive Secretary

HENRY H. ALDERMAN
Executive Officer

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Program Coordinator

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LESHER S. WING
Federal Power Commission

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Department of the Army

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Manager: WM. E. TROMMERSHAUSEN

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National Park Service, San Francisco
NEAL BUTTERFIELD, Portland
Representative for National Park Service

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