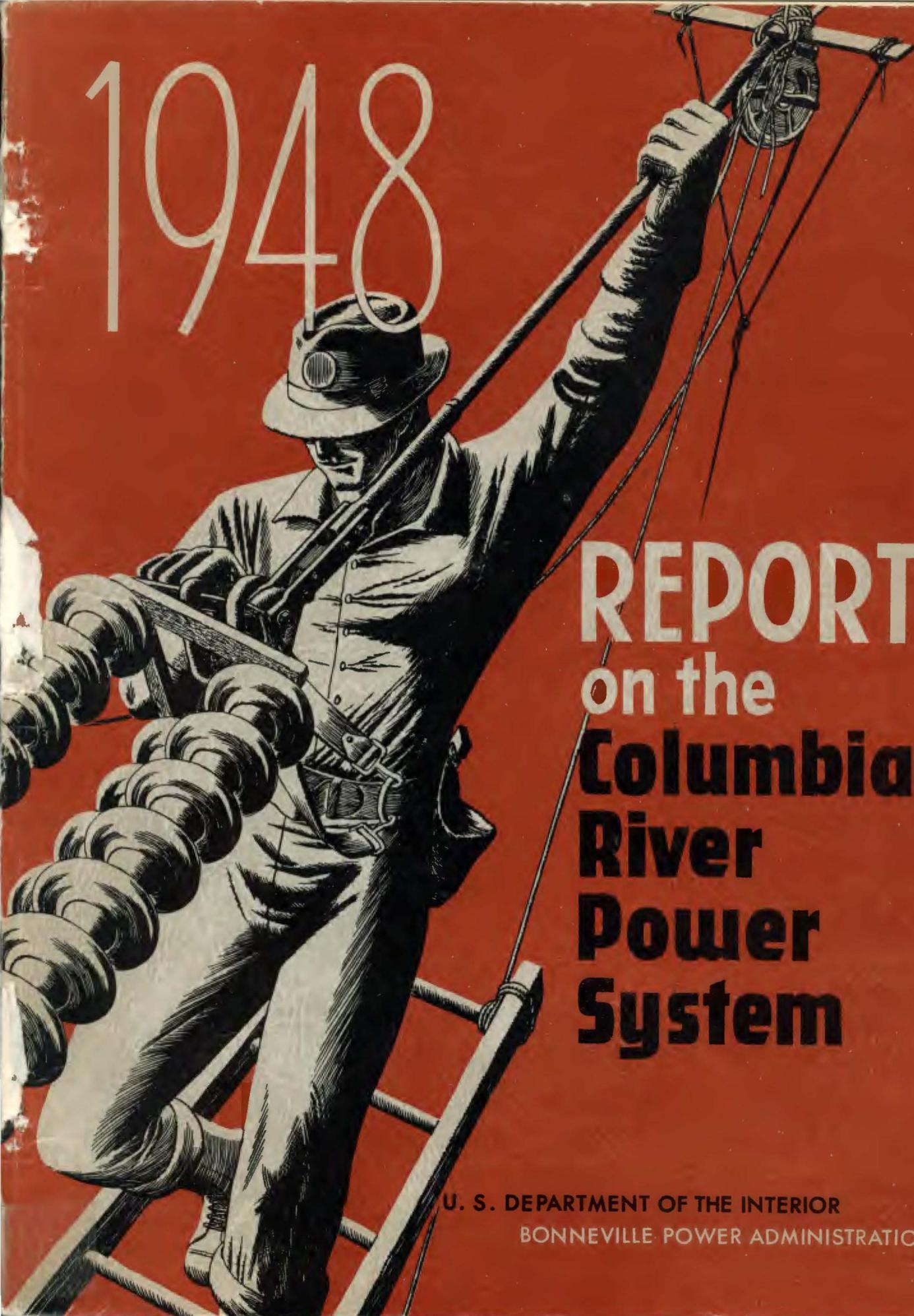


1948



**REPORT**  
on the  
**Columbia**  
**River**  
**Power**  
**System**

U. S. DEPARTMENT OF THE INTERIOR  
BONNEVILLE POWER ADMINISTRATION

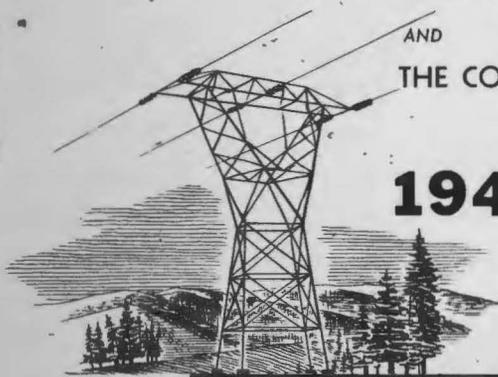
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UNITED STATES DEPARTMENT OF THE INTERIOR

# *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)

**1948**



**BONNEVILLE POWER ADMINISTRATION**

P O R T L A N D 8 , O R E G O N

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BONNEVILLE POWER ADMINISTRATION  
PORTLAND 8, OREGON

OFFICE OF THE ADMINISTRATOR

December 31, 1948

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

My dear Mr. Secretary:

The eleventh Annual Report of the Bonneville Power Administration is transmitted herewith in conformance with requirements of Section 9 (c) of the Bonneville Project Act.

The report covers the operations of the federal government's Columbia River power system from July 1, 1947 to June 30, 1948. 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 (Grand Coulee Dam) of the Bureau of Reclamation, Department of the Interior.

Included is the fourth independent annual Auditors' Report by Arthur Andersen & Co.

From a business standpoint, the Administration's power operations were maintained at a sound and satisfactory level.

Revenues reached a new high.

Payout requirements on power facilities at both Bonneville and Grand Coulee Dams were met ahead of schedule.

The repayment of the Administration's transmission system investment exceeded requirements.

Receipts returned to the Federal Treasury from power operations reached a greater volume than ever before.

The low cost of Columbia River power brought increased use of electricity by all classes of consumers.

It must be clearly stated, however, that a number of disquieting factors have been developing for some time, as foreseen and reported by the Bonneville Administration in previous years. During 1948 the cumulative effect of these factors reached a degree of severity which seriously threatened the objectives of the Bonneville Act and the economic health of the region.

## letter of transmittal--2

Briefly, the situation is, on the one hand, a continued heavy growth in the region's population and business needs, and, on the other, failure to invest federal capital in the Columbia River power enterprise at a rate and volume commensurate with this regional growth.

Principal result of this condition during Fiscal Year 1948 was the development of a significant and serious shortage in supplies of electric power during peak load hours and in periods when water flows were adverse. At the year's end there was immediate threat of shortage both in generating capacity and transmission capacity. It became evident that the shortage would impinge adversely upon the business life of the region during the 1948-49 winter season of peak use and that this problem could recur each year, in varying degrees of severity, for several years to come.

No permanent relief from this situation will be afforded until generators at Hungry Horse, McNary, Chief Joseph and other dams begin production of power.

In the interim, the Administration is drawing upon all the resources at its command to assure maximum service to all power consumers of the region.

Increased effort was made during 1948 to coordinate the federal power resources with those of major distribution utilities in the region having generation supplies of their own. This was done through the medium of the Northwest Power Pool.

During the Fiscal Year 1948, the Administration supplied 3,000,000,000 kilowatt hours to the private utilities in Oregon, Washington and northern Idaho. This represented 1,300,000,000 kilowatt hours in excess of the Administration's contractual commitments to those companies, and represented 39 per cent of their total requirements. This contribution was made after full provision for all of the Administration's contractual commitments to publicly owned distributors and to heavy industry.

Closer cooperation was developed during the year with Northwest Power Pool members at the policy level. Regular management meetings were held with the Northwest Utilities Conference Committee, comprising principal officials of public and private utilities participating in the Northwest Power Pool. At these meetings, agreements were reached on future load estimates, and plans for power conservation were agreed upon.

Abolishment of its Industrial and Resources Development program seriously crippled the Administration's planning function at a time when the growing power shortage made such work of increased value.

However, close cooperation was maintained with the Corps of Engineers, the Bureau of Reclamation, the National Securities Resources Board, the Munitions Board, the Bureau of the Budget, the Federal Power Commission, and other agencies concerned with the several aspects of power supply and demand.

Detailed recommendations were made to these agencies on the construction of new multi-purpose projects. Agreement was reached on major items. Current power problems were reviewed regularly with the Columbia Basin Inter-Agency Committee, whose members are also members of the Bonneville Advisory Board.

At year's end there was general acceptance among these agencies of the view that at least 4,266,000 kilowatts of new capacity should be developed on the Columbia River system by 1957, and an additional 5,777,000 kilowatts not later than 1970. This view was reflected in the 308 Review Report of the Corps of Engineers and the Columbia Basin Report of the Reclamation Bureau.

In its own engineering operations, the Administration was forced to an emergency level.

Lack of funds made it extremely difficult to maintain adequate schedules in the construction of facilities. In several instances the Administration was forced, for the first time, to draw upon its continuing fund in order to provide service. Unless this had been done, certain facilities previously authorized by the Congress, and upon which construction had been started in the Fiscal Year 1947, would have been halted while still incomplete, with a resultant power shortage and loss of payrolls and investment, as well as other hardships in the communities affected.

Similar problems developed in the operation and maintenance of the system. Heavy reductions in force at the beginning of the year halted maintenance activity on any but an emergency basis. Service outages became more frequent. Resultant financial losses both to the Administration and its customers grew in severity.

As the year closed, the Bonneville transmission system, due to the inadequacies of the construction program, as well as to the lack of preventive maintenance in the face of a steadily growing load, approached a condition of dangerous overloading.

While the current financial picture was unquestionably excellent at year's end, a number of long term financial problems stood out in sharp relief.

Chief among these was the continued rising trend of construction costs, particularly the cost of new generation at proposed new dams, and the cost of irrigation works in the Columbia Basin Project which, under present law, must be supported primarily by power revenues.

An important factor offsetting these conditions was the Administration's success in keeping the cost of transmission down through improved technics. However, this will afford only partial relief if construction costs continue to rise.

## letter of transmittal--4

Intensified study has been undertaken by the Administration on the effect of cost trends upon the basic power rate of \$17.50 per kilowatt year. Until the study is completed, the Administration does not advocate increase in the wholesale rate.

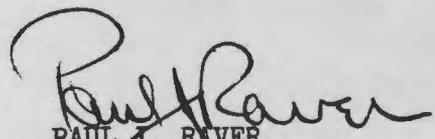
The Pacific Northwest's need for power is, in my opinion, of such urgency as to override any objection that construction of new power facilities should be delayed until the inflationary spiral is controlled. I believe a clear case can be made that projects of this character, because they add directly to the production of consumer needs, are counter-inflationary in character.

With passage of the Bonneville Project Act in 1937, the federal establishment assumed the responsibilities of a utility business. Lack of flexibility in federal fiscal policies, which were designed primarily to fit the traditional government services, is now preventing fulfillment of this utility responsibility. Effects of this failure are cumulative. They will appear with increased intensity each year until remedial action is taken.

Such remedial action is within the purview of the Congress. If undertaken it should take these basic forms: (1) approval of a well planned program of federal capital investment in the Columbia River, both immediate and long range; (2) approval of an adequate and sustained financing plan in support of such a program; (3) application of the modern management methods required by any solvent business enterprise, including provision for properly controlled use of revenues for operation and maintenance of the power system.

Without such action business and industrial enterprise in the Pacific Northwest will be deprived of any degree of certainty relative to its power supply. Such uncertainty will deprive the region of the new supplies of risk capital required for growth. A static regional economy will prevent the nation from realizing its full potential, both for peace time industrial development and for national security.

Sincerely yours,

  
PAUL J. RAVER  
Administrator

Condensed Summary of Revenues and Expenses

COLUMBIA RIVER POWER SYSTEM

	Fiscal year 1947	Fiscal year 1948	Total to June 30, 1948
Operating revenues	\$21,890,929	\$24,513,710	\$129,866,166
Expenses of operation, maintenance, etc.	\$ 6,594,981	\$ 5,930,753	\$ 38,660,223
Provision for depreciation	3,495,944	3,882,539	20,949,895
Interest and other deductions, net	5,193,807	5,564,237	38,186,723
Total deductions	\$15,284,732	\$15,377,529	\$ 97,796,841
Surplus net revenues from power operations	\$ 6,606,197	\$ 9,136,181	\$ 32,069,325

WITH REVENUES from the Columbia Power system reaching an all-time high during the fiscal year 1948, the Bonneville Power Administration can report all costs of operation required by law, including depreciation and interest, were covered by a considerable margin.

**SUMMARY OF OPERATIONS**

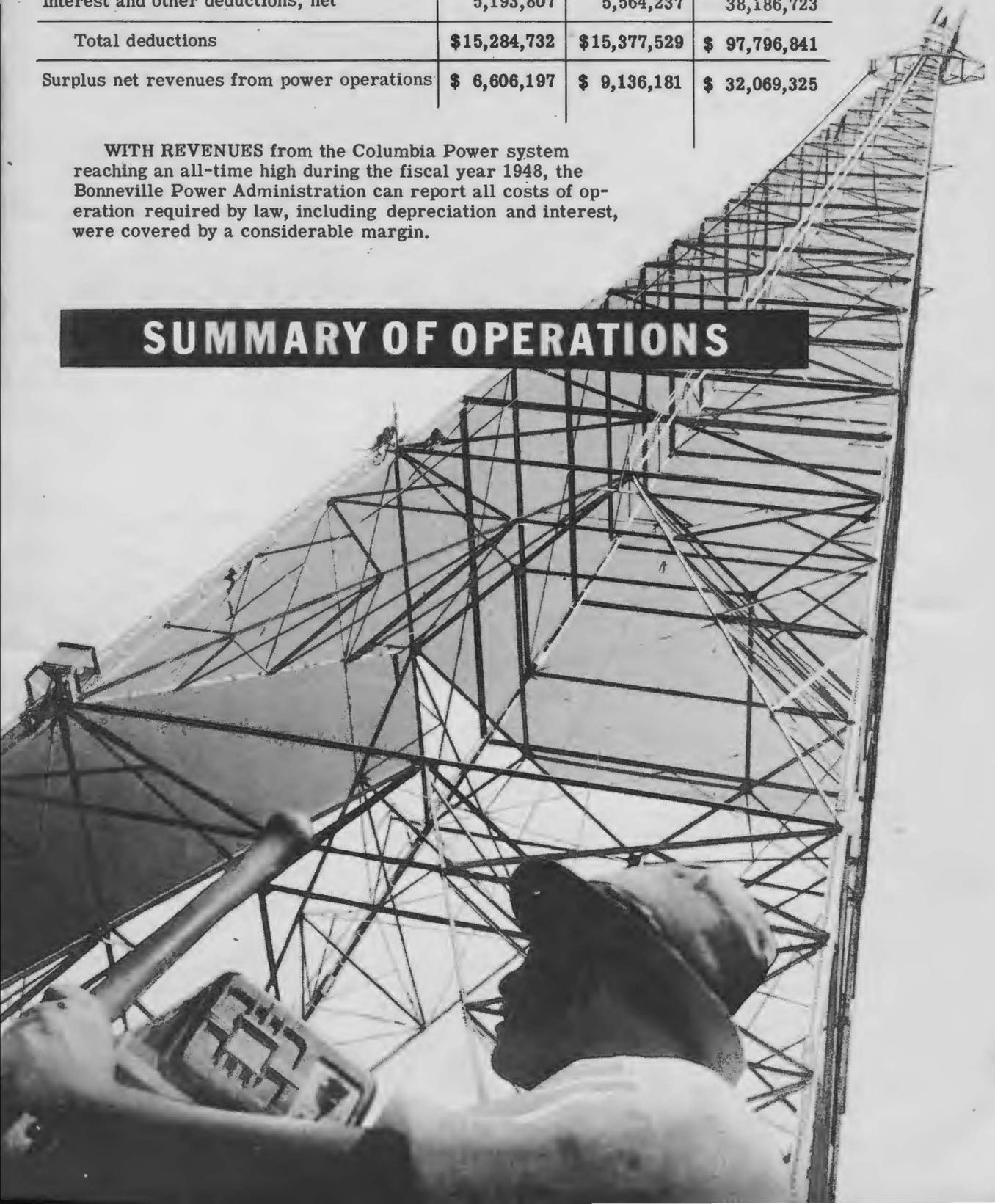
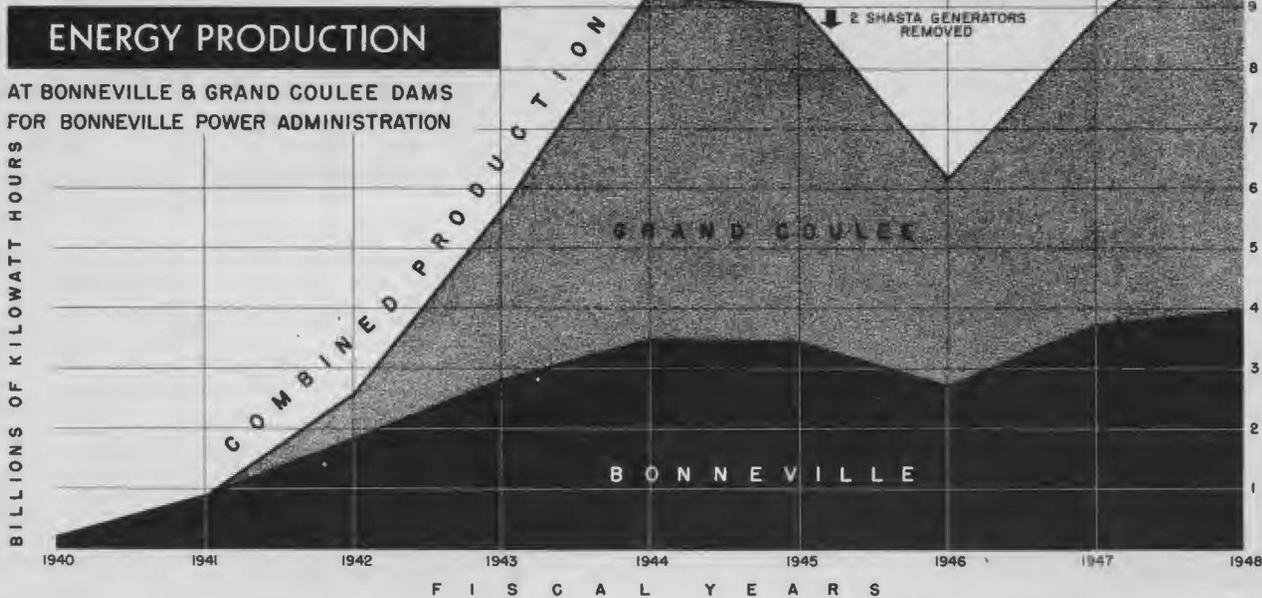


CHART I



## Energy Production

ELECTRICAL ENERGY produced at Bonneville and Grand Coulee dams and sold by the Bonneville Power Administration during the fiscal year 1948 for the first time exceeded 10 billion kilowatt-hours.

The total of 10,885,907,000 kilowatt-hours exceeded the peak war year of 1944 by 17.8 per cent and represented 61 per cent of total energy produced in the States of Oregon and Washington, and over 50 per cent of the total produced in the Northwest during the 12-month period.

Energy generation during June 1948 and for the year would have been approximately 200 million kilowatt-hours greater if the most acute flood condition in 50 years had not occurred in May and June. High water and reduced operating head curtailed the power output at both Grand Coulee and Bonneville dams.

Table I, and Chart I, Generation at Bonneville and Grand Coulee dams, shows energy production from the beginning of operations to the end of fiscal 1948, and Table II, Electric Energy Account, presents an explanation

of energy received and delivered by the administration.

Three new generating units were added to the six at Grand Coulee during October 1947, February and April 1948, bringing the total capacity at the two plants to 1,490,400 kilowatts name plate rating, with safe continuous capacity under favorable operating head conditions of 1,644,000 kilowatts. Three more generators were scheduled for the Grand Coulee plant for April, July and October 1949.

Chart II shows the installed generator capacity at the two plants.



Bonneville Dam

Grand Coulee Dam



TABLE I  
GENERATION AT BONNEVILLE AND GRAND COULEE PLANTS FOR  
BONNEVILLE POWER ADMINISTRATION, 1938-48

Fiscal years ending June 30	Bonneville Dam generation ↓ Kilowatt-hours	Grand Coulee Dam generation ↓ Kilowatt-hours	Total generation for BPA ↓ Kilowatt-hours
1939	34,874,138		34,874,138
1940	208,426,077		208,426,077
1941	894,177,000	7,455,000	901,632,000
1942	1,807,309,000	741,844,249	2,549,153,249
1943	2,801,480,400	2,816,955,729	5,618,436,129
1944	3,488,873,992	5,750,949,460	9,239,823,452
1945	3,391,127,400	5,660,445,960	9,051,573,360
1946	2,674,834,000	3,561,329,280	6,236,163,280
1947	3,695,255,000	5,058,482,320	8,753,737,320
1948	3,991,860,000	6,894,047,000	10,885,907,000
<b>Total</b>	<b>22,988,217,007</b>	<b>30,491,508,998</b>	<b>53,479,726,005</b>

**TABLE II**  
**BONNEVILLE POWER ADMINISTRATION**  
**ELECTRIC ENERGY ACCOUNT**  
**FISCAL YEAR ENDED JUNE 30, 1948**

**Energy received (kilowatt-hours):**

**Energy generated for Bonneville Power Administration:**

Bonneville	3,991,860,000
Grand Coulee	6,894,047,000
<b>Total</b>	<b>10,885,907,000</b>
Power purchased and interchanged in	286,310,725
<b>Total received</b>	<b>11,172,217,725</b>

**Energy delivered (kilowatt-hours):**

Sales	10,272,257,111
Power interchanged out	106,983,377
Used by Administration	13,795,897
<b>Total delivered</b>	<b>10,393,036,385</b>
Energy losses	779,181,340
Percent of total energy received	7.0

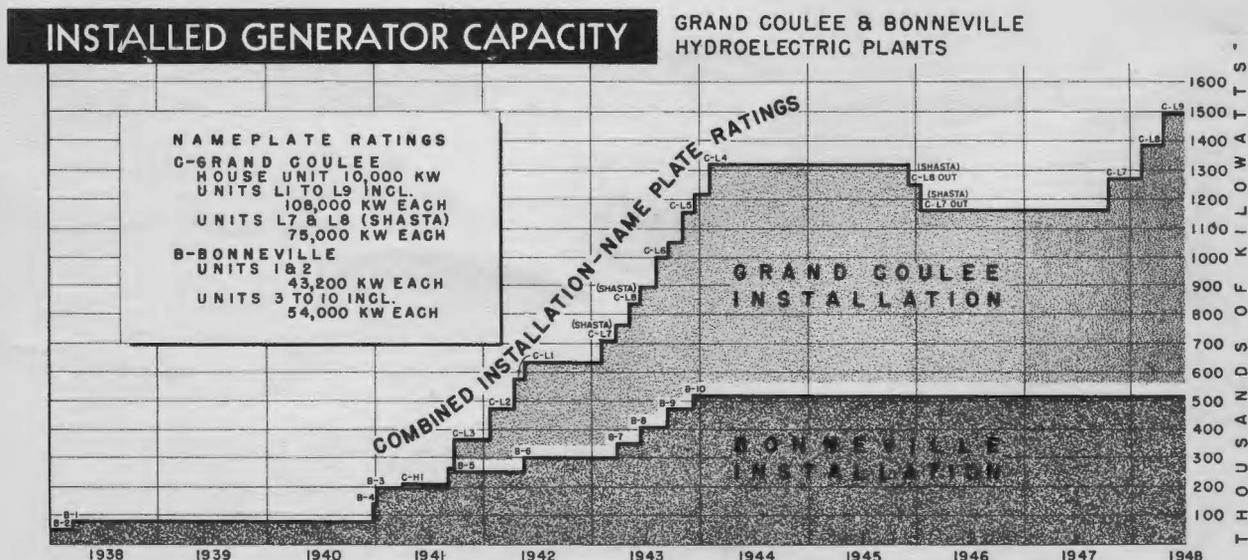
**Maximum demand on Bonneville and Grand Coulee plants**  
**(kilowatt) May 11, 1948, 10-11 a.m.**

1,610,000

**Load factor--total generated for Bonneville Power Administration**

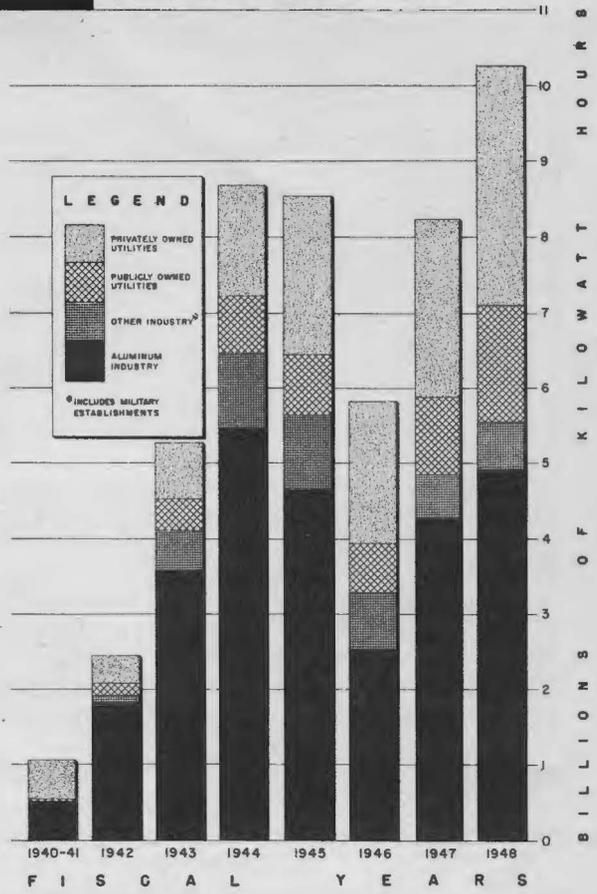
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CHART II



**ENERGY DELIVERIES**

BY CLASS OF CUSTOMER



*Construction worker fits bushing connector to bus.*

# Energy Deliveries

DURING THE ADMINISTRATION'S 10 years operation, ending June 30, 1948, the system delivered 50,334,092,000 kilowatt-hours of energy, of which sales during the fiscal year 1948 represented 20 per cent.

Of the 10,885,907,000 kilowatt-hours of energy produced in fiscal 1948 by the two Columbia River plants, 10,272,257,111 kilowatt-hours were delivered to purchasers. Energy loss in transmission amounted to 7.0 per cent, compared to a loss of 6.7 per cent in fiscal 1947. Transmission losses increase when the system is overloaded. Energy sales by class of customer for each of the years are shown in Table III and Chart III.

During fiscal 1948 the Administration served 88 wholesale customers, of which 57 were publicly owned utilities, six were privately owned utilities, seven were military

establishments, and 18 were industrial plants. Service was added for four new customers: three publicly owned utilities and one privately owned utility. Service was discontinued for two customers, one a military establishment and one an industrial plant. Twenty-seven additional delivery points were established and one discontinued. Table III shows the detail of energy received and delivered during fiscal year 1948.

The maximum coincidental demand on these two plants during the year was 1,610,000 kilowatts, occurring during May 1948. This was an increase of 13 per cent above the wartime peak of 1,427,000 kilowatts in January 1945. The May 1948 peak demand represents a 21 per cent increase over the February 1947 peak of 1,335,000 maximum coincidental demand.

TABLE III  
ELECTRIC ENERGY SALES BY CLASS OF CUSTOMER

Fiscal years 1939-1948  
(Megawatt-hours)

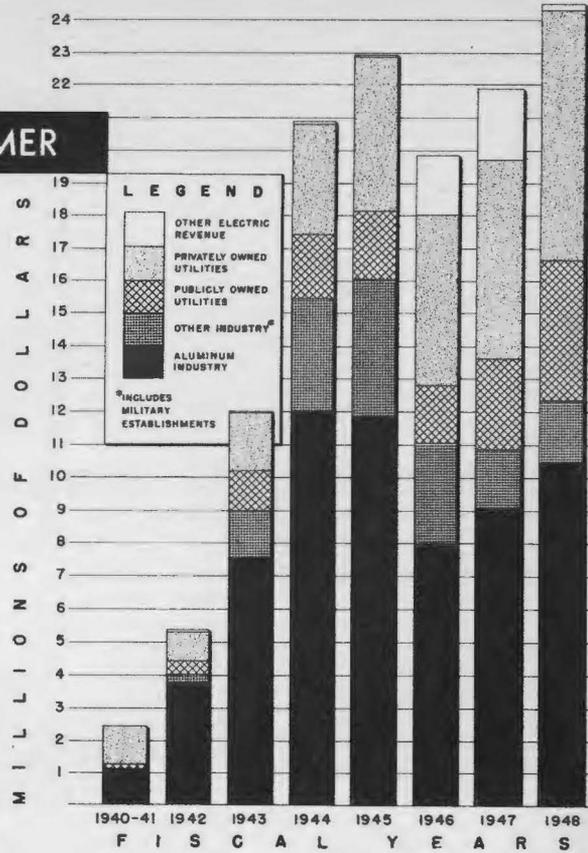
Class of customer	1939 and 1940	1941	1942	1943	1944
<b>Industry:</b>					
Aluminum	-	522,982	1,845,249	3,588,848	5,453,893
Other industry	21	4,790	76,580	464,309	934,588
Military establishments	-	18	2,575	42,887	87,889
Publicly-owned utilities	3,108	32,134	142,491	435,299	727,642
Privately-owned utilities	218,842	317,713	357,704	739,076	1,467,304
<b>Total</b>	<b>221,971</b>	<b>877,637</b>	<b>2,424,599</b>	<b>5,270,409</b>	<b>8,671,316</b>
	1945	1946	1947	1948	Total to June 30, 1948
<b>Industry:</b>					
Aluminum	4,667,381	2,492,985	4,212,413	4,902,465	27,686,216
Other industry	878,896	739,408	600,131	609,534	4,308,257
Military establishments	85,828	59,970	26,557	37,379	343,103
Publicly-owned utilities	823,822	635,531	1,044,901	1,546,147	5,391,065
Privately-owned utilities	2,057,203	1,902,990	2,377,887	3,176,732	12,615,451
<b>Total</b>	<b>8,513,130</b>	<b>5,830,884</b>	<b>8,261,889</b>	<b>10,272,257</b>	<b>50,344,092</b>

*Substation Operator Controls Flow Of Energy to BPA Customers*



CHART IV

REVENUES BY CLASS OF CUSTOMER



Revenues

TOTAL OPERATING REVENUES of the Columbia River Power system, consisting of the administration's transmission system together with allocated power components of the Bonneville dam and the Columbia Basin project reached an all-time peak of \$24,513,710 in fiscal year 1948. This was an increase of more than \$2,600,000 or 12 per cent over revenues for fiscal year 1947. The 1947 figure included \$2,012,972 of non-recurring revenue from contract cancellation charges. Therefore, revenues from sales of electric energy actually increased \$4,532,157, equal to 22.9 per cent. Fiscal 1948 results were in excess of \$1,500,000 greater than in any previous year of operation.

It is conceivable that, under ordinary conditions, fiscal 1948 revenues would have exceeded the \$25,000,000 mark; but due to flood conditions prevailing during May and June, the last two months of the fiscal year, the power output at the two dams was materially curtailed.

Gross operating revenues from the beginning of operations in 1939 to June 30, 1948 totaled \$129,866,166. Table IV and Chart IV

show revenues by class of customer. Sales to the aluminum and other industries, including military establishments, accounted for 50.46 per cent of the gross revenues: publicly-owned utilities (Public utility districts, cooperatives, and municipalities) 17.61 per cent; and privately-owned utilities 31.14 per cent.

All receipts from the Administration's operations are returned to the Treasury of the United States. The Administration accordingly must secure annual appropriations from Congress for all money necessary for operations, maintenance and construction except that a \$500,000 continuing fund <sup>1/</sup> which the administrator may use to defray emergency expenses and to insure continuous operation, is established from power sales receipts returned to the Treasury by the Bonneville Project Act. In fiscal year 1948, for the first time in the 11-year history of the Administration, it became necessary to draw upon this continuing fund although the disbursements from the fund accounted for less than one per cent of total disbursements in the fiscal year.

<sup>1/</sup> See page 2.

TABLE IV  
REVENUES BY CLASS OF CUSTOMERS

Through Fiscal Year 1948

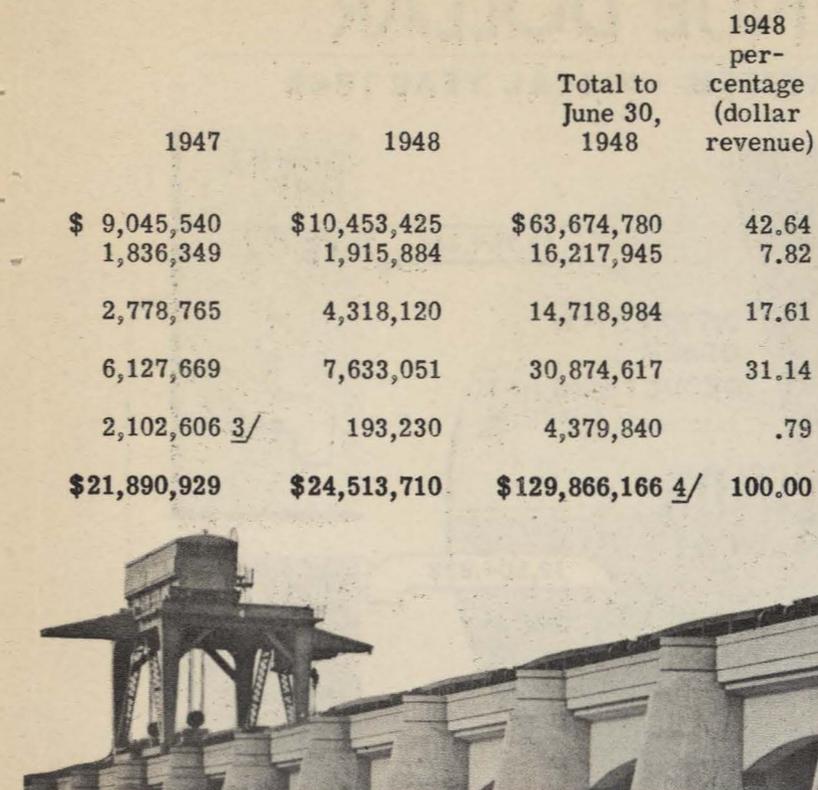
Class of customers	1943 and prior	1944	1945	1946	1947	1948	Total to June 30, 1948	1948 per-centage (dollar revenue)
Industry:								
Aluminum	\$12,360,698	\$11,989,735	\$11,838,156	\$ 7,987,226	\$ 9,045,540	\$10,453,425	\$63,674,780	42.64
Other industry <sup>1/</sup>	1,735,758	3,449,736	4,171,469	3,108,749	1,836,349	1,915,884	16,217,945	7.82
Publicly-owned utilities	1,773,892	1,994,750	2,141,635	1,711,822	2,778,765	4,318,120	14,718,984	17.61
Privately-owned utilities	3,751,490	3,401,042	4,752,021	5,209,344	6,127,669	7,633,051	30,874,617	31.14
Other electric revenue	69,458	60,665	86,737	1,867,144 <sup>2/</sup>	2,102,606 <sup>3/</sup>	193,230	4,379,840	.79
<b>Total operating revenue</b>	<b>\$19,691,296</b>	<b>\$20,895,928</b>	<b>\$22,990,018</b>	<b>\$19,884,285</b>	<b>\$21,890,929</b>	<b>\$24,513,710</b>	<b>\$129,866,166 <sup>4/</sup></b>	<b>100.00</b>

<sup>1/</sup> This includes military establishments.

<sup>2/</sup> This 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.)

<sup>3/</sup> This 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.)

<sup>4/</sup> As of June 30, 1948, the Administration had collected and deposited in the United States Treasury power revenue receipts totaling \$118,050,821 and general fund receipts of \$4,838,752. Accounts receivable, accrued unbilled revenues, unbilled exchange power 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.



## Repayment of Federal Investment

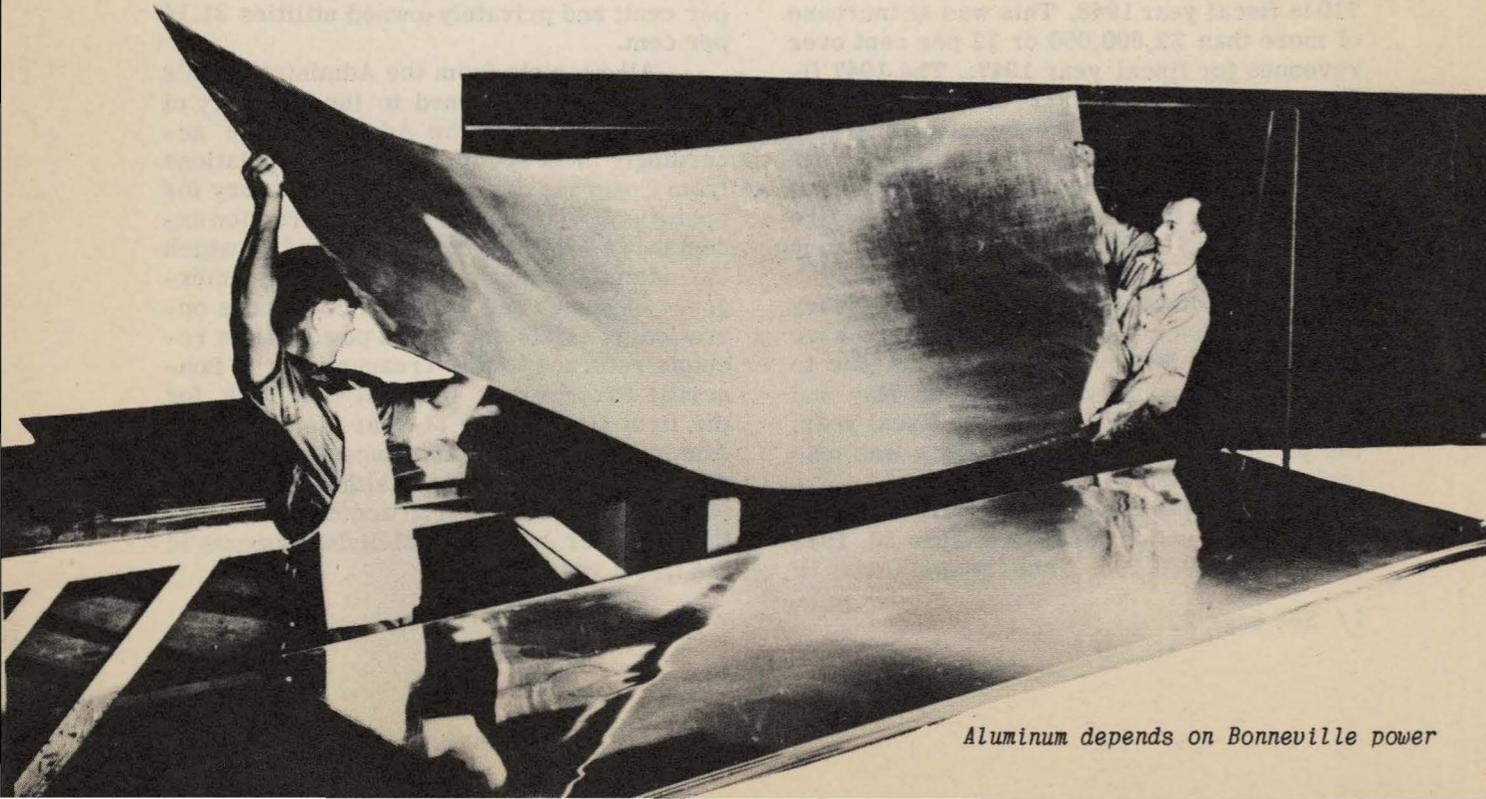
AS OF JUNE 30, 1948 the gross federal investment allocated to Columbia river power amounted to \$396,356,646. This investment comprised the total of all funds appropriated and requisitioned for both construction and operations of the power portion of the Columbia Basin project (Grand Coulee dam), the Bonneville project and the related transmission facilities of the Bonneville Power administration, together with items such as WPA expenditures and amounts transferred from other federal agencies plus the interest charged on the unrepaid balance.

This \$396,356,646 gross figure included an accumulated interest charge of \$54,785,570. Included in the latter was \$11,693,792 of interest during construction which formed part of the cost of the electric utility plant; \$5,831,320 of deferred interest on the investment in the Columbia Basin project (Grand Coulee dam) allocated to future downstream river regulation; and \$37,260,458 of interest expense charged currently to operations (see Table V).

This gross federal investment has been periodically reduced by repayments out of the revenues from power operations. As of June 30, 1948, \$122,668,522 had been returned to the Treasury in repayment of the federal investment, leaving a net investment by the Government in the power system to be repaid from future operations of \$273,688,124.

With the exception of the amounts deposited in the Administration's continuing fund, all operating revenues are returned to the Treasury of the United States. Annual appropriations from Congress are required to finance both operation and construction activities since all revenues must be deposited in the Treasury and are not available to the agencies for expenditure.

Table VI shows the financial status of the Bonneville dam and Columbia Basin (Grand Coulee) projects for the period ending June 30, 1948. The sale of power at the present low rate is returning to the Federal Government a substantial surplus, as well



Aluminum depends on Bonneville power

TABLE IV  
REVENUES BY CLASS OF CUSTOMERS

Through Fiscal Year 1948

Class of customers	1943 and prior	1944	1945	1946
Industry:				
Aluminum	\$12,360,698	\$11,989,735	\$11,838,156	\$ 7,987,226
Other industry <sup>1/</sup>	1,735,758	3,449,736	4,171,469	3,108,749
Publicly-owned utilities	1,773,892	1,994,750	2,141,635	1,711,822
Privately-owned utilities	3,751,490	3,401,042	4,752,021	5,209,344
Other electric revenue	69,458	60,665	86,737	1,867,144 <sup>2/</sup>
Total operating revenue	\$19,691,296	\$20,895,928	\$22,990,018	\$19,884,285

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*Aluminum depends on Bonneville power*

1947	1948	Total to June 30, 1948	1948 per- centage (dollar revenue)
\$ 9,045,540	\$10,453,425	\$63,674,780	42.64
1,836,349	1,915,884	16,217,945	7.82
2,778,765	4,318,120	14,718,984	17.61
6,127,669	7,633,051	30,874,617	31.14
2,102,606 <sup>3/</sup>	193,230	4,379,840	.79
<b>\$21,890,929</b>	<b>\$24,513,710</b>	<b>\$129,866,166 <sup>4/</sup></b>	<b>100.00</b>



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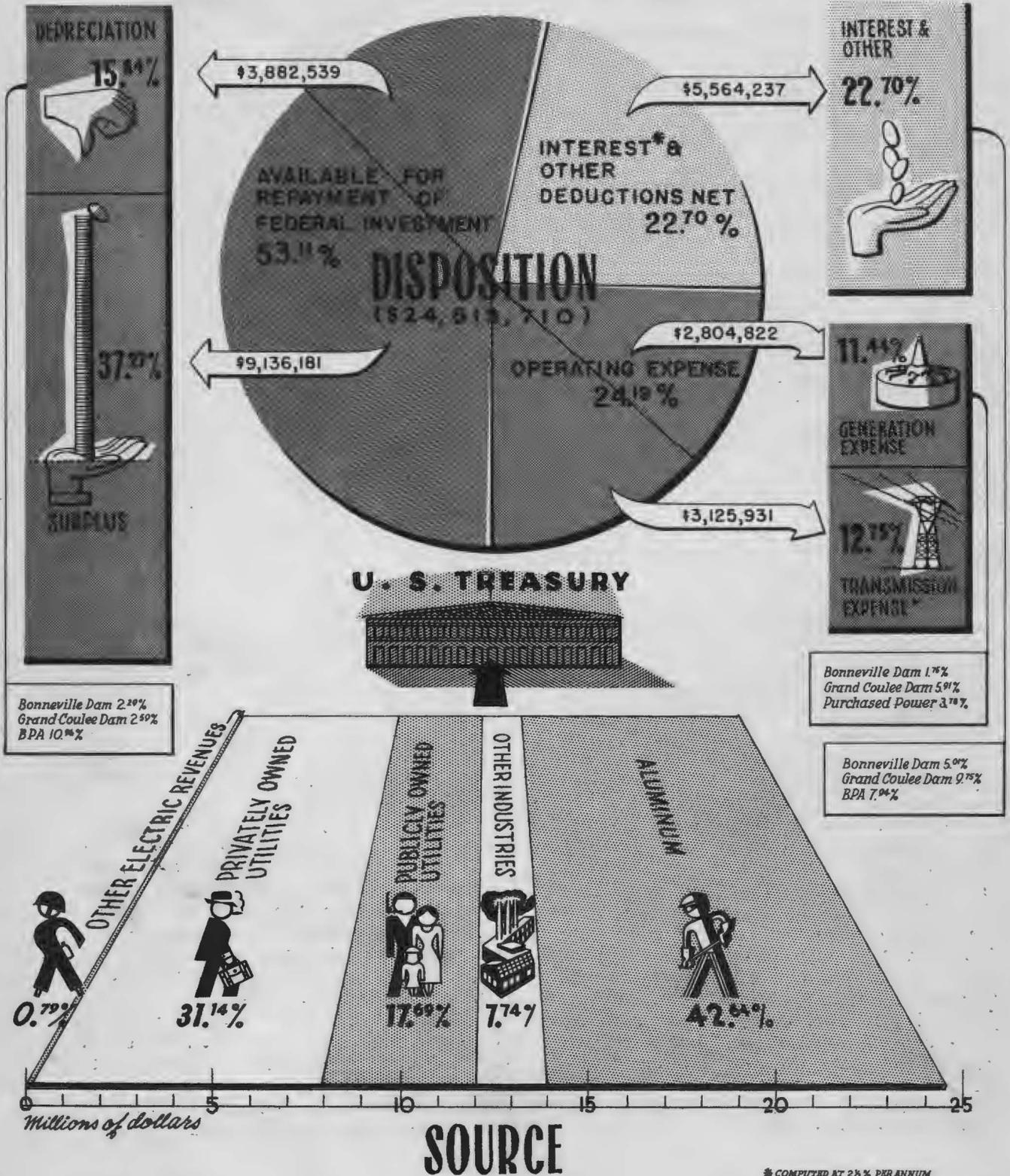
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# THE 1948 REVENUE DOLLAR

COLUMBIA RIVER POWER SYSTEM • FISCAL YEAR 1948



\* COMPUTED AT 2% PER ANNUM  
 ✓ OPERATION, MAINTENANCE, MARKETING, ADMINISTRATION, & GENERAL EXPENSE OF BPA

as over-all charges applicable to the generator projects and the related transmission system.

While the \$17.50 per kilowatt year basic rate had so far proved to be sufficient to repay, with interest, the federal investment, it appeared that increasing costs of construction might make a future rate adjustment necessary if the trend continued.

Gross revenues were allocated to the two dams in proportion to the electric energy produced for the Bonneville Power administration at the respective generating plants. While such generation does not represent the entire energy supply of the Ad-

ministration, on account of exchange arrangements with other systems, it does account for the bulk of it and is considered to be a reasonably satisfactory basis for such an allocation.

The financial requirements include all amounts allocated to power for operation and maintenance, interest, miscellaneous income deductions, amortization and replacements. The requirements of the transmission system of the Bonneville Power administration were allocated to the two dams on the same basis as revenues, that is, in proportion to the electric energy produced by each. Chart V shows the source and disposition of the revenue dollar in fiscal year 1948.

TABLE V

COLUMBIA RIVER POWER SYSTEM

Summary of Interest\* on Federal Investment  
as of June 30, 1948

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

Transmission system	\$ 1,208,013.49
Bonneville Dam	2,317,042.39
Columbia Basin Project	8,168,736.03
Subtotal	\$11,693,791.91

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

5,831,320.04

Interest charged to operations--repaid currently:

Transmission system	\$11,549,827.64
Bonneville Dam	11,290,893.06
Columbia Basin Project	14,419,737.55
Subtotal	\$37,260,458.25

Gross interest accumulation as per Schedule I of Auditors' report for 1948 \$54,785,570.20

\*Computed at the rate of 2 1/2 percent per year.

TABLE VI  
STATEMENT SHOWING AN ALLOCATION OF REVENUES AND FINANCIAL REQUIREMENTS TO  
BONNEVILLE AND GRAND COULEE DAMS  
FOR PERIOD TO JUNE 30, 1948

COLUMBIA RIVER POWER SYSTEM	System total	Bonneville Dam (and related transmission system)	Grand Coulee Dam
Gross revenues	\$129,866,166	\$55,574,080	\$74,292,086
Financial requirements - Bonneville Dam	21,364,290	21,364,290	-
Financial requirements - Grand Coulee Dam	34,618,680	-	34,618,680
Financial requirements - Bonneville Power Administration (Transmission)	50,251,481	22,557,890	27,693,591
Total financial requirements	\$106,234,451	\$43,922,180	\$62,312,271
Balance - excess of revenues	\$ 23,631,715	\$11,651,900	\$11,979,815
Percent of excess	100.00	49.31	50.69

Notes:

Gross revenues are actual data taken from the certified financial statements.

Financial requirements are actual through fiscal year 1947 but are partially estimated for 1948. It is estimated that no material change in results will be effected when actual 1948 data become available.

Financial "requirements" are taken from theoretical, or control, payout schedules, which are simply calculations to show the amounts required to pay out over the established payout periods, as distinct from the actual payout, which to date is being effected more rapidly than required by applicable statutes. Inasmuch as no control schedule on the Columbia Basin Project is available, actual payments from the latest revision of Payout Schedule C-2 have been used.

TABLE VII COLUMBIA RIVER POWER SYSTEM		Allocation	
Summary of Plant Accounts as of June 30, 1948	Total	Non-power	Power
Bonneville Power Administration →	\$109,565,676	\$ -	\$109,565,676
Bonneville Dam →	84,613,428	26,314,760	58,298,668
Columbia Basin Project →	253,748,738	104,411,029	149,337,709
<b>Total →</b>	<b>\$447,927,842</b>	<b>\$130,725,789</b>	<b>\$317,202,053 <sup>1/</sup></b>
Less combined reserve for depreciation →			23,464,736
<b>Total less reserve →</b>			<b>\$293,737,317</b>

<sup>1/</sup> This total of plant investment represents the major component of the gross Federal investment of \$396,356,646 which includes in addition amounts appropriated for cash working capital, material and supplies, operating expenses and other similar items, and non-appropriated items such as interest on Federal investment.



*Bonneville supplies more than 600,000 kw to aluminum plants*

## Customer Service

POWER REQUIREMENTS of the region increased faster during the year than generation and transmission facilities could be constructed with the inadequate funds appropriated. Service to a number of preferred customers was inadequate or delayed, and lack of facilities made it impossible to contract for the sale of power to many prospective customers.

As of June 30, 1948, the Administration's load forecasts showed that the requirements to meet existing long-term firm commitments by 1951 would leave no firm power for sale to new customers until upstream storage becomes available in the summer of 1952 from Hungry Horse reservoir.

Virtually the entire supply of firm power from the federal system available in 1951 had been committed, by the close of the year, on long-term contracts to the public agencies and the heavy electro industries which had been attracted to the region in the war and post-war periods by availability of low-cost power.

These commitments included reserves for growth in public agency loads.

The margin of firm power held in reserve for growth in loads of public agencies was sold on one-year contracts to privately owned utility companies in the region for their use pending such time as it would be absorbed by the needs of the preferred agencies.

This situation made it impossible for the Administration to consider new long term commitments for firm power supply, since such supply must be guaranteed, and is limited by the possibility of minimum water conditions in the Columbia Basin.

There will be available for sale, however, a considerable but variable quantity of power during high water seasons of each year, and during longer periods in those years where better than minimum water conditions prevail.

Table VIII lists the customers served by the Administration during fiscal 1948.

TABLE VIII

## ENERGY DELIVERIES TO CUSTOMERS OF THE BONNEVILLE POWER ADMINISTRATION

Fiscal Year Ended June 30, 1948

Customers

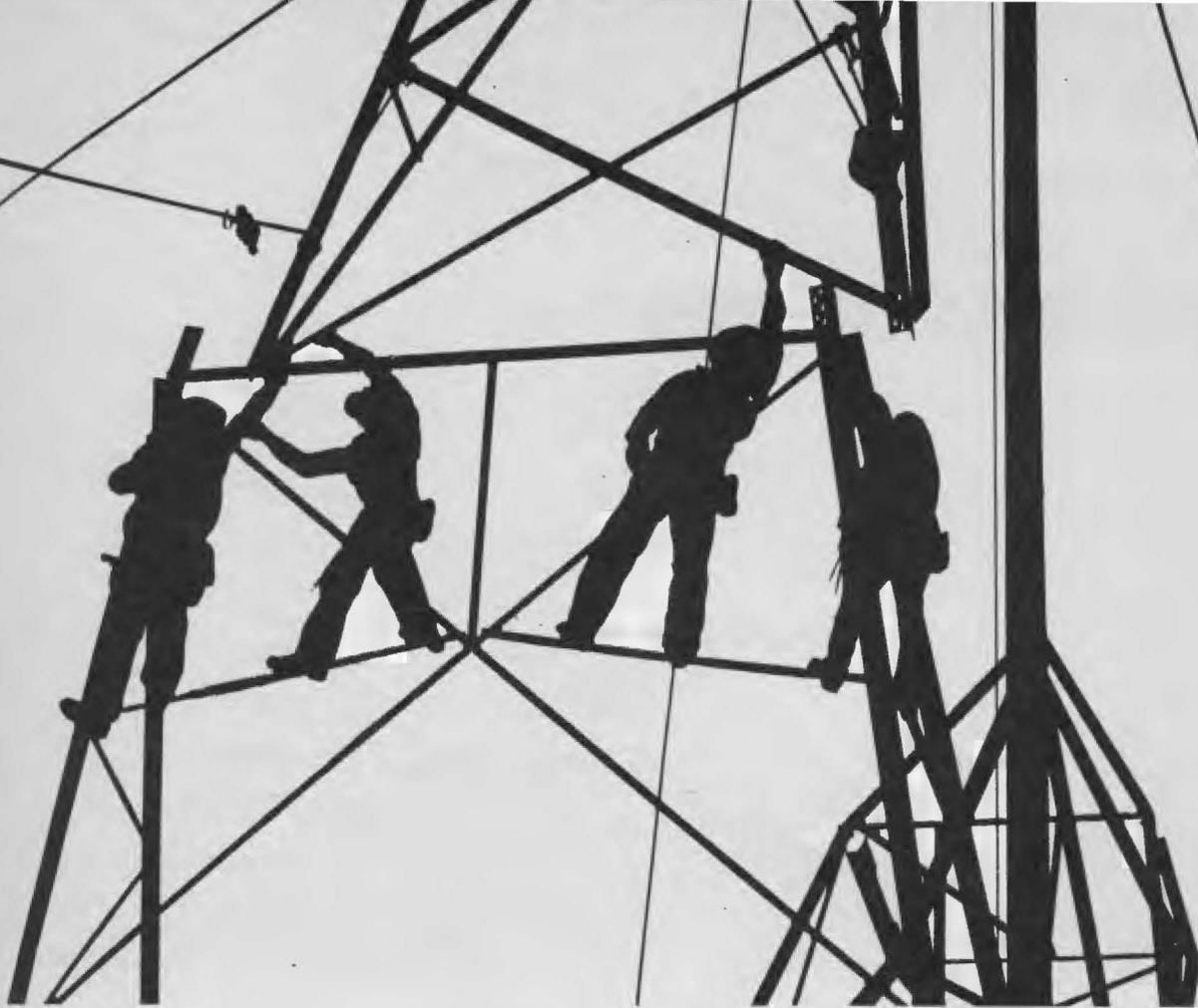
Publicly-owned utilities:	Energy deliveries for year 1/ kilowatt-hours
<b>Municipalities:</b>	
Bandon, Oregon	1,431,796
Canby, Oregon	4,566,000
Cascade Locks, Oregon	5,097,600
Centralia, Washington	1,555,000
Drain, Oregon	3,364,200
Ellensburg, Washington	13,654,000
Eugene, Oregon	35,445,988
Forest Grove, Oregon	16,021,200
Grand Coulee, Washington	11,055,000
McMinnville, Oregon	29,406,000
Milton, Oregon	3,938,400
Monmouth, Oregon	4,510,400
Seattle, Washington	161,017,000
Tacoma, Washington	356,004,000
<b>Total municipalities</b>	<b>647,066,584</b>
<b>Public utility districts:</b>	
Benton County Public Utility District No. 1	34,518,645
Central Lincoln Peoples' Utility District	26,225,512
Clark County Public Utility District No. 1	160,592,730
Clatskanie Peoples' Utility District	4,923,800
Cowlitz County Public Utility District No. 1	235,254,900
Douglas County Public Utility District No. 1	5,086,200
Franklin County Public Utility District No. 1	2,418,338
Grant County Public Utility District No. 2	52,949,968
Grays Harbor Public Utility District No. 1	97,556,000
Kittitas County Public Utility District No. 1	2,544,960
Klickitat County Public Utility District No. 1	2,118,100
Lewis County Public Utility District No. 1	11,702,400
Okanogan County Public Utility District No. 1	47,630,580
Pacific County Public Utility District No. 2	31,398,821
Pend Oreille County Public Utility District No. 1	2,853,600
Skamania County Public Utility District No. 1	8,257,088
Tillamook County Peoples' Utility District	1,456,040
Wahkiakum County Public Utility District No. 1	6,357,600
<b>Total public utility districts</b>	<b>733,845,282</b>
<b>Cooperatives:</b>	
Benton-Lincoln Electric Cooperative	9,845,082
Benton Rural Electric Association	10,014,720
Big Bend Electric Cooperative	4,399,964
Blaichly-Lane Electric Cooperative	1,623,000
Clearwater Valley Light & Power Association	10,890,900
Columbia County Rural Electric Association	5,354,280
Coos-Curry Electric Cooperative	3,237,800
Douglas Electric Cooperative	7,871,730
Hood River Electric Cooperative	5,750,400
Idaho County Light & Power Cooperative Assn.	1,911,150
Inland Empire Rural Electric Association	23,819,164
Kootenai County Rural Electric Association	4,431,116
Lane County Electric Cooperative	8,075,820
Lincoln Electric Cooperative	6,423,000
Nespelem Valley Electric Cooperative	2,418,000
Northern Idaho Rural Electrical Rehabilitation Association	3,115,494
Okanogan County Electric Cooperative	1,187,040
Pend Oreille Electric Cooperative	1,638,360
Salem Electric	19,471,800
Stevens County Electric Cooperative	6,791,006
Umatilla Electric Cooperative	8,005,572
Wasco Electric Cooperative	6,192,300
West Oregon Electric Cooperative	4,096,593
<b>Total cooperatives</b>	<b>156,564,291</b>

Customers

Other:	Energy deliveries for year 1/ kilowatt-hours
Oregon State College	2,008,248
Vera Irrigation District No. 15	6,662,760
<b>Total other</b>	<b>8,671,008</b>
<b>Total publicly-owned utilities</b>	<b>1,546,147,165</b>
<b>Privately-owned utilities:</b>	
British Columbia Electric Railway Company, Ltd.	75,660,436
Mountain States Power Company	98,571,246
Pacific Power & Light Company - Astoria	51,268,000
Portland General Electric Company	1,034,997,308
Puget Sound Power & Light Company	847,514,000
Washington Water Power-Pacific Power & Light Companies	580,773,000
Four Company Pool 2/	487,947,929
<b>Total privately-owned utilities</b>	<b>3,176,731,919</b>
<b>Military establishments</b>	<b>37,378,757</b>
<b>Industries:</b>	
Aluminum:	
Aluminum Company of America	1,502,248,000
Permanente Metals Corporation:	
Spokane Aluminum Fabrication	193,830,000
Spokane Aluminum Reduction	1,725,180,000
Tacoma Aluminum Reduction	229,855,000
Reynolds Metals Company:	
Longview	106,632,000
Troutdale	1,144,720,000
<b>Other industries:</b>	
Electro-Metallurgical Company	118,686,000
Pacific Carbide and Alloys	21,152,000
Pennsylvania Salt Manufacturing Company:	
Plant No. 1	31,036,000
Plant No. 2	31,420,800
Miscellaneous (9)	407,239,470
<b>Total industries</b>	<b>5,511,999,270</b>
<b>Total sales of electric energy</b>	<b>10,272,257,112</b>

1/ Includes energy deliveries carried on exchange accounts.

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



## Transmission

BY JUNE 30, 1948, the Bonneville Power Administration had a total of 3,298.3 miles of transmission line in operation. Eighty-six substations had a transformer capacity of 2,765,333 kilovolt-amperes. (See Table IX and Charts VI and VII)

This included a net gain of 322.2 miles of line, and 552,400 kilovolt-amperes of transformer capacity added during the fiscal year.

Substantial as this total system capacity was, it was insufficient to meet the power requirements of the Administration's utility and industrial customers with a reasonable margin of safety.

In some load centers of the region the lack of adequate transmission reserves resulted in low voltage and service interrup-

tions. These conditions threatened production and payroll losses in such load centers.

Major Construction for Power-Deficit Areas. Major construction projects during the year were directed toward bringing relief to areas where the power deficit was becoming most critical.

One of these important projects was the continuation of construction of the Grand Coulee-Snohomish facility, a 170-mile 230-kilovolt transmission line from Grand Coulee dam to Snohomish, Wash.

This line and the Snohomish substation will serve the densely populated area in the vicinity of Seattle and Everett, Wash., where power is already in short supply. When complete, the facility will be a double circuit and of sufficient capacity to provide a major

CHART VI

**TRANSMISSION LINES**

IN CIRCUIT MILES

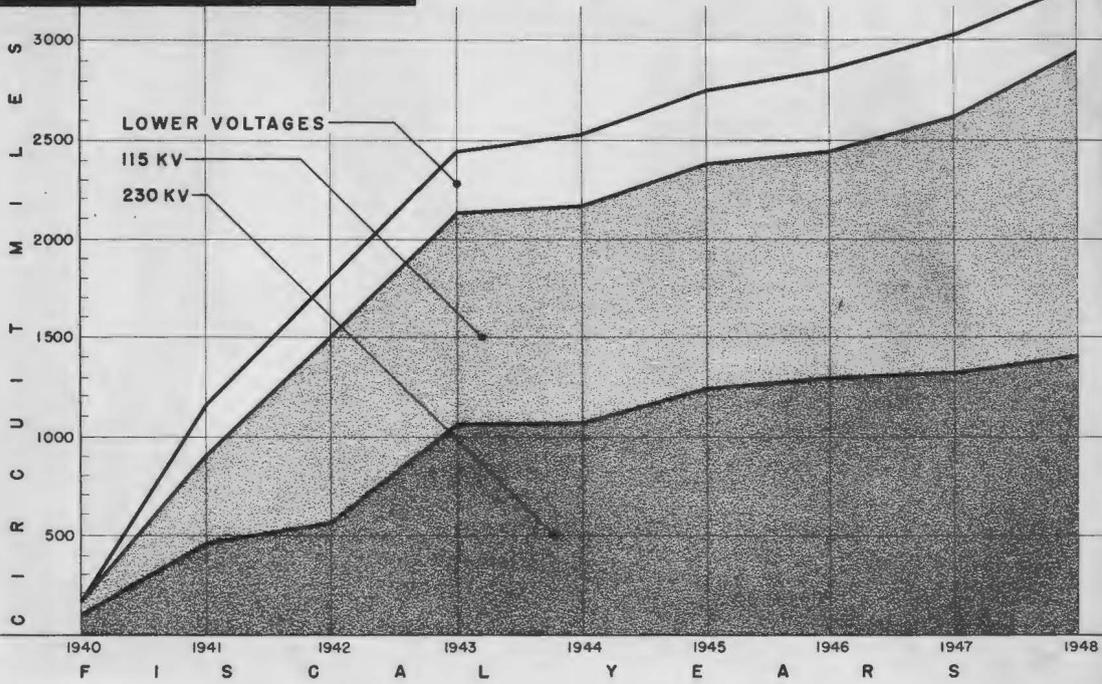
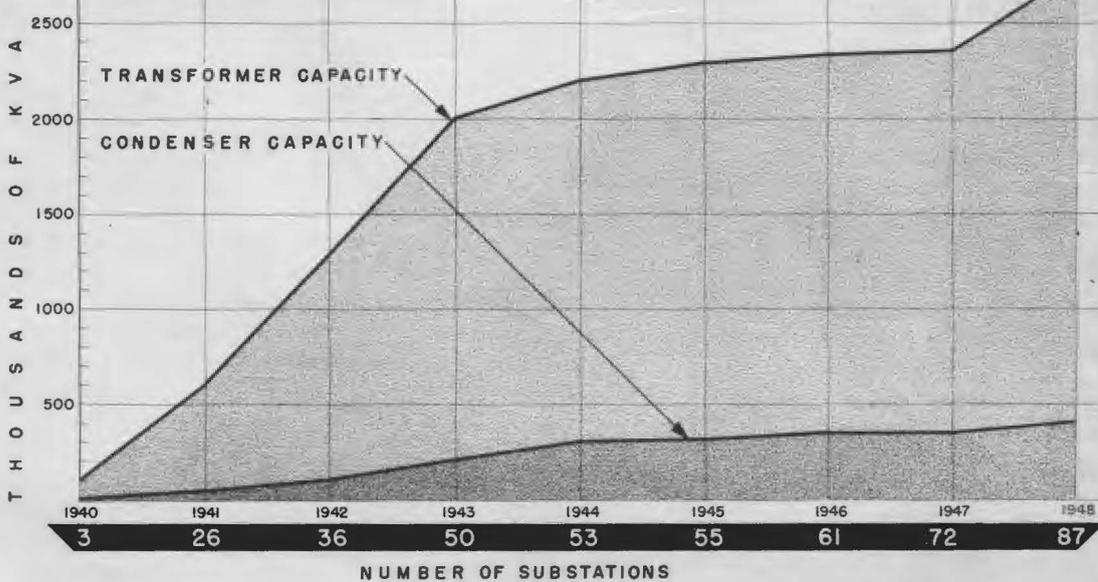
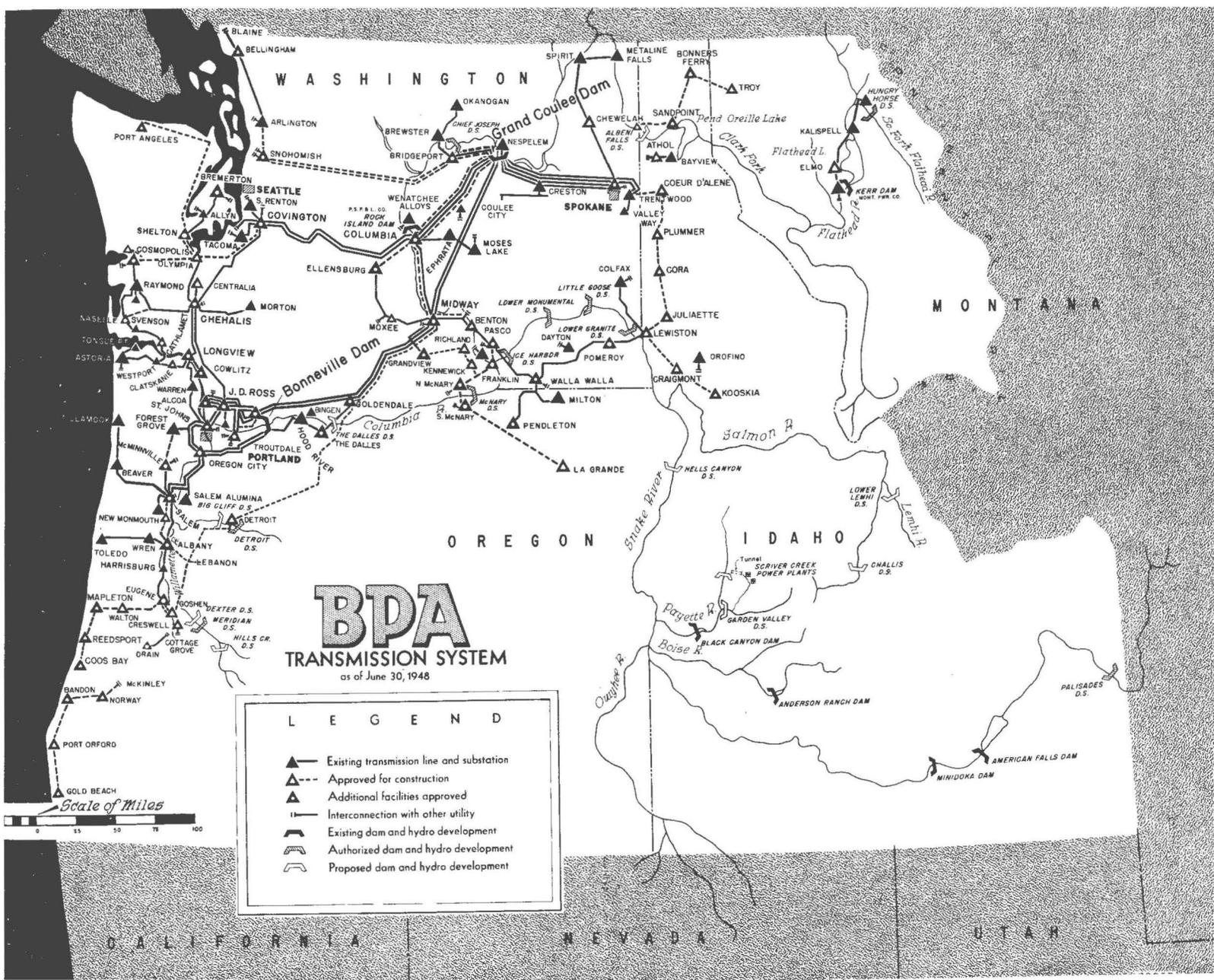


CHART VII

**SUBSTATION CAPACITY**

IN KVA





# BPA

## TRANSMISSION SYSTEM

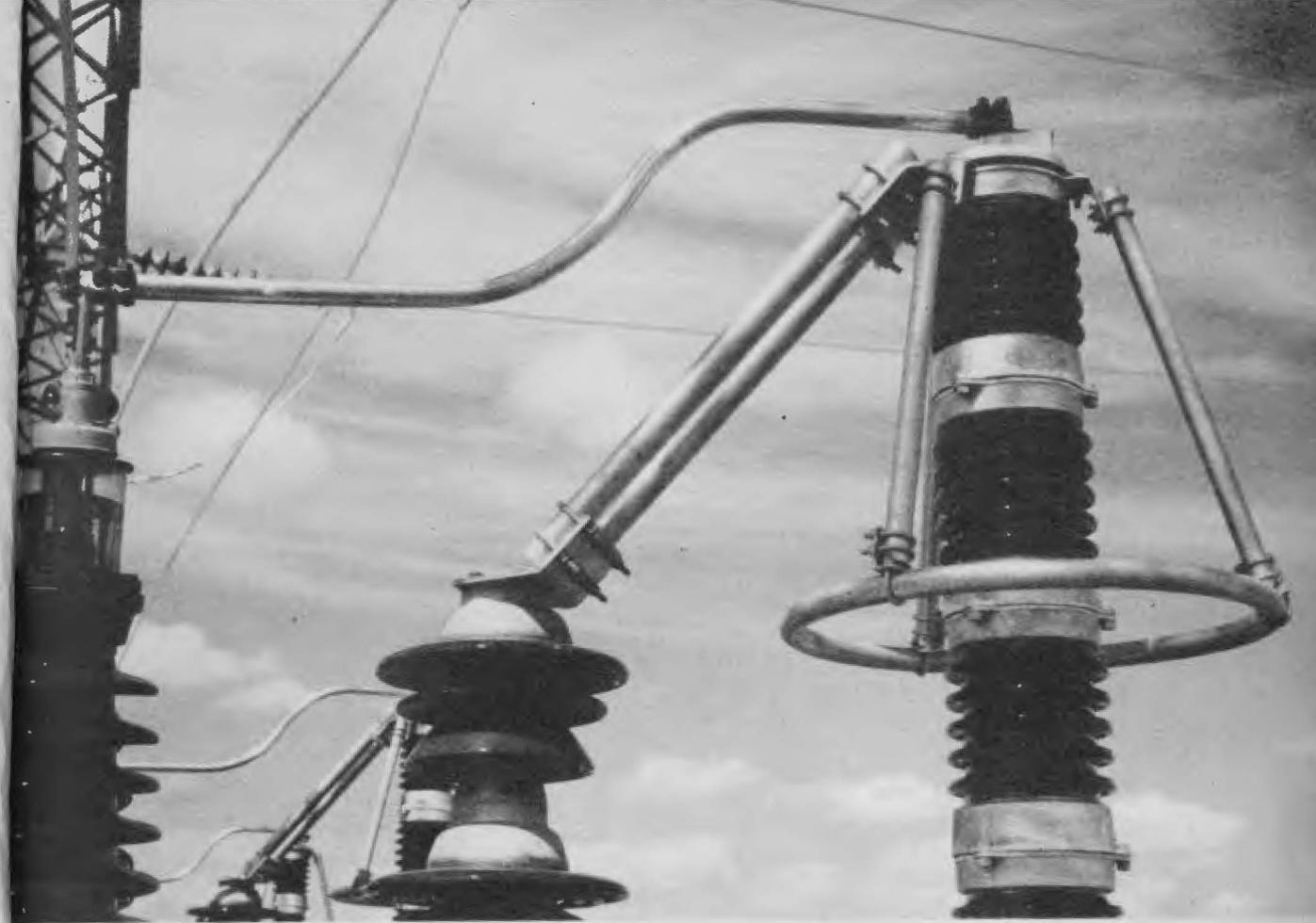
as of June 30, 1948

### LEGEND

- Existing transmission line and substation
- Approved for construction
- Additional facilities approved
- Interconnection with other utility
- Existing dam and hydro development
- Authorized dam and hydro development
- Proposed dam and hydro development



CALIFORNIA NEVADA IDAHO



*Huge lightning arresters protect expensive substation transformers*

transmission link between Grand Coulee dam and load centers in the State of Washington. For these reasons, this work was given highest priority by the Administration.

By the close of fiscal 1948, work on the line was 57 per cent complete, while the substation at the Snohomish terminus had been energized through connections with the Seattle City Light system which in turn is connected with the Bonneville system to the south.

A second important facility, also in northwest Washington, is the 71-mile 230-kilovolt, Arlington-Blaine transmission line and switching station, which was energized on August 10, 1947.

This line, originally authorized to sell surplus power to British Columbia, will be used to bring surplus power from the Bridge River plant now under construction by the British Columbia Electric Co. system to the load centers of Washington and Oregon during the critical years of 1949-51, when adverse water conditions in the Columbia wa-

tershed may bring serious trouble to the region's power consumers. During the past year surplus energy was sold to the British Columbia Electric Co. to assist them in meeting power shortages.

The Shelton-Allyn 16-mile 115-kilovolt line and a 6,000-kilovolt-ampere Shelton substation were energized September 4, 1947, on the Olympic Peninsula. This met the industrial demand in the Shelton area and provided the first leg of a circuit which will ultimately be pushed as far as Port Angeles, where there is currently a shortage of power for industrial plants.

Other power supply deficits were relieved in the State of Washington by the energization of The Dalles-Goldendale, 115-kilovolt line, and 6,000-kilovolt-ampere Goldendale substation on January 23, 1948, and by the completion of the Spokane-Spirit-Metaline Falls line on February 6, 1948. This latter facility, 103 miles long, met the demand for power by the mining enterprises in the Metaline district of Washington.

In Oregon, a beginning was made toward bringing adequate service to the State's southwest area, where the region's timber industry now centers, and where the population has grown by 60 per cent in the past eight years. A substation of 7,500 kilovolt-amperes capacity was placed in operation at Toledo near the coast, and a 115-kilovolt line between Cottage Grove and Drain, in the upper Willamette Valley, was energized with a 9,000-kilovolt-ampere substation at Drain. While these facilities were of some help, they were far from adequate to meet the power requirements of the area. A 115-kilovolt line from Eugene to Mapleton, Oregon was rushed to completion and was energized December 24, 1948 to meet a serious peak power deficiency in the area served by the Central Lincoln County Peoples' Utility District.

Facilities were built during the year to bring construction power to Hungry Horse (Montana) and McNary (Oregon) dam sites.

Sections of a 60-mile line from Kerr Dam at the lower end of Flathead Lake (Montana) to the Hungry Horse dam site were energized on December 14, 1947, and March 11, 1948, at 33 kilo-volts, and at 115 kilovolts on June 27, 1948. To bring power to McNary dam construction, two short tap lines and two substations were energized on July 29, 1947, and October 22, 1947, one on each side of the Columbia River.

In spite of these extensions, the Bonneville administration's transmission program during 1948 fell seriously behind the demands made upon it caused by the business and population growth of the region.

Critical Load on System. Loading of the transmission facilities beyond their designed limits, in an attempt to meet the demand for power, resulted in a number of serious operating problems.

One of these was the problem of voltage regulation, which was critical in service to industrial and household equipment requiring the maintenance of voltages within fixed limits. The use of static capacitors was employed as a partial correction. During latter part of the fiscal year voltage on the system was maintained by increasing the reactive generation at both Grand Coulee and Bonneville dams; but this required decreasing power generation by 15,000 to 20,000 kilowatts, and so reduced the net power supply.



*Alcoa substation, isolated by flood, continues to operate*

Perhaps the most serious operating problem which developed during the year, as a result of overload, was the approach to a condition of system instability. When the transmission lines lack spare capacity, as they do when overloaded, the effects of local failures are spread to all parts of the system. This unstable condition was exemplified during the winter 1947-48, when a local failure put two 230,000-volt Grand Coulee-Spokane lines out of service, and loads in excess of 400,000 kilowatts were dropped. Loads nearly as large were dropped several times during the year, primarily due to system instability.

Adverse Effects of Deferring Maintenance. The war, and inadequate appropriations since the war, have forced the Administration to curtail its program of preventive maintenance for a number of years. Normal



*Columbia river flood, June 1948, reduces generation at Bonneville*

maintenance has also been handicapped by lack of reserve transmission facilities. With equipment operating overloaded during the normal work week, maintenance had to be performed at night and during week-ends with an attendant rise in costs for overtime.

Lack of funds to replace insulators and split crossarms resulted in a rising trend of service failures on the system. Failure to inspect contacts of oil circuit breakers at fixed intervals and to clear brush on transmission-line right-of-way also added to the number of system failures. Re-establishment of normal maintenance and operation crews awaits favorable Congressional action on appropriation requests.

In several instances during the year, the Administration was forced to draw upon its continuing emergency fund <sup>1/</sup> to meet statutory requirements for service, and to

complete programs ordered by the Congress. This fund was used in the following instances: completion of The Dalles-Goldendale line for service to Klickitat County PUD No. 1; installation of 20,000-kilovolt-ampere capacitors at Troutdale substation; installation of 7,500-kilovolt-ampere capacitor at Salem substation. These installations firmed up the power-supply situation in the Portland and Eugene areas by the correction of serious voltage conditions. The fund was also used to repair a synchronous condenser at the Salem substation which had failed under critical loading conditions.

Transmission emergencies were met in other cases by arrangement with utility customers to construct substation facilities which normally, under terms of the Federal statute and the Federal rate structure, would be provided by the Government.

<sup>1/</sup> See Section 11, Bonneville Project Act.

TABLE IX  
B P A SYSTEM ADDITIONS

	Circuit miles			Total
	230 kv	115 kv	Under 115 kv	
<b>Transmission lines:</b>				
Placed in operation 1948 fiscal year	88.4	221.9	11.9	322.2
Removed from operation 1948 fiscal year			48.2	48.2
In operation June 30, 1947	1317.7	1310.0	382.9	3010.6
<b>Total operated June 30, 1948</b>	<b>1406.1</b>	<b>1531.9</b>	<b>346.6</b>	<b>3284.6</b>
Leased to others			13.7	13.7
<b>Grand total June 30, 1948</b>	<b>1406.1</b>	<b>1531.9</b>	<b>360.3</b>	<b>3298.3</b>

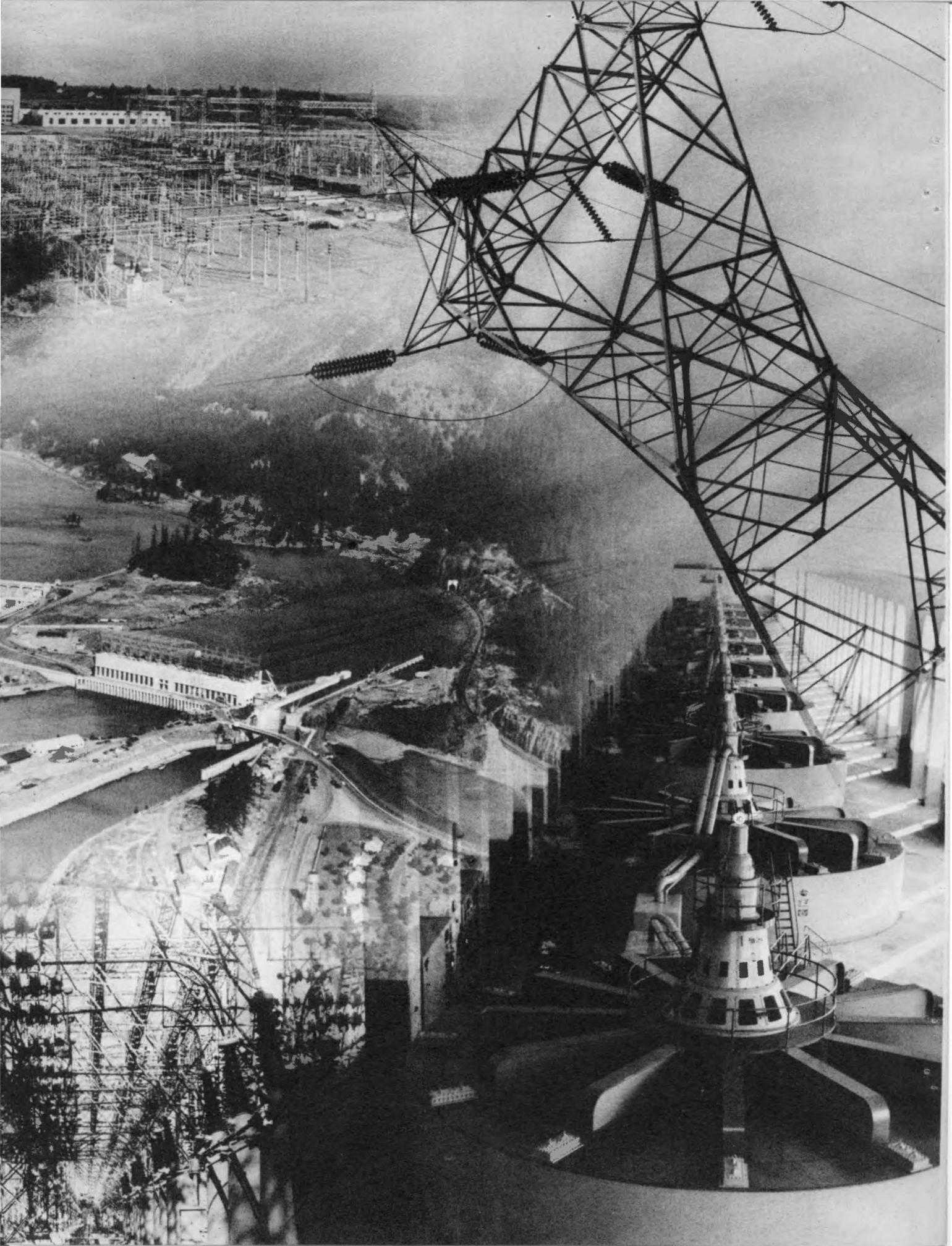
	Installed at end of 1947 fiscal year	Fiscal year 1948		Installed at end of 1948 fiscal year
		Added	Removed	
<b>Substations operated:</b>				
Transformation	*2,359,283	554,950	148,900	*2,765,333
Static capacitors	59,110	62,990		122,100
Synchronous condensers	287,500			287,500
Substations	†59	17	3	†73
Switching stations	13	1		14

\* All transformers in service. No allowance for temporary added capacity with portable fans. Includes one 600 kva substation owned, but operated by others.

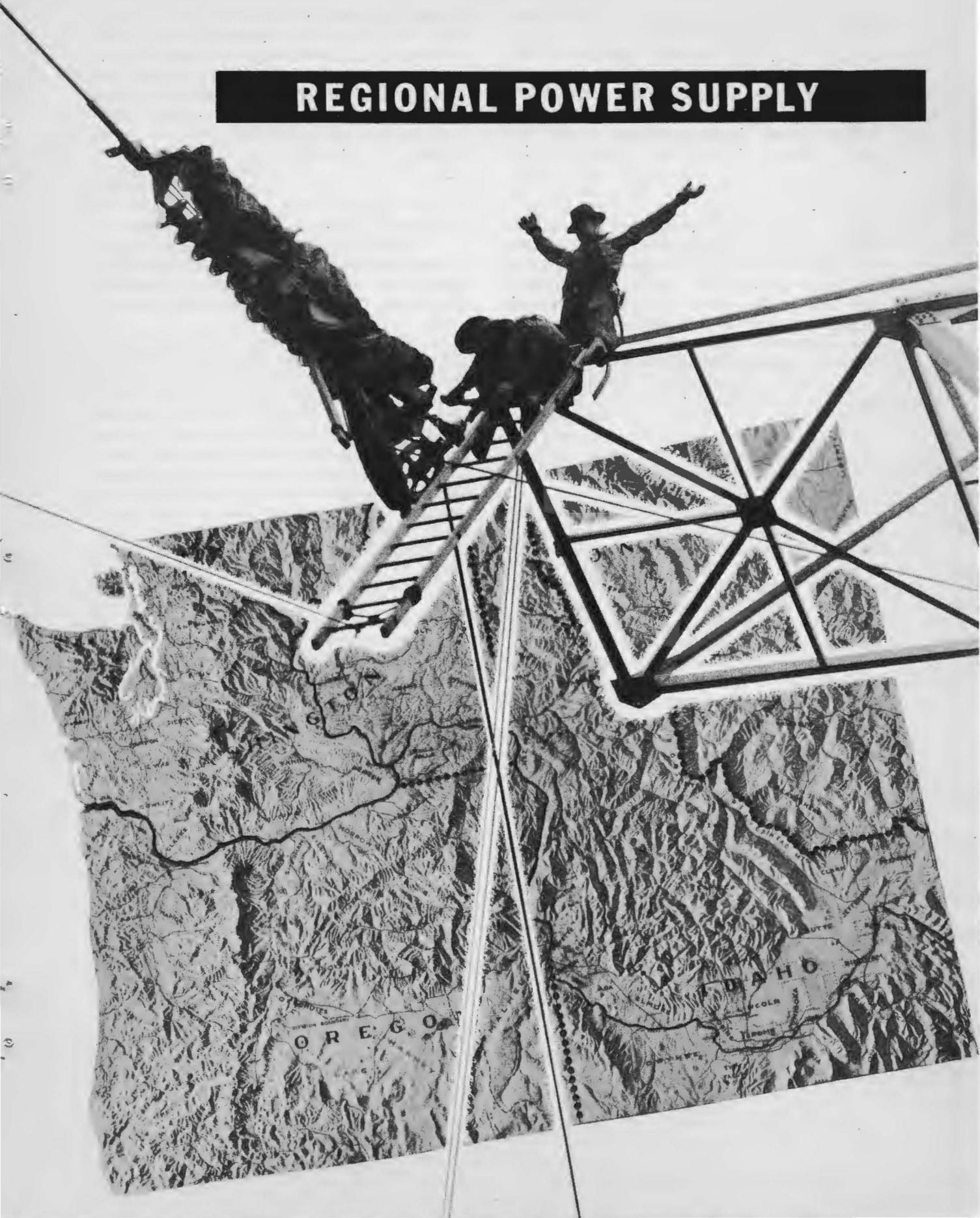
† Includes one 600 kva substation owned, but operated by others.

Rugged terrain and heavy clearing characterized construction of the 166.83 mile transmission line between Grand Coulee dam and Snohomish, Washington. This facility was the major construction project put into high gear for the fiscal year 1948.





# REGIONAL POWER SUPPLY



THE FISCAL YEAR 1948 saw the Pacific Northwest entering the first year of a power shortage period that may extend into 1956. Normal load growth of present customers is expected to require most of the new installed capacity scheduled for the next six to eight years. Grand Coulee dam will be the only major source of additional capacity during the next three years. Hungry Horse storage and generation and Albeni Falls storage can be made available in 1952, McNary generation in 1953, Chief Joseph (Foster Creek) in 1955, and Hells Canyon in 1956. (See Table X) Smaller but highly important plants in the Upper Snake Basin, on the tributaries of the Willamette River, and on the Lower Snake can also be put into service during this period if Congressional authority and sufficient appropriations are forthcoming.

Capacity Insufficient. The power situation is particularly acute in the localities in the Pacific Northwest which have experienced the most rapid growth. To meet this growth all distributors, both public and private, are engaged in rebuilding and expanding their local power facilities.

Bonneville Power administration has joined with the major public and privately-owned utilities in the area in the Pacific Northwest Power Pool. The federal transmission system serves as the backbone of the pool. Through operations of the pool maximum advantage is taken of all generating facilities in the region. Even with the advantages derived from coordinated operation through the power pool, the power resources of the Northwest are now inadequate to meet all requirements of the area.

It is the function of the Bonneville Power administration to build transmission lines to local load centers. So long a time is required for the fabrication and installation of generating and transmission facilities, and so slow has been the recent rate of federal investment in these facilities that the time when the region's power supply can be brought into balance with regional power requirements will now be long delayed. The long construction period required is characteristic of major hydroelectric projects and is aggravated by current material and manpower shortages.

Long before the end of fiscal 1948, it was apparent that during the winter of 1948-1949 the combined power resources of the region might be inadequate to meet the po-

tential demands by as much as 10 per cent; and, after considering imports from outside the region, the deficiency was expected to be approximately eight per cent. It was also apparent that this situation could be met only in part by refusal of power to various industrial plants—some that were supplied temporarily with seasonal secondary power, and some that were not enabled to start operations at all despite a desire to do so. It was further apparent that voluntary power use curtailment programs would be necessary.

Smaller deficiencies in peaking capacity are anticipated through 1950. Unless imports from outside the region are available, there may be a small peaking deficiency in 1951.

The total number of kilowatt-hours that can be produced (energy capability of the plants) will be adequate to meet regional requirements in all years that river flows are average or better, assuming that the presently recommended program for construction of multipurpose dams and transmission facilities is carried out on schedule and that adequate supplies of fuel for steam generating plants are available. However, if river flows approach the minimum of record, as has happened in about one year in ten, there may be critical shortages of energy in any year prior to 1954.

The estimated regional deficiency on a minimum water basis ranges from 300,000 average kilowatts to 700,000 average kilowatts between 1949 and 1953, inclusive, with prospects of relief to the extent of about 50,000 kilowatts by imports from outside the region. The most critical year in prospect under minimum hydro conditions will be 1951-1952 when the shortage can amount to 19 per cent of regional requirements, and 32 per cent of potential requirements on the federal system.

Even the maximum construction program feasible of accomplishment, as recommended in the Administration's Advance Program, cannot provide sufficient generating and reservoir capacity to assure that the most essential regional loads will be supplied under minimum water conditions of record until 1954 at the earliest. Loads and resources will be practically in balance in 1954 and 1955. Until 1954, therefore, new commitments for industrial power must be largely on an interruptible basis related to water conditions in the rivers.



*Rapid growth of sprinkler irrigation adds to regional power demand*

The margin of capability over requirements indicated for 1956 and 1957, if the recommended program is carried out, can be utilized very effectively in the regional and national interests to serve additional plants which the aluminum industry would like to locate in the Pacific Northwest, to supply other electro-process industries related to the national security, and to displace steam generation with a consequent saving in fuel oil.

**Power Requirements Large.** The power requirements of the Pacific Northwest have more than doubled since 1940 and are expected to increase by approximately 85 per cent during the next 10 years. Potential regional requirements during the period 1948-1949 are 4,354,000 kilowatts (in terms of peak loads). These are estimated to in-

crease to 8,116,000 kilowatts in 1957.

Potential peak requirements on the federal transmission system are estimated to grow from 1,989,000 kilowatts in the winter of 1948-1949 to 4,793,000 kilowatts in December 1957, an increase of about two and one half times. This increase is made up of the requirements of the public and private distribution agencies in excess of the scheduled capability of their plants together with industrial loads supplied directly from the federal system. The actual loads on the Bonneville Power administration during the winter of 1948-1949 will be something less than the full potential requirements as shown above because of the shortage of federal generating capability.

No provision has been made in the Administration's load forecasts for more pow-

GENERAL SPECIFICATIONS—FEDERAL NORTHWEST HYDROELECTRIC PROJECTS

Project	Location	Installed Capacity 1/	Nominal Prime Power 2/	Pool Elevation
		Kilowatts	Kilowatts	Feet
<b>CONSTRUCTED</b>				
Grand Coulee 3/	Washington	1,944,000	1,677,000	1,288.0
Minidoka	Idaho	14,000	5,000	4,245.0
Boise Diversion	Idaho	1,500	1,000	2,800.0
Black Canyon	Idaho	8,000	8,000	2,947.0
Bonneville	Oregon	518,400	482,000	72.0
<b>UNDER CONSTRUCTION</b>				
Hungry Horse	Montana	300,000	120,000	3,559.0
Anderson Ranch	Idaho	40,500	5,000	4,196.0
McNary	Oregon	910,000	635,000	340.0
<b>AUTHORIZED</b>				
Chief Joseph (Foster Creek)	Washington	1,280,000	876,000	937.5
Palisades	Idaho	30,000	23,000	5,620.0
Lower Granite	Washington	220,000	142,000	715.0
Little Goose	Washington	260,000	173,000	633.0
Lower Monumental	Washington	240,000	162,000	533.0
Ice Harbor	Washington	260,000	170,000	440.0
Roza 4/	Washington	10,000	5,000	—
Chandler 4/	Washington	12,000	11,000	—
Meridian 5/	Oregon	115,000	26,000	929.0
Detroit	Oregon	100,000	35,000	1,569.0
Big Cliff	Oregon	16,000	10,000	1,197.0
<b>UNAUTHROIZED</b>				
Libby	Montana	588,000	244,000	2,440.0
Glacier View	Montana	210,000	96,000	3,725.0
Paradise	Montana	576,000	244,000	2,700.0
Albeni Falls	Idaho	42,600	26,000	2,062.5
Priest Rapids	Washington	1,219,000	774,000	550.0
Upper Scriver	Idaho	30,000	21,000	4,505.0
Lower Scriver	Idaho	90,000	42,000	4,060.0
Garden Valley	Idaho	45,000	41,000	3,240.0
Hells Canyon	Idaho	980,000 6/	602,000 6/	2,075.0
Challis	Idaho	5,000	2,000	4,950.0
Lower Lemhi	Idaho	5,000	2,000	—
John Day	Washington	1,105,000	735,000	255.0
The Dalles	Oregon	980,000	701,000	160.0
Hills Creek	Oregon	20,000	13,000	1,510.0
Dexter	Oregon	15,000	9,000	695.0
Cougar	Oregon	25,000	14,000	1,683.0
Green Peter	Oregon	81,000	21,000	984.0
White Bridge	Oregon	15,000	8,000	670.0

1/ Name plate ratings.

2/ Average capability during system storage control period.

3/ Nine of ultimate 18 units are now in operation and 6 units are being manufactured.

4/ Roza and Chandler added by BPA to list of C-2 projects.

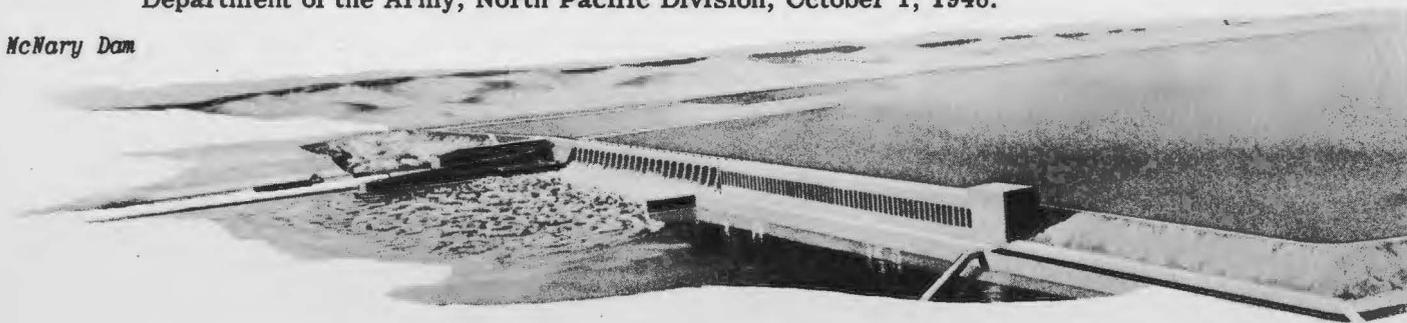
5/ Power facilities are not authorized.

6/ Figure includes 100,000 kw prime and 130,000 kw installed capacity at reregulating dam.

Usable Storage	Average Head	Purpose
Acre-feet	Feet	
5,120,000	324	Irrigation, navigation and power
95,180	49	Irrigation and power
—	31	Irrigation and power
44,100	94	Irrigation and power
—	60	Navigation and power
2,980,000	391	Storage, flood control and power
440,000	260	Irrigation and power
—	87	Navigation and power
—	171	Irrigation and power
1,277,000	144	Irrigation, flood control and power
—	77	Navigation and power
—	96	Navigation and power
—	89	Navigation and power
—	93	Navigation and power
—	140	Irrigation and power
—	118.5	Irrigation and power
368,000	228	Irrigation, flood control, navigation and power
340,000	299	Irrigation, flood control, navigation and power
—	81	Irrigation, flood control, navigation and power
4,250,000	353	Storage, flood control and power
3,160,000	400	Storage, flood control and power
4,080,000	243	Storage, flood control and power
1,140,000	24	Storage and power
—	129	Flood control, navigation and power
—	390	Irrigation and power
—	770	Irrigation and power
1,250,000	280	Irrigation and power
3,280,000	459	Flood control, navigation and power
5,000	—	Irrigation, flood control and power
—	—	Irrigation, flood control and power
—	95	Navigation and power
—	88	Navigation and power
221,000	204	Flood control, navigation and power
—	53	Flood control, navigation and power
182,000	418	Irrigation, flood control, navigation and power
222,000	315	Irrigation, flood control, navigation and power
1,850	93	Irrigation, flood control, navigation and power

Source: "Review Report on Columbia River and Tributaries," Corps of Engineers, Department of the Army, North Pacific Division, October 1, 1948.

McNary Dam



er for aluminum reduction plants. The three primary aluminum manufacturing concerns have stated that they would expand their output in the Pacific Northwest if power could be made available. Although the need for more aluminum production both for peace and for national security has now been generally recognized, the Bonneville Power administration has taken the position that the decision to locate more aluminum reduction capacity in the Pacific Northwest should be a national decision because of the defense aspects surrounding the location of such critically important plants. The subject is now under consideration by the Munitions Board, the National Security Resources Board, and other agencies concerned with national defense and basic national resources.

Power Plant Construction Program.

To meet the growing regional loads and to reestablish proper operating reserves, it is obviously incumbent upon all power suppliers to take whatever steps they can to install additional generating and transmission capacity. Nonfederal utilities, particularly the region's large municipal systems have announced plans for the construction of

1,189,500 kilowatts of generating capacity, all of it in hydro plants except for 13,000 kilowatts of steam capacity scheduled by the city of Eugene, Oregon.

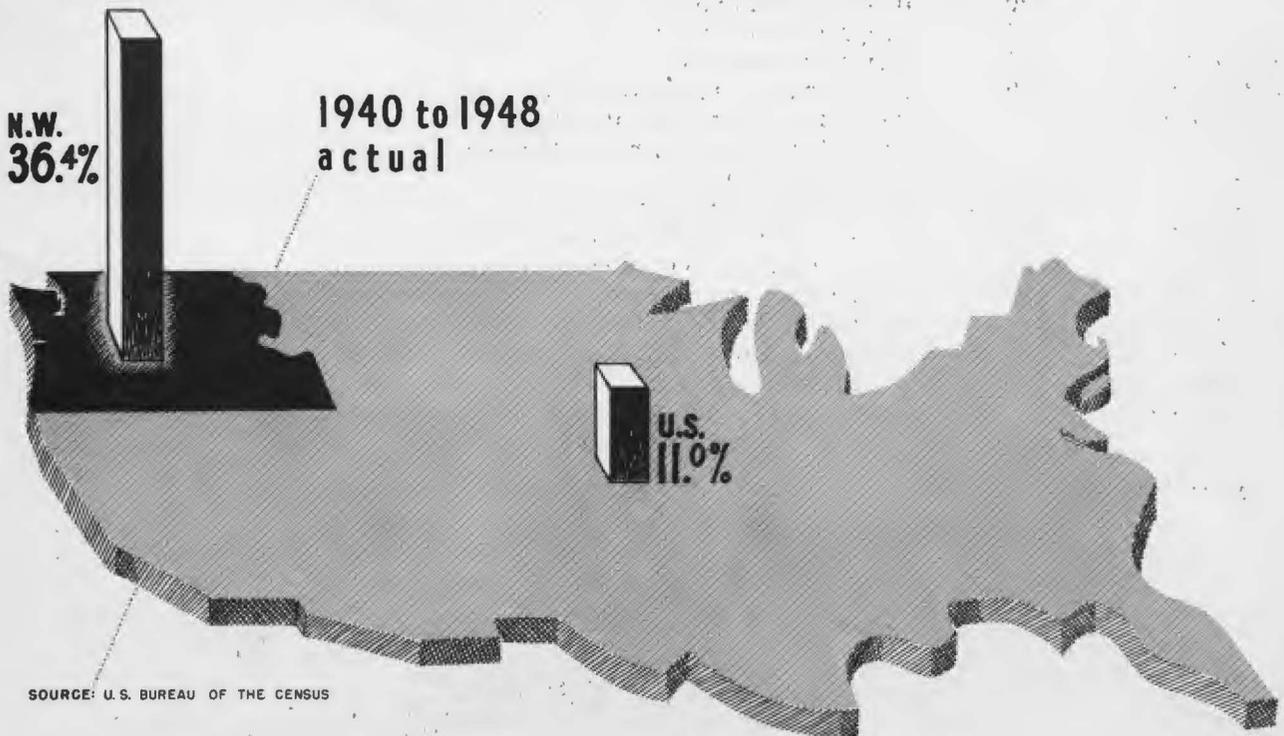
The smaller publicly-owned distribution systems, and the privately-owned utilities in Washington and Oregon, for the most part are continuing to rely heavily upon the federal system for their power supply.

Already the federal government is the largest supplier of power in the Pacific Northwest. The Bonneville and Grand Coulee plants now produce more than half of the power consumed in Washington, Oregon, Idaho and Montana. To meet direct service industrial loads and to supply the deficiencies in the requirements of the nonfederal utilities, it is recommended that the federal system install an additional 4 million kilowatts of generating capacity by December 1957. The total peaking capability of the federal system in that year would then be 5,934,000 kilowatts. This is the maximum construction program which the Bureau of Reclamation and the Corps of Engineers consider to be physically feasible of accomplishment under normal construction procedures.

CHART VIII

**POPULATION CHANGES**

**RATIO OF INCREASE IN PACIFIC NORTHWEST & U.S.**



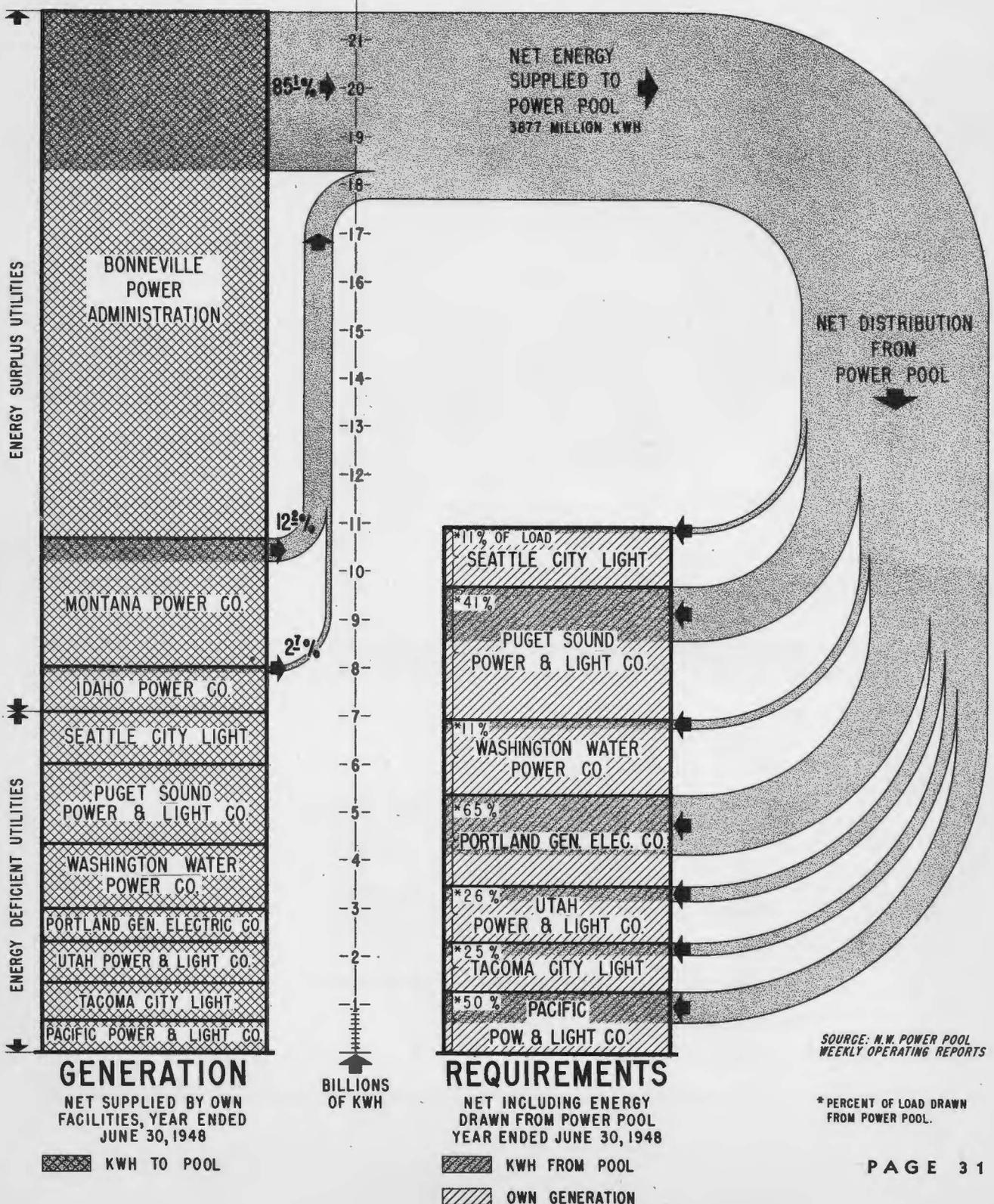
SOURCE: U.S. BUREAU OF THE CENSUS

*BPA Supplied Net*

**85<sup>1</sup>% OF THE ENERGY**

FOR TRANSFER TO THE ENERGY DEFICIENT

**N.W. POWER POOL UTILITIES** YEAR ENDED JUNE 30, 1948





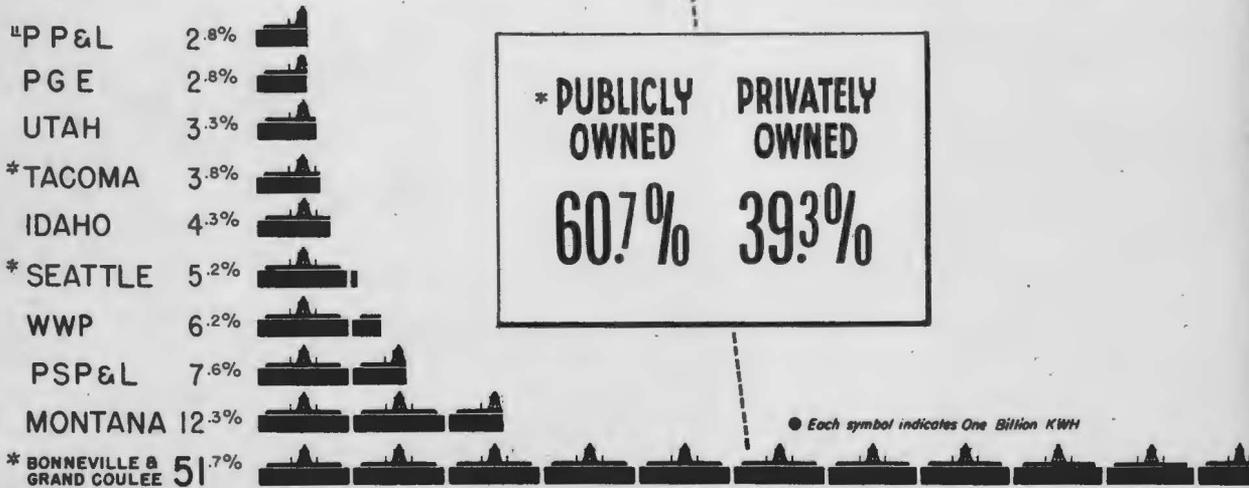
Proposed site of Hells Canyon dam

CHART X

GENERATION BY THE ELECTRIC UTILITY SYSTEMS OF THE NORTHWEST POWER POOL

GENERATED BY

YEAR ENDING JUNE 30, 1948



UTILITIES OF THE NORTHWEST POWER POOL

Pacific Power and Light Co., Portland General Electric Co., Utah Power & Light Co., Tacoma City Light, Idaho Power Co., Seattle City Light, Washington Water Power, Puget Sound Power & Light Co., Montana Power Co. and the Bonneville Power Administration.

Ⓛ Northwestern Electric Co. system merged with Pacific Power & Light Co. July 1, 1947.

# AUDITORS' REPORT



COLUMBIA RIVER POWER SYSTEM

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

FINANCIAL STATEMENTS

AND

AUDITORS' REPORT

AS OF JUNE 30, 1948

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, 1948; 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. In connection therewith, we have reviewed the systems of internal control and the accounting procedures of the projects to the extent necessary to enable us to render an opinion as to the financial position of their power components and the results of their power operations, and without making a detailed audit of the transactions, have examined or tested accounting records of the projects and other supporting evidence by methods and to the extent we deemed appropriate. Our examination was made in accordance with generally accepted auditing standards applicable in the circumstances and included all procedures which we considered necessary.

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, 1948 include facilities totaling \$185,909,642 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 \$103,681,879 at June 30, 1948, 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, 1948 and the results of their power operations for the fiscal year ended that date, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year and in accordance with the uniform system of accounts prescribed by the Federal Power Commission pursuant to the Federal Water Power Act.

Seattle, Washington

August 16, 1948

*Arthur Andersen & Co.*

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 - JUNE 30, 1948 AND 1947

A S S E T S	June 30		L I A B I L I T I E S	June 30	
	1948	1947		1948	1947
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)	\$213,520,174.10	\$190,374,179.53	Congressional appropriations, allotments and W.P.A. expenditures, less amounts not requisitioned	\$340,696,895.89	\$310,956,764.06
Joint facilities (dams, reservoirs, fishways, general service facilities, etc.) allocated to power -			Transfers from other Federal projects (net)	874,179.88	1,023,661.61
Present power production	67,736,803.63	69,023,868.31	Interest on Federal investment	54,785,570.20	48,149,249.89
Future downstream river regulation	35,945,075.24	32,958,999.15		\$396,356,645.97	\$360,129,675.56
	\$317,202,052.97	\$292,357,046.99	Less - Funds returned to U. S. Treasury in repayment of Federal investment (Schedule 5)	122,668,521.62	99,829,217.61
Less - Reserve for depreciation (Note 3) -			Net investment of U. S. Government	\$273,688,124.35	\$260,300,457.95
Specific power facilities	\$ 19,736,969.49	\$ 15,542,727.83	CURRENT LIABILITIES:		
Joint facilities allocated to power -			Accounts payable	\$ 6,541,910.19	\$ 5,769,938.19
Present power production	2,434,157.41	2,589,964.61	Due to Central Valley Project	1,477,324.12	739,500.00
Future downstream river regulation	1,293,609.52	587,117.74	Employees' accrued leave	1,453,465.53	1,442,879.20
	\$ 23,464,736.42	\$ 18,719,810.18		\$ 9,472,699.84	\$ 7,952,317.39
Original cost less reserve	\$293,737,316.55	\$273,637,236.81	DEFERRED CREDITS:		
INTEREST AND DEPRECIATION CHARGES ON JOINT FACILITIES ALLOCATED TO FUTURE DOWNSTREAM RIVER REGULATION -- recoverable from operations of future downstream hydro plants	\$ 6,497,401.03	\$ 5,500,905.41	Customer's deposit, see contra	\$ 897,558.91	\$ 951,458.91
			Other	19,570.74	175.00
SPECIAL FUND, see contra liability	\$ 897,558.91	\$ 951,458.91		\$ 917,129.65	\$ 951,633.91
CURRENT ASSETS:			RESERVES:		
Cash held by Treasury Department disbursing officers	\$ 3,655,817.30	\$ 2,194,617.56	Excess installation costs at Shasta Dam of generating facilities formerly leased from Central Valley Project	\$ -	\$ 364,036.09
Employees' withholding tax, savings bond and other special deposits	461,233.13	249,656.02	Deferred maintenance	294,000.00	567,000.00
Accounts receivable -				\$ 294,000.00	\$ 931,036.09
Customers -			CONTRIBUTIONS IN AID OF CONSTRUCTION -- by State of Washington	\$ 175,526.14	\$ 175,526.14
Departments and agencies of U. S. Government	407,702.45	431,219.30	ACCUMULATED NET REVENUES (Note 1):		
Others	4,711,404.70	4,044,967.59	Balance at beginning of year	\$ 22,933,144.04	\$ 16,326,947.34
Miscellaneous receivables	290,495.14	81,823.32	Add - Net revenues for the year	9,136,181.17	6,606,196.70
Materials and supplies	4,483,770.01	3,846,851.46		\$ 32,069,325.21	\$ 22,933,144.04
	\$ 14,010,422.73	\$ 10,849,135.25	Balance at end of year		
DEFERRED CHARGES:				\$316,616,805.19	\$293,244,115.52
Losses on abandoned properties (principally rights-of-way and clearing costs), being amortized over five years from dates of abandonment	\$ 615,415.50	\$ 834,321.56			
Clearing accounts and other deferred charges	858,690.47	1,471,057.58			
	\$ 1,474,105.97	\$ 2,305,379.14			
	\$316,616,805.19	\$293,244,115.52			

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 OF COMBINED REVENUES AND EXPENSES ALLOCATED TO POWER

FOR THE FISCAL YEARS ENDED JUNE 30, 1948 AND 1947

	Fiscal Year Ended June 30	
	1948	1947
OPERATING REVENUES:		
Sales of electric energy	\$24,320,480.47	\$19,788,323.07
Amortization of contract cancellation charges	-	2,012,972.12
Other electric revenues	193,229.61	89,634.29
Total operating revenues	\$24,513,710.08	\$21,890,929.48
OPERATING EXPENSES (Notes 1 and 2):		
Purchased power	\$ 927,057.71	\$ 340,031.53
Operation -		
Specific power facilities	3,125,227.69	4,274,574.22
Joint facilities allocated to power	211,210.48	160,606.61
Provision for rental and excess installation costs at Shasta Dam of generating facilities leased from Central Valley Project	335,062.26	-
Maintenance -		
Specific power facilities	1,115,767.69	1,279,401.53
Joint facilities allocated to power	239,593.42	263,119.07
Reversal of prior years' provisions for deferred maintenance	515,000.00*	-
Depreciation (Note 3) -		
Specific power facilities	3,614,443.61	3,265,643.63
Joint facilities allocated to power	395,736.58	332,631.57
Less - Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	127,641.66*	102,330.70*
Amortization of losses on abandoned properties	291,834.03	277,248.44
Total operating expenses	\$ 9,813,291.81	\$10,090,925.90
Net operating revenues	\$14,700,418.27	\$11,800,003.58
OTHER INCOME (net)	7,625.34	19,395.78
	\$14,708,043.61	\$11,819,399.36
INTEREST AND OTHER DEDUCTIONS:		
Interest on Federal investment allocated to power	\$ 6,636,320.31	\$ 6,349,690.32
Less -		
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	868,853.96*	919,983.82*
Amount charged to construction	366,162.10*	272,486.96*
Miscellaneous income deductions	170,558.19	55,983.12
Total interest and other deductions	\$ 5,571,862.44	\$ 5,213,202.66
Net revenues	\$ 9,136,181.17	\$ 6,606,196.70

\* Denotes red figure

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

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 - JUNE 30, 1948

A S S E T S	Bonneville Power Administration (Schedule 7)	Bonneville Dam Project (Schedule 10)	Columbia Basin Project (Schedule 13)	Eliminations	Combined (To Schedule 1)
ELECTRIC UTILITY PLANT at original cost, including interest during construction (Notes 1 and 2):					
Specific power facilities (Power houses, generating equipment and transmission plant)	\$109,565,676.52	\$37,967,687.85	\$ 65,986,809.73	\$ -	\$213,520,174.10
Joint facilities (dams, reservoirs, fishways, general service facilities, etc.) allocated to power -					
Present power production	-	20,330,979.77	47,405,823.86	-	67,736,803.63
Future downstream river regulation	-	-	35,945,075.24	-	35,945,075.24
	\$109,565,676.52	\$58,298,667.62	\$149,337,708.83	\$ -	\$317,202,052.97
Less - Reserves for depreciation (Note 3) -					
Specific power facilities	\$ 14,564,167.23	\$ 2,748,997.48	\$ 2,423,804.78	\$ -	\$ 19,736,969.49
Joint facilities allocated to power -					
Present power production	-	728,092.61	1,706,064.80	-	2,434,157.41
Future downstream river regulation	-	-	1,293,609.52	-	1,293,609.52
	\$ 14,564,167.23	\$ 3,477,090.09	\$ 5,423,479.10	\$ -	\$ 23,464,736.42
Original cost less reserves	\$ 95,001,509.29	\$54,821,577.53	\$143,914,229.73	\$ -	\$293,737,316.55
INTEREST AND DEPRECIATION CHARGES ON JOINT FACILITIES ALLOCATED TO FUTURE DOWNSTREAM RIVER REGULATION -- recoverable from operations of future downstream hydro plants	\$ -	\$ -	\$ 6,497,401.03	\$ -	\$ 6,497,401.03
SPECIAL FUND AND ADVANCES:					
Special fund, see contra liability	\$ 897,558.91	\$ -	\$ -	\$ -	\$ 897,558.91
Advances to -					
Bonneville Dam Project	4,997,392.78	-	-	4,997,392.78	-
Columbia Basin Project	7,793,010.29	-	-	7,793,010.29	-
	\$ 13,687,961.98	\$ -	\$ -	\$12,790,403.07	\$ 897,558.91
CURRENT ASSETS:					
Cash held by Treasury Department disbursing officers	\$ 1,005,095.50	\$ -	\$ 2,650,721.80	\$ -	\$ 3,655,817.30
Employees' withholding tax, savings bond and other special deposits	383,049.29	-	78,183.84	-	461,233.13
Accounts receivable -					
Customers -					
Departments and agencies of U. S. Government	407,702.45	-	-	-	407,702.45
Others	4,711,404.70	-	-	-	4,711,404.70
Miscellaneous receivables	141,976.49	-	148,518.65	-	290,495.14
Materials and supplies	3,125,446.31	-	1,358,323.70	-	4,483,770.01
	\$ 9,774,674.74	\$ -	\$ 4,235,747.99	\$ -	\$ 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	\$ 615,415.50	\$ -	\$ -	\$ -	\$ 615,415.50
Clearing accounts and other deferred charges	476,339.36	27,454.10	354,897.01	-	858,690.47
	\$ 1,091,754.86	\$ 27,454.10	\$ 354,897.01	\$ -	\$ 1,474,105.97
	\$119,555,900.87	\$54,849,031.63	\$155,002,275.76	\$12,790,403.07	\$316,616,805.19

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

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 - JUNE 30, 1948

L I A B I L I T I E S	Bonneville Power Administration (Schedule 7)	Bonneville Dam Project (Schedule 10)	Columbia Basin Project (Schedule 13)	Eliminations	Combined (To Schedule 1)
<b>INVESTMENT OF U. S. GOVERNMENT:</b>					
Congressional appropriations, allotments and W.P.A. expenditures, less amounts not requisitioned	\$135,054,039.57	\$60,003,736.68	\$145,639,119.64	\$ -	\$340,696,895.89
Transfer from other Federal projects (net)	99,700.69*	87,900.00	885,980.57	-	874,179.88
Interest on Federal investment	12,757,841.13	13,607,935.45	28,419,793.62	-	54,785,570.20
	-----	-----	-----	-----	-----
	\$147,712,180.01	\$73,699,572.13	\$174,944,893.83	\$ -	\$396,356,645.97
Less - Funds returned to U. S. Treasury in repayment of Federal investment	63,766,552.60	23,862,150.00	35,039,819.02	-	122,668,521.62
	-----	-----	-----	-----	-----
Net investment of U. S. Government	\$ 83,945,627.41	\$49,837,422.13	\$139,905,074.81	\$ -	\$273,688,124.35
	-----	-----	-----	-----	-----
<b>CURRENT LIABILITIES:</b>					
Accounts payable	\$ 2,651,561.56	\$ 14,216.72	\$ 3,876,131.91	\$ -	\$ 6,541,910.19
Due to Central Valley Project	-	-	1,477,324.12	-	1,477,324.12
Employees' accrued leave	952,843.65	-	500,621.88	-	1,453,465.53
	-----	-----	-----	-----	-----
	\$ 3,604,405.21	\$ 14,216.72	\$ 5,854,077.91	\$ -	\$ 9,472,699.84
	-----	-----	-----	-----	-----
<b>DEFERRED CREDITS:</b>					
Customer's deposits, see contra	\$ 897,558.91	\$ -	\$ -	\$ -	\$ 897,558.91
Other	19,570.74	-	-	-	19,570.74
	-----	-----	-----	-----	-----
	\$ 917,129.65	\$ -	\$ -	\$ -	\$ 917,129.65
	-----	-----	-----	-----	-----
RESERVE FOR DEFERRED MAINTENANCE	\$ -	\$ -	\$ 294,000.00	\$ -	\$ 294,000.00
	-----	-----	-----	-----	-----
CONTRIBUTIONS IN AID OF CONSTRUCTION -- by State of Washington	\$ -	\$ -	\$ 175,526.14	\$ -	\$ 175,526.14
	-----	-----	-----	-----	-----
DEFERRED POWER REVENUES -- excess of receipts applied in repayment of Federal investment over costs to be repaid from power revenues	\$ -	\$ 4,997,392.78	\$ 7,793,010.29	\$12,790,403.07	\$ -
	-----	-----	-----	-----	-----
<b>ACCUMULATED NET REVENUES (Note 1):</b>					
Balance at beginning of year	\$ 22,107,066.04	\$ -	\$ 826,078.00	\$ -	\$ 22,933,144.04
Add - Net revenues for the year ended June 30, 1948	8,981,672.56	-	154,508.61	-	9,136,181.17
	-----	-----	-----	-----	-----
Balance at end of year	\$ 31,088,738.60	\$ -	\$ 980,586.61	\$ -	\$ 32,069,325.21
	-----	-----	-----	-----	-----
	\$119,555,900.87	\$54,849,031.63	\$155,002,275.76	\$12,790,403.07	\$316,616,805.19
	-----	-----	-----	-----	-----

\*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.

## 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 REVENUES AND EXPENSES ALLOCATED TO POWER

FOR THE FISCAL YEAR ENDED JUNE 30, 1948

	Bonneville Power Administration (Schedule 8)	Bonneville Dam Project (Schedule 11)	Columbia Basin Project (Schedule 14)	Eliminations	Combined (Schedule 2)
<b>OPERATING REVENUES:</b>					
Sales of electric energy	\$24,320,480.47	\$ -	\$ -	\$ -	\$24,320,480.47
Less - Amounts allocated to Bonneville Dam Project	2,404,416.14*	2,404,416.14	-	-	-
Columbia Basin Project	4,440,903.58*	-	4,440,903.58	-	-
Payment for river regulation benefits at Bonneville Dam Project	-	-	187,570.00	187,570.00	-
Other electric revenues	193,229.61	-	-	-	193,229.61
Total operating revenues	\$17,668,390.36	\$2,404,416.14	\$4,628,473.58	\$187,570.00	\$24,513,710.08
<b>OPERATING EXPENSES (Notes 1 and 2):</b>					
Purchased power	\$ 927,057.71	\$ -	\$ -	\$ -	\$ 927,057.71
Operation -					
Specific power facilities	2,203,820.77	256,518.42	664,888.50	-	3,125,227.69
Joint facilities allocated to power	-	74,625.73	136,584.75	-	211,210.48
Payment for river regulation benefits	-	187,570.00	-	187,570.00	-
Provision for rental and excess installation costs at Shasta Dam of generating facilities leased from Central Valley Project	-	-	335,062.26	-	335,062.26
Maintenance -					
Specific power facilities	630,276.51	251,021.62	234,469.56	-	1,115,767.69
Joint facilities allocated to power	-	161,012.83	78,580.59	-	239,593.42
Reversal of prior years' provisions for deferred maintenance	-	315,000.00*	-	-	315,000.00*
Depreciation (Note 3) -					
Specific power facilities	2,686,629.86	460,930.14	466,883.61	-	3,614,443.61
Joint facilities allocated to power	-	99,755.85	295,980.73	-	395,736.58
Less - Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	-	-	127,641.66*	-	127,641.66*
Amortization of losses on abandoned properties	291,834.03	-	-	-	291,834.03
Total operating expenses	\$ 6,739,618.88	\$1,176,434.59	\$2,084,808.34	\$187,570.00	\$ 9,813,291.81
Net operating revenues	\$10,928,771.48	\$1,227,981.55	\$2,543,665.24	\$ -	\$14,700,418.27
OTHER INCOME (net)	3,969.87	-	3,655.47	-	7,625.34
	\$10,932,741.35	\$1,227,981.55	\$2,547,320.71	\$ -	\$14,708,043.61
<b>INTEREST AND OTHER DEDUCTIONS:</b>					
Interest on Federal investment allocated to power	\$ 1,970,964.31	\$1,229,958.20	\$3,435,397.80	\$ -	\$ 6,636,320.31
Less -					
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	-	-	868,853.96*	-	868,853.96*
Amount charged to construction	190,453.71*	1,976.65*	173,731.74*	-	366,162.10*
Miscellaneous income deductions	170,558.19	-	-	-	170,558.19
Total interest and other deductions	\$ 1,951,068.79	\$1,227,981.55	\$2,392,812.10	\$ -	\$ 5,571,862.44
Net revenues	\$ 8,981,672.56	\$ -	\$ 154,508.61	\$ -	\$ 9,136,181.17

\* 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.

## 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, 1948 AND THE PERIOD FROM

BEGINNING OF OPERATIONS TO JUNE 30, 1948

	Fiscal Year Ended June 30, 1948				Period from Beginning of Operations to June 30, 1948			
	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Combined	Bonneville Power Administration	Bonneville Dam Project	Columbia Basin Project	Combined
Sales of electric energy	\$24,320,480.47	\$ -	\$ -	\$24,320,480.47	\$125,486,327.63	\$ -	\$ -	\$125,486,327.63
Less -								
Increase in uncollected sales, represented by accounts receivable from customers	\$ 642,920.26	\$ -	\$ -	\$ 642,920.26	\$ 5,119,107.15	\$ -	\$ -	\$ 5,119,107.15
Collections in transit to U. S. Treasury	22,369.31*	-	-	22,369.31*	-	-	-	-
Noncash (exchange) power sales	1,041,215.54	-	-	1,041,215.54	2,316,399.74	-	-	2,316,399.74
	<u>\$ 1,661,766.49</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 1,661,766.49</u>	<u>\$ 7,435,506.89</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 7,435,506.89</u>
Cash receipts from sales of electric energy deposited in U. S. Treasury	\$22,658,713.98	\$ -	\$ -	\$22,658,713.98	\$118,050,820.74	\$ -	\$ -	\$118,050,820.74
Miscellaneous receipts allocated to power	235,960.56	-	86,819.53	322,780.09	4,838,751.60	-	421,139.34	5,259,890.94
Total receipts allocated to power deposited in U. S. Treasury	\$22,894,674.54	\$ -	\$ 86,819.53	\$22,981,494.07	\$122,889,572.34	\$ -	\$ 421,139.34	\$123,310,711.68
Allocation of receipts among projects	9,643,229.00*	5,487,570.00	4,155,659.00	-	58,480,829.68*	24,987,570.00	33,493,259.68	-
Payment for river regulation benefits	-	187,570.00*	187,570.00	-	-	1,125,420.00*	1,125,420.00	-
Amount transferred to Emergency Fund	142,190.06*	-	-	142,190.06*	642,190.06*	-	-	642,190.06*
Funds returned to U. S. Treasury in repayment of Federal investment allocated to power	<u>\$13,109,255.48</u>	<u>\$5,300,000.00</u>	<u>\$4,430,048.53</u>	<u>\$22,839,304.01</u>	<u>\$ 63,766,552.60</u>	<u>\$23,862,150.00</u>	<u>\$35,039,819.02</u>	<u>\$122,668,521.62</u>

\*Denotes red figure

COLUMBIA RIVER POWER SYSTEMNOTES 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 non-power 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 REVENUES AND EXPENSES  
FOR THE FISCAL YEAR ENDED JUNE 30, 1948

OPERATING REVENUES:		
Sales of electric energy		\$24,320,480.47
Less - Amounts allocated to (Note 3) -		
Bonneville Dam Project	\$2,404,416.14	
Columbia Basin Project	<u>4,440,903.58</u>	6,845,319.72
		-----
		\$17,475,160.75
Other electric revenues		193,229.61
		-----
Total operating revenues		<u>\$17,668,390.36</u>
OPERATING EXPENSES (Note 1):		
Purchased power	\$ 927,057.71	
Operation	2,203,820.77	
Maintenance	630,276.51	
Depreciation (Note 2)	2,686,629.86	
Amortization of losses on abandoned properties	<u>291,834.03</u>	6,739,618.88
		-----
Net operating revenues		<u>\$10,928,771.48</u>
OTHER INCOME (net)		3,969.87
		-----
		\$10,932,741.35
INTEREST AND OTHER DEDUCTIONS:		
Interest on Federal investment	\$1,970,964.31	
Less - Interest charged to construction	190,453.71*	
Miscellaneous income deductions	<u>170,558.19</u>	1,951,068.79
		-----
Net revenues		<u>\$ 8,981,672.56</u>

\*Denotes red figure

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

BONNEVILLE POWER ADMINISTRATIONNOTES 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:

Under the terms of agreements with the Corps of Engineers, U. S. Army, and the Bureau of Reclamation of the Department of the Interior, Bonneville Power Administration is required to allocate to Bonneville Dam Project and to Columbia Basin Project each year stipulated amounts of the receipts derived from the sale of electric energy. These amounts, which are not dependent upon the quantities of power generated and delivered by the dams to the Administration, are designed to repay the portion of the Federal investment in the dams (i.e., accumulated operation and maintenance expenses, interest and plant costs) allocated to power plus, in the case of Columbia Basin Project, certain expenses and plant costs allocated to irrigation. The stipulated payments contemplate the repayment of the plant costs within a shorter period than the estimated service lives of the projects and, therefore, the amounts of receipts allocated to the dams to date have exceeded the accumulated expenses repayable from power revenues. The portions of these payments equal to such expenses have been treated as allocations of revenues to the dams and the remaining portions have been recorded as advances to the dams to be applied against future expenses.

## 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.

## UNITED STATES OF AMERICA

## CORPS OF ENGINEERS - U. S. ARMY

## BONNEVILLE DAM PROJECT

## STATEMENT OF ASSETS AND LIABILITIES - JUNE 30, 1948

ASSETS	Total	Deduct - Amounts Allocated to Other Than Power	Amounts Allocated to Power
PROPERTY, PLANT AND EQUIPMENT at original cost including interest during construction (Notes 1 and 2):			
Specific power facilities (powerhouse and generating equipment)	\$ 37,967,687.85	\$ -	\$37,967,687.85
Specific navigation facilities (shiplock)	5,983,781.00	5,983,781.00	-
Joint facilities (dam, reservoir, fishways, etc.)	40,661,959.53	20,330,979.76	20,330,979.77
	<u>\$ 84,613,428.38</u>	<u>\$26,314,760.76</u>	<u>\$58,298,667.62</u>
Less - Reserves for depreciation (Note 3) -			
Specific power facilities	\$ 2,748,997.48	\$ -	\$ 2,748,997.48
Specific navigation facilities	265,472.77	265,472.77	-
Joint facilities	1,456,185.22	728,092.61	728,092.61
	<u>\$ 4,470,655.47</u>	<u>\$ 993,565.38</u>	<u>\$ 3,477,090.09</u>
Original cost less reserves	<u>\$ 80,142,772.91</u>	<u>\$25,321,195.38</u>	<u>\$54,821,577.53</u>
DEFERRED CHARGES	49,471.77	22,017.67	27,454.10
	<u>\$ 80,192,244.68</u>	<u>\$25,343,213.05</u>	<u>\$54,849,031.63</u>
<u>LIABILITIES</u>			
INVESTMENT OF U. S. GOVERNMENT:			
Congressional appropriations and allotments, less amounts not requisitioned	\$ 86,901,045.66	\$26,897,308.98	\$60,003,736.68
Transfers from other Federal projects	175,400.00	87,500.00	87,900.00
Interest on Federal investment	21,138,286.34	7,530,350.89	13,607,935.45
	<u>\$108,214,732.00</u>	<u>\$34,515,159.87</u>	<u>\$73,699,572.13</u>
Less -			
Funds returned to U. S. Treasury in repayment of Federal investment allocated to power	\$ 23,862,150.00	\$ -	\$23,862,150.00
Net expense of non-reimbursable portion of project (including \$820,036.36 for the year ended June 30, 1948)	9,174,364.74	9,174,364.74	-
	<u>\$ 33,036,514.74</u>	<u>\$ 9,174,364.74</u>	<u>\$23,862,150.00</u>
Net investment of U. S. Government	<u>\$ 75,178,217.26</u>	<u>\$25,340,795.13</u>	<u>\$49,837,422.13</u>
CURRENT LIABILITIES:			
Accounts payable	\$ 5,018.80	\$ 2,362.04	\$ 2,656.76
Due to other projects	11,615.84	55.88	11,559.96
	<u>\$ 16,634.64</u>	<u>\$ 2,417.92</u>	<u>\$ 14,216.72</u>
DEFERRED POWER REVENUES -- Excess of receipts applied in repayment of Federal investment over costs allocated to power (Notes 1 and 4):			
Balance at beginning of year	\$ 1,914,238.92	\$ -	\$ 1,914,238.92
Excess of receipts over expenses for the year ended June 30, 1948	3,083,153.86	-	3,083,153.86
Balance at end of year	<u>\$ 4,997,392.78</u>	<u>\$ -</u>	<u>\$ 4,997,392.78</u>
	<u>\$ 80,192,244.68</u>	<u>\$25,343,213.05</u>	<u>\$54,849,031.63</u>

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

UNITED STATES OF AMERICA  
CORPS OF ENGINEERS - U. S. ARMY  
BONNEVILLE DAM PROJECT  
STATEMENT OF REVENUES AND EXPENSES  
FOR THE FISCAL YEAR ENDED JUNE 30, 1948

	<u>Total</u>	<u>Deduct - Amounts Allocated to Other Than Power</u>	<u>Amounts Allocated to Power</u>
<b>OPERATING REVENUES:</b>			
Receipts from sales of electric energy by Bonneville Power Administration allocated to Bonneville Dam Project	\$5,487,570.00	\$ -	\$5,487,570.00
Less - Portion of receipts in excess of current expenses, transferred to deferred power revenues (Note 4)	3,083,153.86	-	3,083,153.86
Current power revenues	\$2,404,416.14	\$ -	\$2,404,416.14
<b>OPERATING EXPENSES (Notes 1 and 2):</b>			
Operation -			
Specific power facilities	\$ 256,518.42	\$ -	\$ 256,518.42
Specific navigation facilities	27,309.93	27,309.93	-
Joint facilities	149,251.45	74,625.72	74,625.73
Payment for river regulation benefits	187,570.00	-	187,570.00
Maintenance -			
Specific power facilities	251,021.62	-	251,021.62
Specific navigation facilities	39,154.71	39,154.71	-
Joint facilities	322,025.67	161,012.84	161,012.83
Reversal of prior years' provision for deferred maintenance	630,000.00*	315,000.00*	315,000.00*
Depreciation (Note 3) -			
Specific power facilities	460,930.14	-	460,930.14
Specific navigation facilities	32,312.05	32,312.05	-
Joint facilities	199,511.70	99,755.85	99,755.85
Total operating expenses	\$1,295,605.69	\$119,171.10	\$1,176,434.59
Net operating revenues	\$1,108,810.45	\$119,171.10*	\$1,227,981.55
<b>INTEREST DEDUCTIONS:</b>			
Interest on Federal investment in -			
Specific power facilities	\$ 667,467.22	\$ -	\$ 667,467.22
Specific navigation facilities	141,701.50	141,701.50	-
Joint facilities	1,124,981.95	562,490.97	562,490.98
Less - Interest charged to construction	\$1,934,150.67	\$704,192.47	\$1,229,958.20
	5,303.86	3,327.21	1,976.65
Net interest deduction	\$1,928,846.81	\$700,865.26	\$1,227,981.55
Net revenues for the year	\$ 820,036.36*	\$820,036.36*	\$ -

\*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 allocate to Bonneville Dam Project each year stipulated amounts of the receipts derived from the sale of electric energy. These amounts, which are not dependent upon the quantity of power generated and delivered by the dam to the Administration, are designed to repay the portion of the Federal investment in the dam (i.e., accumulated operation and maintenance expenses, interest and plant costs) allocated to power. The stipulated payments contemplate the repayment of the plant costs within a shorter period than the estimated service life of the project and, therefore, the amounts of receipts allocated to Bonneville Dam Project to date have exceeded the accumulated expenses repayable from power revenues. The portions of these payments equal to such expenses have been treated as current revenues of the dam and the remaining portions have been recorded as deferred revenues to be applied against future expenses.
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

## DEPARTMENT OF THE INTERIOR

## COLUMBIA BASIN PROJECT (GRAND COULEE DAM)

## STATEMENT OF ASSETS AND LIABILITIES - JUNE 30, 1948

<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 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)	\$ 65,986,809.73	\$ -	\$ 65,986,809.73
Joint facilities (dam, reservoir and general service facilities) allocated to -			
Present power production	47,405,823.86	-	47,405,823.86
Future downstream river regulation	35,945,075.24	-	35,945,075.24
Irrigation	60,896,782.90	60,896,782.90	-
Navigation	1,000,000.00	1,000,000.00	-
Specific irrigation facilities (equalizing reservoirs, canals and pumping plant)	42,514,246.50	42,514,246.50	-
	<u>\$253,748,738.23</u>	<u>\$104,411,029.40</u>	<u>\$149,337,708.83</u>
Less - Reserves for depreciation (Note 3) -			
Specific power facilities	\$ 2,423,804.78	\$ -	\$ 2,423,804.78
Joint facilities allocated to -			
Present power production	1,706,064.80	-	1,706,064.80
Future downstream river regulation	1,293,609.52	-	1,293,609.52
Irrigation	1,143,323.21	1,143,323.21	-
	<u>\$ 6,566,802.31</u>	<u>\$ 1,143,323.21</u>	<u>\$ 5,423,479.10</u>
Original cost less reserves	<u>\$247,181,935.92</u>	<u>\$103,267,706.19</u>	<u>\$143,914,229.73</u>
INTEREST AND DEPRECIATION CHARGES ON JOINT FACILITIES ALLOCATED TO FUTURE DOWNSTREAM RIVER REGULATION -- recoverable from operations of future downstream hydro plants	\$ 6,497,401.03	\$ -	\$ 6,497,401.03
CURRENT ASSETS:			
Cash held by Treasury Department disbursing officers	\$ 5,762,438.32	\$ 3,111,716.52	\$ 2,650,721.80
Employees' withholding tax, savings bond and other special deposits	150,353.53	72,169.69	78,183.84
Miscellaneous accounts receivable	322,866.29	174,347.64	148,518.65
Materials and supplies	4,716,401.75	3,358,078.05	1,358,323.70
	<u>\$ 10,952,059.89</u>	<u>\$ 6,716,311.90</u>	<u>\$ 4,235,747.99</u>
DEFERRED CHARGES -- clearing accounts, etc.	\$ 902,861.75	\$ 547,964.74	\$ 354,897.01
	<u>\$265,534,258.59</u>	<u>\$110,531,982.83</u>	<u>\$155,002,275.76</u>

\*Denotes red figure

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

UNITED STATES OF AMERICA  
DEPARTMENT OF THE INTERIOR  
COLUMBIA BASIN PROJECT (GRAND COULEE DAM)  
STATEMENT OF ASSETS AND LIABILITIES - JUNE 30, 1948

<u>LIABILITIES</u>	<u>Total</u>	<u>Deduct - Amounts Allocated to Irrigation and Navigation</u>	<u>Amounts Allocated to Power (Including Downstream River Regulation)</u>
<b>INVESTMENT OF U. S. GOVERNMENT:</b>			
Congressional appropriations, allotments and W.P.A. expenditures, less amount not requisitioned	\$251,404,416.08	\$105,765,296.44	\$145,639,119.64
Transfers from other Federal projects (net)	1,582,108.16	696,127.59	885,980.57
Interest on portion of Federal investment allocated to power	28,419,793.62	-	28,419,793.62
	<u>\$281,406,317.86</u>	<u>\$106,461,424.03</u>	<u>\$174,944,893.83</u>
Less - Funds returned to U. S. Treasury in repayment of Federal investment	35,388,575.91	348,756.89	35,039,819.02
Net investment of U. S. Government	<u>\$246,017,741.95</u>	<u>\$106,112,667.14</u>	<u>\$139,905,074.81</u>
<b>CURRENT LIABILITIES:</b>			
Accounts payable	\$ 8,462,759.69	\$ 4,586,627.78	\$ 3,876,131.91
Due to Central Valley Project (Shasta Dam)	1,477,324.12	-	1,477,324.12
Employees' accrued leave	944,983.01	444,361.13	500,621.88
	<u>\$ 10,885,066.82</u>	<u>\$ 5,030,988.91</u>	<u>\$ 5,854,077.91</u>
RESERVE FOR DEFERRED MAINTENANCE	\$ 525,000.00	\$ 231,000.00	\$ 294,000.00
CONTRIBUTIONS IN AID OF CONSTRUCTION - by State of Washington	\$ 313,439.53	\$ 137,913.39	\$ 175,526.14
<b>DEFERRED POWER REVENUES -- Excess of receipts applied in repayment of Federal investment over costs to be repaid from power revenues (Note 4) -</b>			
Balance at beginning of year	\$ 8,078,254.87	\$ -	\$ 8,078,254.87
Less - Amount transferred to revenues for the year ended June 30, 1948	285,244.58	-	285,244.58
Balance at end of year	<u>\$ 7,793,010.29</u>	<u>\$ -</u>	<u>\$ 7,793,010.29</u>
<b>ACCUMULATED NET REVENUES (Note 1):</b>			
Balance at beginning of year	\$ -	\$ 826,078.00*	\$ 826,078.00
Add - Net revenues for the year ended June 30, 1948	-	154,508.61*	154,508.61
Balance at end of year	<u>\$ -</u>	<u>\$ 980,586.61*</u>	<u>\$ 980,586.61</u>
	<u>\$265,534,258.59</u>	<u>\$110,531,982.83</u>	<u>\$155,002,275.76</u>

\*Denotes red figure

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

UNITED STATES OF AMERICA  
DEPARTMENT OF THE INTERIOR  
COLUMBIA BASIN PROJECT (GRAND COULEE DAM)  
STATEMENT OF REVENUES AND EXPENSES  
FOR THE FISCAL YEAR ENDED JUNE 30, 1948

	<u>Total</u>	<u>Deduct - Amounts Allocated to Irrigation and Navigation</u>	<u>Amounts Allocated to Power</u>
<b>OPERATING REVENUES:</b>			
Receipts from sales of electric energy by Bonneville Power Administration allocated to Columbia Basin Project (exclusive of \$1,856,771 applicable to 1948 but paid in 1947)	\$4,155,659.00	\$ -	\$4,155,659.00
Add - Amount transferred from deferred power revenues, advanced in prior years (Note 4)	285,244.58	-	285,244.58
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Current power revenues	\$4,440,903.58	\$ -	\$4,440,903.58
Payment for river regulation benefits	187,570.00	-	187,570.00
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Total operating revenues	\$4,628,473.58	\$ -	\$4,628,473.58
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<b>OPERATING EXPENSES (Notes 1 and 2):</b>			
Operation -			
Specific power facilities	\$ 664,888.50	\$ -	\$ 664,888.50
Joint facilities	243,901.34	107,316.59	136,584.75
Provision for rental and excess installation costs at Shasta Dam of generating facilities leased from Central Valley Project	335,062.26	-	335,062.26
Maintenance -			
Specific power facilities	234,469.56	-	234,469.56
Joint facilities	140,322.48	61,741.89	78,580.59
Depreciation (Note 3) -			
Specific power facilities	466,883.61	-	466,883.61
Joint facilities allocated to power	295,980.73	-	295,980.73
Less - Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	127,641.66*	-	127,641.66*
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Total operating expenses	\$2,253,866.82	\$169,058.48	\$2,084,808.34
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Net operating revenues	\$2,374,606.76	\$169,058.48*	\$2,543,665.24
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<b>OTHER INCOME</b>	18,205.34	14,549.87	3,655.47
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	\$2,392,812.10	\$154,508.61*	\$2,547,320.71
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<b>INTEREST DEDUCTIONS:</b>			
Interest on portion of Federal investment allocated to power	\$3,435,397.80	\$ -	\$3,435,397.80
Less -			
Amount allocated to future downstream river regulation, recoverable from operations of future downstream hydro plants	868,853.96*	-	868,853.96*
Amount charged to construction	173,731.74*	-	173,731.74*
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Net interest deductions	\$2,392,812.10	\$ -	\$2,392,812.10
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Net revenues	\$ -	\$154,508.61*	\$ 154,508.61
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\*Denotes red figure

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

COLUMBIA BASIN PROJECT (GRAND COULEE DAM)NOTES TO FINANCIAL STATEMENTS ON SCHEDULES 13 AND 14

## 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 non-power 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:

Under the terms of an agreement between the Bureau of Reclamation of the Department of the Interior and Bonneville Power Administration, the Administration is required to allocate to Columbia Basin Project each year stipulated amounts of the receipts derived from the sale of electric energy. These amounts, which are not dependent upon the quantity of power generated and delivered by the dam to the Administration, are designed to repay the portion of the Federal investment in the dam (i.e., accumulated operation and maintenance expenses, interest and plant costs) allocated to power plus certain expenses and plant costs allocated to irrigation. The stipulated payments contemplate the repayment of the plant costs within a shorter period than the estimated service life of the project and,

COLUMBIA BASIN PROJECT (GRAND COULEE DAM)

NOTES TO FINANCIAL STATEMENTS ON SCHEDULES 13 AND 14

therefore, the amounts of receipts allocated to Columbia Basin Project to date have exceeded the accumulated expenses repayable from power revenues. The portions of these payments equal to such expenses have been treated as current revenues of the dam and the remaining portions have been recorded as deferred revenues to be applied against future expenses.

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.

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**D.L. MARLETT, Assistant Administrator**

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**Chief Engineer**

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**General Counsel**

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