

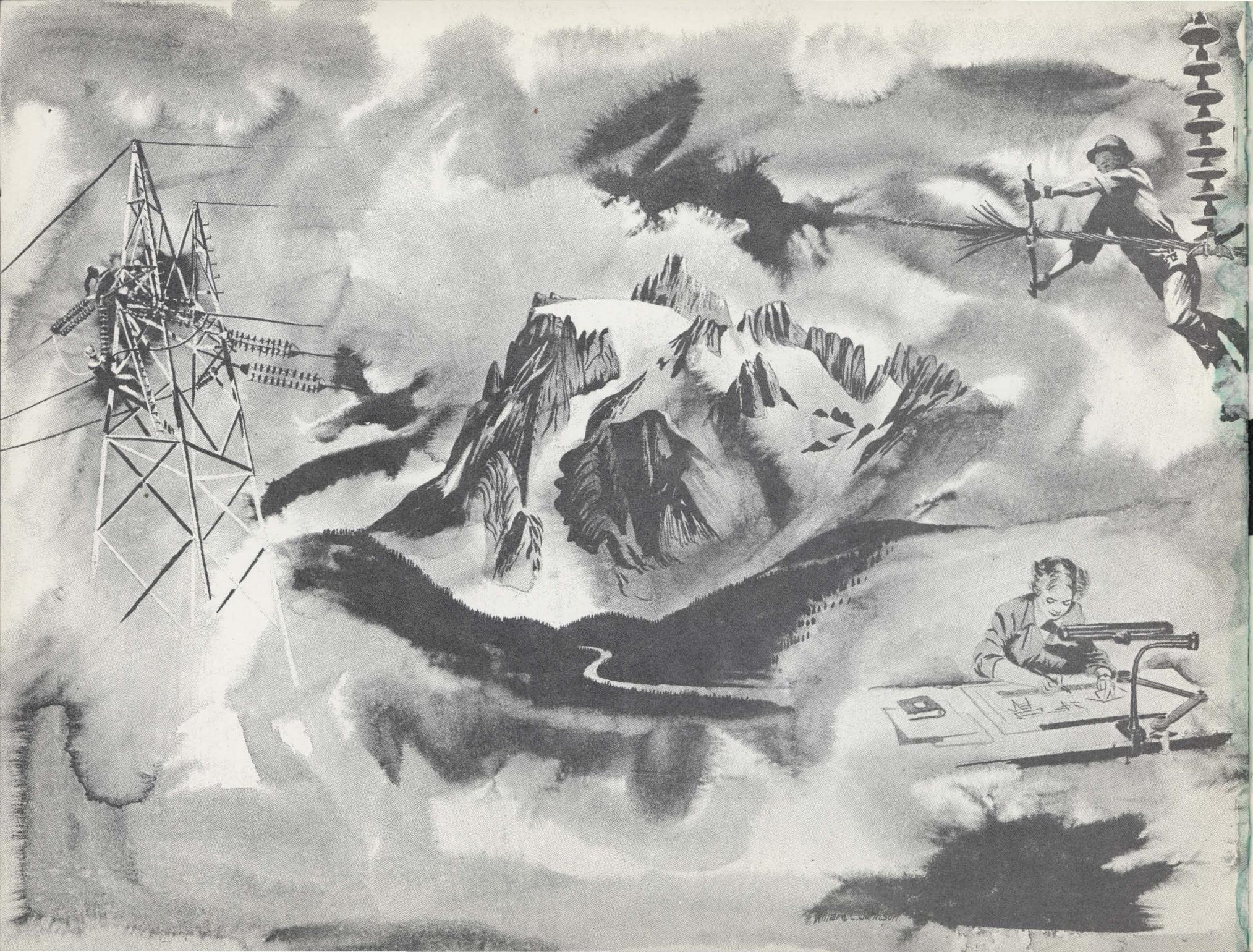
1960 COLUMBIA RIVER POWER SYSTEM REPORT

U. S. DEPARTMENT OF THE INTERIOR
Fred A. Seaton, Secretary

1960 ANNUAL REPORT ON THE U. S. COLUMBIA RIVER POWER SYSTEM

U. S. DEPARTMENT OF THE INTERIOR
BONNEVILLE POWER ADMINISTRATION

Willard C. Johnson



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1960 ANNUAL REPORT ON THE U.S. COLUMBIA RIVER POWER SYSTEM

Fred A. Seaton, *Secretary*

Consisting of

Bonneville Power Administration,

and the following projects:

Bonneville Dam,

Columbia Basin

(Grand Coulee Dam),

Hungry Horse, Albeni Falls,

Detroit - Big Cliff, McNary,

Lookout Point - Dexter,

Chief Joseph, Yakima

(Roza & Chandler),

The Dalles, Ice Harbor,

Hills Creek, Cougar,

Green Peter, Foster,

John Day

& Lower Monumental

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Letter of Transmittal

December 15, 1960

Hon. Fred A. Seaton
Secretary of the Interior
Washington, D. C.

Dear Mr. Secretary:

I herewith respectfully submit the Twenty-third Annual Report of Bonneville Power Administration as specified in subsection 9(c) of the Bonneville Project Act. The report is an accounting of the marketing and transmission of electric energy generated by Federal multipurpose dams in the Administration's marketing area of Oregon, Washington, northern Idaho, Montana west of the Continental Divide, and a small segment of northwest Nevada.

Two highly significant events have occurred since the end of the fiscal year which I would like to take note of in this letter of transmittal. These will have a tremendous impact on the power outlook and economy of the Pacific Northwest for years to come. They represent the culmination of negotiations under way and policy decisions reached during the fiscal year 1960.

Delegations appointed by the governments of Canada and the United States to negotiate on the basic terms to be included in a treaty for the cooperative development of water resources of the Columbia River Basin announced agreement October 19, 1960. Ratification of the treaty by both countries based on these agreements will set in motion a tremendous power development of Canadian storage projects and Libby Dam that could make available to the United States 1,686,000 kilowatts of low-cost prime power over the next 10 year period. These projects together with those existing or under construction assure the Pacific Northwest of power to meet the estimated normal firm power requirements of the region through 1970.

Another event, the signing in October and November of 20 year contract commitments for some 364,000 average kilowatts of combined firm and secondary power for industrial expansion in the Pacific Northwest, marks a new era in power development. For the first time in nearly 15 years, Bonneville Power Administration finds itself in a period of surplus power instead of power scarcity. Since January 1, 1953, installed generation in the Administration's marketing area has increased approximately two and one-half times. Roughly, half of this unprecedented development was Federal and half non-Federal projects.

There has probably never been a time in the history of the Pacific Northwest when we have faced a brighter outlook for the sound and continuing development of all aspects of our regional economy. The development of Canadian storage and the Libby project, through

adding a large block of low-cost power to the region's resources, will enable Bonneville Power Administration to maintain lower wholesale power rates than otherwise would be possible. The power potential that lies in the United States-Canadian Columbia River Treaty, proposed use of atomic energy at the Hanford Works for power generation and hydroelectric projects under construction or for which licenses have been applied for, points to a sound and growing economy for the Pacific Northwest.

Gross operating revenues of the U. S. Columbia River Power System for fiscal year 1960 were \$71,200,563, an increase of \$2,564,272, or 3.74 percent over the prior year. Nevertheless, the year's revenues were \$3,500,000 less than had been estimated at the outset of the year. The Administration's industrial customers did not increase plant operations as much as had been anticipated, other power systems benefited from favorable streamflow conditions at their own hydroelectric plants, and the Administration's distributors in many cases increased their purchases of power from non-Federal sources.

Gross revenues were adequate on a cost accounting basis to provide for all expenses of operation, maintenance and interest and leave a remainder of \$18,374,097 available for return of the fixed capital investment through provisions for depreciation expense. The amount so available fell short of scheduled requirements for depreciation by \$8,486,016. However, on a cumulative basis to June 30, 1960, revenues exceeded all expenses and requirements for depreciation by a total of \$84,500,000.

The forecast for fiscal years 1961 and 1962 is for a small decrease in gross revenues for 1961 over 1960, but a considerable upturn in gross revenues in 1962. Net revenues after all expenses of operation, maintenance and interest have been estimated at approximately \$15,000,000 in 1961 and \$16,000,000 in 1962, but these amounts would be about

\$13,000,000 less in each year than the scheduled provisions for depreciation.

Cash receipts of \$69,800,000 in 1960 repaid all expenses of operation, maintenance and interest and left \$18,700,000 available for amortization of the capital investment. Although this was \$11,600,000 less than the scheduled amortization for the year, on a cumulative basis as of June 30, 1960, capital repayments of \$287,800,000 have exceeded scheduled repayment requirements by \$53,100,000.

Transmission costs have increased annually with the increases in fixed plant in service, salaries, wages and prices generally, but the Administration has been able to maintain a cost level of approximately 1 mill per kilowatt hour sold in its transmission operations. Including energy wheeled, the average transmission cost per kilowatt hour handled was only 0.94 mills in 1960. The Bonneville Power Administration grid at the end of the fiscal year consisted of 8,028 circuit miles of high voltage transmission lines and 201 substations.

The Administration's 19 industrial customers as of June 30, 1960, had plant capacity estimated at about 1,829,400 kilowatts in terms of possible power consumption, but they were purchasing power at the rate of only 1,417,100 kilowatts, leaving idle capacity of 412,300 kilowatts, much of which in past years has been served on an interruptible supply basis. Of the total power purchases of 1,417,100 kilowatts, the Government was supplying a total of 1,282,100 kilowatts. The remaining 135,000 kilowatts were being served from non-Federal sources. The amount being supplied by the Government included 1,101,900 kilowatts on a firm power basis and 180,200 kilowatts on an interruptible supply basis.

Before closing, I would like to present a few highlights of our operations for the fiscal year 1960.

The U. S. Columbia River Power System, consisting of nine Corps of Engineers plants and four Bureau of Reclamation plants, generated over 31 billion kilowatt hours of electrical energy for the year ending June 30, 1960, an increase of 3.3 percent over the previous year. This energy represented 59.2 percent of the energy generated by major utilities of the region.

During fiscal year 1960, Bonneville Power Administration sold 29.7 billion kilowatt hours of electric energy for about \$69,000,000, or an average of 2.32 mills per kilowatt hour. Energy sales increased 3.6 percent over the previous year.

You will be interested to know that 35.7 percent of this energy went to publicly owned utilities, 18.8 percent to privately owned utilities, 30.1 percent to the aluminum industry and 15.4 to other industries and Federal agencies.

I would like in conclusion again to express my deep appreciation for the invaluable assistance and support given me during the year by the Office of the Secretary. I also wish to acknowledge the wholehearted cooperation of the Corps of Engineers, Federal Power Commission and Bureau of Reclamation as well as the sustained fine working relationships with State and local officials and the utilities of the region.

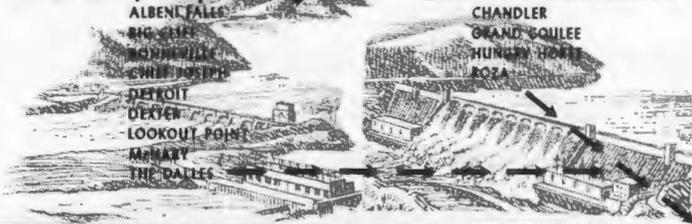
Sincerely yours,



Wm. A. Pearl
Administrator

FEDERAL GENERATING PLANTS
 Built, Operated & Maintained by:

U. S. Army Corps of Engineers Bureau of Reclamation



NONFEDERAL GENERATING PLANTS
 Built, Operated & Maintained by Other Utilities,
 Power transferred over BPA Grid.



PRODUCERS

**Functions of
 Bonneville Power
 Administration**



BONNEVILLE POWER ADMINISTRATION

MARKETS POWER FROM FEDERAL DAMS,
 TRANSFERS POWER FOR OTHER UTILITIES,
 BUILDS, OPERATES & MAINTAINS
 FEDERAL TRANSMISSION SYSTEM

POWER PROGRAM FUNCTIONS

1. JOINT ADVANCE PLANNING
 - (a) COORDINATION WITH GENERATING AGENCIES
 - (b) COLUMBIA BASIN INTERAGENCY COMMITTEE
2. POWER REQUIREMENTS FORECASTS
3. TRANSMISSION SYSTEM PLANNING
4. PAYOUT, COST ALLOCATIONS & RATES
5. ELECTRICAL & HYDRAULIC INTEGRATION
6. POOLED OPERATION

WHOLESALER

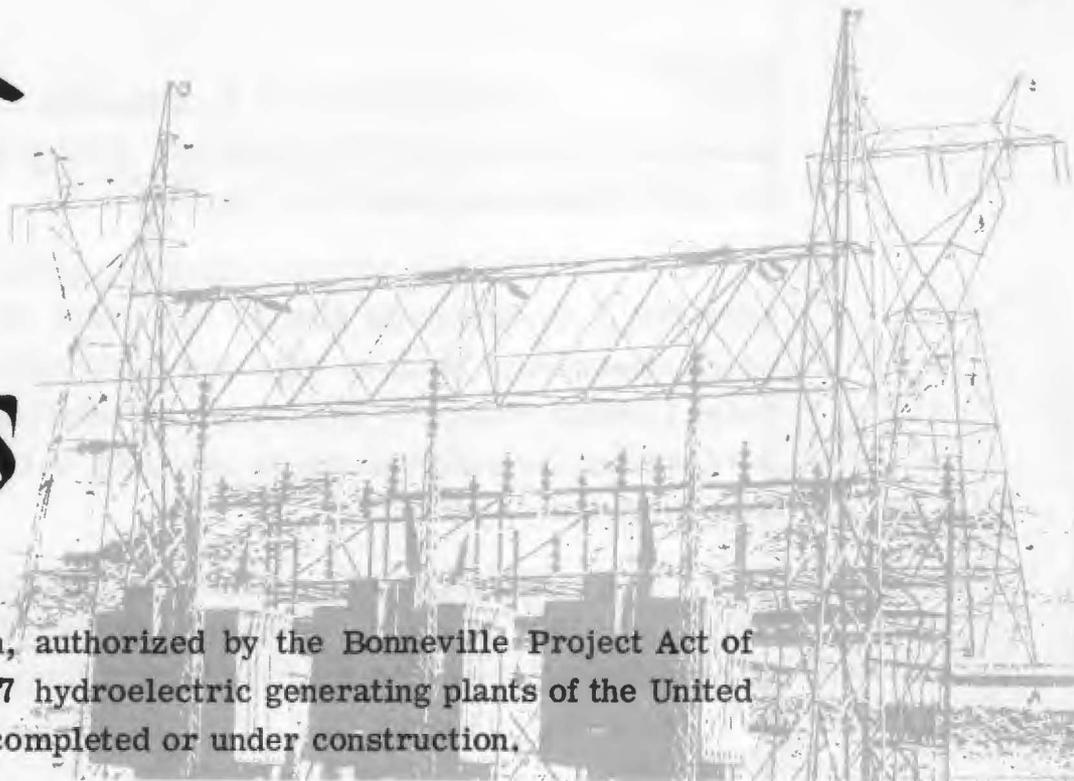


DISTRIBUTORS



CONSUMERS

Summary of Operations



Bonneville Power Administration, authorized by the Bonneville Project Act of 1937, is the designated marketing agency for 17 hydroelectric generating plants of the United States Columbia River power system currently completed or under construction.

Federal Projects

Power was marketed during fiscal year 1960 from nine Corps of Engineers plants and four Bureau of Reclamation plants with an installed generating capacity of 6,033,250 kilowatts. These include existing projects and projects under construction where initial generators have been installed. With completion of the projects under construction the nameplate rating will be 7,594,250 kilowatts, and with completion of the authorized projects nameplate rating will be nearly 8,900,000 kilowatts. Projects existing, under construction and authorized for construction by the Corps of Engineers and Bureau of Reclamation are shown in table 1.

*Generation
Added*

Additions to the U.S. Columbia River power system in fiscal year 1960 have a nameplate rating of 312,000 kilowatts. Four units of 78,000 kilowatts each were added to the Corps of Engineers' project at The Dalles.

Existing storage capacity usable for power in Federal reservoirs is 9,868,500 acre-feet. An additional 414,000 acre-feet will be provided by Cougar and Hills Creek on which construction is under way, and 5,343,000 acre-feet will be provided by Libby and Green Peter projects which are authorized for construction. The Libby project requires approval of the Canadian Government and is currently being discussed in connection with the over-all Canadian storage problem.

All generation and storage capacity under Federal construction will be in service by June 1968 under the present schedule. Service dates for the other authorized projects are not scheduled as no funds have been appropriated for their construction.

*Non-Federal
Projects*

Addition of 825,250 kilowatts of nameplate rating by non-Federal utilities increased the generating capacity of non-Federal resources in the area served by the Bonneville Power Administration to a total of 3,644,580 kilowatts.

Future additions under construction or licensed for construction by non-Federal utilities would add 2,464,600 kilowatts to the area's resources.

*Northwest
PowerPool*

Generation by the principal electric utility systems of the Pacific Northwest during the fiscal year 1960 is shown in chart 1.

TABLE 1
U. S. COLUMBIA RIVER POWER SYSTEM
 General specifications - projects existing, under construction and authorized
 Installations and capabilities correspond to a coordinated system operation
 June 30, 1960

Project	Operating agency 1/	Location	Stream	Plant installations		Nominal prime power kilowatts 3/	Pool elevation (feet)	Usable storage (acre-feet) 4/	Average head (feet)	Date in service		Principal purposes 5/
				Number of units	Total capacity kilowatts 2/					Initial unit	Last unit	
EXISTING												
Bonneville	CE	Wash.-Ore.	Columbia	10	518,400	466,000	74	Pondage	58	June 1938	Dec. 1943	P,N.
Grand Coulee	BR	Wash.	Columbia	18	1,944,000	1,552,000	1,288	5,072,000	315	Sept. 1941	Sept. 1951	P,I,FC,N,PS.
Hungry Horse	BR	Mont.	S. Fk. Flathead	4	285,000	186,000	3,560	2,982,000	376	Oct. 1952	July 1953	P,I,FC,N,PS.
Detroit	CE	Ore.	N. Santiam	2	100,000	39,000	1,563.5	323,000	285	July 1953	Oct. 1953	P,I,FC,N,PS.
McNary	CE	Wash.-Ore.	Columbia	14	980,000	527,000	340	Pondage	75	Nov. 1953	Feb. 1957	P,I,N.
Big Cliff	CE	Ore.	N. Santiam	1	18,000	11,000	1,206	Pondage	91	June 1954	June 1954	P,Rereg.
Lookout Point	CE	Ore.	M. Fk. Willamette	3	120,000	34,000	926	336,500	185	Dec. 1954	Apr. 1955	P,I,FC,N,PS.
Albeni Falls	CE	Idaho	Pend Oreille	3	42,600	21,000	2,062.5	1,155,000	18	Mar. 1955	Aug. 1955	P,FC,N,PS.
Dexter	CE	Ore.	M. Fk. Willamette	1	15,000	11,000	695	Pondage	53	May 1955	May 1955	P,Rereg.
Chief Joseph	CE	Wash.	Columbia	16	1,024,000	856,000	946	Pondage	177	Aug. 1955	Sept. 1958	P,I.
Chandler	BR	Wash.	Yakima	2	12,000	11,000	618.5	0	121	Feb. 1956	Feb. 1956	P,I.
The Dalles	CE	Wash.-Ore.	Columbia	14	963,000	624,000	160	Pondage	84	May 1957	Apr. 1960	P,N.
Rozsa	BR	Wash.	Yakima	1	11,250	6,000	1,186.5	0	160	Aug. 1958	Aug. 1958	P,I.
					6,033,250	4,344,000		9,868,500	-			
UNDER CONSTRUCTION												
The Dalles	CE	Wash.-Ore.	Columbia	2	156,000	50,000	160	Pondage	84	July 1960	Nov. 1960	P,N.
Hills Creek	CE	Ore.	M. Fk. Willamette	2	30,000	16,000	1,543	249,000	210	Dec. 1961	Mar. 1962	P,I,FC,N,PS.
Ice Harbor	CE	Wash.	Snake	3	270,000	171,000	440	Pondage	97	Dec. 1961	Dec. 1961	P,I,N.
Cougar	CE	Ore.	S. Fk. McKenzie	2	25,000	17,000	1,690	165,000	350	Nov. 1962	Nov. 1962	P,FC,N,PS.
John Day	CE	Wash.-Ore.	Columbia	8	1,080,000	797,000	265	Pondage	104	June 1967	June 1968	P,I,FC,N.
					1,561,000	1,051,000		414,000				
AUTHORIZED												
Libby	CE	Mont.	Kootenai	4	344,000	257,000	2,459	5,010,000	265	-	-	P,FC,N,PS.
Lower Monumental	CE	Wash.	Snake	3	270,000	169,000	540	Pondage	99	-	-	P,I,N.
Little Goose	CE	Wash.	Snake	3	270,000	180,000	633	Pondage	99	-	-	P,N.
Lower Granite	CE	Wash.	Snake	3	300,000	184,000	735	Pondage	100	-	-	P,N,I.
Green Peter	CE	Ore.	M. Santiam	2	90,000	22,000	1,015	333,000	240	-	-	P,I,FC,N,PS.
Foster	CE	Ore.	S. Santiam	2	30,000	18,000	640	Pondage	100	-	-	P,FC,I,Rereg.
					1,304,000	830,000		5,343,000				
						-31,000 6/						
Total - 23 projects					8,898,250	6,194,000		15,625,500				

1/ CE - Corps of Engineers; BR - Bureau of Reclamation.

2/ Nameplate rating.

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

4/ Storage usable for power production.

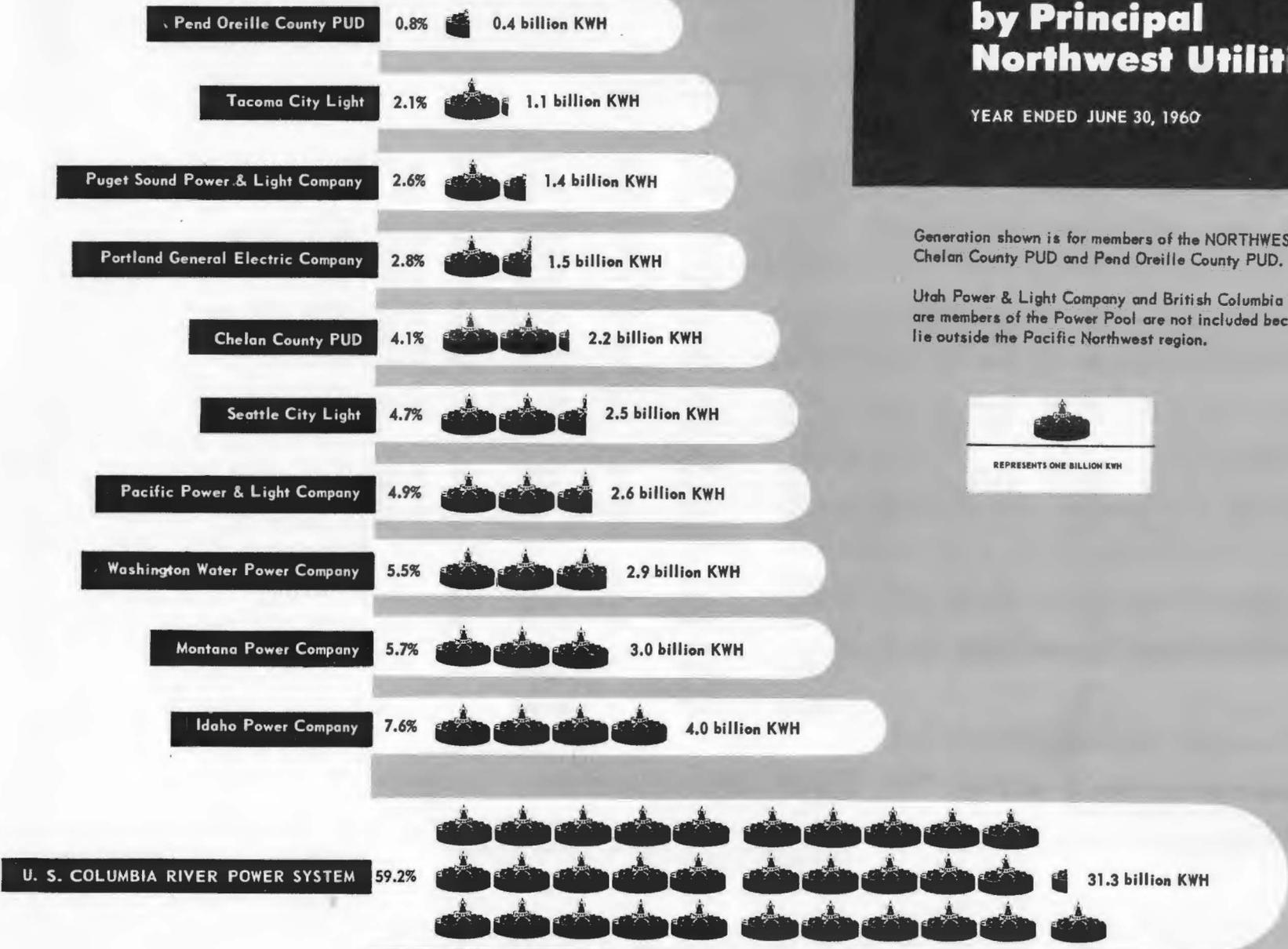
5/ P - Power; I - Irrigation; FC - Flood Control; N - Navigation; PS - Power Storage; Rereg. - Reregulating Reservoir.

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

Power Generated by Principal Northwest Utilities

YEAR ENDED JUNE 30, 1960

GENERATED BY



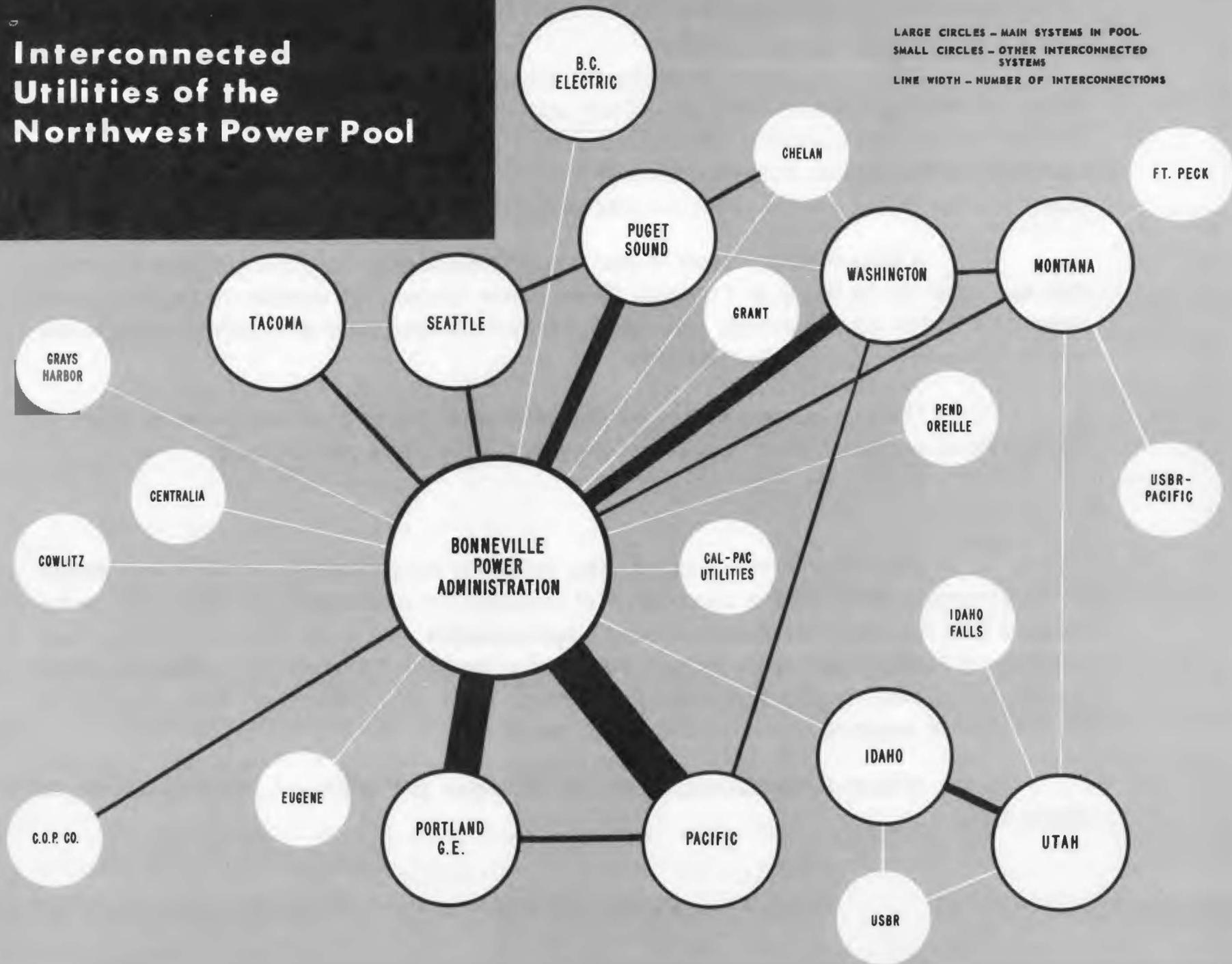
Generation shown is for members of the NORTHWEST POWER POOL plus Chelan County PUD and Pend Oreille County PUD.

Utah Power & Light Company and British Columbia Electric Company who are members of the Power Pool are not included because their service areas lie outside the Pacific Northwest region.



Interconnected Utilities of the Northwest Power Pool

LARGE CIRCLES - MAIN SYSTEMS IN POOL
SMALL CIRCLES - OTHER INTERCONNECTED SYSTEMS
LINE WIDTH - NUMBER OF INTERCONNECTIONS



With the exception of Chelan County and Pend Oreille County Public Utility Districts, all utilities listed are members of the Northwest Power Pool. These two are included because they provide substantial amounts of generation to the pool. The Utah Power and Light Company and the British Columbia Electric Company are members of the pool but are not included as their major service areas are outside the region.

A total of 59.2 percent of the energy generated by the major utilities of the region was provided by the U.S. Columbia River power system. In addition to its other load Bonneville Power Administration provided 8.4 billion kilowatt hours of energy to meet the net requirements of eight other pool utilities.

Utilities interconnected in the Northwest Power Pool are shown in chart 2. Chart 3 shows net power flows to and from the pool for the power pool utilities.

*Transmission
Network*

Bonneville Power Administration as part of its marketing function is responsible for construction, operation and maintenance of transmission facilities to transmit power to the region's load centers. The Administration's transmission grid at the end of the fiscal year consisted of 8,028 circuit miles of high voltage transmission lines and 201 substations with 14,109,122 kilovolt ampere transformer capacity. Eight new substations with capacity of 77,500 kilovolt amperes were installed during this year.

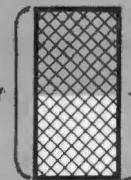
Growth in transmission line circuit miles and substation capacity is shown in charts 7 and 8.

NET OPERATIONS ENDING JUNE 30, 1960

Northwest Power Pool

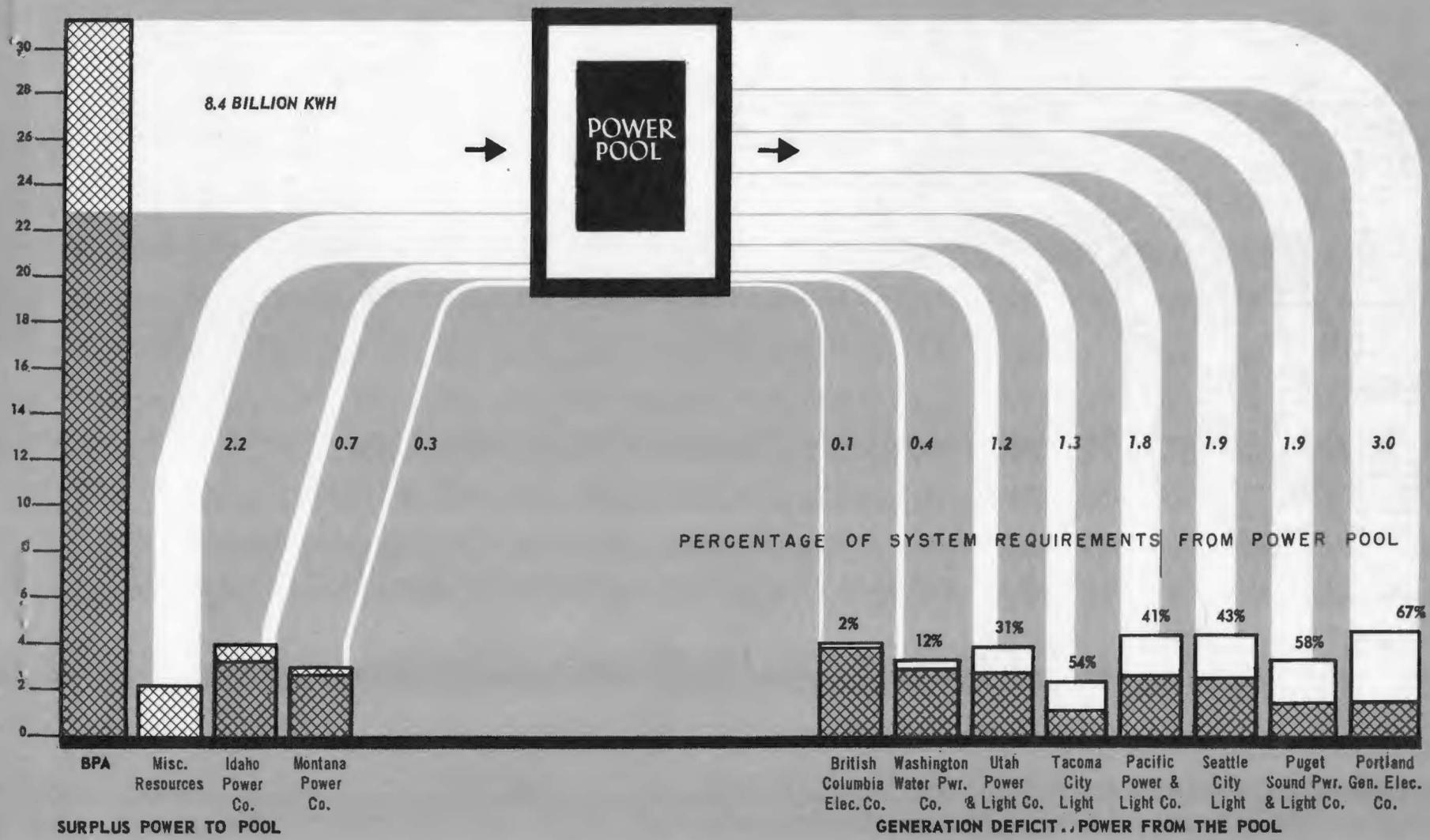
BPA SUPPLIED 72% OF NET ENERGY REQUIREMENTS

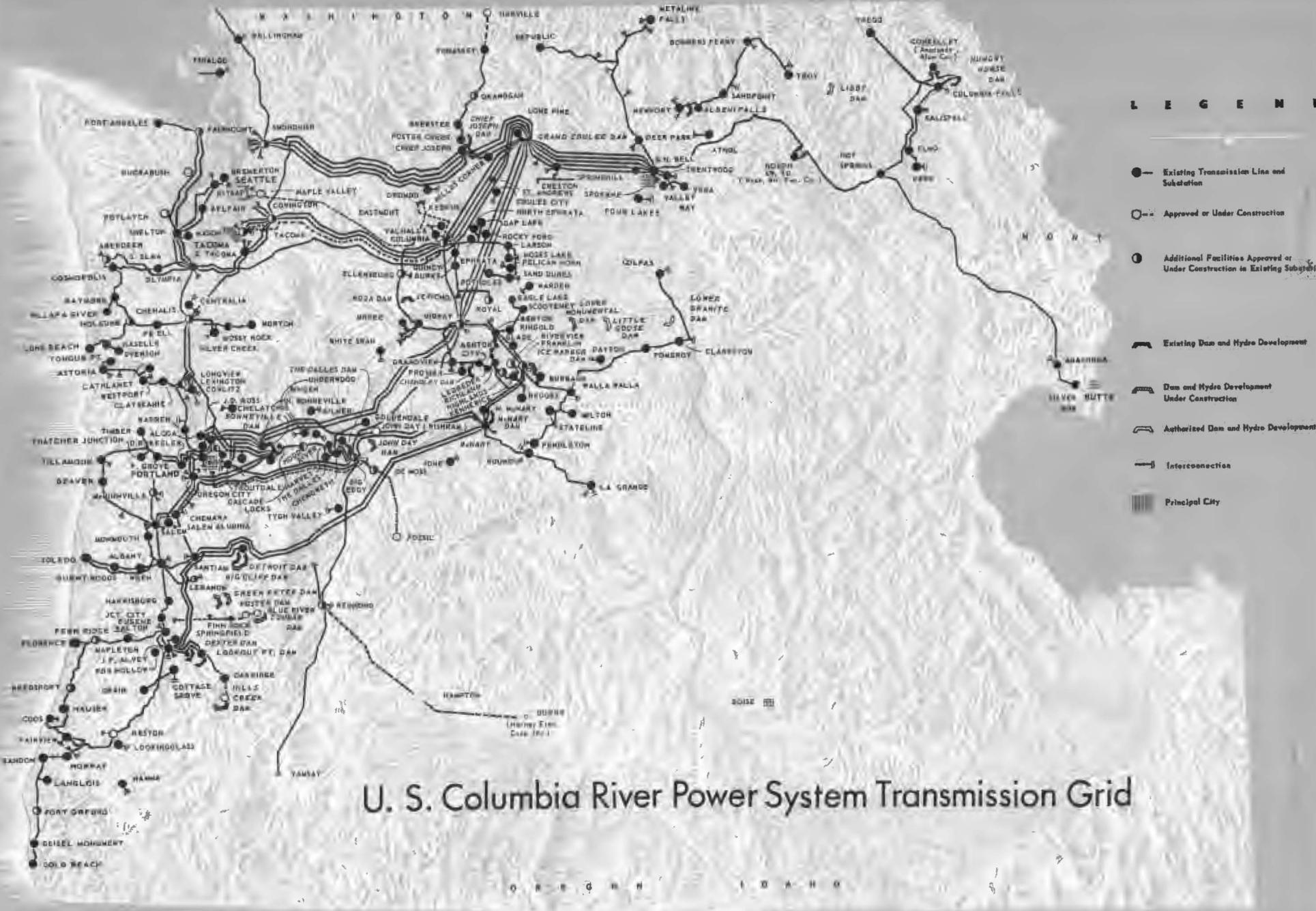
GENERATION BY UTILITY



SURPLUS TO POWER POOL

DEFICIT FROM POWER POOL





L E G E N D

- Existing Transmission Line and Substation
- Approved or Under Construction
- ① Additional Facilities Approved or Under Construction in Existing Substation
- Existing Dam and Hydro Development
- Dam and Hydro Development Under Construction
- Authorized Dam and Hydro Development
- Interconnection
- ▨ Principal City

U. S. Columbia River Power System Transmission Grid

O R E G O N I D A H O

U. S. DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION

*Electrical
Coordination
& Integration*

Bonneville Power Administration's high voltage transmission grid serves as the "backbone" for all interconnected utilities of the Pacific Northwest. The Administration's transmission network had 424 points of connection as of June 30, 1960, almost double the 256 connections of 10 years ago. These include interconnections with all the principal utilities having generating facilities in the region.

An expanded "wheeling" program instituted by the Administration in 1954 has made possible integration and coordination of Columbia River Basin generating and transmission facilities. The program makes possible not only integration of all plants contributing to the Northwest Power Pool but effects substantial economies in power transmission and, in many cases, makes feasible construction of non-Federal projects far distant from load centers.

Growth of

Wheeling Program

The wheeling program under which the Federal transmission grid is made available for transmission of non-Federal generation to area load centers increased by 40.3 percent in fiscal year 1960 over the previous year. The Administration wheeled or transferred for other utilities 6.7 billion kilowatt hours of energy as compared with 4.8 billion kilowatt hours the previous year. During the same period other utilities wheeled or transferred 2.1 billion kilowatt hours of energy for the Administration.

Power is being delivered under long term firm capacity contracts from the Pelton project of the Portland General Electric Company, the Box Canyon project of the Pend Oreille Public Utility District and the Priest Rapids project of the Grant County Public Utility District. Excess capacity contracts are in effect for power from the Swift project of the Pacific Power and Light Company, the Rock Island project of the Chelan County Public Utility

District, the Priest Rapids project of the Grant County Public Utility District, and into the region from the California Oregon Power Company and the Idaho Power Company.

Wheeling contracts for the transfer of non-Federal power are listed in table 2.

*Construction
Program*

Major transmission additions completed during the year in Oregon included a 230,000 volt line between Albany and Toledo to supply additional industrial power for the Toledo area, and a 115,000 volt line between Finn Rock and Leaburg, near Eugene, to serve the lumbering and resort area of the upper McKenzie Valley. In the Columbia Basin Reclamation area in Washington, a 115,000 volt line was added between Sand Dunes and Larson, near Moses Lake, and a 33,000 kilovolt ampere substation at Larson.

Construction under way at the close of the fiscal year included a 345,000 volt, 128 mile line from Chelan County Public Utility District's Rocky Reach hydroelectric project to Maple Valley, near Seattle, Washington, to bring the output of the project to western Washington; a 23 mile, 230,000 volt line from Rocky Reach hydroelectric project to Columbia, near Wenatchee, Washington; a 125 mile, 287,000 volt line between Tacoma, Washington, and Columbia; an 81 mile, 345,000 volt line with initial 230,000 volt operation, between Big Eddy substation, The Dalles dam, and McLoughlin substation, near Oregon City, Oregon, owned by Portland General Electric Company; a 130 mile, 115,000 volt line between Redmond and Burns, Oregon; and a 40 mile, 115,000 volt line between DeMoss and Fossil, Oregon.

*Energy
Production*

Electric energy totaling over 31 billion kilowatt hours was generated at the 13 Federal plants for the Administration during fiscal year 1960. This was an increase of 3.3 percent over the preceding year.

TABLE 2
Wheeling Agreements
Executed with Bonneville Power Administration

<u>Project</u>	<u>Customer</u>	<u>Amount to be wheeled (KW)</u>	<u>Date contract executed</u>
<u>Firm Basis</u>			
Priest Rapids	Puget Sound Power & Light Co.	113,544	January 6, 1958
Priest Rapids	City of Tacoma	63,080	January 28, 1958
Priest Rapids	City of Seattle	63,080	January 28, 1959
Priest Rapids	City of Eugene	13,405	January 23, 1958
Priest Rapids	City of McMinnville	7,108	January 28, 1958
Priest Rapids	City of Forest Grove	7,108	January 28, 1958
Priest Rapids	City of Milton-Freewater	7,108	February 24, 1958
Priest Rapids	PUD No. 1 of Cowlitz County	15,770	January 28, 1958
Priest Rapids	PUD No. 1 of Kittitas County	3,154	May 9, 1958
Priest Rapids	Portland General Electric Co.	197,108	August 12, 1958
Subtotal		<u>490,465</u>	
Wanapum	Puget Sound Power & Light Co.	142,875	June 30, 1959
Subtotal		<u>142,875</u>	
Rocky Reach	Puget Sound Power & Light Co.	386,000	December 23, 1957
Rocky Reach	PUD No.1 of Chelan County (Alcoa)	110,000	May 9, 1958
Rocky Reach	Portland General Electric Co.	123,520	August 12, 1958
Subtotal		<u>619,520</u>	
Pelton	Portland General Electric Co.	123,000	March 25, 1958
Subtotal		<u>123,000</u>	
Box Canyon	City of Seattle	48,000	February 1, 1956
Subtotal		<u>48,000</u>	
Carmen-Smith	City of Eugene	90,000	July 8, 1960
Grand total		<u>1,513,860</u>	
<u>Excess capacity</u>			
Priest Rapids	Pacific Power & Light Co.	197,093	June 3, 1960
Priest Rapids	Washington Water Power Co.	86,664	January 28, 1959
Swift	Pacific Power & Light Co.	270,000	January 2, 1958
Rock Island	PUD No. 1 of Chelan County	140,000	August 6, 1953
COPCO-Reynolds	California Oregon Power Co.	87,500	February 20, 1958
Idaho-PP & L	Pacific Power & Light Co.	53,000	November 6, 1958
Grand total		<u>834,257</u>	

TABLE 3
 Generation at Federal plants for the Bonneville Power Administration
 Fiscal years 1939-60

Fiscal years ending June 30	Generation thousands of kwh	Maximum demand kw	Load factor %	Plants	Generation 1/ millions of kwh	
					F.Y. 1960	Total to July 1, 1960
1939-41	1,144,932	210,000				
1942	2,549,153	468,000	62.2			
1943	5,618,436	841,000	76.3			
1944	9,239,823	1,355,000	77.6			
1945	9,051,573	1,427,000	72.4			
1946	6,236,163	1,346,000	52.9			
1947	8,753,737	1,335,000	74.9			
1948	10,885,907	1,610,000	77.0			
1949	12,925,788	1,797,000	82.1			
1950	14,140,834	2,106,000	76.7			
1951	16,472,384	2,535,000	74.2			
1952	18,555,401	2,784,000	75.9			
1953	17,633,232	2,867,000	70.2			
1954	20,195,833	3,301,000	69.8			
1955	23,253,186	3,651,000	72.7			
1956	27,599,380	4,479,000	70.1			
1957	29,984,219	4,887,000	70.0			
1958	30,201,078	5,024,000	68.6			
1959	30,280,112	4,737,000	72.9			
1960	31,281,353	4,928,000	72.3			
				Operated by Corps of Engineers		
				Albeni Falls	252	1,210
				Big Cliff	101	592
				Bonneville	3,419	70,879
				Chief Joseph 2/	4,349	21,831
				Detroit 3/	387	2,731
				Dexter	73	385
				Lookout Point 3/	301	1,889
				McNary	5,347	32,728
				The Dalles	4,074	8,685
				Operated by USBR		
				Chandler	44	290
				Grand Coulee 2/	11,924	178,046
				Hungry Horse	930	6,591
				Roza 2/	80	146
				Total	31,281	326,003
Total	326,002,524	5,024,000				

1/ Includes energy generated in testing new generating units.

2/ Includes energy transferred for Bureau of Reclamation.

3/ Excludes energy for condenser power at Detroit and Lookout Point.

The maximum coincidental demand during this fiscal year was 4,928,000 kilowatts, occurring March 3, 1960, 5-6 p.m. Energy produced at the Federal plants for the Administration is shown by years in table 3 and illustrated in the accompanying chart 4.

*Energy
Deliveries*

In addition to deliveries by sales, the integrated transmission grid of the Administration receives and delivers substantial quantities of energy as transfers from other utilities. During fiscal year 1960, 12 percent of the energy flowing over the system was received for such transfers. This percentage has increased rapidly in the last 5 years.

<u>Fiscal years</u>	<u>Total receipts 1/ Billions KWH</u>	<u>Transfer in 2/ Billions KWH</u>	<u>Percent of total</u>
1955	25.7	0.5	2.0
1956	31.1	0.8	2.7
1957	34.3	1.4	4.2
1958	34.0	2.5	7.4
1959	34.3	3.1	9.0
1960	37.4	4.5	12.0

1/ From Federal generation, from other utilities for transfer or storage, and uncontrolled.

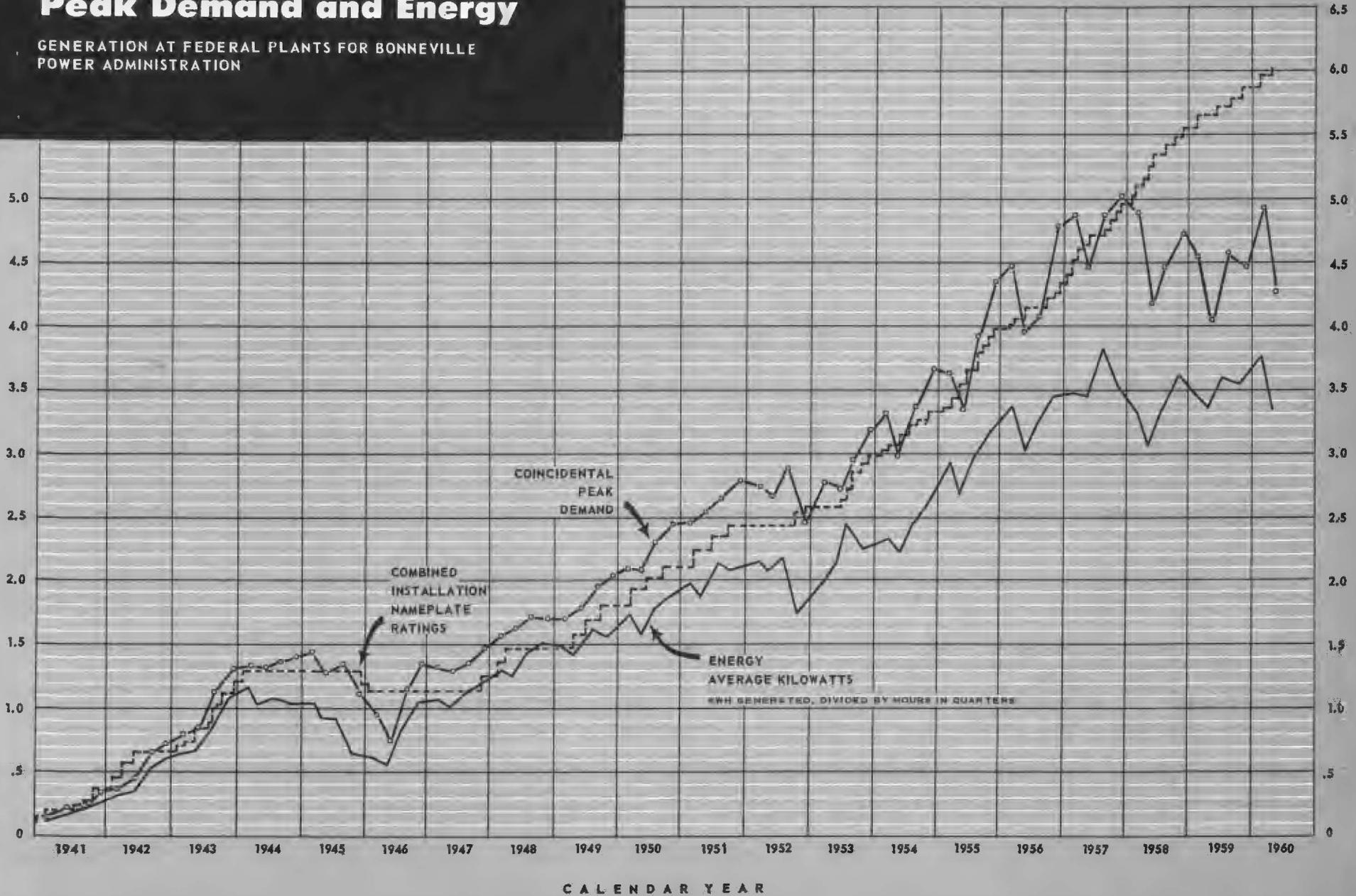
2/ From other utilities for transfer.

Table 4, Electric Energy Account, summarizes energy receipts and deliveries for fiscal year 1960. Transactions summarized in this account also involve storage by the Administration in non-Federal reservoirs as well as storage by non-Federal utilities in the Federal reservoirs, energy transfers for irrigation purposes for the Bureau of Reclamation from Grand Coulee, Chief Joseph and Roza, energy used by the Administration and energy losses in transmission and transformation.

Peak Demand and Energy

GENERATION AT FEDERAL PLANTS FOR BONNEVILLE POWER ADMINISTRATION

MILLIONS OF KILOWATTS



Energy Sales
of 29.7
Billion KWH

During fiscal year 1960, BPA sold 29.7 billion kilowatt hours of electric energy for about \$69,000,000, an average of 2.32 mills per kilowatt hour. Energy sales increased 3.6 percent over the previous year.

TABLE 4
Electric energy account for fiscal year 1960

Energy received (millions of kilowatt hours):	
Energy generated at Federal plants for BPA 1/.....	31,281
Power interchanged in	<u>6,158</u>
Total received	37,439
Energy delivered (millions of kilowatt hours):	
Sales	29,683
Power interchanged out	6,087
Used by Administration	<u>34</u>
Total delivered	35,804
Energy losses in transmission and transformation	1,635
Losses as percent of total energy received – percent	4.4
Maximum demand on generating plants (kilowatts), March 3, 1960, 5-6 p.m., Pacific Standard Time	4,928,000
Load factor, total generated for BPA, percent	72.3

1/ For detail by plants, see table 3.

Percentage distribution of energy sales by classes of customers for fiscal year 1960 follows:

	Number of customers <u>June 1960</u>	Energy sale by percent <u>of total</u>
Publicly owned utilities	79	35.7
Privately owned utilities	9	18.8
Aluminum industry	9	30.1
Other industries & Federal agencies	<u>19</u>	<u>15.4</u>
Total	116	100.0

*Public Utility
Sales Increase*

Sales to publicly owned utilities continued to increase at a higher rate than sales to other classes of customers. Between 1950 and 1960, sales to publicly owned utilities increased 272 percent, while total sales increased 128 percent.

Increased non-Federal generation, most of which was transferred over the Bonneville Power Administration transmission system, resulted in reduction in BPA sales to privately owned utilities and to Cities of Seattle and Tacoma, Washington.

The aluminum companies increased their purchases of firm power during 1960 by about 60,000 kilowatts, which is a 10 percent increase over 1959. Sales of interruptible power to aluminum plants decreased by 7 percent from the previous year, with most of the decrease shown by those plants increasing their purchase of firm power. Sales of interruptible power to the aluminum industry have decreased by 270,000 kilowatts since 1956.

An increase in energy deliveries to other industries and Federal agencies re-

TABLE 5
Sales of electric energy by classes of customers
Fiscal years 1960 and 1959

	Fiscal year 1960		Fiscal year 1959		Percent increase
	Millions of kwh	Mills per kwh	Millions of kwh	Mills per kwh	
Publicly owned utilities 1/					
Firm	10,455	2.71	9,186	2.75	13.8
Nonfirm	<u>134</u>	<u>2.50</u>	<u>299</u>	<u>2.50</u>	<u>-55.2</u>
Total	10,589	2.70	9,485	2.74	11.6
Privately owned utilities					
Firm	4,522	2.15	5,657	2.13	-20.1
Nonfirm	<u>1,068</u>	<u>2.50</u>	<u>897</u>	<u>2.50</u>	<u>19.1</u>
Total	5,590	2.22	6,554	2.18	-14.7
Aluminum plants					
Firm	7,761	1.98	7,039	2.02	10.2
Nonfirm	<u>1,167</u>	<u>1.82</u>	<u>1,256</u>	<u>1.92</u>	<u>- 7.1</u>
Total	8,928	1.96	8,295	2.00	7.6
Other industries 2/					
Firm	4,053	2.25	3,847	2.27	5.4
Nonfirm	<u>523</u>	<u>2.21</u>	<u>483</u>	<u>2.24</u>	<u>8.2</u>
Total	4,576	2.24	4,330	2.27	5.7
Total energy					
Firm	26,791	2.33	25,729	2.34	4.1
Nonfirm	<u>2,892</u>	<u>2.17</u>	<u>2,935</u>	<u>2.21</u>	<u>- 1.5</u>
Total	29,683	2.32	28,664	2.33	3.6

1/ Data for City of Richland billed to the Atomic Energy Commission July 1958 - October 1959 has been shifted from Federal agencies to publicly owned utilities for comparative data.

2/ Including Federal agencies.

sults from their increased operations during the 1959 fiscal year. The energy consumption level in June 1960 was about equal to June 1959.

Detail of energy sales by classes of customers for 1960 compared with 1959, including classification between firm and nonfirm, is shown in table 5. Growth in sales since 1940 is illustrated in charts 5 and 6. Energy sales to individual customers for 1960 are shown in table 6.

*Power for
Industrial
Expansion*

As a result of the favorable power situation and unprecedented expansion of hydroelectric generation in the Pacific Northwest, Bonneville Power Administration was able to offer for sale last May a block of 150,000 kilowatts of firm power for industrial expansion. Concurrently, a new category of high priority secondary power called "industrial power", limited to 400,000 kilowatts, was offered.

Contract negotiations in progress at the end of the fiscal year indicate the new power offer will result in the establishment of two new electroprocess industries in the region and plant expansion of two existing industries with an estimated investment of about \$140,000,000 in new plant equipment. Peak requirements of the four plants are expected to total 177,000 kilowatts of firm and 222,000 kilowatts of secondary power.

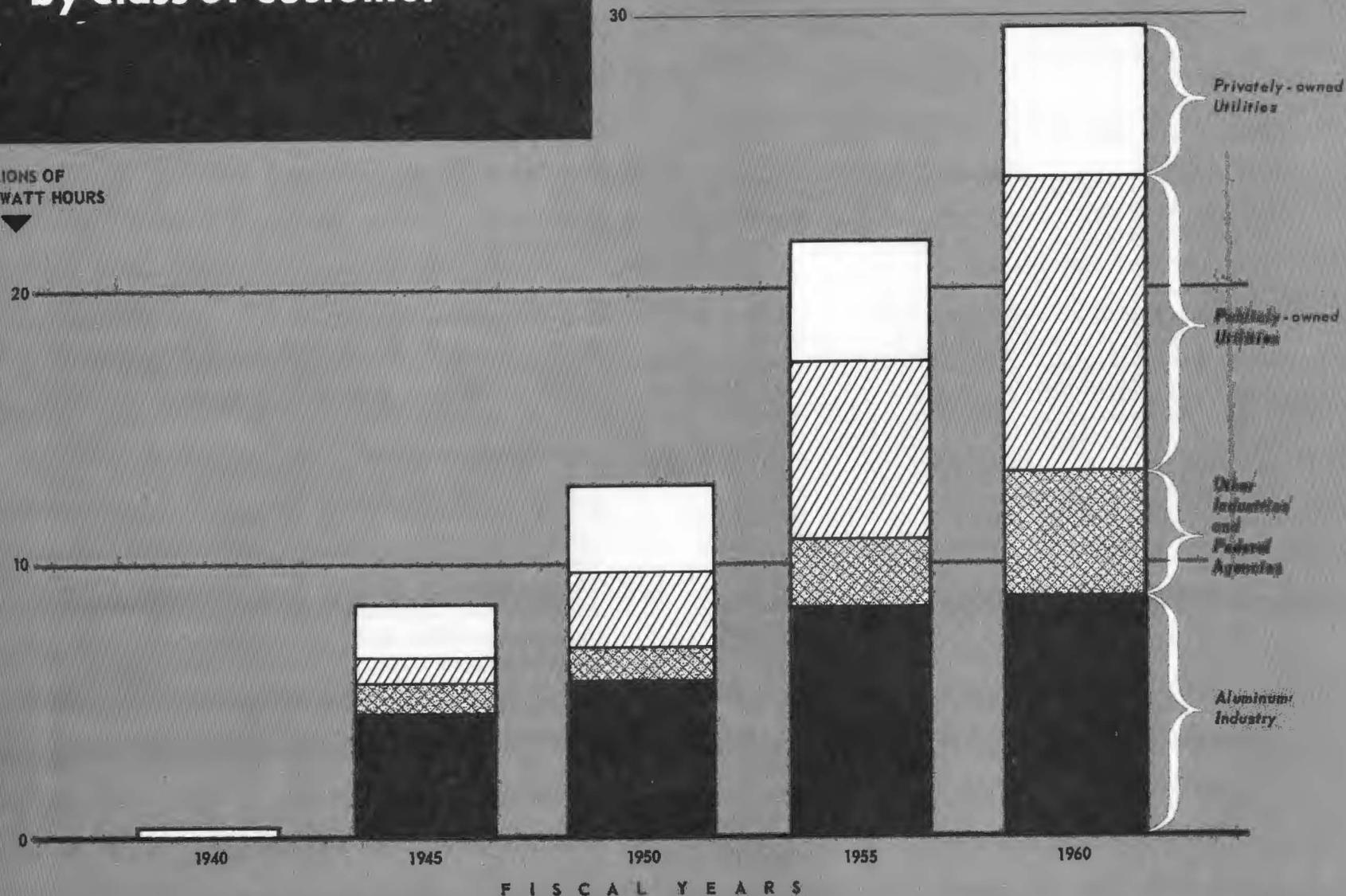
The new industrial sales are expected to increase Bonneville Power Administration revenues by about \$6,500,000 a year.

Power Rates

Bonneville Power Administration delivered about 69 percent of its energy sales

Sales of Electric Energy by Class of Customer

BILLIONS OF KILOWATT HOURS



<u>Customers</u>	Energy deliveries for year 1/ thousands of kilowatt hours	<u>Customers</u>	Energy deliveries for year 1/ thousands of kilowatt hours
Midstate Elec. Coop.	12,213	FEDERAL AGENCIES (9) 3/ 5/	2,756,529
Missoula Elec. Coop.	15,742	INDUSTRIES	
Nespelem Valley Elec. Coop.	9,011	ALUMINUM	
Northern Lights	30,816	Aluminum Co. of America:	
Okanogan Co. Elec, Coop.	5,327	Vancouver Plant	1,333,228
Orcas Power & Light Co.	17,032	Wenatchee Plant	832,561
Quinault Light Co. 2/	2,279	Anaconda Aluminum Co.	1,053,161
Ravalli Co. Elec. Coop.	12,783	Harvey Aluminum Co.	1,104,094
Salem Electric	59,007	Kaiser Alum, & Chem. Corp.:	
Tanner Mutual P & L Assn.	1,206	Spokane Alum. Fab.	272,930
Umatilla Elec. Coop. Assn.	31,761	Spokane Alum. Red.	2,448,080
Vera Irrigation Dist. #15	39,704	Tacoma Alum. Red.	4/
Wasco Elec. Coop.	33,320	Reynolds Metals Co.:	
West Oregon Elec. Coop.	26,411	Longview Plant	1,135,174
		Troutdale Plant	748,352
Total cooperatives (34)	1,196,114	OTHER	
Total publicly owned utilities	10,552,518	Carborundum Co.	236,961
PRIVATELY OWNED UTILITIES		Crown Zellerbach Corp.	80,211
British Columbia Elec. Co.	66,379	Hanna Nickel Smelting Co.	535,345
California Oregon Power Co.	381,624	Keokuk Electro-Metals Co.	119,452
California-Pacific Utilities Co.	11,058	Pacific Carbide and Alloys Co.	45,827
Idaho Power Co.	159	Pacific Northwest Alloys	84,244
Montana Power Co.	351,360	Pennsalt Chemicals Corp.	227,178
Pacific Power & Light Co.	1,173,489	Rayonier Corp.	40,200
Portland General Elec. Co.	3,054,473	Union Carbide Metals Co.	105,524
Puget Sound Power & Light Co.	412,901	Victor Chemical Works	381,672
Washington Water Power Co.	138,226		
Total privately owned utilities (9)	5,589,669	Total industries (19)	10,784,194
		Total sales of electric energy (116) 3/	<u>29,682,910</u>

1/ Includes energy deliveries carried on exchange accounts.

2/ New customer added during year.

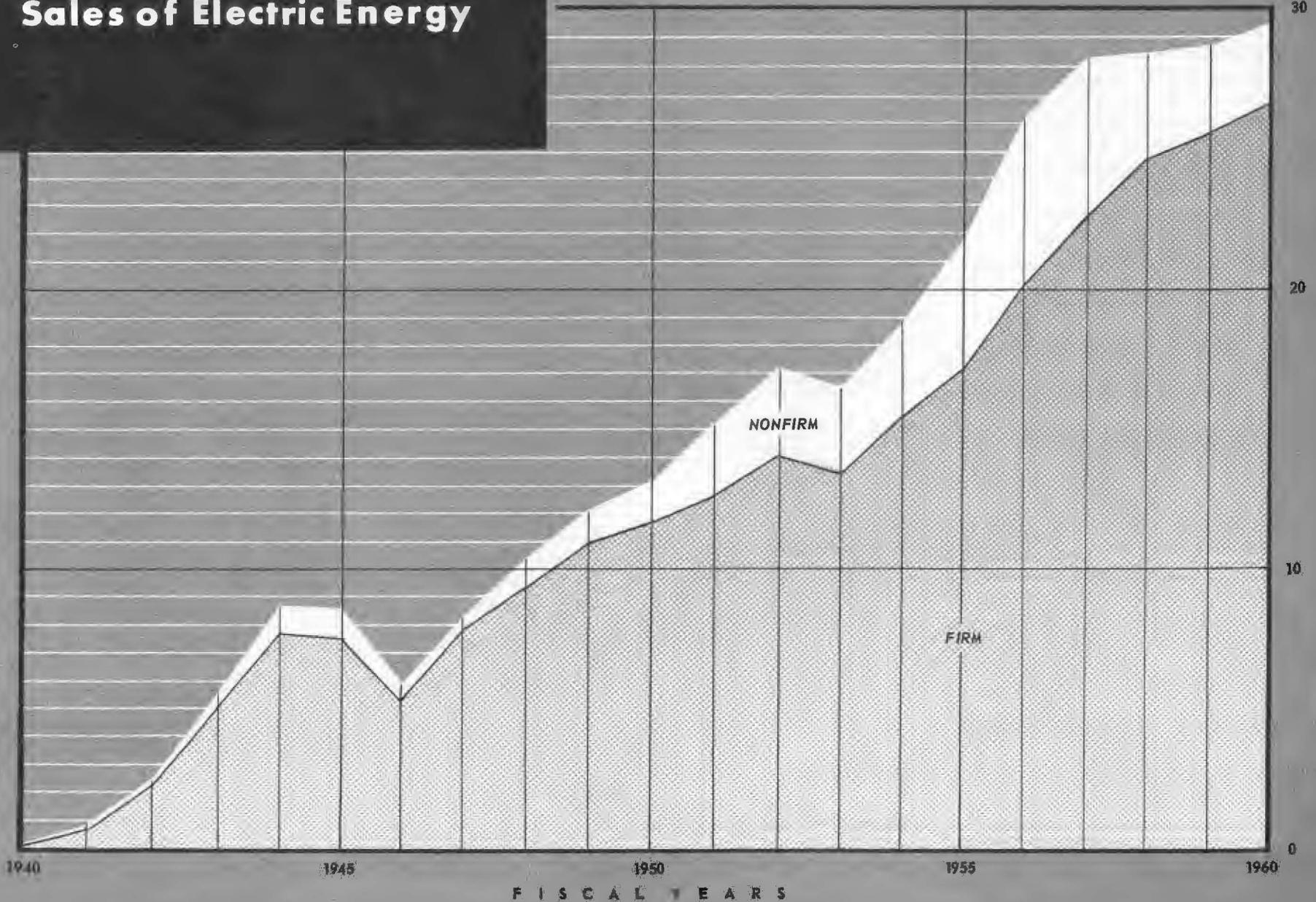
3/ Number of customers as of June 30, 1960; two customers discontinued during year.

4/ Service temporarily discontinued.

5/ Federal Agencies: Atomic Energy Comm., Bureau of Mines, Bureau of Reclamation, Camp Hanford, Fairchild Air Base, Puget Sound Navy Yard, Tongue Pt. Naval Station, U. S. Indian Service, and U. S. Navy (Jim Creek).

Firm and Nonfirm Sales of Electric Energy

BILLIONS OF KILOWATT HOURS



under the C-4 rate of \$17.50 per kilowatt year, at an average cost of 2.15 mills per kilowatt hour. These sales were made to industries, and to utilities having substantial generating facilities. An additional 7 percent of total sales were made to industries purchasing at-site power under the A-4 rate of \$14.50 per kilowatt year. Nearly one-fifth of total energy sales were made under the E-4 rate at an average cost of 3.10 mills per kilowatt hour to utilities purchasing all or substantially all of their power requirements from the Administration for resale.

A summary of energy sales for fiscal year 1960, classified by rate schedules, is shown in table 7.

The major features of rate schedules are the following:

C-4	Kilowatt year rate for transmission system firm power
F-4	Demand energy rate for firm power
A-4	Kilowatt year rate for at-site firm power
E-4	Demand energy rate for firm power for resale to ultimate consumers
H-3	Energy rate for dump, emergency, breakdown or experimental service
Space heating	Special space heating rate applicable in vicinity of Grand Coulee plant

*Basic Rate
Unchanged*

Special studies of the Administration's wholesale rate structure and payout schedules resulted in continuance of the present basic wholesale rate of \$17.50 per kilowatt year and the present rate structure for another 5 year period effective December 20, 1959,

TABLE 7
 Electric energy sales by rate schedules
 Fiscal year 1960

<u>Rate schedule</u>	<u>Energy millions of kwh</u>	<u>Percent of total</u>	<u>Percent change from 1959</u>	<u>Mills per kwh</u>
C - 4: Industries 1/ 2/	11,236			2.12
Utilities	9,283			2.19
Subtotal	20,519	69.1	- 0.3	2.15
F - 4: Industries 2/	6			3.77
Utilities	50			4.64
Subtotal	56	0.2	- 8.3	4.54
A - 4: Industries 1/	2,157	7.3	21.6	1.68
E - 4: Utilities 3/	5,641	19.0	14.0	3.10
H - 3, Experimental and exchange: Industries and Utilities	1,296	4.4	- 0.1	2.50
Space heating: Utilities	14	4/	5/	1.00
Total	29,683	100.0	3.6	2.32

1/ Includes interruptible industrial sales.

2/ Includes Federal Agencies.

3/ Including Federal Agency pumping loads.

4/ Less than 0.05 percent.

5/ Initial service under this rate in September 1959.

with approval by the Federal Power Commission. Bonneville Power Administration has maintained the same basic rate level since beginning of operations in 1938.

*Canadian
Storage*

There were several important developments in the power field during fiscal

year 1960 that could have a tremendous impact on both the power resources and power operations of the U.S. Columbia River power system.

One of these important events was an announcement by the International Joint Commission of a general policy statement as a guide for development of upper Columbia River storage projects. This concerns an equitable apportionment of downstream benefits which would accrue to U.S. plants as a result of construction of storage facilities in the Canadian portion of the upper Columbia River Basin.

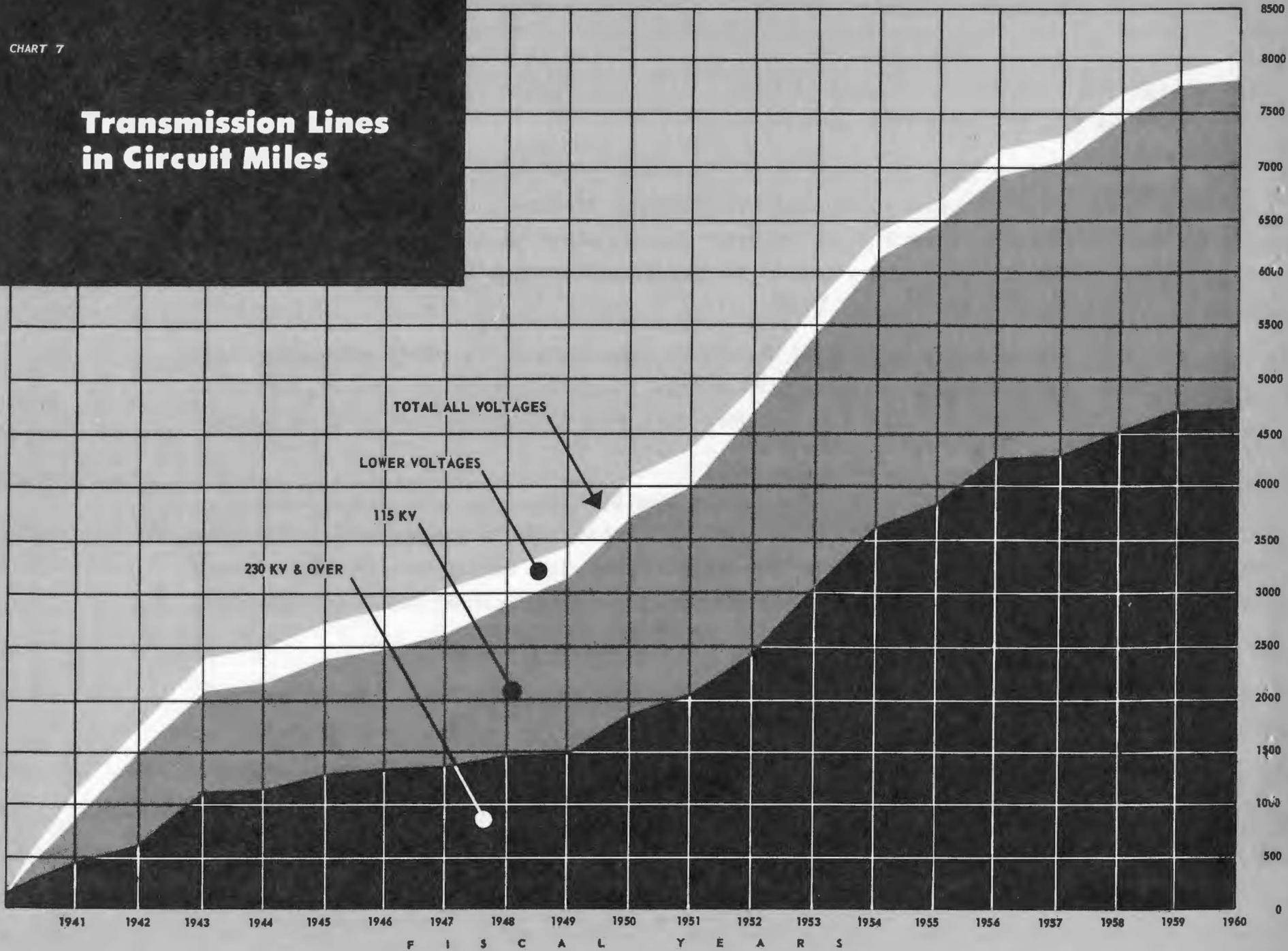
The recently established negotiating committee is currently proceeding with discussions between Canada and the United States. The U.S. negotiating team is made up of representatives of the Department of Interior, the Corps of Engineers and the State Department.

The potential hydroelectric generation resulting from downstream benefits of the proposed upper Columbia River storage projects could make a substantial contribution to the power capability of the Columbia River system. Completion during the next decade of one or more of these projects would affect many phases of Columbia River power operations and resources planning.

*Atomic
Energy*

Another important event was start of construction on a dual purpose reactor at the Hanford Atomic Energy Works. This could be the forerunner of the first large scale generation of electric energy by atomic fission in the Pacific Northwest.

Transmission Lines in Circuit Miles



TOTAL ALL VOLTAGES

LOWER VOLTAGES

115 KV

230 KV & OVER

F I S C A L Y E A R S

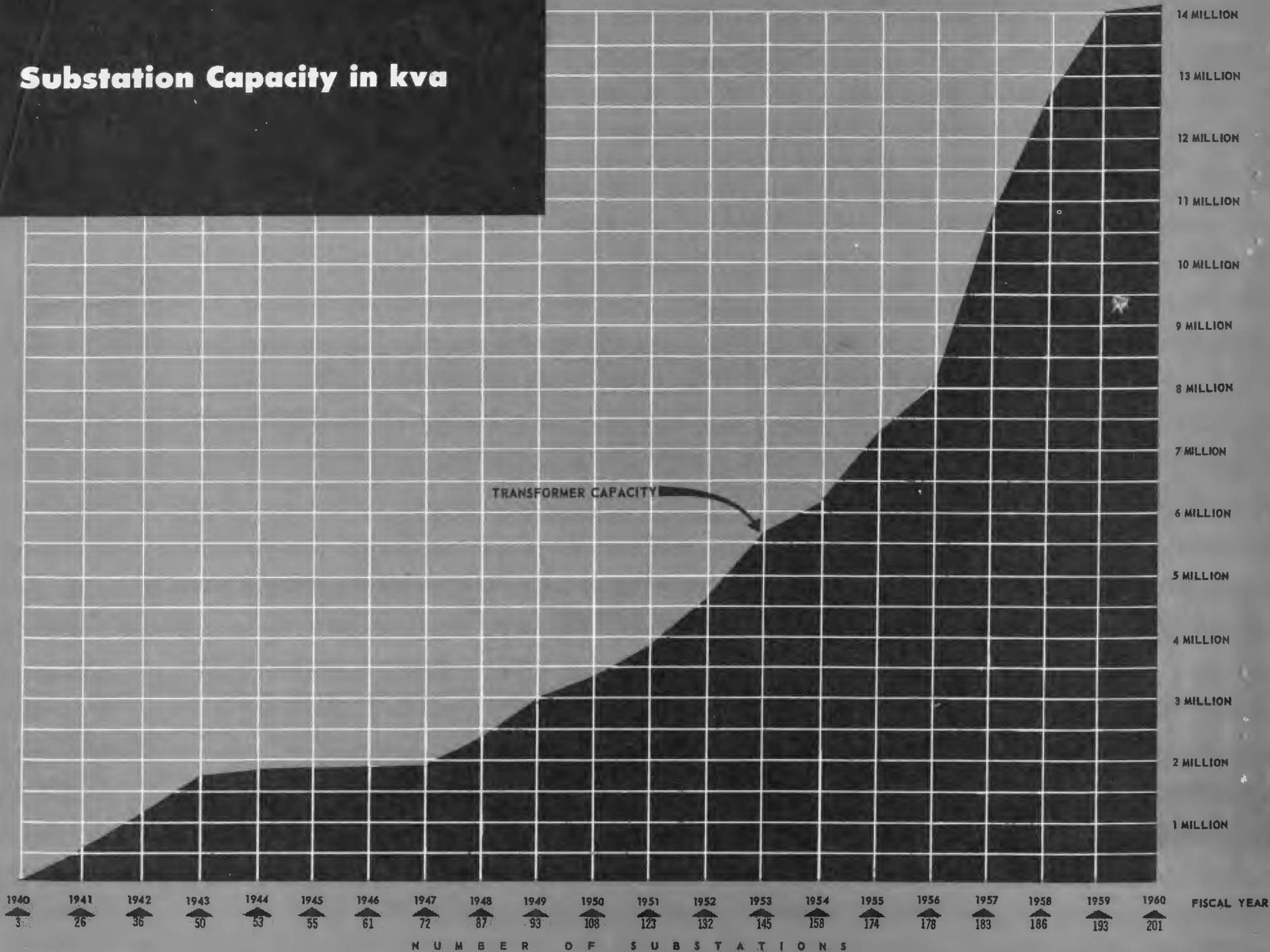
The Federal Power Commission, with the assistance of BPA, has completed its study of the economic feasibility of installing steam operated generation facilities in connection with the reactor. The most feasible reactor design under assumptions of the study would produce 654,000 kilowatts during the initial 10 year period of operations and 756,000 kilowatts over the 25 years following.

*California
Intertie*

Bonneville Power Administration in cooperation with the Bureau of Reclamation and in consultation with interested utilities of the Pacific Northwest and California completed a study of a proposed intertie between the U.S. Columbia River power system and northern California. The study was made in response to a resolution of the Senate Committee on Interior and Insular Affairs adopted May 19, 1959, and was submitted to the Committee on February 17, 1960. The purpose of the study was to determine the feasibility of marketing substantial blocks of secondary power currently surplus to the needs of the Pacific Northwest. The potential market for the power involves a displacement of steam generation in northern California, when such surplus power is available from the Pacific Northwest.

Negotiations relative to a proposed sale of surplus energy to the Pacific Gas and Electric Company were suspended at the request of the Senate Committee pending conclusion of an independent study sponsored by the State of California of an extra high voltage "common carrier" type of interconnection. The committee desired to consider legislation insuring that construction of an intertie would not deprive power consumers of the Pacific Northwest of power produced in the region.

Substation Capacity in kva



KVA

14 MILLION
13 MILLION
12 MILLION
11 MILLION
10 MILLION
9 MILLION
8 MILLION
7 MILLION
6 MILLION
5 MILLION
4 MILLION
3 MILLION
2 MILLION
1 MILLION

1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960

FISCAL YEAR

NUMBER OF SUBSTATIONS

Financial Report

Summary of Revenues & Expenses

A condensed statement of the combined revenues and expenses of the U. S. Columbia River Power System on a cost accounting basis is presented in table 8. Actual data are given for fiscal years 1959 and 1960 and in total through fiscal year 1960, together with estimated data for fiscal years 1961 and 1962.

Gross operating revenues in 1960 reached an all-time peak of \$71,200,563, an increase of \$2,564,272, or 3.74 percent over the preceding year. Nevertheless, for the reasons more fully set forth in the review of revenues later in this report, the year's business fell approximately \$3,500,000 below the estimate made at the outset of the year.

After providing for all expenses of operation, maintenance, administration and interest, net revenues of \$18,374,097 remained available for the fiscal year for repayment of

TABLE 8
U. S. COLUMBIA RIVER POWER SYSTEM
 Summary of results of operations
 Fiscal years 1959 and 1960
 Estimates for fiscal years 1961 and 1962

Line No.	Item				Estimated	
		Fiscal year 1959	Fiscal year 1960	Cumulative total to June 30, 1960	Fiscal year 1961	Fiscal year 1962
1.	Sales of electric energy	\$66,859,544	\$68,944,051	\$718,242,537	\$67,249,000	\$70,300,000
2.	Other electric revenue	1,776,747	2,256,512	17,529,286	3,000,000	4,700,000
3.	Total operating revenue	<u>68,636,291</u>	<u>71,200,563</u>	<u>735,771,823</u>	<u>70,249,000</u>	<u>75,000,000</u>
4.	Less:					
5.	Expenses of operation, maintenance, administration, etc.	19,625,333	21,061,626	203,134,035	22,276,000	23,923,000
6.	Interest expense, net of interest during construction	<u>30,186,169</u>	<u>31,764,840</u>	<u>250,752,180</u>	<u>33,041,000</u>	<u>35,038,000</u>
7.	Subtotal	<u>49,811,502</u>	<u>52,826,466</u>	<u>453,886,215</u>	<u>55,317,000</u>	<u>58,961,000</u>
8.	Remainder available for depreciation and amortization	18,824,789	18,374,097	281,885,608	14,932,000	16,039,000
9.	Provisions for depreciation	<u>25,434,609</u>	<u>26,860,113</u>	<u>197,430,003</u>	<u>27,773,000</u>	<u>29,166,000</u>
10.	Net revenues	<u>\$(6,609,820)</u>	<u>\$(8,486,016)</u>	<u>\$ 84,455,605</u>	<u>\$(12,841,000)</u>	<u>\$(13,127,000)</u>
11.	Net revenues (line 10) as a percentage of total operating revenues (line 3)	(9.70) %	(11.92) %	11.49 %	(18.28) %	(17.50) %
12.	System maximum generation during the year (Kilowatts)	4,737,000	4,928,000	—	5,000,000	5,100,000
13.	Total Kilowatt hours sold (thousands)	28,664,300	29,682,910	305,354,000	28,200,000	29,200,000
14.	Total Kilowatt hours wheeled (thousands)	3,339,975	4,123,546	11,153,521	5,400,000	10,500,000
15.	Revenue per KWH sold (line 1 ÷ line 13) (mills)	2.33	2.32	2.35	2.38	2.41
16.	Revenue per KWH wheeled (mills)	0.43	0.44	0.44	0.43	0.41
17.	Power supply costs per Kilowatt hour sold (mills)	1.56	1.61	1.13	1.76	1.83
18.	Power supply costs per KW of system maximum generation	\$9.44	\$9.70	—	\$9.92	\$10.46
19.	Transmission costs per KWH sold (mills)	1.01	1.01	0.98	1.10	1.05
20.	Transmission costs per KWH handled	0.95	0.94	0.96	1.00	0.88
21.	Transmission costs per KW of system maximum generation	\$6.13	\$6.11	—	\$6.23	\$5.99

the capital investment through provisions for depreciation and amortization. On a cumulative basis the amount available for return of the capital investment is nearly \$282,000,000. The amount for fiscal year 1960 fell short of meeting provisions for depreciation expense by \$8,486,016, but on a cumulative basis revenues have exceeded requirements for depreciation expense by approximately \$84,500,000.

For the reasons given in detail in the note on table 10, the 1959 revenue and expense data in table 8 have been restated from the results previously published. The restatement increased both revenues and expenses by an equal amount. Hence, net financial results for the year were not changed.

Forecasts for the next 2 fiscal years indicate some recession in gross revenues

Comments:

- Line 8. Power revenues continue to be adequate to cover out-of-pocket costs, i.e., expenses of operation, maintenance and interest, with a substantial remainder available for repayment of capital investment.*
- Line 10. Net revenues, \$84,455,605, through June 30, 1960, as well as provisions for depreciation, \$197,430,003, a total of \$281,885,608, are available for repayment (amortization) of the capital investment.*
- Line 14. The data shown for kilowatt hours wheeled are limited to energy delivered by the Bonneville Power Administration (BPA) for the account of others from non-federal sources. BPA also "wheels" a small amount of federal power sold "at-site" over its own facilities to some of its customers located within 15 miles of a federal dam purchasing power at BPA's at-site rate schedule. Such deliveries are included in energy sold (line 13) and not in energy wheeled.*
- Line 16. This ratio is restricted to the revenues received from wheeling energy shown in Line 14. See comments above re Line 14.*
- Line 17 and 18. Power supply costs include total operation, maintenance, interest and depreciation expenses at the federal dams allocated to power plus the cost of power purchased by BPA.*
- Line 19 and 21. For the purpose of these ratios transmission costs consist of BPA's total expenses for operation, maintenance, interest and depreciation less the cost of power purchased and less the amount of revenues obtained by BPA from the wheeling of power from non-federal sources (see comment re Line 14 above). Inasmuch as a part of BPA's cost is assignable to wheeling operations and the wheeling charges are derived from an average transmission cost formula, the wheeling revenues are credited against BPA costs in order to obtain a remainder fairly applicable against the handling of federal energy.*
- Line 20. This ratio consists of total BPA costs except purchased power divided by the total of energy sold (Line 13) and energy wheeled (Line 14).*

for 1961 followed by considerable improvement in 1962. The estimates indicate that after providing for all out-of-pocket expenses for operation, maintenance, administration and interest, approximately \$15,000,000 in 1961 and \$16,000,000 in 1962 will be available for repayment of the capital investment. However, these annual net revenues are estimated to be about \$13,000,000 less in each year than the scheduled provisions for depreciation and will serve to effect further reductions in the cumulative surplus of \$84,500,000 shown as of June 30, 1960.

*Energy
Accounts*

Table 8 also contains comparative data on energy sold, energy transmitted for the account of others, and revenues and costs per kilowatt hour. Average revenue per kilowatt hour sold continues at approximately 2 1/3 mills. Revenue from energy wheeled for the account of others has averaged approximately 0.44 mills per kilowatt hour. Revenue from sales averages substantially more per unit than revenue from wheeling because of the differences in costs involved. Rates for energy sold must consider costs of generation, transmission and marketing.

Charges for wheeling service are not concerned with production or marketing costs but are based on a pricing formula that is geared to the Administration's average annual transmission costs for the types of facilities used in the wheeling service. Moreover, the bulk of the wheeling is over high voltage, high capacity transmission facilities which have much lower unit average annual costs than does the BPA system as a whole. Hence, transmission costs for energy wheeled average considerably less than transmission costs for energy sold.

Total costs of transmission continue to run approximately 1 mill per kilowatt hour although the average is slightly less when both the energy sold and the energy wheeled

are taken into account. On the other hand, the cost of the system power supply, obtained principally from generation at the Federal hydroelectric plants, shows a continuation of the upward trend of recent years, reaching 1.61 mills per kilowatt hour in 1960 with further increases estimated for the succeeding 2 years.

*System Data
Given*

Table 9 is a combining statement of revenues and expenses for fiscal year 1960. The schedule shows revenues and expenses for each generating project and for the Bonneville Power Administration and in total for the U. S. Columbia River Power System. The total system data are the same as those shown in the 1960 column of table 8.

The financial statements for 1960 contain two substantial surplus adjustments. First, the accounts for power operations at the Columbia Basin project show a surplus debit of \$3,075,423. This represents the power allocation of a total net loss of \$6,209,518 incurred by the Bureau of Reclamation in the disposal of properties at Coulee Dam village in accordance with the mandates of the Coulee Dam Community Act of 1957 (71 Stat. 524). That legislation permitted the sale of Government owned housing and certain other properties but required the donation of substantial assets in municipal facilities to the new municipality of Coulee Dam, Washington. Nevertheless, the investment is to be reimbursed to the U. S. Treasury despite the requirements for donation to the city.

The second surplus adjustment is in the accounts of the Hungry Horse project, which for 1960 show a credit adjustment to surplus in the amount of \$865,026. During 1960 a definitive cost allocation for the Hungry Horse project was adopted by the Department of the Interior, assigning 70 percent of the joint cost to power and 30 percent to flood control. A

TABLE 9
U. S. COLUMBIA RIVER POWER SYSTEM
 Combining statement of revenues and expenses
 For the fiscal year 1960

Line No.	Item	Bonneville Power Administration	Bonneville Dam	Columbia Basin Project	Hungry Horse	Albeni Falls	McNary
1.	Sales of electric energy	\$68,944,051					
2.	Other electric revenue	2,054,169	\$ 10,980	\$ 29,525	\$ 7,261	\$ 15,900	\$ 126,241
3.	Allocation of BPA revenue to projects	(47,078,000)	2,100,000	12,800,000	3,833,000	1,400,000	9,000,000
4.	Total operating revenues by projects	<u>23,920,220</u>	<u>2,110,980</u>	<u>12,829,525</u>	<u>3,840,261</u>	<u>1,415,900</u>	<u>9,126,241</u>
5.	Less:						
6.	Expenses of operation, maintenance, administration, etc.	12,155,105	1,069,981	2,594,125	455,658	278,888	1,563,826
7.	Interest expense, net of interest during construction	8,317,321	841,293	3,342,667	1,848,705	725,619	6,458,407
8.	Subtotal	<u>20,472,426</u>	<u>1,911,274</u>	<u>5,936,792</u>	<u>2,304,363</u>	<u>1,004,507</u>	<u>8,022,233</u>
9.	Remainder available for depreciation and amortization	3,447,794	199,706	6,892,733	1,535,898	411,393	1,104,008
10.	Provision for depreciation and amortization	12,067,262	801,842	2,177,260	933,580	533,992	3,505,480
11.	Net revenues for the year	(8,619,468)	(602,136)	4,715,473	602,318	(122,599)	(2,401,472)
12.	Accumulated net revenues 6-30-59 . .	23,987,236	15,933,440	47,184,811	1,936,718	(176,992)	6,957,356
13.	Adjustments affecting prior years . .			3,075,423 1/	865,026 2/		
14.	Accumulated net revenues 6-30-60 . .	<u>\$15,367,768</u>	<u>\$15,331,304</u>	<u>\$48,824,861</u>	<u>\$3,404,062</u>	<u>\$ (299,591)</u>	<u>\$4,555,884</u>

<u>Detroit - Big Cliff</u>	<u>Lookout Point- Dexter</u>	<u>Chief Joseph</u>	<u>Yakima- Kennewick & Roza</u>	<u>The Dalles</u>	<u>Total for Generating Projects</u>	<u>Total for Columbia River Power System</u>
			\$ 5,522	\$ 6,914	\$ 202,343	\$68,944,051
\$1,700,000	\$1,700,000	\$ 6,500,000	345,000	7,700,000	47,078,000	2,256,512
<u>1,700,000</u>	<u>1,700,000</u>	<u>6,500,000</u>	<u>350,522</u>	<u>7,706,914</u>	<u>47,280,343</u>	<u>71,200,563</u>
329,775	281,338	1,140,982	72,203	1,119,745	8,906,521	21,061,626
952,512	973,760	3,766,744	61,522	4,476,290	23,447,519	31,764,840
<u>1,282,287</u>	<u>1,255,098</u>	<u>4,907,726</u>	<u>133,725</u>	<u>5,596,035</u>	<u>32,354,040</u>	<u>52,826,466</u>
417,713	444,902	1,592,274	216,797	2,110,879	14,926,303	18,374,097
598,089	612,199	2,595,518	55,713	2,979,178	14,792,851	26,860,113
(180,376)	(167,297)	(1,003,244)	161,084	(868,299)	133,452	(8,486,016)
562,273	303,408	(866,966)	217,839	(887,105)	71,164,782	95,152,018
					2,210,397	2,210,397
<u>\$ 381,897</u>	<u>\$ 136,111</u>	<u>\$(1,870,210)</u>	<u>\$378,923</u>	<u>\$(1,755,404)</u>	<u>\$69,087,837</u>	<u>\$84,455,605</u>

() Denotes red figures.

Note: This table is based on the cost accounts.

1/ Loss on disposal of Coulee Dam village.

2/ Reduction of expense due to reallocation of joint facilities operation and maintenance, depreciation and interest expenses.

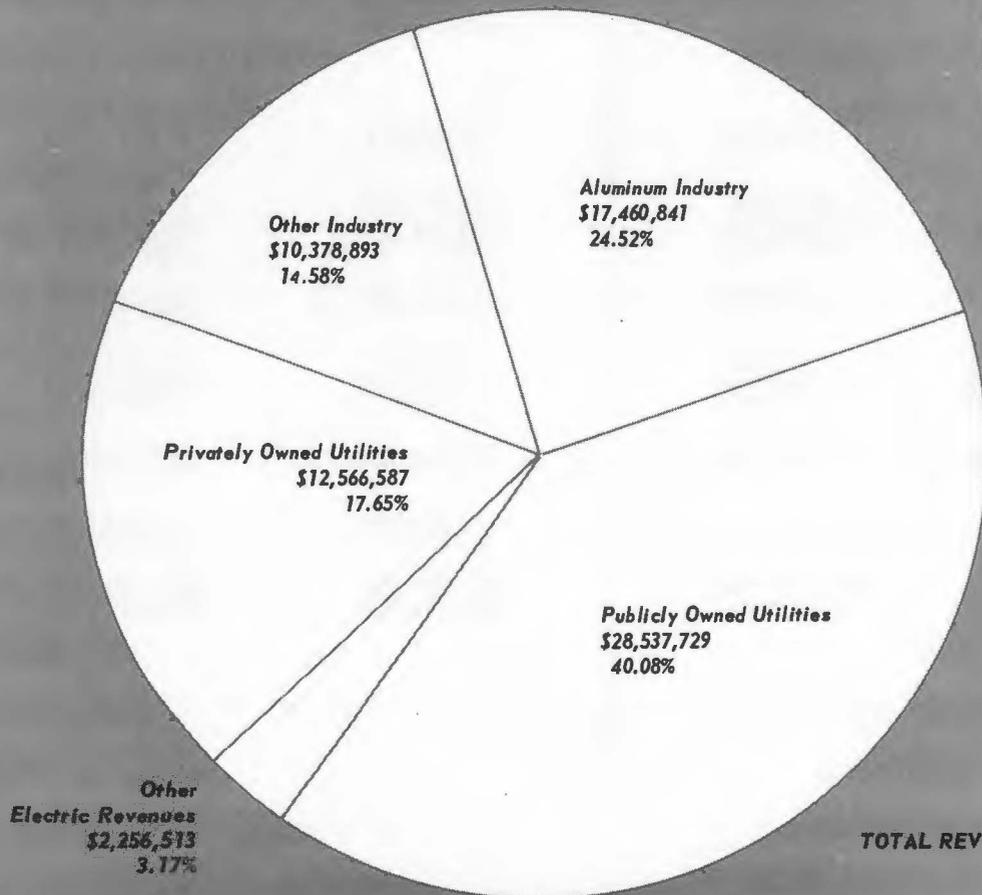
U. S. COLUMBIA RIVER POWER SYSTEM

Source and Disposition of the Revenue Dollar

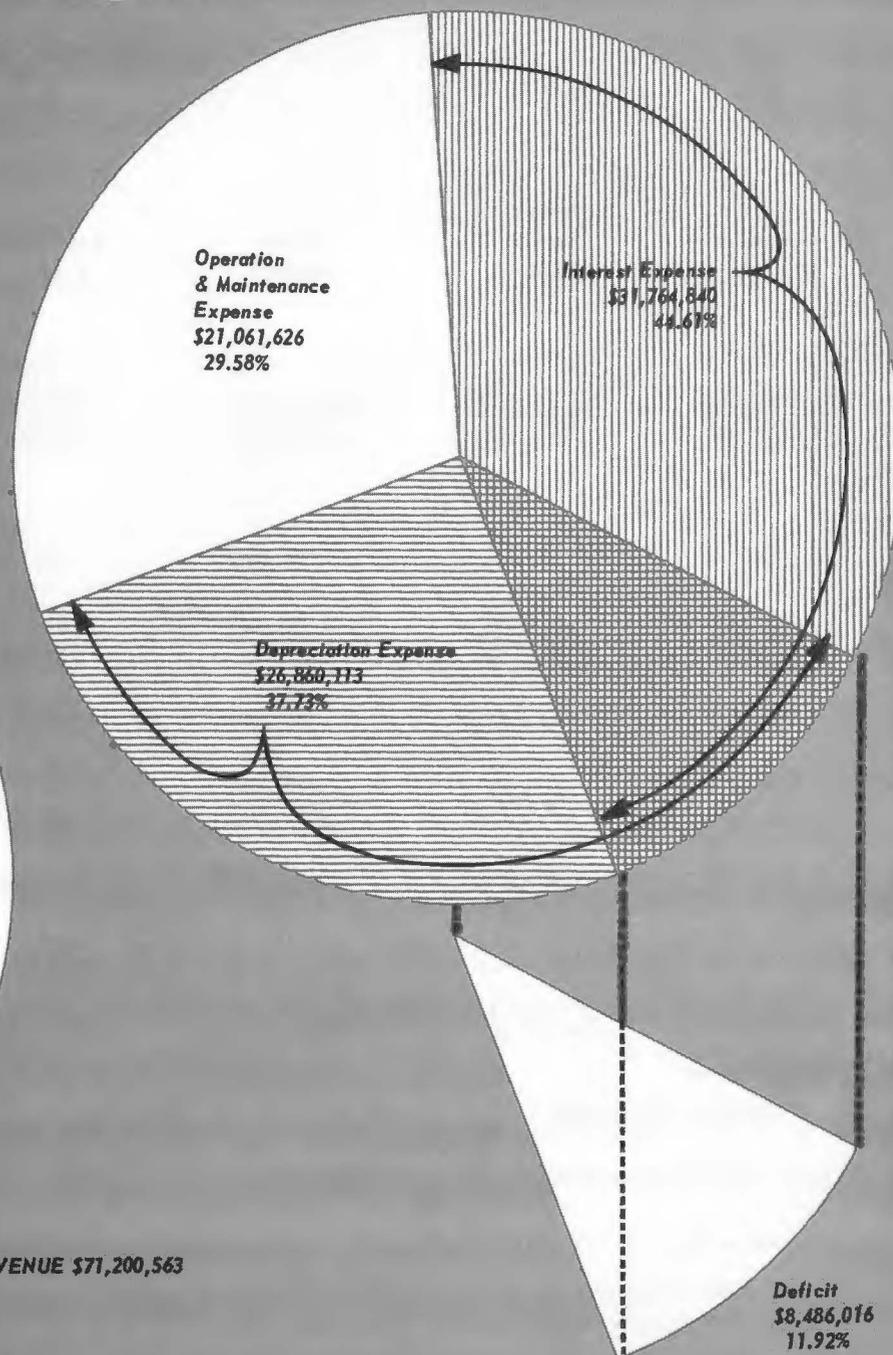
(Commercial Power Operations Only)

F. Y. 1960

source



disposition



TOTAL REVENUE \$71,200,563

greater proportion of joint costs had been charged to power in the project's accounts during prior years. Application of the final allocation ratios resulted in a credit of \$865,026 to the net results of power operations at the project.

The source and disposition of the revenue dollar for the power system in fiscal year 1960 are indicated in chart 9. Publicly owned utilities contributed 40.08 percent of gross revenues. Industries contributed a total of 39.10 percent consisting of 24.52 percent for the aluminum industry and 14.58 percent for other industry, including Federal agencies. Privately owned utilities accounted for 17.65 percent and other electric revenues, principally wheeling services, accounted for the remaining 3.17 percent.

Operation and maintenance expenses in 1960 were equivalent to 29.58 percent of gross revenues. Depreciation expense accounted for 37.73 percent and interest expense, the largest single category, was 44.61 percent. The total of expense exceeded revenues by 11.92 percent.

Comparative Revenues

Revenues are analyzed by class of customer and type of service, that is, firm and nonfirm sales contracts, in table 10. Actual data for 1960 are compared with results for the prior year and with the estimate for the succeeding year. In general, firm power sales increased for all types of customers except the privately owned utilities where a substantial decline occurred. On the other hand, nonfirm sales declined in almost every category except miscellaneous industry and a nominal increase in the case of the privately owned utilities. Other electric revenue resulting primarily from the wheeling of non-Federal power increased substantially.

TABLE 10
BONNEVILLE POWER ADMINISTRATION
 Comparative summary of revenues
 Fiscal years 1959 and 1960 and
 estimate for 1961

Class of customer and type of service	F.Y. 1959	F.Y. 1960			Increase or (decrease)		Estimate 1961
		Amount	Percent of total	Per KWH (mills)	Amount	Percent	
Aluminum industry:							
Firm power	\$14,198,209	\$15,293,231	21.54%	1.98	\$1,095,022	7.7%	\$14,587,000
Nonfirm	2,412,935	2,167,610	3.05	1.82	(245,325)	(10.2)	1,837,000
Total aluminum	<u>16,611,144</u>	<u>17,460,841</u>	<u>24.59</u>	<u>1.96</u>	<u>849,697</u>	<u>5.1</u>	<u>16,424,000</u>
Other industry:							
Firm power	3,121,919	3,163,441	4.46	2.17	41,522	1.3	3,259,000
Nonfirm	695,709	867,604	1.22	2.17	171,895	24.7	713,000
Total other industry	<u>3,817,628</u>	<u>4,031,045</u>	<u>5.68</u>	<u>2.17</u>	<u>213,417</u>	<u>5.6</u>	<u>3,972,000</u>
Federal agencies:							
Firm power	6,015,061	6,109,091	8.60	2.30	94,030	1.6	6,196,000
Nonfirm	388,084	238,757	.35	2.34	(149,327)	(38.5)	420,000
Total Federal agencies	<u>6,403,145</u>	<u>6,347,848</u>	<u>8.95</u>	<u>2.30</u>	<u>(55,297)</u>	<u>(0.9)</u>	<u>6,616,000</u>
Privately owned utilities:							
Firm power	11,756,443	9,907,325	13.95	2.15	(1,849,118)	(15.7)	7,511,000
Nonfirm	2,634,910	2,659,262	3.75	2.50	24,352	0.9	674,000
Total private utilities	<u>14,391,353</u>	<u>12,566,587</u>	<u>17.70</u>	<u>2.22</u>	<u>(1,824,766)</u>	<u>(12.7)</u>	<u>8,185,000</u>
Public agencies:							
Firm power	24,862,423	28,181,114	39.69	2.71	3,318,691	13.3	31,200,000
Nonfirm	773,850	356,615	.50	2.50	(417,235)	(53.9)	852,000
Total public agencies	<u>25,636,273</u>	<u>28,537,729</u>	<u>40.19</u>	<u>2.70</u>	<u>2,901,456</u>	<u>11.3</u>	<u>32,052,000</u>
Total energy sales	66,859,543	68,944,050	97.11	2.32	2,084,507	3.1	67,249,000
Other electric revenue:	<u>1,614,548</u>	<u>2,054,169</u>	<u>2.89</u>		<u>439,621</u>	<u>27.2</u>	<u>3,000,000</u>
Total operating revenue	<u>\$68,474,091</u>	<u>\$70,998,219</u>	<u>100.00</u>		<u>\$2,524,128</u>	<u>3.7</u>	<u>\$70,249,000</u>
Recapitulation of energy sales revenue:							
Firm power	\$59,954,055	\$62,654,202	88.25	2.33	\$2,700,147	4.5	\$62,753,000
Nonfirm	6,905,488	6,289,848	8.86	2.17	(615,640)	(8.9)	4,496,000
Total	<u>\$66,859,543</u>	<u>\$68,944,050</u>	<u>97.11</u>	<u>2.32</u>	<u>\$2,084,507</u>	<u>3.1</u>	<u>\$67,249,000</u>

Note: In fiscal year 1960 BPA adopted a revised accounting treatment for interchange transactions. Formerly such transactions, which normally had a credit balance, were included in the operating expense accounts, but beginning with 1960 these transactions are shown as revenue from the sales of electric energy. For the purposes of this table the 1959 data have been restated from the previously published figures to make the 1959 information comparable with the 1960 figures. Consequently, energy sales for 1959 have been increased by \$500,406

and operating expenses (purchased power) have been increased by a corresponding amount. Of this \$500,406, \$493,469 appears in the nonfirm sales to privately owned utilities and \$6,937 appears in the nonfirm sales to public agencies. The final net revenue figures for 1959 are unchanged by this revised accounting treatment. In fiscal year 1960 interchange credits of \$1,023,219 have been included in the energy sales figures, of which total \$1,019,533 is in nonfirm sales to private utilities and \$3,686 in nonfirm sales to public agencies.

1/ These data are for the Bonneville Power Administration only and thus exclude a small amount, approximately \$200,000, of other electric revenue earned by the generating projects and included in the statements for the combined Columbia River Power System. Specifically, the system's total revenues for 1960 were \$71,200,563 as against \$70,998,219 for BPA only. For this reason the percentage ratio of each item to the total as shown in this schedule will differ slightly from the percentage ratios shown in schedules based upon the total power system.

In total, the forecast for 1961 is for a decrease in gross revenues of approximately \$750,000 from the actual gross revenues for fiscal year 1960. Energy sales are expected to decline by about \$1,700,000, but this will be in large part offset by an anticipated rise of nearly \$1,000,000 in revenues from wheeling services.

Total revenues of approximately \$71,000,000 for 1960 were \$3,500,000 below the forecast that was made for the year in the 1959 Annual Report. The industries did not increase operations, particularly through the use of nonfirm energy, nearly as much as was expected, although substantial energy supplies were available on a nonfirm contractual basis. Also, the distributor customers, both the privately owned utilities and the public agencies, fell below the estimate because of good water conditions on their own systems and the availability--in some cases ahead of schedule--of new non-Federal sources of supply.

Industrial Sales

Electrometallurgical and electrochemical industrial plants requiring large blocks of low-cost power are an important source of revenues to the U. S. Columbia River Power System. A list of the industrial customers other than Federal agencies is given in table 11, together with data on the location, products and plant capacities in terms of electrical requirements. As of June 30, 1960, the Bonneville Power Administration was selling power directly to the 19 industrial customers listed in table 11.

Sales to these large power-consuming industries have constituted an important portion of the Administration's total business. However, the portion of total sales obtained from industrial business has declined considerably in the last 15 years. For example, in 1945 sales to industries including Federal agencies were 69.83 percent of gross revenues compared

TABLE 11
 Summary load data for industrial customers served
 directly by the Bonneville Power Administration
 as of June 30, 1960

Company	Location	Products	Number potlines or furnaces	Total plant capacity (MW)	BPA firm contract demand (MW)	Power purchases June 30, 1960			
						BPA firm (MW)	BPA in- terrupt (MW)	Outside sources (MW)	Total (MW)
Alcoa	Vancouver	Aluminum pig rod, wire & extrusions	5	210.0	136.0	136.0	17.0	15.0 1/	168.0
Alcoa	Wenatchee	Aluminum pig	4	200.0	120.0	120.0	3.8	25.0 2/	148.8
Anaconda	Columbia Falls	Aluminum pig	2	127.8	111.0	111.0	10.4	.0	121.4
Carborundum	Vancouver	Silicon carbide	4 sets	28.7	18.7	18.7	9.3	.0	28.0
Crown Zellerbach	Port Angeles	Pulp & paper	—	40.0	6.2	5.8	.0	13.8 3/	19.6 4/
Hanna Nickel Smelting Co.	Riddle	Ferro-nickel	4 melting	71.0	67.1	67.1	3.9	.0 5/	71.0
Harvey Aluminum	The Dalles	Aluminum pig	2	132.0	60.6	60.6	67.2	.0	127.8
Kaiser Aluminum Reduction	Spokane	Aluminum pig	8	370.0	204.0	254.0 6/	26.8	.0	280.8
Kaiser Aluminum Fabrication	Spokane	Aluminum sheet & fabricated products	—	45.0	35.8	35.8	3.0	.0	38.8
Kaiser Aluminum Reduction	Tacoma	Aluminum pig	2	85.0	50.0	.0 6/	.0	.0	.0
Keokuk	Rock Island	Ferro-silicon	4	30.0	7.3	7.3	7.8	14.7 7/	29.8
Pacific Northwest Alloys	Spokane	Ferro-chrome	4 8/	37.2	13.0	0.9 9/	.0	.0	0.9
Pacific Carbide & Alloys	Portland	Calcium carbide	1	6.5	5.0	5.0	.0	.0	5.0
Pennsalt Co.	Portland	Chlorine, caustic soda, ammonia	2 lines	29.1	19.6	19.6	8.0	.0	27.6
Rayonier	Port Angeles	Pulp	—	16.0	3.3	3.3	3.7	.0	7.0 10/
Reynolds	Longview	Aluminum pig	3	132.0	132.0	132.0	.0	.0	132.0
Reynolds	Troutdale	Aluminum pig	4	189.0	85.1	77.7 11/	0.5	66.5 12/	144.7
Union Carbide Metals Co.	Portland	Ferro-manganese	4	30.1	9.0	9.0	7.9	.0	16.9
Victor Chemical	Silver Bow	Phosphorus	2	50.0	38.1	38.1	10.9	.0	49.0
Total				<u>1,829.4</u>	<u>1,121.8</u>	<u>1,101.9</u>	<u>180.2</u>	<u>135.0</u>	<u>1,417.1</u>

1/ Purchased from City Light of Seattle under a firm contract. Seattle obtains the power from the Box Canyon Plant of Pend Oreille PUD.

2/ 15 MW are Box Canyon power purchased from City Light of Seattle and 10 MW are purchased from Chelan PUD. Suppliers may interrupt service during peak load periods.

3/ Purchased from City of Port Angeles.

4/ Also obtains power from its own generation.

5/ Purchases from California Oregon Power Co. approximately 3 MW under separate contract for wheel turning and other low load factor usage.

6/ The 50 MW contract demand for the Tacoma plant (which is presently shut down) has been shifted by agreement with BPA to the Spokane plant.

7/ Purchased from Douglas County PUD.

8/ Also have vacuum furnaces.

9/ Plant temporarily on standby because of depressed steel market.

10/ Also obtains power from its own generation.

11/ Includes temporary partial curtailment of firm deliveries.

12/ Purchased from California Oregon Power Co. under a firm contractual arrangement.

with 39.22 percent in 1960. For the aluminum industry alone, the ratio has declined from 51.49 percent to 24.59 percent during the same period. The actual dollar volume of sales to both the aluminum and other industries has increased during this time but not so rapidly as the Administration's total sales. 1/

The dollar volume of firm power sales to the aluminum and other industries has increased every year for the last several years, but the volume of secondary power sales to the industries has dropped substantially. The aluminum companies increased their firm power purchases about \$1,100,000 in 1960 but the nonfirm purchases showed a decrease from the prior year in keeping with the trend over the past few years.

*Industrial
Loads*

Summarized Table 11 summarizes the load data for the industrial customers served by the Administration. The data are as of June 30, 1960. Changes occur from day to day as the companies increase or decrease their operations, particularly by the use of secondary energy.

The Administration's industrial customers have, in the aggregate, an estimated capacity to use power at the rate of approximately 1,829,400 kilowatts, as shown in table 11. As of June 30, 1960, their power purchases from the Government and other sources totaled 1,417,100 kilowatts. Hence, idle capacity was 412,300 kilowatts.

A total of 1,101,900 kilowatts was being purchased from the Government under firm contracts and 180,200 kilowatts on an interruptible supply basis. The remaining 135,000

1/ The percentages cited in this paragraph differ slightly from those in chart 9 for the reason given in the footnote on table 10.

kilowatts were being purchased from outside sources. A good portion of 412,300 kilowatts of idle capacity has, in earlier years, been served by the Administration on an interruptible power supply basis in addition to the 180,200 kilowatts being so served as of June 30, 1960.

As of June 30, 1960, there was substantially no curtailment of firm power loads by the industrial customers. One plant with a firm contract demand of 13,000 kilowatts was on standby on June 30, 1960, because of the depressed steel market and therefore was taking very little of its firm power entitlement. One aluminum plant with a firm contract demand of 85,100 kilowatts was taking only 77,700 kilowatts of firm power, a curtailment of 7,400 kilowatts. Total industrial firm power purchases were only 19,900 kilowatts below total industrial firm contract demands. However, since June 30, 1960, one aluminum company has shut down another potline and a few other industrial customers have increased or decreased plant operations by small amounts. Consequently, as of November 3, 1960, firm power curtailed by these customers totals 72,700 kilowatts as compared with 19,900 kilowatts as of June 30.

Assets & Liabilities

A statement of the combined assets and liabilities of the U. S. Columbia River Power System and Related Activities as of June 30, 1960, is given in table 12. The statement shows data in total and separately for the amounts allocated to power. The "related" activities consist principally of irrigation, flood control, and navigation.

As of June 30, 1960, the total fixed plant investment was \$2.3 billion. Of this total, \$168,000,000 represented work in progress at projects under construction for which no allocation of costs has been made in the balance sheet. Of the remaining fixed plant investment, \$1.6 billion was allocated to power, \$376,000,000 to irrigation, \$89,000,000 to flood

TABLE 12
**U. S. COLUMBIA RIVER POWER SYSTEM
 AND RELATED ACTIVITIES**
 Statement of combined assets and liabilities
 as of June 30, 1960

<u>Assets</u>	<u>Total</u>	<u>Amount allocated to power</u>	<u>Liabilities</u>	<u>Total</u>	<u>Amount allocated to power</u>
FIXED ASSETS (Plant):			Investment of U. S. Government:		
Commercial power	\$1,618,184,972	\$1,618,184,972	Congressional appropriations	\$2,489,309,274	\$1,750,353,038
Irrigation	375,972,361	—	Cost of materials and services furnished by other Federal agencies, net	25,057,606	21,634,751
Flood control	89,305,725	—	Interest on Federal investment:		
Navigation	77,576,458	—	Charged to operations	281,380,293	250,752,180
Fish and Wildlife	1,165,888	—	Charged to construction	94,642,529	78,609,283
Multipurpose projects under construction 1/	167,942,327	—	Revenues transferred to continuing fund	1,833,035	1,833,035
Total	<u>2,330,147,731</u>	<u>1,618,184,972</u>	Total investment of U. S. Government	<u>2,892,222,737</u>	<u>2,103,182,287</u>
Less accumulated depreciation:			Less funds returned to U. S. Treasury:		
Commercial power	181,921,438	181,921,438	Repayment of Federal investment in the power program	717,150,287	717,147,770
Irrigation	1,096,139	—	Repayment of Federal investment in nonpower program	19,612,530	—
Flood control	3,788,584	—	Expense of flood control operations...	14,918,829	—
Navigation	6,425,985	—	Expense of navigation operations ...	34,010,982	—
Total	<u>193,232,146</u>	<u>181,921,438</u>	Other nonreimbursable expenses	1,807,965	—
Original cost, net	<u>2,136,915,585</u>	<u>1,436,263,534</u>	Total	787,500,593	717,147,770
CURRENT ASSETS:			Net investment of U. S. Government	<u>2,104,722,144</u>	<u>1,386,034,517</u>
Unexpended funds	34,458,500	23,585,821	ACCUMULATED NET REVENUES:		
Special deposits	1,138,240	766,029	Net revenues from commercial power operations	84,455,605	84,455,605
Accounts receivable:			Less net loss from irrigation operations..	3,881,182	—
Customers	10,390,953	10,390,953	Total	80,574,423	84,455,605
Other	1,074,432	367,177	Total investment	<u>2,185,296,567</u>	<u>1,470,490,122</u>
Materials and supplies	6,295,725	5,820,879	CURRENT AND ACCRUED LIABILITIES:		
Total	<u>53,357,850</u>	<u>40,930,859</u>	Accounts payable	13,156,952	6,264,369
OTHER ASSETS AND DEFERRED CHARGES			Employees' accrued leave	2,261,177	2,261,177
	13,486,229	2,472,319	Total	15,418,129	8,525,546
Total assets			Deferred credits	469,587	469,587
	<u>\$2,203,759,664</u>	<u>\$1,479,666,712</u>	Matured installments of fixed obligations for use of irrigation facilities	1,888,644	—
			Contributions in aid of construction ...	686,737	181,457
			Total liabilities	<u>\$2,203,759,664</u>	<u>\$1,479,666,712</u>

1/ Consists of expenditures to June 30, 1960 for projects having no generators in service. These projects are John Day, Ice Harbor, Cougar and Hills Creek. Ultimately the cost of these projects will be allocated among purposes, including commercial power.

control, \$78,000,000 to navigation, and \$1,000,000 to fish and wildlife activities. The investment allocated to power is repayable with interest from power revenues. The investment allocated to irrigation is repayable without interest and will be returned in part by the water users but primarily by power revenues. Amounts assigned to other activities are not directly reimbursable but are covered by benefits afforded the public as the result of such activities.

Table 13 presents a breakdown of the plant investment by project and shows the amount for each project allocated to nonpower and power purposes. The amount of the nonpower allocation is further detailed in the footnote to show the amount by activity for both specific facilities and the portion of joint facilities allocated to each nonpower purpose. The amount of joint facility costs allocated to nonpower purposes is less than 10 percent of the total plant investment for all purposes.

*Repayment of
the Federal
Investment*

The fixed plant facilities of the Bonneville Power Administration have an estimated average service life of 35 years. ^{2/} Accordingly, the Administration has adopted a policy of returning to the U. S. Treasury each year's additional investment in fixed plant facilities with interest over the ensuing 35 years. However, the hydroelectric generating plants have a substantially longer estimated average service life because of different physical characteristics of the bulk of such investment. Broadly speaking, the payout plan for the generation investment is 50 years after the in-service dates of the properties. In addition to these sched-

^{2/} Recent studies indicate that the average may be somewhat more than 35 years but no change in the amortization plan has been adopted as of the present time.

TABLE 13
U. S. COLUMBIA RIVER POWER SYSTEM
 Summary of amount and allocation of investment in fixed assets
 (Plant accounts)
 as of June 30, 1960

Operating projects only

Project	Total	Allocation 2/			
		Nonpower 1/		Power 3/	
		Amount	Percent	Amount	Percent
Bonneville Power Administration	\$ 479,913,364			\$ 479,913,364	100.0
Bonneville Dam	87,370,015	\$ 27,368,312	31.3	60,001,703	68.7
Columbia Basin (Grand Coulee)	535,221,555	334,721,959	62.5	200,499,596	37.5
Hungry Horse	106,085,891	22,664,883	21.4	83,421,008	78.6
Albeni Falls	31,786,004	297,694	0.9	31,488,310	99.1
McNary	305,504,210	26,308,099	8.6	279,196,111	91.4
Detroit - Big Cliff	65,962,202	24,217,076	36.7	41,745,126	63.3
Lookout Point - Dexter	93,932,986	52,078,030	55.4	41,854,956	44.6
Chief Joseph	157,488,225	2,486,408	1.6	155,001,817	98.4
Yakima (Chandler and Roza)	36,307,009	32,089,095	88.4	4,217,914	11.6
The Dalles	<u>262,633,943</u>	<u>21,788,876</u>	8.3	<u>240,845,067</u>	91.7
Total plant	<u>\$2,162,205,404</u>	<u>\$544,020,432</u>	25.2	<u>\$1,618,184,972</u>	74.8
Less combined reserve for depreciation				<u>181,921,438</u>	
Total less reserve				<u>\$1,436,263,534</u>	

1/ Segregation of nonpower by purpose:

	Specific facilities	Allocation of joint facilities	Total	Percent
Irrigation	\$292,965,727	\$ 83,006,634	\$375,972,361	69.11
Flood control		89,305,725	89,305,725	16.42
Navigation	43,192,111	34,384,347	77,576,458	14.26
Other	1,165,888		1,165,888	.21
Total	<u>\$337,323,726</u>	<u>\$206,696,706</u>	<u>\$544,020,432</u>	<u>100.00</u>

2/ Allocations are tentative or interim except for Bonneville, Grand Coulee, Hungry Horse, Albeni Falls, Yakima and BPA.

3/ These are the percentages of total project costs, not just the joint costs.

ules for the amortization of the power investment, a substantial portion of the investment allocated to irrigation exceeds the repayment ability of the water users and must be returned to the U. S. Treasury from commercial power revenues.

*Department
Repayment
Policy*

The policy of the Department of the Interior contemplates the repayment of this irrigation investment within 50 years after each block of land receives water. In order to comply with the repayment policies for power and irrigation investment, it is necessary in some instances, notably the Columbia Basin project, to repay the power investment in substantially less than 50 years in order to provide for the return of the irrigation investment within its established payout period. Specifically, the power investment at the Columbia Basin project is scheduled to be repaid by fiscal year 1976, or only approximately 24 years after the 18th and last generator unit was placed in service at Grand Coulee Dam in September of 1951, that is, fiscal year 1952.

Table 14 summarizes as of June 30, 1960, the status of repayment of the commercial power investment. Total cash receipts returned to the Treasury have exceeded \$717,000,000. These receipts are applied first to the repayment of expenses for operation, maintenance, administration and interest, all of which had aggregated approximately \$429,000,000, thereby leaving net receipts of approximately \$288,000,000 applied to return of the capital investment. This repayment of the capital investment exceeded the scheduled repayment at June 30, 1960, by \$53,000,000.

*Results on
Payout
Basis*

Financial results on a payout basis for fiscal year 1960 and cumulative through

TABLE 14
U. S. COLUMBIA RIVER POWER SYSTEM
 Summary of investment in operating projects
 allocated to commercial power and status of repayment
 as of June 30, 1960

Operating projects only 1/

<u>Payout data</u>	<u>Gross investment</u>	<u>Repayments</u>	<u>Net investment</u>
Investment in current expenses:			
Operation, maintenance, etc. 2/	\$ 178,644,021	\$178,644,021	\$ —
Interest 3/	<u>250,752,180</u>	<u>250,752,180</u>	<u>—</u>
Total current expenses	<u>429,396,201</u>	<u>429,396,201</u>	<u>—</u>
Capital investment:			
Invested capital 4/	1,650,200,265	287,751,569	1,362,448,696
Unexpended (uninvested) appropriations	<u>23,585,821</u>	<u>—</u>	<u>23,585,821</u>
Gross capital investment	<u>1,673,786,086</u>	<u>287,751,569</u>	<u>1,386,034,517</u>
Total Federal investment	<u>\$2,103,182,287</u>	<u>\$717,147,770</u>	<u>\$1,386,034,517</u>

- 1/ Consists of Bonneville Dam, Columbia Basin Project, Hungry Horse, Albeni Falls, Detroit-Big Cliff, Lookout Point-Dexter, McNary, Chief Joseph, Yakima (Kennewick & Roza), The Dalles projects and Bonneville Power Administration. Excluded are Ice Harbor, Cougar, Hills Creek and John Day, which were under construction but with no generator units in service as of June 30, 1960.
- 2/ Table 8 on an accumulated basis to June 30, 1960 shows expenses of operation, maintenance, etc., in the amount of \$203,134,035 as against the total of \$178,644,021 shown above. The data on Table 8 are accrued cost accounts including noncash exchange account transactions and the capital costs of abandoned projects written off to expense. These items account for the difference in the total expense shown on Table 8 from the total shown in this table which is prepared on a cash payout basis. For the same reason this table uses as gross repayments only the actual cash receipts of \$717,147,770 as against total accrued operating revenues of \$735,771,823 shown on Table 8. The difference between the accrued revenues and the cash receipts consists of noncash exchange account transactions included in accrued revenues and uncollected accounts receivable on hand as of June 30, 1960.
- 3/ The Columbia River Power System does not make actual payments for interest either from appropriations or revenues, but imputes and includes in its accounts provisions for interest expense and applies receipts returned to the Treasury in repayment of such expenses.
- 4/ The invested capital consists primarily of the fixed plant account allocated to power in the amount of \$1,618,184,972 including interest during construction, together with inventories and other miscellaneous assets, less funds received from non-Federal sources such as trade creditors represented by accounts payable and other accrued liabilities such as employees' accrued leave.

June 30, 1960, are shown for each individual project and the system in total in table 15. Each project had cash receipts, including power revenues allocated to the projects from the sale of power by the Bonneville Power Administration, sufficient to cover the year's out-of-pocket expenses for operation, maintenance and interest and leave a balance of net receipts available for amortization of the capital investment. For the system as a whole, the balance available for amortization was \$18,700,000. Scheduled amortization of \$30,300,000 exceeded the net receipts available by \$11,600,000. However, on a cumulative basis through June 30, 1960, the available receipts exceeded amortization requirements by \$53,000,000.

A number of the generating projects in the power system have been in operation but a comparatively short time. However, for the older projects, namely, Bonneville Dam and the Columbia Basin project, and for the Bonneville Power Administration a substantial portion of the power capital investment has been repaid. These data are shown at lines 13 to 18, inclusive, on table 15. For Bonneville Dam 45.30 percent of the power capital investment has been repaid. The corresponding ratios were 38.20 percent for the Columbia Basin project and 24.85 percent for the Bonneville Power Administration. For the combined power system, 17.44 percent of the power capital investment had been repaid.

*Reconciliation
of Cost & Payout
Statements*

The financial statements set forth in tables 8, 9, 12 and 13 are based on the accounts and records kept in accordance with the Federal Power Commission's system of accounts for electric utilities. This is the conventional accrual accounting system followed by the power industry which provides for the recovery of the fixed plant investment through provisions for depreciation expense rather than by amortization of the capital investment. In

TABLE 15
U. S. COLUMBIA RIVER POWER SYSTEM
 Summary of status of repayment of Federal power investment
 Cumulative total to June 30, 1960
 (Payout data)

Line No.	Item	Operating projects only											Total generating projects	Bonneville Power Administration	Columbia River Power System total	
		Bonneville Dam	Columbia Bosin Project	Hungry Horae	Albeni Falls	McNary	Detroit - Big Cliff	Lookout Point - Dexter	Chief Joseph	Yakima - Kennewick & Roza	The Dalles					
1.	Project cash receipts, F.Y. 1960	\$ 11,068	\$ 37,601	\$ 15,314	\$ 15,897	\$ 90,126	\$ -	\$ -	\$ 209,145	\$ 5,347	\$ 3,486	\$ 387,984	\$ 69,430,945	\$ 69,818,929	1/	
2.	Revenues allocated to projects from BPA sales	2,100,000	12,800,000	3,833,000	1,400,000	9,000,000	1,700,000	1,700,000	6,500,000	345,000	7,700,000	47,078,000	(47,078,000)	-		
3.	Total project cash receipts . .	<u>2,111,068</u>	<u>12,837,601</u>	<u>3,848,314</u>	<u>1,415,897</u>	<u>9,090,126</u>	<u>1,700,000</u>	<u>1,700,000</u>	<u>6,709,145</u>	<u>350,347</u>	<u>7,703,486</u>	<u>47,465,984</u>	<u>22,352,945</u>	<u>69,818,929</u>	1/	
4.	Less:															
5.	Expenses of operation, maintenance, etc.	1,069,981	2,530,165	455,658	278,888	1,570,060	329,775	281,338	1,060,381	72,203	1,119,745	8,768,194	10,577,426	19,345,620		
6.	Interest expense	841,293	3,342,667	1,848,705	725,619	6,458,407	952,512	973,760	3,766,744	61,522	4,476,290	23,447,519	8,317,321	31,764,840		
7.	Total deductions	<u>1,911,274</u>	<u>5,872,832</u>	<u>2,304,363</u>	<u>1,004,507</u>	<u>8,028,467</u>	<u>1,282,287</u>	<u>1,255,098</u>	<u>4,827,125</u>	<u>133,725</u>	<u>5,596,035</u>	<u>32,215,713</u>	<u>18,894,747</u>	<u>51,110,460</u>		
8.	Net cash receipts available for amortization	199,794	6,964,769	1,543,951	411,390	1,061,659	417,713	444,902	1,882,020	216,622	2,107,451	15,250,271	3,458,198	18,708,469		
9.	Less scheduled amortization . . .	1,120,000	6,964,769	1,543,951	434,000	3,715,000	574,000	555,000	2,062,000	216,622	2,259,000	19,444,342	10,856,000	30,300,342		
10.	Amortization in excess of schedule for fiscal year 1960 . .	(920,206)	-	-	(22,610)	(2,653,341)	(156,287)	(110,098)	(179,980)	-	(151,549)	(4,194,071)	(7,397,802)	(11,591,873)	1/	
11.	Amortization in excess of schedule as of 6-30-59	11,282,288	-	-	582,188	7,072,194	939,413	711,339	1,048,924	-	(239,627)	21,396,719	43,251,727	64,648,446		
12.	Amortization in excess of Schedule as of 6-30-60	<u>\$10,362,082</u>	<u>-</u>	<u>-</u>	<u>\$ 559,578</u>	<u>\$ 4,418,853</u>	<u>\$ 783,126</u>	<u>\$ 601,241</u>	<u>\$ 868,944</u>	<u>-</u>	<u>\$ (391,176)</u>	<u>\$ 17,202,648</u>	<u>\$ 35,853,925</u>	<u>\$ 53,056,573</u>	1/	
13.	Total power capital investment	\$60,885,253	\$207,888,426	\$84,470,860	\$31,557,462	\$280,214,960	\$41,991,579	\$41,926,327	\$155,805,555	\$4,232,110	\$241,660,160	\$1,150,632,692	\$523,153,394	\$1,673,786,086		
14.	Less unexpended appropriations	424,236	391,964	36,865	73,686	761,973	44,128	59,186	424,523	18,448	971,355	3,206,364	20,373,457	23,585,821		
15.	Invested capital	60,461,017	207,496,462	84,433,995	31,483,776	279,452,987	41,947,451	41,867,141	155,381,032	4,213,662	240,688,805	1,147,426,328	502,773,937	1,650,200,265		
16.	Less amortization to June 30, 1960	27,389,081	79,272,433	11,130,263	2,859,576	22,515,853	4,358,126	3,391,241	7,520,944	647,303	3,744,824	162,829,644	124,921,925	287,751,569	1/	
17.	Remainder to be amortized	<u>\$33,071,936</u>	<u>\$128,224,029</u>	<u>\$73,303,732</u>	<u>\$28,624,200</u>	<u>\$256,937,134</u>	<u>\$37,589,325</u>	<u>\$38,475,900</u>	<u>\$147,860,088</u>	<u>\$3,566,359</u>	<u>\$236,943,981</u>	<u>\$984,596,684</u>	<u>\$377,852,012</u>	<u>\$1,362,448,696</u>		
18.	Percentage repaid (line 16 ÷ line 15)	45.30%	38.20%	13.18%	9.08%	8.06%	10.39%	8.10%	4.84%	15.36%	1.56%	14.19%	24.85%	17.44%		

() Denotes red figures.

Note: Data on this schedule are from payout accounts. See schedules 3 and 4 of Auditors' Report for fiscal year 1960.

1/ These figures differ from corresponding data on schedules 3 and 4 of the Auditors' Report by \$2517, the amount of cash receipts at Ice Harbor of \$346 on a cumulative basis, and at the John Day project in the amount of \$2171. These projects are not yet in operation and are therefore excluded from this schedule.

brief, provisions for depreciation expense are designed to recover the nonsalvageable investment in fixed capital assets over the estimated useful service lives of the physical plant. In the Federal power system amortization plan, however, the fixed capital investment is scheduled for recovery during the payout periods previously described, namely, 35 years for the transmission facilities and 50 years for the power and irrigation facilities.

Tables 14 and 15 have presented data on the so-called payout basis. For this purpose cash receipts are used rather than accrued revenues which are used in the cost accounting financial statements. Also, in the payout schedules the operation and maintenance expenses have been adjusted to eliminate major noncash accruals, that is, items settled on a net basis through payments in kind or offsetting services. Otherwise, the data in these schedules are on an accrual, not a cash, basis. Moreover, the payout data substitute amortization for depreciation as the measure of recovery of the fixed capital investment. A comparison of the financial results of operations on these two bases for fiscal year 1960 is given in table 16. Accrued revenues exceeded cash receipts by \$1,381,634. This difference is analyzed in the explanation at the bottom of the schedule. Accrued revenues must be adjusted for changes in accounts receivable, for noncash exchange account transactions, and for cash receipts arising out of transactions not reflected in the current year's revenue and expense statement. These latter items, in other words, are solely balance sheet transactions.

*Cost & Payout
Accounts*

Operation and maintenance expenses in the accrued cost accounts exceeded the amount in the payout accounts by \$1,716,006. This consists principally of the elimination of

TABLE 16
U. S. COLUMBIA RIVER POWER SYSTEM
Comparison of financial results of operation for
fiscal year 1960
on cost and payout bases

Line No.	Cost data from schedule 1 1/ and other sources	Payout data from schedule 4 1/	Difference
1.	Revenues – BPA	\$70,998,220	–)
2.	Cash receipts – BPA	–	\$ 69,430,945)
3.	Revenues – other projects	202,343	–)
4.	Cash receipts – other projects	–	387,984 2/)
5.	Total	<u>71,200,563</u>	<u>69,818,929</u>
6.	Less:		
7.	Operation, maintenance, etc., expenses	21,061,626	19,345,620
8.	Interest	31,764,840	31,764,840
9.	Depreciation	26,860,113	–)
10.	Scheduled amortization	–	30,300,342)
11.	Total deductions	<u>79,686,579</u>	<u>81,410,802</u>
12.	Net results	<u>\$(8,486,016)</u>	<u>\$(11,591,873)</u>
			<u>\$ 3,105,857</u>

(–) Denotes red figures.

1/ Schedule numbers refer to schedules in the General Accounting Office Auditors' Report for 1960.

2/ Excludes \$2,170 of cash receipts at John Day Project which is not yet in operation.

Explanation:

The difference between BPA revenues and cash receipts consists principally of receivables, exchange account transactions and miscellaneous receipts. Specifically, the reconciliation is as follows:

BPA revenues	\$70,998,220
Less: Increase in the customers' accounts receivable	\$1,266,330
Non-cash exchange account revenues	1,165,207
Total deductions	<u>2,431,537</u>
Subtotal	68,566,683
Add: Cash receipts transferred for provisional sales	703,235
Net decrease in accrued utility revenue and exchange account balances	41,060
Miscellaneous general fund receipts arising out of non-revenue transactions	<u>119,967</u>
Total additions	864,262
Total BPA cash receipts	<u>\$69,430,945</u>

the noncash exchange account transactions. Interest expense is the same in both the cost and payout schedules.^{3/} However, the scheduled amortization exceeded provisions for depreciation expense by \$3,440,229. This results from the fact that the amortization plan provides for the recovery of the capital investment on the average in a somewhat shorter period of time than the average service lives which form the basis for depreciation accounting.

3/ The payout data presented in the various tables in this report are developed from the accrued cost accounting data by means of the adjustments mentioned above in regard to cash receipts and noncash exchange account transactions. In the case of the reclamation projects the cost accounts are based on memorandum records rather than the official accounts and records of the projects. The memorandum accounting has been by agreement with the Bonneville Power Administration to permit the presentation of combined financial statements on a cost accounting basis.

These, in turn, have been used as a basis for the payout schedules presented in the report, but payout results on this basis will not agree precisely with the official payout results reflected in the official rate and repayment schedules of the Bureau of Reclamation. For example, the latter are based upon an interest rate of 3 percent, except for the Kennewick division of the Yakima project, rather than 2½ percent used in the cost accounts.

Also, interest is computed somewhat differently in the two sets of accounts and there are other differences between them such that the results shown in this report are not to be construed as the official data in the case of reclamation projects. However, the presentation is satisfactory in terms of the approximate order of magnitude of the power capital investment repaid.

A D D E N D U M

Financial Report

Accounting and Reporting Requirements

As both a business-type electric power operation and a noncorporate governmental agency, the Bonneville Power Administration and the power generating agencies, namely, the Bureau of Reclamation and the Corps of Engineers, have complex accounting and reporting requirements. The problem is further complicated for the generating agencies inasmuch as they have nonpower functions as well.

The power agencies keep accounts and make reports in accordance with conventional electric power accounting practices, but must also account and report on a payout, that is, amortization basis, and must account and report in terms of obligations and expenditures for the purposes of Federal appropriation and fiscal processes.

Section 9 of the Bonneville Project Act requires that the Bonneville Power Administrator, subject to the requirements of the Federal Power Act, shall keep complete and accurate accounts of operations and shall obtain an annual independent commercial-type audit of such accounts.

The Federal Power Act, in Section 303, requires that all Federal agencies engaged in the generation and sale of electric energy for ultimate disposition to the public shall be subject to the provisions of Sections 301 and 302 of the act "so far as may be practicable" and shall comply with Sections 301 and 302 and with the rules and regulations of the Commission issued pursuant thereto to the same extent as may be required of a public utility. Section 301 gives the Commission jurisdiction over accounts, records and memoranda of licensees and public utilities, including the right of access to inspect and examine such accounts, records and memoranda. Pursuant to this authority the Federal Power Commis-

sion has prescribed a uniform system of accounts for public utilities and licensees. Section 302 gives the Federal Power Commission jurisdiction over rates of depreciation of the several classes of property of each licensee and public utility. The Commission thus may prescribe rules, regulations and reports as to accounts, records, memoranda and depreciation rates. Federal power agencies are subject to these rules and regulations so far as may be practicable.

Section 111 of the Budget and Accounting Procedures Act of 1950 declares it to be the policy of Congress that:

"(a) The accounting of the Government provide full disclosure of the results of financial operations, adequate financial information needed in the management of operations and the formulation and execution of the Budget, and effective control over income, expenditures, funds, property, and other assets.

"(b) Full consideration be given to the needs and responsibilities of both the legislative and executive branches in the establishment of accounting and reporting systems and requirements.

"(c) The maintenance of accounting systems and the producing of financial reports with respect to the operations of executive agencies, including central facilities for bringing together and disclosing information on the results of the financial operations of the Government as a whole, be the responsibility of the executive branch.

"(d) The auditing for the Government, conducted by the Comptroller General of the United States as an agent of the Congress be directed at determining the extent to which accounting and related financial reporting fulfill the purposes specified, financial transactions have been consummated in accordance with laws, regulations or other legal requirements, and adequate internal financial control over operations is exercised, and afford an effective basis for the settlement of accounts of accountable officers.

"(e) Emphasis be placed on effecting orderly improvements resulting in simplified and more effective accounting, financial reporting, budgeting, and auditing requirements and procedures and on the elimination of those which involve duplication or which do not serve a purpose commensurate with the costs involved.

"(f) The Comptroller General of the U. S., the Secretary of the Treasury, and the Director of the Bureau of the Budget conduct a continuous program for the improvement of accounting and financial reporting in the Government."

The 1950 act also authorizes the Comptroller General of the United States, after consulting the Secretary of the Treasury and the Director of the Bureau of the Budget concerning their accounting, financial reporting and budgetary needs, and considering the needs of other executive agencies, to prescribe the principles, standards and related requirements for accounting to be observed by the agencies in the Executive Department of the Government, including suitable integration between the accounting processes of the agencies and the accounting of the Treasury Department. The act directs the General Accounting Office to cooperate with the executive agencies in the development of their accounting systems. Agency accounting systems are to be approved by the Comptroller General when he deems them to be adequate and in conformity with the principles, standards and related requirements prescribed by him.

Public Law 863 of the 84th Congress, approved August 1, 1956, (70 Stat. 782) contains additional directives with respect to accounting by Federal agencies. One requirement is that the accounts be maintained on an accrual basis of accounting. The agencies are directed to use cost-based budgets in support of appropriation requests and for internal agency administration and operation. Moreover, there shall be, insofar as possible, consist-

ency in the accounting and budget classifications of each agency, synchronization between such classifications and the agency's organizational units, and simplification of the administrative control of funds through the allotment system. Despite these directives for accrual-type cost accounting and reporting, the agencies also must account in terms of obligations and expenditures to support requests for appropriations and for purposes of the administration of appropriated funds and reporting status of appropriations.

As distinguished from accruals and expenditures (checks drawn), obligations consist of commitments made through the execution of contracts, the placing of orders, etc. Obligations precede expenditures and often precede original entries in books of account kept on an accrual basis. For example, an order placed for a transformer is an obligation at the time the order is placed, but it does not get into the accrual accounts until delivered to the purchaser or the purchaser receives the invoice. At that time the equipment may be "costed", that is, charged to a work order, or it may be charged to inventory, an asset account, and not charged to construction costs until subsequently issued from the warehouse to a work order. The actual expenditure to liquidate the obligation, that is, to pay the vendor for the equipment, may take place at a still later date.

Bonneville Power Administration has adopted a detailed activity accounting system that meets all of these accounting and reporting requirements except that the amortization accounts are on a purely memorandum basis. The formal accounts include provisions for depreciation computed on a straight-line basis rather than amortization accounts.

The Corps of Engineers for the projects in the U. S. Columbia River Power System also follows the Federal Power Commission's system of accrual cost accounting, including provisions for

depreciation expense, and maintains accounts and records adequate to meet the governmental fiscal year requirements.

The Bureau of Reclamation, for the projects in the U. S. Columbia River Power System, has an accrual cost accounting system including procedures to comply with Federal fiscal requirements, and this accounting system, which has been approved by the General Accounting Office, is designed to meet the special requirements of the reclamation laws, including accounting for irrigation and other nonpower functions, and does not conform in all particulars with the conventional electric utility accounting system of the Federal Power Commission. For example, the official accounts and records of the reclamation projects do not include depreciation accounting and interest during construction because these matters are outside the Bureau's requirements. Moreover, the official accounts and rate and repayment studies of the reclamation projects in the U. S. Columbia River Power System compute interest on the power investment at 3 percent per annum 1/ rather than 2 1/2 percent, the rate used in the memorandum cost accounts referred to in the next paragraph.

In order to provide for reporting of the combined results of operations of all of the projects in the U. S. Columbia River Power System on a uniform basis, the Bureau of Reclamation maintains auxiliary memorandum accounts to include such matters as provision for depreciation expense, interest during construction, and interest charges computed at 2 1/2 percent per annum on the power investment. This arrangement for memorandum accounts was

1/ An exception to the 3 percent rate is found in the case of the Kennewick division of the Yakima project for which 2½ percent is the official rate. The act of June 12, 1948, (62 Stat. 382) authorizing the Kennewick division of the Yakima project specifies interest on the power investment at not less than 2½ percent per year and authorizes the application of one-fifth of such interest to repay the irrigation construction costs as signed for return from power revenues.

effected by a memorandum of understanding executed in 1946 by the Bonneville Power Administration and the Bureau of Reclamation.

Inasmuch as official, definitive allocations of the costs of the generating projects, which then consisted only of the Bonneville and Grand Coulee Dams, did not become available until 1945, the Bonneville Power Administration was unable, prior to that time, to make a definite report to the Congress and the public on the financial results of operations. While the accounts and records of the Administration made it possible to determine transmission costs, the absence of cost allocations for the multipurpose projects made it impossible to determine the cost of the power supply.

After the cost allocations became available, the Bonneville Power Administration, with the express approval of the General Accounting Office, arranged for an independent, commercial-type audit of the accounts and records of the projects comprising the U. S. Columbia River Power System by one of the nation's leading accounting and auditing firms. 2/ The audit covered not only fiscal year 1945 but the entire history of the projects from commencement of construction through June 30, 1944, and June 30, 1945.

2/ The Comptroller General, in unpublished Decision No. B-50505 dated June 29, 1945, authorized the Bonneville Power Administration to engage a private auditing firm. In October of 1945 the Congress adopted amendments to the Bonneville Act requiring, among other things, that the Administrator obtain an annual independent commercial-type audit.

The George Act approved February 24, 1945, (59 Stat. 5) required that beginning with the then current fiscal year the financial transactions of all Government corporations were to be audited by the General Accounting Office in accordance with principles and procedures applicable to commercial corporate transactions. The First Deficiency Appropriation Act, 1945, approved April 25, 1945, (59 Stat. 77) authorized the Comptroller General to employ staff to handle the commercial-type audit work and prohibited Government corporations, except where otherwise expressly provided by law, from having audits by private firms.

The Government Corporation Control Act approved December 6, 1945, (59 Stat. 597) set forth extensive provisions with respect to the accounts and budgets of Government corporations. Among other things, this act directed the General Accounting Office to make commercial-type audits of the financial transactions of Government corporations, authorized the Comptroller

The auditors' annual reports, including financial statements, a covering certificate, and footnotes, have been published verbatim each year by the Bonneville Power Administration as part of this Annual Report made pursuant to the requirements of subsection 9(c) of the Bonneville Project Act. The annual audit was made by the independent firm of certified public accountants to and including fiscal year 1952. For 1953 and subsequent fiscal years the annual audit has been made by the General Accounting Office. See footnote 2. The Auditors' Report by the Comptroller General for fiscal year 1960 was not made available as of the time of printing this Annual Report, but it will be printed and made available as a separate document as soon as it is submitted to the Department of the Interior by the Comptroller General.

The accounting and reporting requirements as described herein result in two sets of figures for BPA and Corps of Engineers projects and in three sets of figures for the reclamation projects. First, the so-called cost accounting reports and financial statements are established in accordance with the conventional accrual depreciation cost accounting system prescribed by the Federal Power Commission although, as noted, memorandum accounts are used for this purpose at the reclamation projects. Second, the

General to employ staff for this purpose and provided that such corporations were not to have a private audit unless otherwise expressly authorized by law. The Budget and Accounting Procedures Act of 1950 (64 Stat. 832) included a provision that the financial transactions of each executive, legislative and judicial agency shall be audited by the General Accounting Office in accordance with principles and procedures prescribed by the Comptroller General.

These enactments, although not applicable to noncorporate Government agencies such as Bonneville Power Administration, the Bureau of Reclamation and the Corps of Engineers, set a pattern and led to extensive changes in the audit programs of the General Accounting Office and to the establishment by that office of a staff of accountants and auditors qualified in terms of commercial-type practices and procedures. The Comptroller General subsequently called attention to the fact that his office was in a position to furnish the annual independent commercial-type audit required by the 1945 amendments to the Bonneville Project Act. Effective with fiscal year 1953 when the scope of the audit had to be enlarged to include new projects, such as Hungry Horse and Detroit-Big Cliff, coming into operation, the annual audit of the U. S. Columbia River Power System was taken over by the General Accounting Office.

payout financial statements, for example, tables 14 and 15 of this report and schedule 4 of the Auditors' Report, are set forth on the so-called payout or amortization basis and are supported by memorandum accounts as to the requirements for amortization. ^{3/} Moreover, as indicated in the review of table 16 of this report, the payout statements include certain adjustments of the accrual cost accounts to reflect cash receipts and other items for payout reporting purposes. The payout schedules in this report and in the Auditors' Report are drawn from the cost accounting financial statements, with appropriate adjustments as noted, with the result that in the case of the reclamation projects the official rate and repayment schedules represent a third set of figures.

The problems presented by the different accounting and reporting requirements and the fact that this situation results in two or sometimes three sets of figures for a project have been under careful consideration by the Department of the Interior in cooperation with the Corps of Engineers, the Federal Power Commission, the General Accounting Office, and the Bureau of the Budget. Reference to the provisions of Section 111 of the Budget and Accounting Procedures Act of 1950 quoted above discloses that Congressional policy calls for (1) full disclosure, (2) adequate financial information needed by management, (3) full consideration of the needs of both the legislative and executive branches, and (4) elimination of accounting, reporting and auditing procedures that do not serve a purpose commensurate with the costs involved.

The basic need of Bonneville Power Administration is for accounts and reports that provide information necessary to deter-

^{3/} See table 16 for a comparison of 1960 data on the cost and payout bases.

mine the revenues, that is, the rate levels, required to meet its repayment obligations and which disclose the status of accomplishment of this objective. The basic obligations are the repayment of all expenses of operation, maintenance, administration, marketing, etc., in connection with both generation and transmission, payment of interest on the investment in generation and transmission allocated to power, the amortization of such investment by appropriate payments to the Treasury from power operations, and the repayment of construction costs allocated to irrigation in excess of the repayment ability of the water users. The repayment obligation is thus an amortization rather than a depreciation problem because the repayment periods are essentially arbitrary.

Unlike provisions for depreciation expense, the amortization schedules are not geared to service lives of the various classes of property and make no allowance for net salvage. Inasmuch as the amortization periods generally are shorter than service lives, and since the power repayment obligation includes nonpower costs, that is, assistance to irrigation payout, the repayment obligation of the power operation exceeds "cost" as measured in accordance with generally accepted electric utility depreciation cost accounting. Hence, the payout responsibility governs required rate levels and is the basic obligation that management must meet and with respect to which management must have financial information and must make reports to the Congress and the public.

The accounting and reporting system that has been reflected in Bonneville Power Administration's annual reports and in the annual reports by the auditors has disclosed the financial results of operation measured in accordance with the Federal Power Commission's system of accounts which is followed generally in the electric power business. Supplemental schedules in both sets of

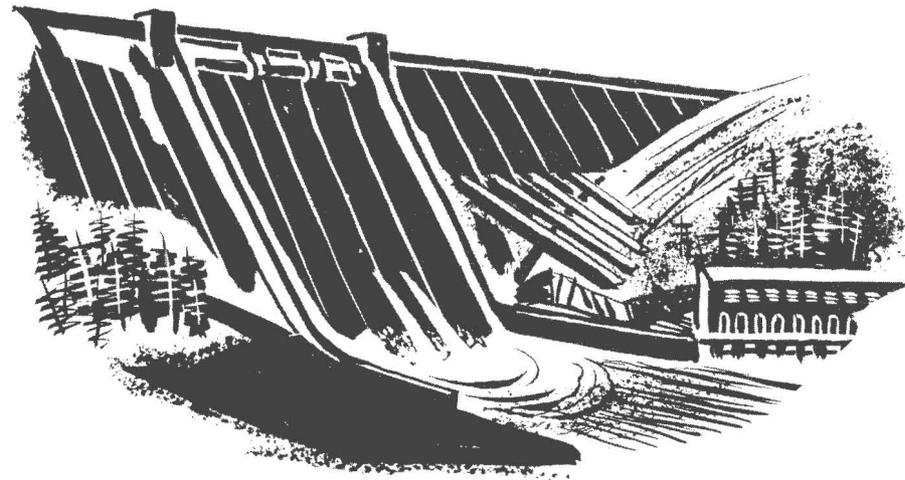
reports have reflected the status of payout of the Federal power program, although as hereinabove explained, these latter results have been derived from the cost accounts, including in some instances, memorandum records rather than the formal, official accounts. Emphasis in these reports has been on the combined financial statements for the power system as a whole, although limited supplemental data have been reported each year on an individual project basis.

In order to simplify accounting and reporting and to obtain data needed for financial and rate management directly from official accounts and records of all the projects, the Department of the Interior has under consideration a proposal to adopt amortization accounting rather than depreciation accounting in the formal official accounting systems. In addition, the Bonneville Power Administration would issue financial statements covering just its operations and would reflect in such statements the amounts of revenues allocated to the generating projects. For example, the statement of revenues and expenses of the Bonneville Power Administration would show gross revenues less amounts allocated to the generating projects, followed by the deduction of expenses for operation, maintenance, marketing, administration and interest, to arrive at net revenues available for the amortization of the investment in transmission facilities.

These results would then be compared with scheduled amortization requirements geared to the Administration's official payout period. Supplementary schedules would be published for each generating project showing its total annual revenues and the application of such returns to the repayment of expenses, including interest, and the amortization of the power capital investment and the irrigation investment assigned for return from power revenues. These project financial reports would be drawn from the

official accounts and records of the generating projects. This plan would result in full disclosure of the financial results of operations and would provide the information needed by management in the administration of rates and charges for sale of power and for other services such as the wheeling of non-Federal power. Moreover, these results would be attained through one set of figures and reports.

If this revised plan of accounting and reporting proves feasible, future annual reports of the Bonneville Power Administration will be on that basis.



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(Office of the Solicitor)

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JOHN M. RATHBUN
Chief of Supply

A. CLYDE LEGGATT
Chief of Administrative Services

^{1/} Additional duty as Director of Personnel

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LESHER S. WING
Federal Power Commission

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National Park Service, San Francisco

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Bureau of Indian Affairs, Portland

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SAMUEL J. HUTCHINSON, Regional Director
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Federal Power Commission

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Clatskanie, Oregon

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Winslow, Harland, Winslow & Gabriel
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Washington State University
Pullman, Washington

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Helena, Montana

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Boise, Idaho

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Montana State Water Conservation Board
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Montana Farmers Union
Kalispell, Montana

Charles R. Smith, Director
AFL-CIO, Region 20
Boise, Idaho

Clay V. Spear
District Judge
Coeur d'Alene, Idaho

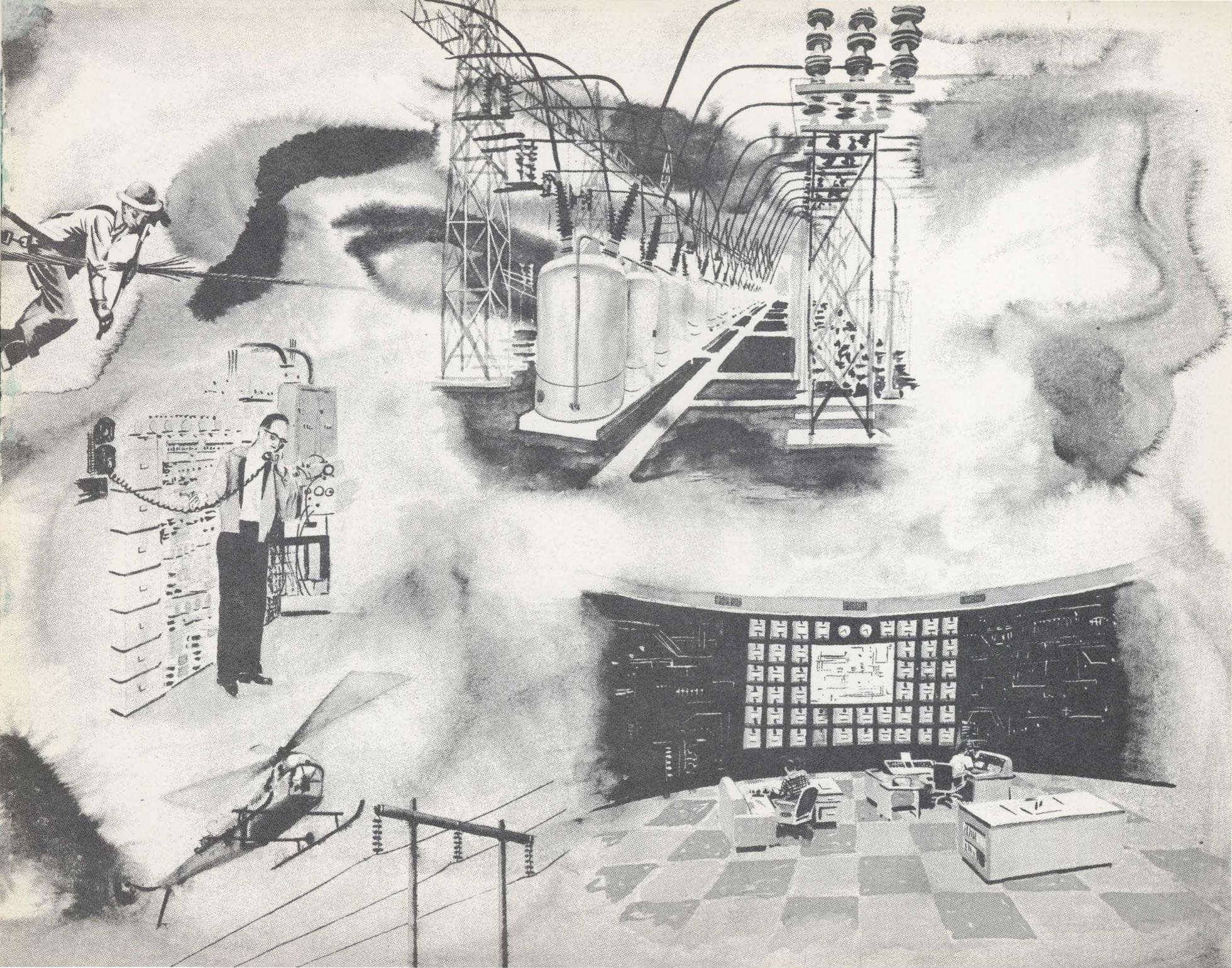
Albert W. Stone, Professor
School of Law
Montana State University
Missoula, Montana

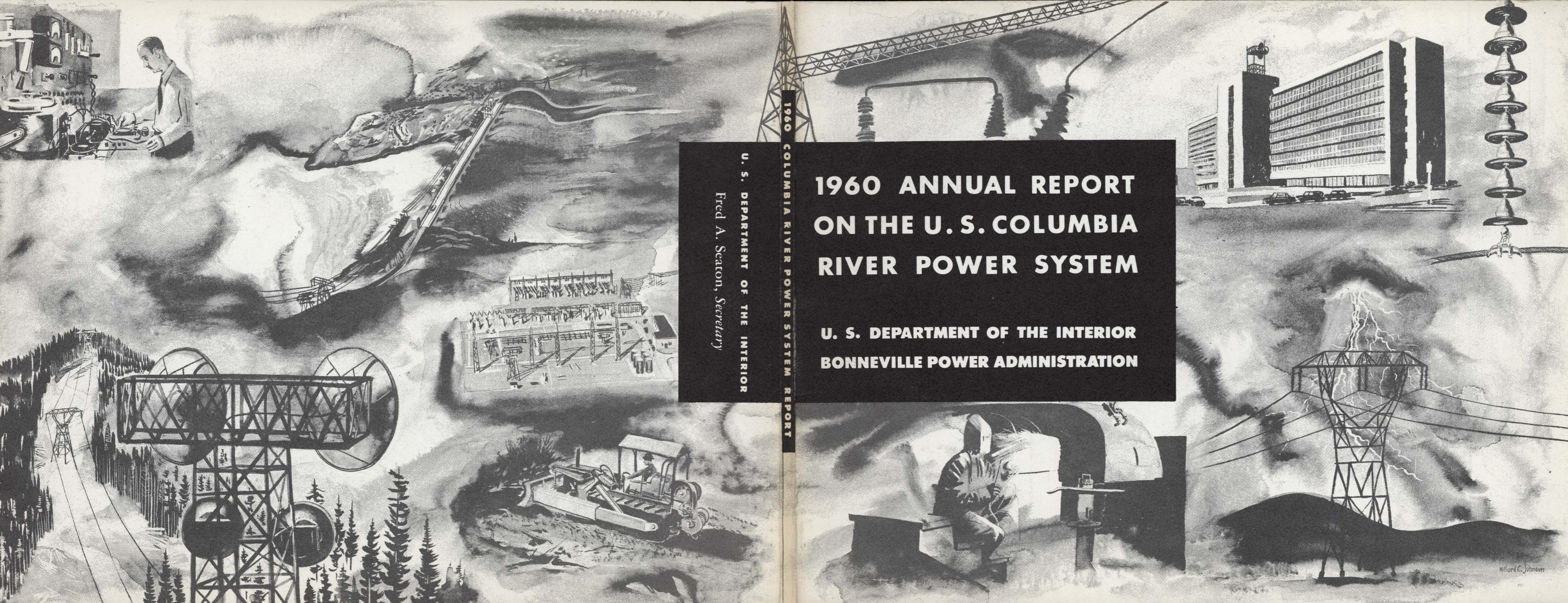
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Helena, Montana

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Coeur d'Alene, Idaho





1960 COLUMBIA RIVER POWER SYSTEM REPORT

U. S. DEPARTMENT OF THE INTERIOR
Fred A. Seaton, Secretary

1960 ANNUAL REPORT ON THE U. S. COLUMBIA RIVER POWER SYSTEM

U. S. DEPARTMENT OF THE INTERIOR
BONNEVILLE POWER ADMINISTRATION

Willard C. Johnson