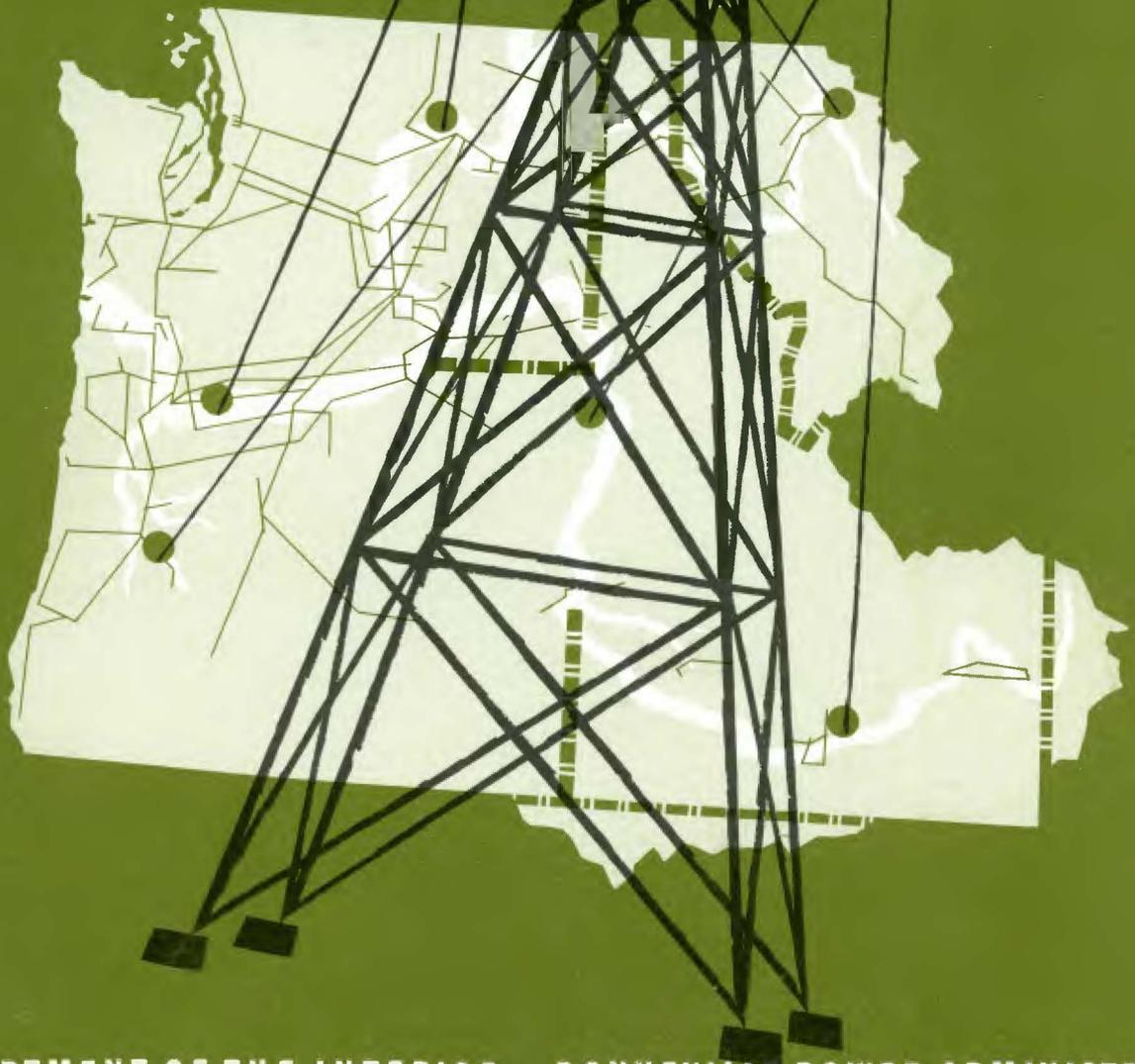
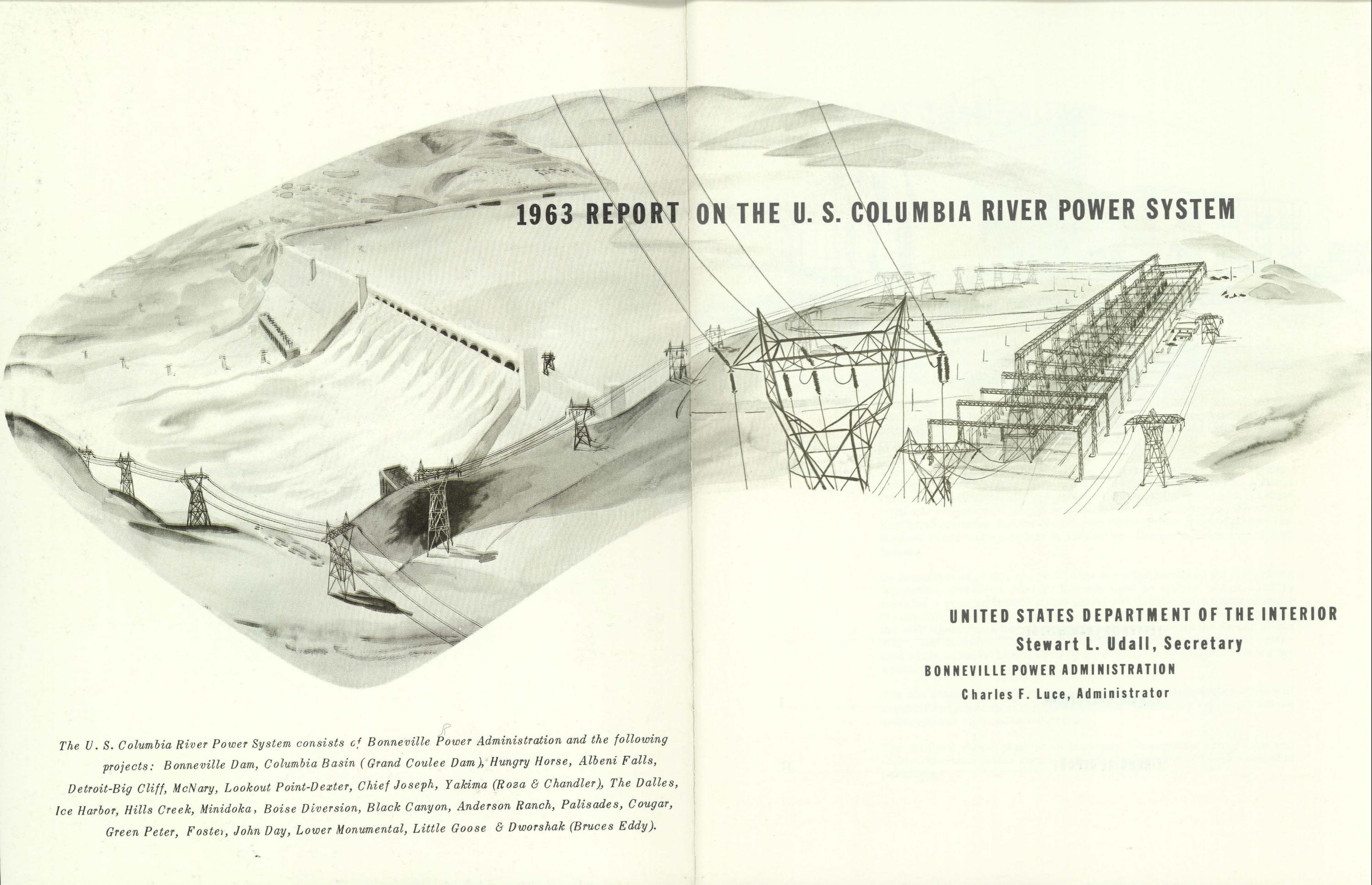


1963 REPORT

U. S.
COLUMBIA
RIVER
POWER
SYSTEM



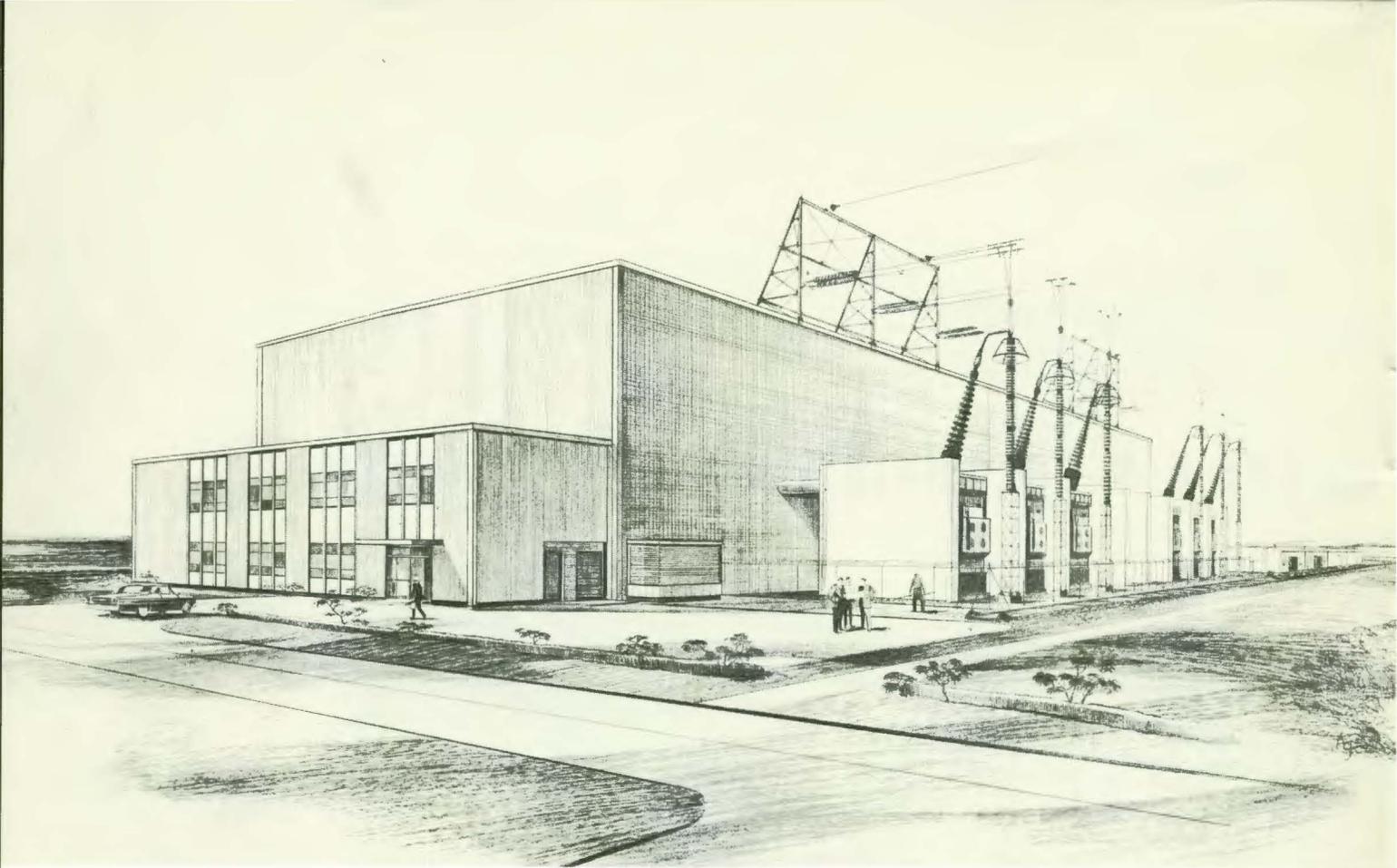
U. S. DEPARTMENT OF THE INTERIOR • BONNEVILLE POWER ADMINISTRATION



1963 REPORT ON THE U. S. COLUMBIA RIVER POWER SYSTEM

UNITED STATES DEPARTMENT OF THE INTERIOR
Stewart L. Udall, Secretary
BONNEVILLE POWER ADMINISTRATION
Charles F. Luce, Administrator

The U. S. Columbia River Power System consists 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, Minidoka, Boise Diversion, Black Canyon, Anderson Ranch, Palisades, Cougar, Green Peter, Foster, John Day, Lower Monumental, Little Goose & Dworshak (Bruces Eddy).



Architect's drawing of nuclear powerhouse at Hanford.

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LETTER OF TRANSMITTAL

December 31, 1963

Hon. Stewart L. Udall
Secretary of the Interior
Washington, D. C.

Dear Mr. Secretary:

It is with a sense of positive accomplishment and progress that I transmit herewith the Twenty-sixth Annual Report of the Bonneville Power Administration, in accordance with subsection 9 (c) of the Bonneville Project Act.

This is not to say that all our problems have been resolved, all our battles won or all our hopes fulfilled. But the measure of accomplishment is encouraging. Following are the highlights of fiscal year 1963 together with a report on developments since the end of the fiscal year.

Hanford Project

The Hanford steam electric generating project is well on its way. On September 14, 1962, early in the fiscal year, Congress authorized non-Federal financing, construction and operation of the Hanford project under a unique tripartite arrangement among Bonneville Power Administration, the Atomic Energy Commission and the Washington Public Power Supply System. The Hanford bonds were sold May 8, 1963, at an effective interest rate of 3.26 percent.

On September 26, 1963, one year to the day after he signed the authorizing legislation, President John F. Kennedy used an atomic "magic wand" to energize a giant automated steam shovel and thereby start construction of the Hanford generating facilities. The President referred to Hanford as the site where "man forged the giant sword which ended the Second World War", and declared: "Now, on this same site, and with these same scientific skills, a Nation dedicated to living in peace is forging not a sword but a plowshare. . ."

The new steam plant will start producing power in October 1965. This will avert a firm power shortage that otherwise threatened the region in 1965-66 under critical streamflow conditions.

The Hanford steam plant is an important conservation project that will utilize otherwise waste steam which is a by-product of the production of plutonium.

Letter of Transmittal

New Payout Schedule

On April 3, 1963, we received departmental approval for a new system-wide amortization, or payout, plan. The new payout plan is fully explained in the financial section of this report.

Briefly, it brings our payout practices more nearly into line with those followed by other Federal power marketing agencies in other river basins, and more properly reflects the physical and economic service lives of the generating projects for which we market power.

Southern Idaho

On May 21, 1963, we were designated the marketing agency for Federal power generated and sold in southern Idaho. The designation was effective as of September 1, 1963. The departmental decision to extend our marketing area to include all of the Columbia River Basin drainage came after a thorough feasibility study jointly made by us and the Bureau of Reclamation.

The extension should, in the long run, have little effect on our financial operations. However, subject to adequate transmission arrangements, it assures preference customers in southern Idaho a supply of power at reasonable cost sufficient to meet their growing loads; it offers hope for industrial expansion; and it offers the people of southern Idaho a fair share of the power produced at Federal Columbia River System generators which are turned, in substantial part, with waters rising in Idaho.

Marketing Legislation

The Northwest Power Marketing Bill, S. 1007, was passed by the Senate on April 23, 1963, and by the House on August 27, 1963. The House-passed bill contained an amendment known as the Westland amendment, however, which at this writing left final disposition of the bill in doubt.

The basic bill defines a primary marketing area for BPA that makes engineering and economic sense. This area embraces roughly the Columbia River Basin drainage and the associated coastal drainage of Washington and Oregon. The bill requires that we meet all needs of our marketing area for hydroelectricity before we export hydroelectricity to other regions. It permits and facilitates the sale of power surplus to the region's needs over any interties proposed to be built between the Pacific Northwest and other regions. The first such interties, in all probability, will link the Pacific Northwest and the Pacific Southwest.

Coordination

Following lengthy negotiations, on October 16, 1963, we signed a new power coordination agreement with the Corps of Engineers and 10 major non-Federal generation utilities in the Northwest. The new agreement, based on experience gained under two previous 1-year coordination agreements, could run for as long as 10 years; however, any participant may request renegotiation upon one year's notice.

The new agreement assures the people of the Northwest that public and private power are cooperating to achieve maximum use of the region's power facilities and thereby provide service at the lowest cost. It provides much the same benefits as if a single owner operated all the hydro projects in the Columbia River Basin.

Inflating the "bubble" to house Big Eddy dc test center.



Direct Current Test Center

In February 1963, we started construction on our new \$2 million extra high voltage direct current test center at the Big Eddy Substation near The Dalles, Oregon. On November 4, 1963, the test center was energized.

This facility, first and foremost of its kind in the free world, will establish engineering and operating standards for a new technology of long-distance, high-capacity power transmission. It will test direct current transmission at up to 1,100,000 volts over a 4.7-mile test line.

While we now know enough about direct current to utilize it economically in special situations such as the proposed Pacific Northwest-Pacific Southwest Intertie, by testing we hope to achieve further economies which will reduce costs and broaden its application.

Letter of Transmittal

Revenues At the end of the fiscal year our total revenues from beginning of operation reached \$956,439,000. These have been applied as follows: operations and maintenance, \$268,858,000; interest expense, \$327,876,000; and repayment of capital investment, \$359,705,000.

Some time in the month of January 1964, we expect to reach the billion-dollar mark in total revenues.

Pressing Problems Our most pressing problems at the end of calendar year 1963 were these:

1. We must resolve the remaining questions involving the Pacific Northwest-Pacific Southwest Intertie.

Foremost among these is the final congressional decision on S. 1007, the Pacific Northwest Power Marketing bill. Thereafter, we must negotiate further with the non-Federal entities that desire to build all or parts of the intertie facilities, and must determine precisely who will build what. We know that with final passage of S. 1007 we will still have problems concerning the intertie, but they will be of manageable proportions.

2. We must do our best to reach agreement with Canada on a plan for joint development of the Columbia River.

The benefits to both nations are so great that it would be sad if remaining problems could not be resolved. We must, however, face the fact that British Columbia's decision to develop the Peace River has made it difficult for Canada to proceed with the Columbia treaty on the same basis that it was negotiated and signed.

3. We must achieve a wheeling agreement with the Idaho Power Company and Utah Power and Light Company, or make other arrangements to bring power from the Bonneville main system into southern Idaho.

While we will have sufficient power resources to meet the growing needs of preference customers in the Upper Snake River Basin and to supply potential loads of new industry, we lack the necessary transmission facilities. If the private utilities serving that area decline to provide wheeling on proper terms, we will recommend such other steps as are necessary to get Bonneville power to the people of southern Idaho.

4. We must make a final decision on rate changes to present to the Federal Power Commission early in 1964.

We are dedicated to keeping our agency on a sound financial basis, and in light of all the pertinent factors we shall recommend such rate changes as are necessary to accomplish that goal.

*President
John F. Kennedy
dedicates Hanford
generating
plant*



In Memoriam

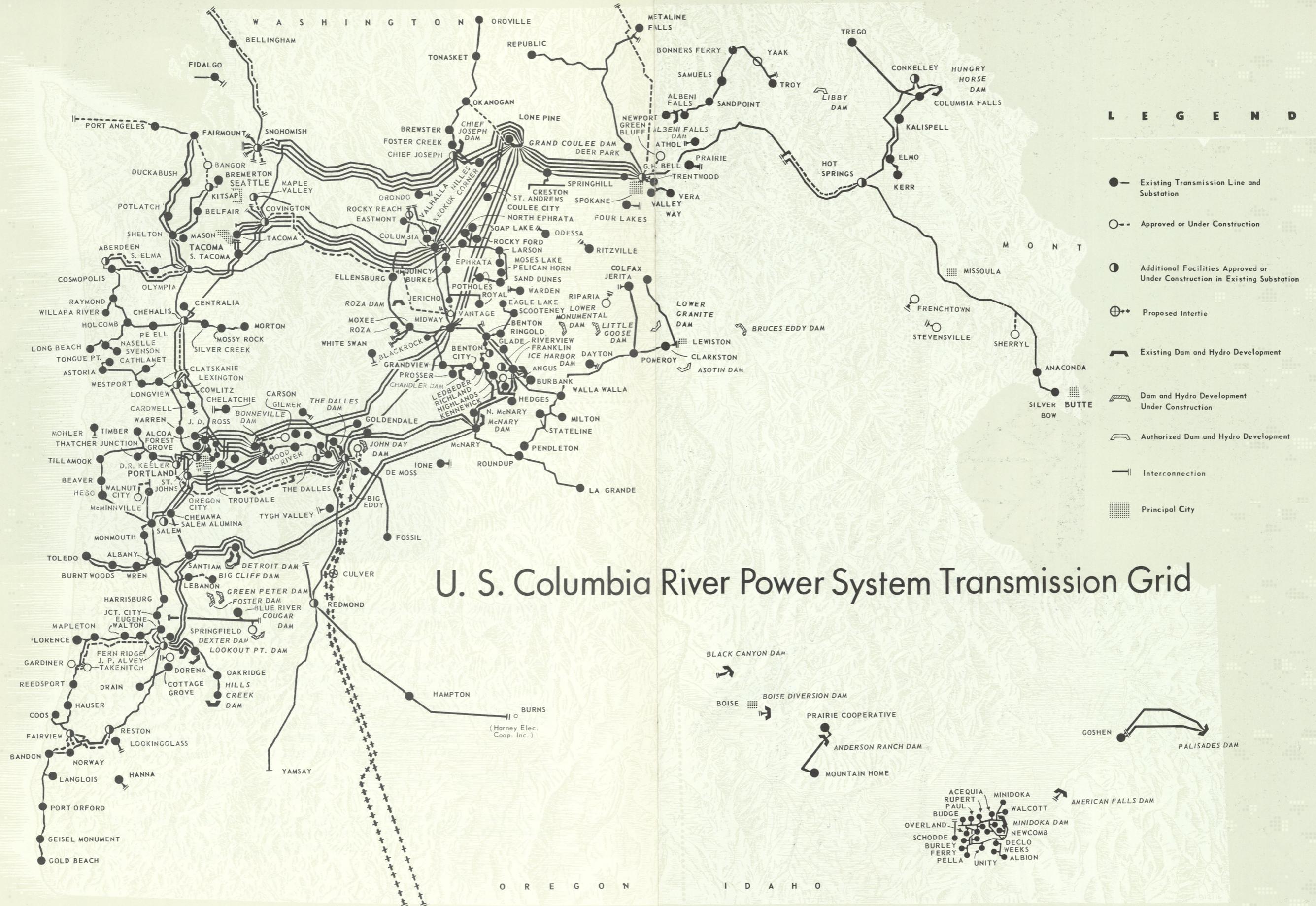
Finally, we cannot but note the passing on November 22, 1963, of our beloved President. Like all Americans and millions of people the world over, we mourn the death of a great leader.

To this particular agency, John Fitzgerald Kennedy restored a vitality and sense of mission it had almost lost in the previous decade. Our proposals for hydroelectric facilities to harness the Columbia River for the benefit of present and future generations had his unfailing support. The accomplishments of President Kennedy in developing the resources of the Pacific Northwest and the Nation will stand as monuments to his memory. And his inspiring leadership will live on in the hearts and minds of all of us.

Sincerely yours,

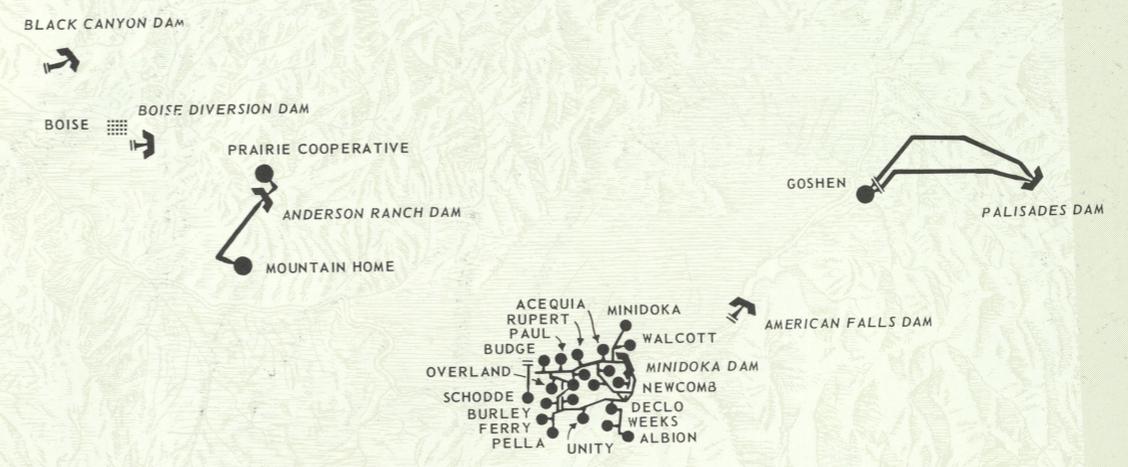
Charles F. Luce

Charles F. Luce
Administrator



U. S. Columbia River Power System Transmission Grid

- ### LEGEND
- Existing Transmission Line and Substation
 - Approved or Under Construction
 - ⊙ Additional Facilities Approved or Under Construction in Existing Substation
 - ⊕ Proposed Intertie
 - ▬ Existing Dam and Hydro Development
 - ▬ Dam and Hydro Development Under Construction
 - ▬ Authorized Dam and Hydro Development
 - Interconnection
 - Principal City





ANNUAL OPERATIONS

On May 21, 1963, by secretarial order, Bonneville Power Administration was assigned the power marketing functions of the Bureau of Reclamation in the Upper Snake River drainage. This area embraces all of southern Idaho and small adjoining areas in Wyoming, Utah and Nevada.

The result is to make a single agency of the Department of the Interior--BPA--the marketing agent for all Federal hydroelectric power generated at multipurpose projects in the entire Columbia River Basin which includes, besides the Upper Snake drainage, Montana west of the Continental Divide, northern Idaho and nearly all of Washington and Oregon.

The secretarial order added to the Bonneville marketing area 61,000 square miles of territory and five generating projects--Minidoka, Boise Diversion, Black Canyon, Anderson Ranch and Palisades--plus 238 miles of transmission line and 24 substations. Bonneville is now the marketing agent for 27 Pacific Northwest Federal projects, 20 completed and seven under construction. Its marketing area now encompasses a land area of approximately 285,000 square miles, including those portions of Washington and Oregon outside the Columbia River Basin, with a population approaching 6 million.

The order directed BPA to integrate the Upper Snake Federal hydroelectric plants with those in the rest of the Columbia River Basin, to make its "postage stamp" wholesale rates effective basin-wide and to complete transfer of power and transmission facilities, personnel and accounts by September 1, 1963.

The Bureau of Reclamation is to continue to operate the projects for irrigation and other purposes, and in strict accordance with State water laws.

All preference customers in the southern Idaho area--municipalities and rural electric cooperatives--now purchasing power from the Bureau of Reclamation will become customers of BPA. Lower BPA wholesale rates will enable these

customers to save about \$600,000 in the first year and will provide low-cost power for expansion of the phosphate industry and development of other resources.

Federal Generation

The U. S. Columbia River Power System, with addition of the Snake River Basin plants in southern Idaho, increased its installed generating capacity to 6,653,150 kilowatts. The Idaho plants have a nameplate rating of 163,900 kilowatts. An additional 38,860 kilowatts of Federal generation produced by isolated Navy, Bureau of Reclamation and Bureau of Indian Affairs plants in the Pacific Northwest is not marketed by BPA.

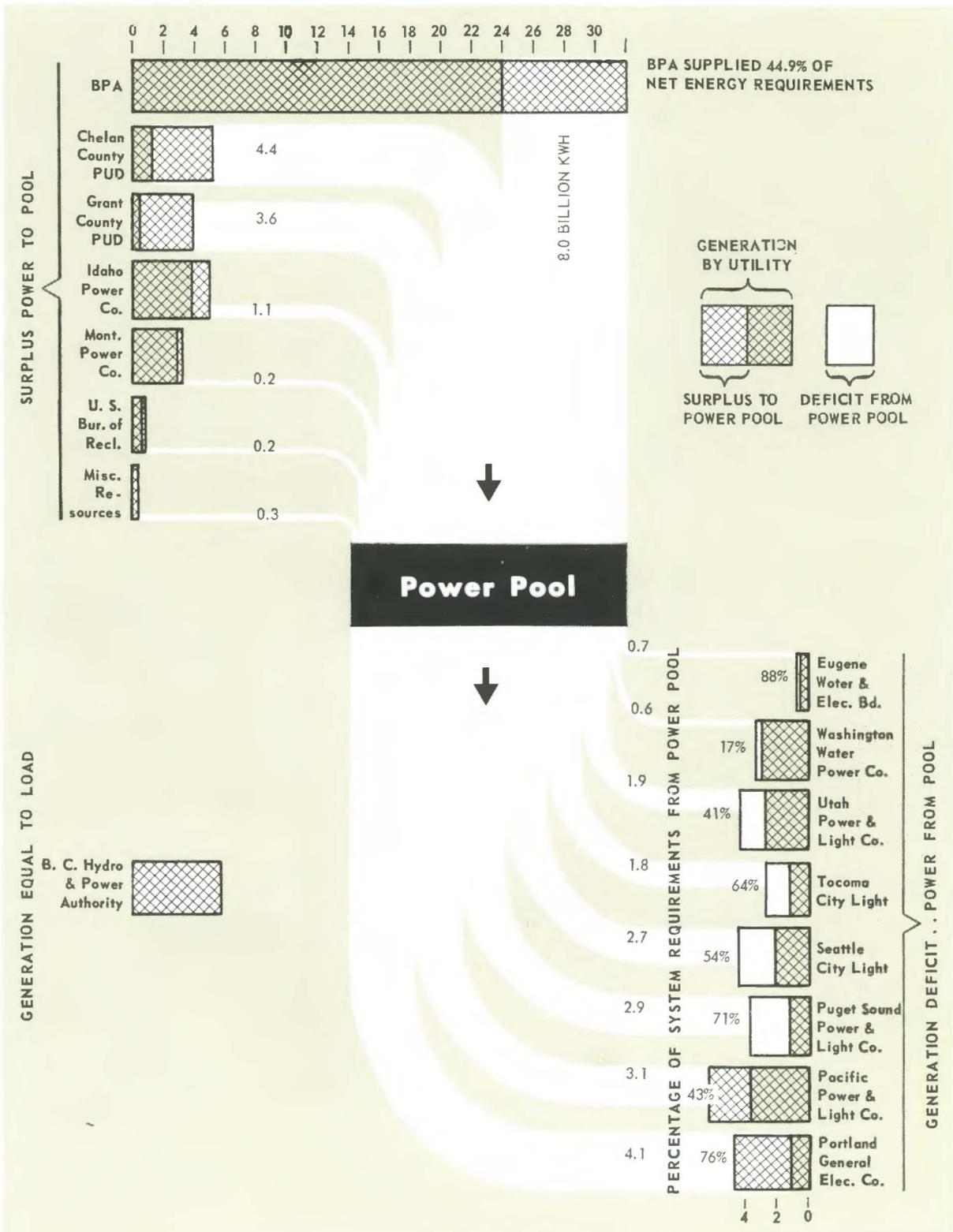
Completion of the plants under construction--Cougar, Green Peter, Foster, John Day, Lower Monumental, Little Goose and Bruces Eddy--will give the Federal system an installed capacity of 9,248,010 kilowatts. Construction of authorized Federal projects would increase the nameplate rating to 10,319,650 kilowatts.

Construction funds were appropriated in October 1962 for the Little Goose and the newly authorized Bruces Eddy projects in the Snake River Basin. Projects authorized at the same time were Asotin on the Snake River, Strube on the South Fork of the McKenzie River and Lost Creek on the Rogue River.

Existing storage capacity in Federal reservoirs usable for power is 12,171,300 acre-feet. Projects under construction will add 2,487,000 acre-feet, and Libby Dam, an authorized project, could add 5,010,000 acre-feet when the Canadian treaty is ratified. The minimum flood control goal of the U. S. Army Corps of Engineers is about 18,000,000 acre-feet. This would reduce maximum flows of the Columbia River to about 800,000 cubic feet per second at The Dalles.

Non-Federal Generation

Non-Federal generation in the expanded area served by Bonneville Power Administration totals 6,632,810 kilowatts of installed capacity, in-



NORTHWEST POWER POOL, NET OPERATIONS ENDING JUNE 30, 1963

TABLE 1
U.S. COLUMBIA RIVER POWER SYSTEM
 General specifications, projects existing, under construction and authorized
 June 30, 1963

Project	Operating agency 1/	Location	Stream	Plant installations		Date in service	
				Number of units	Total capacity kilowatts 2/	(initial unit)	
<u>Existing</u>							
<u>Primary system</u>							
Bonneville	CE	Washington-Oregon	Columbia	10	518,400	June	1938
Grand Coulee	BR	Washington	Columbia	18	1,944,000	September	1941
Hungry Horse	BR	Montana	South Fork Flathead	4	285,000	October	1952
Detroit	CE	Oregon	North Santiam	2	100,000	July	1953
McNary	CE	Washington-Oregon	Columbia	14	980,000	November	1953
Big Cliff	CE	Oregon	North Santiam	1	18,000	June	1954
Lookout Point	CE	Oregon	Middle Fork Willamette	3	120,000	December	1954
Albeni Falls	CE	Idaho	Pend Oreille	3	42,600	March	1955
Dexter	CE	Oregon	Middle Fork Willamette	1	15,000	May	1955
Chief Joseph	CE	Washington	Columbia	16	1,024,000	August	1955
Chandler	BR	Washington	Yakima	2	12,000	February	1956
The Dalles	CE	Washington-Oregon	Columbia	16	1,119,000	May	1957
Roza	BR	Washington	Yakima	1	11,250	August	1958
Ice Harbor	CE	Washington	Snake	3	270,000	December	1961
Hills Creek	CE	Oregon	Middle Fork Willamette	2	30,000	May	1962
<u>Upper Snake River system 3/</u>							
Minidoka	BR	Idaho	Snake	7	13,400	May	1909
Boise Diversion	BR	Idaho	Boise	3	1,500		1912
Black Canyon	BR	Idaho	Fayette	2	8,000		1925
Anderson Ranch	BR	Idaho	South Fork Boise	2	27,000	December	1950
Palisades	BR	Idaho	Snake	4	114,000	February	1957
Subtotal					6,653,180		
<u>Under construction</u>							
Cougar	CE	Oregon	South Fork McKenzie	2	25,000		
Green Peter	CE	Oregon	Middle Santiam	2	80,000		
Foster	CE	Oregon	South Santiam	2	30,000		
John Day	CE	Washington-Oregon	Columbia	10	1,350,000		
Lower Monumental	CE	Washington	Snake	3	405,000		
Little Goose	CE	Washington	Snake	3	405,000		
Bruces Eddy	CE	Idaho	North Fork Clearwater	3	300,000		
Subtotal					2,595,000		
<u>Authorized</u>							
Libby 4/	CE	Montana	Kootenai	4	344,000		
Lower Granite	CE	Washington	Snake	3	405,000		
Asotin	CE	Washington-Idaho	Snake	3	288,000		
Strube	CE	Oregon	South Fork McKenzie	1	4,500		
American Falls 3/	BR	Idaho	Snake	3	30,000		
Subtotal					1,071,500		
Total - 32 projects					10,319,650		

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

2/ Nameplate rating.

3/ Incorporated into the U.S. Columbia River Power System by Departmental Order No. 2860 dated May 21, 1963.

4/ Construction of the Libby project is dependent upon ratification of the United States-Canadian Treaty relating to development of storage in the Canadian portion of the Columbia River Basin.

cluding the addition in fiscal year 1963 of 120,000 kilowatts at the Mayfield plant of the City of Tacoma and 10,000 kilowatts at the Trail Bridge plant of the City of Eugene. Scheduled additions, under construction, or licensed projects would add about 3,861,330 kilowatts for a total installed capacity of 10,494,140 kilowatts.

Northwest Power Pool

Generation by the Northwest Power Pool, representing principal electric utility systems of the

Pacific Northwest during the fiscal year 1963, is shown in the accompanying chart.

Fifty 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 billion kilowatt-hours of energy to meet the net requirements of eight other pool utilities.

TABLE 2
PACIFIC NORTHWEST GENERATION
 Nameplate rating of plants existing, under construction and authorized or licensed
 Kilowatts
 June 30, 1963

Ownership	Existing		Under construction		Licensed or authorized		Total	
	No. of plants	Nameplate rating	No. of plants	Nameplate rating	No. of plants	Nameplate rating	No. of plants	Nameplate rating
<u>Federal agencies</u>								
Hydro	24	6,674,010	7	2,595,000	6	1,123,500	37	10,392,510
Fuel	1	18,000	0	0	0	0	1	18,000
Total Federal agencies	25	6,692,010	7	2,595,000	6	1,123,500	38	10,410,510
<u>Publicly owned agencies</u>								
Hydro	32	2,948,080	7	1,617,370	2	767,010	41	5,332,460
Fuel	16	188,370	1	860,000	0	0	17	1,048,370
Total publicly owned agencies	48	3,136,450	8	2,477,370	2	767,010	58	6,380,830
<u>Privately owned agencies</u>								
Hydro	89	3,240,530	2	616,950	0	0	91	3,857,480
Fuel	14	255,830	0	0	0	0	14	255,830
Total privately owned agencies	103	3,496,360	2	616,950	0	0	105	4,113,310
<u>Total</u>								
Hydro	145	12,862,620	16	4,829,320	8	1,890,510	169	19,582,450
Fuel	31	462,200	1	860,000	0	0	32	1,322,200
Total hydro and fuel	176	13,324,820	17	5,689,320	8	1,890,510	201	20,904,650

A summary of both Federal and non-Federal generation in the Pacific Northwest appears in table 2.

Wheeling of Non-Federal Power

BPA wheeled or transferred for other utilities 10.7 billion kilowatt-hours of energy in fiscal year 1963.

This compares with 11.0 billion kilowatt-hours wheeled or transferred during fiscal year 1962.

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 County Public Utility District, the Rocky Reach project of the Chelan County PUD, and the Carmen-Smith project of the City of Eugene.

Excess capacity contracts cover power from the Swift project of the Pacific Power and Light Company, the Rock Island project of the Chelan County PUD, the Mayfield project of the City of Tacoma, and from the Priest Rapids project of Grant County PUD and into the region from the Idaho Power Company.

TABLE 3
Electric energy account for fiscal year 1963

Energy received (millions of kilowatt-hours):	
Energy generated for BPA	
Bureau of Reclamation	12,118
Corps of Engineers	19,838
Power interchanged in	13,754
Total received	45,710
Energy delivered (millions of kilowatt-hours):	
Sales	30,202
Power interchanged out	13,593
Used by Administration	37
Total delivered	43,822
Energy losses in transmission and transformation	1,888
Losses in percent of the total received--percent	4.1
Maximum demand on Federal plants (kilowatts) January 11, 1963, 5-6 p.m., PST	5,403,000
Load factor, total generated for BPA, percent	67.5

Percentage distribution by classes of customers for fiscal year 1963:

	Number of customers, June 1963	Energy sales by percent of total
Publicly owned utilities	83	43.7
Privately owned utilities	7	11.3
Aluminum industry	9	30.3
Other industries and Federal agencies	19	14.7
Total	118	100.0

Hanford Steam Generation

In fiscal year 1963, congressional legislation authorized the Washington Public Power Supply

System to contract with the Atomic Energy Commission for lease of land, purchase of reactor by-product steam and other necessary arrangements for construction of a steam plant to produce electric power utilizing otherwise waste steam from the New Production Reactor (NPR) at Hanford. The installed capacity of the two steam generators will be 800,000 kilowatts. Exchange agreements among BPA, WPPSS, and purchasers of the project output were completed to permit the interchange of power and effectively integrate the steam plant with West Group Area resources. Such integrated operations will add more than 900,000 kilowatts of salable firm power to the region's resources and avert a power shortage which would have occurred under critical streamflow conditions in 1965-66.

Transmission System

Bonneville Power Administration, since it placed its first line into operation 25 years ago, has grown into a network of 8,910 circuit miles of high voltage transmission lines and 248 substations of 14,895,345 kilovolt-amperes of transformer capacity. This reflects an average yearly growth of 356 miles of lines, and 595,810 kilovolt-amperes of transformer capacity. Additions include 238 miles of transmission lines and 24 substations of 223,850 kilovolt-amperes of transformer capacity in southern Idaho.

The present system reactive capacitance is 2,752,000 kilovolt-amperes.

Construction Under Way

Key facilities under construction at the end of the fiscal year included:

- A second 33-mile, 230,000 volt line between Chehalis and Longview, Washington, to reinforce the Administration's system in the Longview area of southwestern Washington.
- A 70-mile, 500,000 volt line between Arlington and Blaine, Washington, to provide transmission capacity for delivery to the Canadian border of secondary power for sale to British Columbia and to carry a portion of Canada's share of the downstream benefits resulting from the Canadian storage treaty. Initially, this line will be operated at 230 kilovolts.
- A 93-mile, 230,000 volt line between the Administration's Bell Substation near Spokane,

Washington, and the Canadian boundary north of Metaline Falls to provide an interconnection with the West Kootenay Power and Light Co., Ltd., to interchange energy and to permit regulation of water resources. This line will also enable the Administration to deliver to Seattle a portion of the output of the City of Seattle's Boundary hydroelectric project.

- A 110-mile, 500,000 volt line between Big Eddy, near The Dalles, Oregon, and Keeler, near Portland, to be operated initially at 230,000 volts. This line will reinforce the Portland and Willamette Valley transmission system, transmit power to the Portland area, initially from The Dalles and later from the John Day hydroelectric plants and wheel from non-Federal plants on the Columbia River.
- A 120-mile, 500,000 volt line between Vantage, Washington, and Covington to serve the load growth in the Puget Sound area, and provide a normal level of reliability.
- A 73-mile, 230,000 volt line between Alvey Substation, near Eugene, Oregon, and Tahkenitch, near Reedsport, Oregon, to serve increasing loads in the central Oregon coastal area.
- A 47-mile, 230,000 volt line between Olympia, Washington, and Aberdeen, Washington, to prevent overloading of existing lines when outages occur.
- A 13-mile, 115,000 volt line between Kitsap, near Bremerton, Washington, and Bangor to provide additional power to the U. S. Naval Ammunition Depot at Bangor, Washington, and the Naval Torpedo Station at Keyport, Washington.
- A 10-mile, 115,000 volt line between North Bonneville and Stevenson, Washington, to serve the load growth in the Stevenson area.

Interties

During the year BPA analyzed seven non-Federal proposals for construction of Pacific Northwest-Pacific Southwest interties and presented them to the Appropriations Committees of the Congress together with the budget proposal.

Attaching steel "sock" to conductor on Big Eddy-Keeler 500kv line.



western Oregon and Washington coastal areas on October 12, 1962. A windstorm of hurricane force with wind velocities up to 116 miles per hour struck Gold Beach, Oregon, at 2 p.m., and moved northward as far as Port Angeles, Washington. The barometer in the Portland system control center dropped to 28.91 inches, and by 6 p.m. the system load dropped to 50 percent of normal.

There were one or more interruptions to 42 transmission lines, which resulted in over 60 power failures at 48 substations.

BPA Service Restored

BPA restored power to 75 percent of the substations within 8 hours, 90 percent within 24 hours and all stations within 48 hours. BPA service was not interrupted to any major industrial customer during the storm. However, one aluminum plant was shut down because of damage to its facilities.

Other electric utilities in the area suffered severe damage to their overhead distribution systems, which resulted in extensive power outages of long duration for many individual customers.

A summary of the major damage to the BPA system which totaled about \$1,200,000 follows:

- Two 500-foot transmission line towers on the Columbia River crossing at Vancouver, Washington, were destroyed.
- The 412-foot transmission line tower on the Washington side of the Columbia River crossing near Longview was destroyed.
- A steel tower on one 230 kilovolt transmission line and two steel towers on another 230 kilovolt line were destroyed.
- Seventeen wood structures on 115 kilovolt transmission lines were blown down.
- The conductors and steel towers on one 115 kilovolt transmission line were so badly damaged by falling trees that 5 days were required to repair the damage. Another 115 kilovolt transmission line had 25 to 30 trees in the line and 3 spans of conductor on the ground.

BPA recommended to the House and Senate Appropriations Committees the following:

- A 750,000 volt direct current transmission line from the Columbia River to the Los Angeles area, constructed jointly by BPA and the Bureau of Reclamation.
- A 500,000 volt alternating current transmission line from the vicinity of John Day Dam to the Oregon-California border constructed by BPA and connected with a similar line to be constructed in California by non-Federal entities.

BPA has advised Congress that before it sells surplus power to California customers it is essential that Congress enact legislation defining the primary marketing area of the Bonneville Power Administration and establishing the ground rules for sale and exchange of surplus power and peaking capacity outside the region.

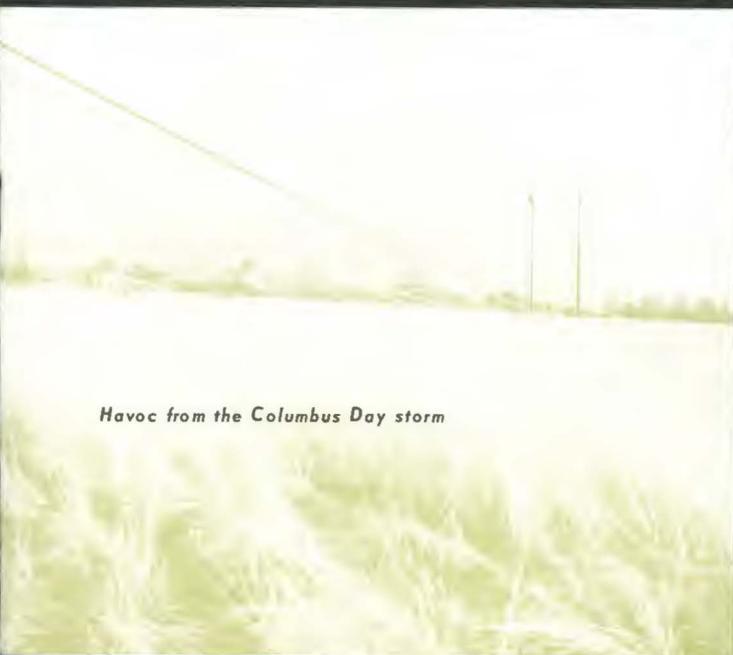
Studies are in progress on a proposed Missouri Basin-Pacific Northwest extra high voltage interconnection.

Columbus Day Storm

Bonneville Power Administration's transmission system was put to one of its severest tests during the "Columbus Day" storm that swept

High Voltage Transmission

Two important steps were taken during the year





Dedicating Charles E. Carey laboratory: Administrator Charles F. Luce, Congresswoman Julia Butler Hansen, Senator Warren G. Magnuson, Under Secretary of Interior James K. Carr, Mrs. Charles E. Carey, and Mrs. Carey's daughter and grandson, Mrs. Marjory Havens and Tom Meador.

in advancing the technology of high voltage power transmission in both alternating and direct current.

Clearing operations were started on the right-of-way for the first 500,000 volt alternating current transmission line and construction was started on a \$2 million direct current transmission test center.

Continuing engineering and economic studies have demonstrated conclusively the advantages of a 500,000 volt alternating current grid overlay for the future transmission system. The transition to 500,000 volt transmission has required extensive investigation of conductor design and configuration, tower requirements, corona phenomena, insulation levels, radio interference, and similar problems.

Completion of the Charles E. Carey high voltage laboratory at J. D. Ross Substation has made it possible to conduct many of the tests and investigations with BPA equipment and facilities.

Direct Current Test Center

Construction was well under way on Bonneville Power Administration's high voltage direct current test center, first of its kind in the United States. The huge air-supported plastic dome, which houses the direct current power supply and testing equipment, is 200 feet long, 100 feet wide and 58 feet high. The plastic dome, costing a third as much as a comparable rigid structure, was completed in June 1963 and work was begun on installing the massive rectifier units. Completion of the test equipment and test line is scheduled for October.

The 2-year test program is an important element in America's contribution to technological leadership in direct current power transmission. The new technique of power transmission will make transportation of large blocks of energy over distances of 1,000 to 2,000 miles economically feasible.

Power from the adjacent Big Eddy Substation, near The Dalles, Oregon, will be converted from 13,800 volts alternating current to 1,100,000 volts direct current. Combined with the test line, the facility will produce the electrical voltage stresses associated with actual long-distance direct current transmission. Data will be provided to establish standards for insulation and conductor spacing and size, together with investigation of conductor radio noise problems, insulator contamination, leakage, and flashover phenomena.

Load Frequency-Control

New load frequency-control equipment for the U. S. Columbia River Power System was installed at the Portland system control center in July 1962. The equipment provides automatic regulation of generation at Bonneville, The Dalles, McNary, Chief Joseph and Grand Coulee powerhouses in accordance with system electrical conditions and manually set schedules of

participation. System control based on constant frequency with automatic time correction or tie-line bias may be selected.

Present plans for interregional transmission lines include the requirement for tie-line bias control in order to limit the magnitude of power fluctuations during normal operating conditions on such lines. Full use of tie-line bias control cannot be realized until new telemetering and control equipment is placed in service. Benefits from the installation have already included a less severe duty cycle at the regulating powerhouse, rapid automatic recovery from some kinds of system emergencies and close control of system time.

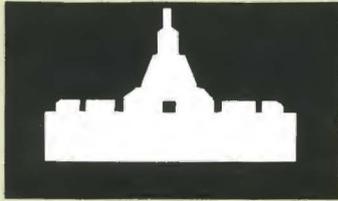
Radio Noise Telemetry

A radio noise telemetry system has been developed for detection of radio influence current in an energized transmission line. The information detected during the test period is transmitted via low power very high frequency radio to the place where it will be recorded on a punched tape so that the data can be analyzed on automatic data processing equipment. The radio telemetry system will play an important part in the radio noise investigation associated with the high voltage direct current test program and in future high voltage development work.



Helicopter moving radio noise test house to isolated location, Big Eddy dc test line.

GENERATION



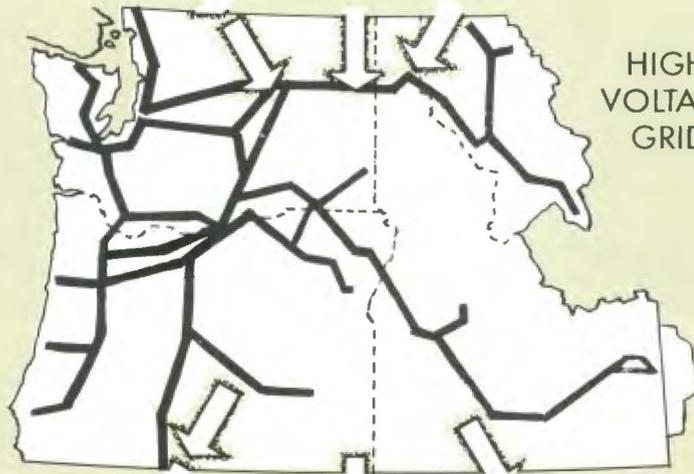
U. S. COLUMBIA
RIVER POWER SYSTEM



PUBLICLY
OWNED
AGENCIES



PRIVATELY
OWNED
AGENCIES



HIGH
VOLTAGE
GRID



HEAVY INDUSTRY



COMMERCIAL



FARM & HOME

USE

ESTIMATED PACIFIC NORTHWEST POWER GENERATION & USE, 1963 (Size of symbol is proportional to amount of power.)

FINANCIAL REPORT

Introduction

This has been a year of important changes for BPA in financial matters. Two are especially significant.

First, we have changed the method of computing our rate and repayment requirements. We no longer follow the severe schedule for paying out each project, individually, over a 50-year period. We have adopted a less severe schedule known as "Consolidated System 50-Year Rate of Payout Plan". It still will pay out each project within 50 years after completion, but on a system basis by which the continuing revenues from each older project after it is paid out will be used to help pay out the remaining balance on newer projects.

Considering the actual service lives of the dams for which we market power, the new repayment plan is very conservative. It also brings our financial practices more nearly into line with those followed by Federal power marketing agencies in other river basins. We shall discuss this change in some detail later in this section.

Second, we have changed the format of our annual financial statements. Our purpose is to make them simpler and more informative. The new statements involve only one set of figures instead of two or sometimes three as heretofore. They appear under the heading "Bonneville Power Administration", but show the net results for the entire power system operation including all Corps of Engineers and Bureau of Reclamation hydroelectric projects in the Columbia River Basin as well as BPA. Later in this section we shall discuss this change more fully, too.

When this annual report went to press, the U. S. General Accounting Office had not completed its audit of the financial schedules presented herein. Therefore these schedules are subject to possible audit adjustments.

Cumulative Surplus

On the new basis of reporting, we incurred a net deficit of \$5,483,000 for fiscal year 1963. How-

ever, cumulatively over our first 26 years of operation, ending June 30, 1963, we had a net surplus of \$22,955,000.

The financial results of operations for the fiscal year and in total through 1963 are presented in the accompanying statement of revenues and expenses designated as schedule 1.

Assets and liabilities as of June 30, 1963, are set forth in the balance sheet, schedule 2. These balance out at \$1,709,714,000.

Schedules A through E are supporting schedules which contain detailed information on the financial results of operations. These include the amount and repayment status of the fixed capital investment of the associated projects.

Fiscal Year 1963 Revenues

BPA gross revenues in 1963 were \$77,704,000. This represented a gain of \$3,221,000, or 4.3 percent, over fiscal year 1962.

Revenues for 1963 consisted of energy sales of \$71,978,000 and miscellaneous revenues, principally charges for the wheeling of non-Federal power over the Federal system, of \$5,726,000.

A more detailed comparative analysis of revenues for fiscal years 1956 through 1963 is presented later in this report.

Cumulative Revenues

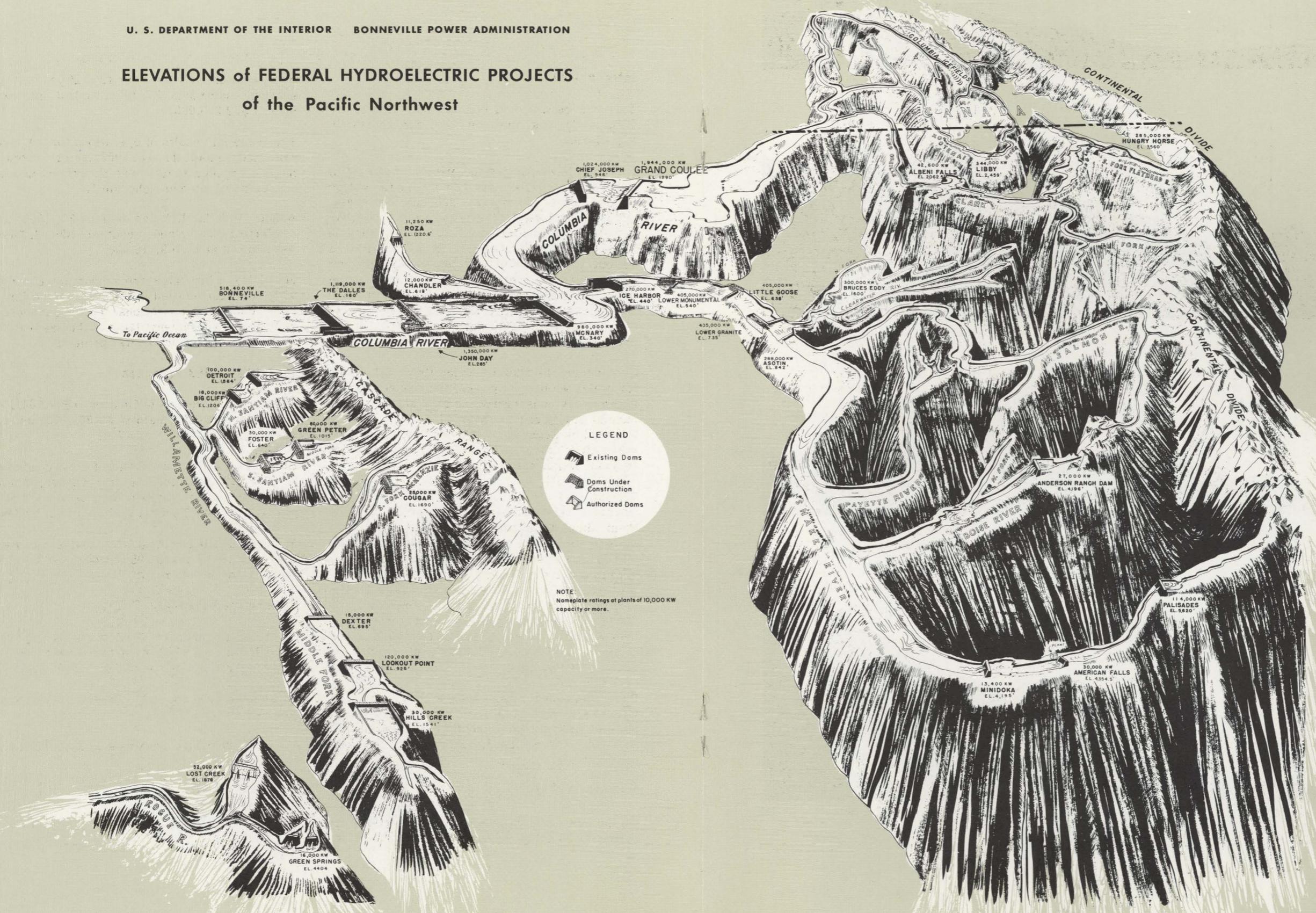
From the beginning of BPA operations in 1938 through June 30, 1963, we accrued revenues totaling nearly one billion dollars--\$956,439,000.

These have been applied to the total power system as follows:

- \$268,858,000--operations and maintenance expenses.
- \$327,876,000--interest expense.
- \$359,705,000--repayment of capital investment.

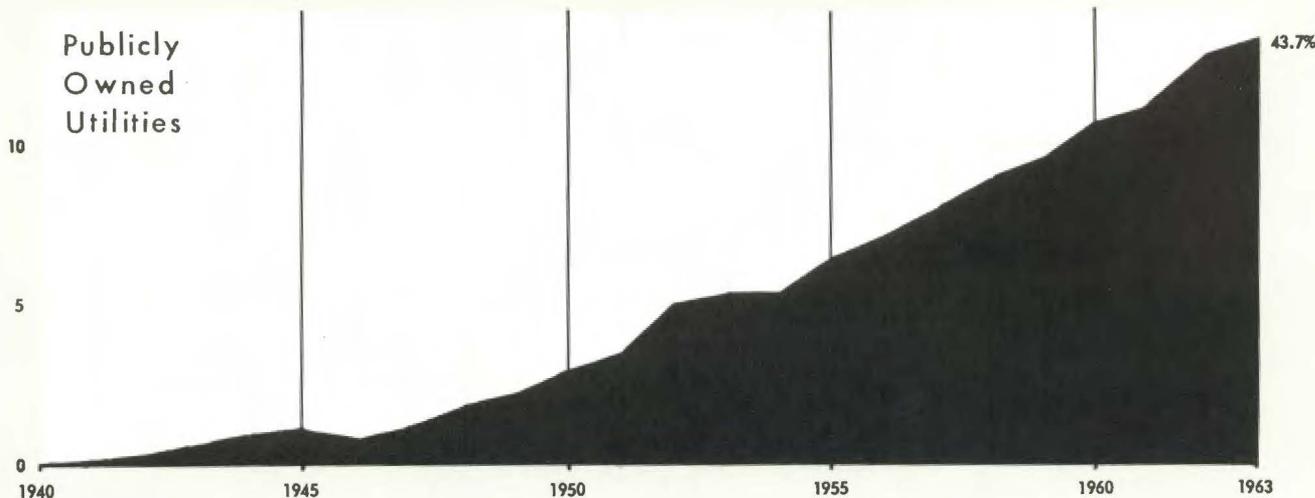
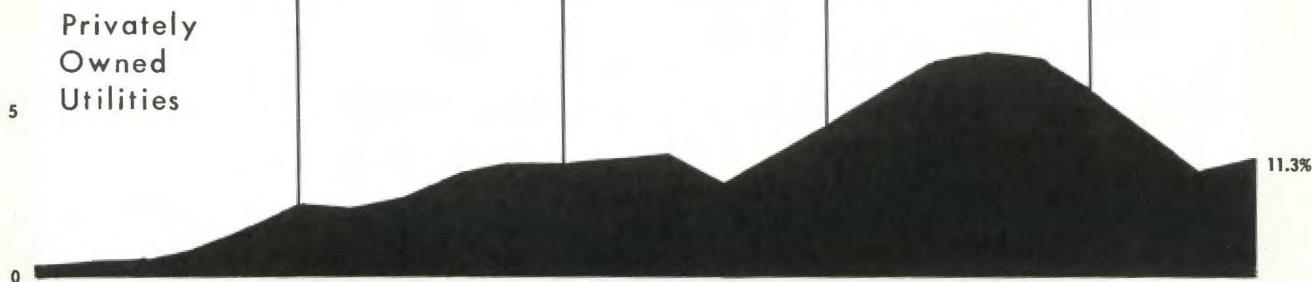
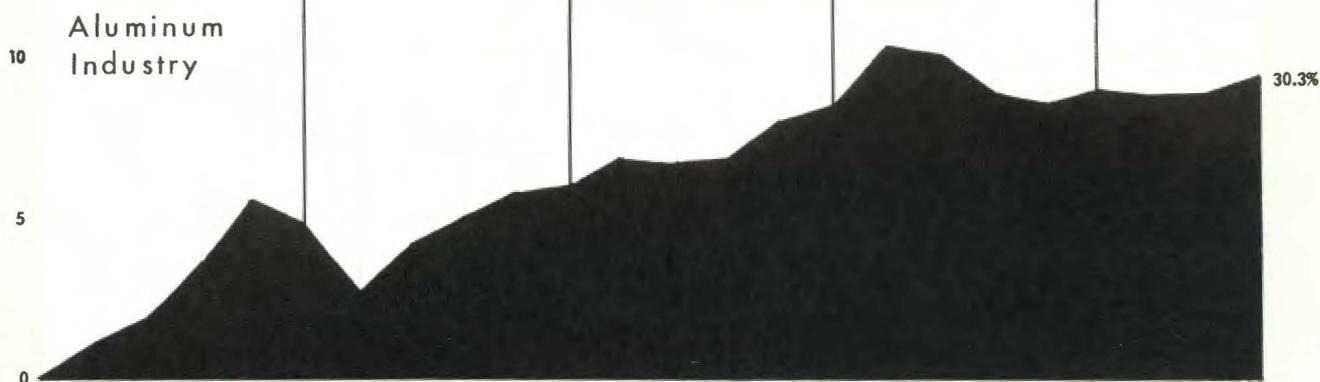
U. S. DEPARTMENT OF THE INTERIOR BONNEVILLE POWER ADMINISTRATION

ELEVATIONS of FEDERAL HYDROELECTRIC PROJECTS of the Pacific Northwest



BILLIONS OF KWH

PERCENT OF TOTAL



SALES OF ELECTRIC ENERGY BY CLASS OF CUSTOMER, FISCAL YEARS

Cash receipts lag behind accrued revenues because the latter include accounts receivable, exchange account sales and miscellaneous receipts. Cash receipts--the amount actually returned to the Treasury--totaled \$933,457,000. Schedule B furnishes a link between the funds returned to the Treasury as shown in our balance sheet, schedule 2, and the total operating revenues shown in our statement of revenues and expenses, schedule 1.

Of the total funds returned, we allocated to the associated projects of the Corps of Engineers and the Bureau of Reclamation \$549,256,000 and to the transmission system \$384,201,000.

Capital Investment

The capital investment still owing for projects and transmission system in operation as of June 30, 1963, was \$1,638,968,000. Of this, \$1,214,592,000 represented the unamortized investment in associated projects returnable from power revenues. The remainder, \$424,376,000, representing the unamortized investment in transmission, consists of our total transmission investment of \$538,091,000 less the depreciation (amortization) reserve of \$90,760,000 and the \$22,955,000 surplus, or advance payments. These data appear in schedule 2.

Of the \$1,214,592,000 still owing on associated projects, \$264,915,000 represents cost allocated to irrigation but assigned to BPA power revenues for repayment. Irrigation costs thus amounted to 21.8 percent of the unpaid balance of plant investment of associated projects returnable from power revenues. Details by project are shown in schedule C.

This is the first time our financial statements have shown specifically the amount of irrigation construction costs assigned for repayment from BPA power revenues. The amount is growing. When all the irrigation projects, divisions, units and blocks under construction or authorized as of June 30, 1963, including those in southern Idaho, are completed, BPA's total irrigation repayment obligation will be \$656,106,000.

Deficit Years

Although we did have a cumulative surplus of \$22,955,000 as of June 30, 1963, we incurred net deficits each of the years 1958 through 1963. Six years ago, on the old basis of reporting, our surplus was \$78,800,000.

The main reason for our recent deficits is that we have not been able to sell all of the energy our system could produce in better than critical water years. During the 6 years in which our surplus diminished alarmingly, we had unsold Federal power--secondary power and temporarily surplus firm power--worth \$157 million at our rates.

If the proposed Pacific Northwest-Pacific Southwest Intertie had been in operation during these years, we could have sold much of this power and we likely would not have had any deficit years.

Despite these deficits, BPA revenues for this 6-year period were sufficient to pay all power, operation, maintenance and interest expense, plus more than \$100 million for amortization of power generation and transmission construction costs. Thus the reported deficits during these 6 years were deficits only in the sense that revenues remaining after meeting all current expenses did not come up to the benchmark schedules previously used as the measure of repayment requirements. They have not been out of pocket losses.

Revenues Analysis

Table 4 is an analysis of our revenues from power sales by class of customer and type of service for fiscal years 1956 through 1963. The table also shows the amount of miscellaneous power revenues for each year of the period. The table contains trend percentages for each class of customer and for miscellaneous power revenues to highlight the annual variations and longer term trends.

Total sales of electric energy increased 20 percent during the period. More significant, however, are the curtailments of sales to the aluminum industry and the privately owned utilities contrasted with the continuous growth in sales to the publicly owned utilities. Thus the 20 percent gain for total sales obscures the fact that firm power sales rose 36.8 percent during the 1956-63 period while nonfirm sales fell 50 percent.

Firm sales to the aluminum industry increased through 1960. However, beginning with 1958, some of the aluminum plants curtailed their firm power loads. In fact, such curtailments in 1958 through 1963 cost BPA \$5,500,000 in loss of rev-

TABLE 4
 UNITED STATES DEPARTMENT OF THE INTERIOR
 BONNEVILLE POWER ADMINISTRATION
 REVENUE AND REVENUE TRENDS
 Sales of energy, firm and nonfirm,
 by class of customer and miscellaneous power revenues

Class of customer	(In thousands of dollars)							
	F.Y. 1956	F.Y. 1957	F.Y. 1958	F.Y. 1959 1/	F.Y. 1960	F.Y. 1961	F.Y. 1962	F.Y. 1963
<u>Aluminum industry</u>								
Firm	13,119	13,693	13,980	14,227	15,293	14,978	14,341	14,382
Nonfirm	6,979	6,333	3,512	2,384	2,168	1,981	3,042	3,715
Total aluminum industry	<u>20,098</u>	<u>20,026</u>	<u>17,492</u>	<u>16,611</u>	<u>17,461</u>	<u>16,959</u>	<u>17,383</u>	<u>18,097</u>
Trend percentages 1/	100%	100%	87%	83%	87%	84%	86%	90%
<u>Other industry</u>								
Firm	2,569	2,836	3,006	3,138	3,163	3,205	3,194	2,927
Nonfirm	1,313	748	407	680	868	613	855	625
Total other industry	<u>3,882</u>	<u>3,584</u>	<u>3,413</u>	<u>3,818</u>	<u>4,031</u>	<u>3,818</u>	<u>4,049</u>	<u>3,552</u>
Trend percentages 1/	100%	92%	88%	98%	104%	98%	104%	92%
<u>Publicly owned utilities</u>								
Firm	19,324	21,384	22,593	24,861	28,304	29,520	32,598	35,466
Nonfirm	181	660	981	768	357	583	1,340	682
Total publicly owned utilities	<u>19,505</u>	<u>22,044</u>	<u>23,574</u>	<u>25,629</u>	<u>28,661</u> 2/	<u>30,103</u>	<u>33,938</u>	<u>36,148</u>
Trend percentages 1/	100%	113%	121%	131%	147%	154%	174%	185%
<u>Privately owned utilities</u>								
Firm	9,226	10,476	11,526	11,846	9,907	8,338	5,678	6,900
Nonfirm	2,773	3,974	2,645	2,552	2,659	1,301	1,536	332
Total privately owned utilities	<u>11,999</u>	<u>14,450</u>	<u>14,171</u>	<u>14,398</u>	<u>12,566</u>	<u>9,639</u>	<u>7,214</u>	<u>7,232</u>
Trend percentages 1/	100%	120%	118%	120%	105%	80%	60%	60%
<u>Federal agencies</u>								
Firm	4,253	4,777	5,860	6,015	5,986	6,194	6,217	6,646
Nonfirm	52	90	194	388	239	281	253	303
Total Federal agencies	<u>4,305</u>	<u>4,867</u>	<u>6,054</u>	<u>6,403</u>	<u>6,225</u> 2/	<u>6,475</u>	<u>6,470</u>	<u>6,949</u>
Trend percentages 1/	100%	113%	141%	149%	145%	150%	150%	161%
<u>Sales of electric energy</u>								
Firm	48,491	53,166	56,965	60,087	62,653	62,235	62,028	66,321
Nonfirm	11,298	11,805	7,739	6,772	6,291	4,759	7,026	5,657
Total sales of electric energy	<u>59,789</u>	<u>64,971</u>	<u>64,704</u>	<u>66,859</u>	<u>68,944</u>	<u>66,994</u>	<u>69,054</u>	<u>71,978</u>
Trend percentages 1/	100%	109%	108%	112%	115%	112%	115%	120%
<u>Miscellaneous power revenues</u>								
	1,045	1,299	1,871	1,615	2,054	2,707	5,429	5,726
Trend percentages 1/	100%	124%	179%	155%	197%	259%	520%	548%
<u>Total revenue</u>								
	<u>60,834</u>	<u>66,270</u>	<u>66,575</u>	<u>68,474</u>	<u>70,998</u>	<u>69,701</u>	<u>74,483</u>	<u>77,704</u>
Trend percentages 1/	100%	109%	109%	113%	117%	115%	122%	128%

1/ F.Y. 1956 is used as the base, or 100%, year.

2/ In 1959, sales to Richland Village were reclassified from Federal agency to publicly owned utility.

enues. We lost additional revenues when the Aluminum Company of America switched part of its service from the Federal system to the Chelan County PUD's Rocky Reach Dam project. This, of course, was in accordance with previously arranged contracts.

Nonfirm sales to the aluminum industry showed a small drop in 1957. This category of sales then fell very rapidly to a low point in 1961 which was only about 28 percent of the 1956 level. Nonfirm sales to the aluminum industry have increased again during the past 2 years.

As of June 30, 1963, these plants were operating at about 65 percent of their interruptible power capacity, and there was very little firm power curtailment.

Firm power sales to privately owned utilities decreased rapidly after fiscal year 1959, with some improvement in 1963.

The decrease can be attributed primarily to development of non-Federal sources of supply. The private utilities built new projects of their own. They also purchased substantial amounts

of power, on long-term contracts, from the publicly owned utilities which went into the dam building business during a period when "no new starts" was Federal power policy. The Federal plants were forced to carry the region's temporary power surplus.

Sales to publicly owned utilities, on the other hand, increased by \$16,600,000, or 85 percent, during the same 7 years. Even those publicly owned utilities which built large hydro plants of their own continued to purchase substantial amounts of lower cost BPA power while selling the bulk of their own generation to the private utilities.

Our miscellaneous revenues increased several-fold during the 1956-63 period. Two factors contributed to this growth. The first is charges by BPA for wheeling non-Federal power. The major portion of new non-Federal generation is wheeled over the Federal transmission network to avoid duplication of facilities. The second factor is payments to BPA for coordination and storage benefits. Non-Federal utilities have made substantial payments each of the past 2 years for benefits from coordination with the Federal system and from upstream Federal storage.

New Payout Policy

Bonneville Power Administration's rates are required by law or long-established custom to accomplish four things:

- Return all the costs of operation and maintenance of the transmission system and associated power generating projects.
- Pay interest on the Federal investment in power facilities, both transmission and generation.
- Amortize the capital investment in power facilities, both transmission and generation, within a "reasonable" period of time. Congress has come to recognize at least 50 years as a "reasonable" period of time.
- Return to the Treasury within fixed periods of time a substantial portion of the costs of irrigation which have been determined to be beyond the ability of the water users to repay.

Until very recently, BPA wholesale rates--the lowest in the Nation--were adequate to accom-

plish all of these purposes and to build a surplus, as well. Now we are faced with the necessity of a rate increase, albeit the first in our history. This led to a careful examination of the basis for calculating our rate and repayment requirements, and adoption of the new payout principles referred to at the beginning of this section.

The old amortization schedule computed the annual payout requirements for each project, individually, over a 50-year period after completion with a minor exception.^{1/} As each new project came on the line, its payout requirements were added to our total annual repayment obligations for the existing projects. Revenues from all of the projects were used to repay the total obligations. However, under the old schedule, as each project paid out, even though it would continue earning revenues, its revenues were not to be used to repay the remaining system obligations. They simply were to be returned to the Treasury as unassigned receipts, and the remaining projects were to meet their own repayment requirements within 50 years. Rates would have to have been set accordingly.

The Federal power systems in other river basins do not apply such a severe rate test. The Missouri River Basin project and the Central Valley project, for example, each consists of both Corps of Engineers and Bureau of Reclamation projects, as does the BPA system. These systems treat the entire integrated system as one project for rate and repayment purposes as well as for operations purposes.

The Secretary of the Interior, on April 3, 1963, approved the new plan for the Bonneville Power Administration which pools all the projects into one system for rate and repayment purposes. Thus, when Bonneville Dam, the first in our system, is paid out in 1994,^{2/} its revenues beyond that date will be used to help pay out the newer dams in the system. Fifty years after the last dam on the system is completed, it will be paid out from its own revenues and those of the older dams which were paid out earlier. In this manner, the power investment in each dam still will be repaid within 50 years after its completion.

¹ The law governing the Kennewick Division (Chandler power plant) of the Yakima project expressly provides a payout period of 66 years for the repayment of the commercial power investment and the irrigation investment repayable from commercial power revenues.

² This is based on a payout period of 50 years after completion of the power installation at Bonneville Dam in December 1943 (fiscal year 1944).

An inevitable result of the new amortization plan is that we will pay more interest in the long run, but that the total obligations for the system can be met with lower annual principal payments spread out over a longer period of time. Yet the overall system payout period is well within both the economic and physical lives of all the projects in the system. The reduction per year for the present system amounts to about \$6 million.

Irrigation Assistance

The new payout system also makes adequate provision for the return from power revenues of construction costs allocated to irrigation but which are beyond the ability of the water users to repay. We will return these irrigation costs on the basis of the longer of (1) the period available to the water users (following the allotted developmental period, if any) for making their payments on construction costs, or (2) 50 years after water is made available to the land--except, of course, when a different period is set by law. This policy will apply to repayment assistance for each block of land.

Revised Cost Allocations

In recomputing our annual repayment obligations, we also have taken into account new cost allocations for certain projects. The lion's share of costs for Federal multipurpose projects in the Northwest is reimbursable and assigned to power, primarily, and to irrigation. Other costs, such as for navigation, flood control, fish and wildlife, and recreation, are considered by Congress to be of such general value to the Nation that they are nonreimbursable. Power pays more than 75 percent of the total cost of these projects.

The cost allocations for a number of projects are still tentative. In some cases, notably for two large Corps of Engineers' projects--McNary and The Dalles--the original tentative allocations have been revised to substantially reduce costs charged to power. Even these revised allocations are tentative.

Until this year we used the original tentative allocations. However, in preparing our financial statements for this year we have used the revised tentative allocations for McNary and The Dalles. This has reduced our annual repayment obligations by about \$1,700,000 per year.

Schedule 4 of last year's Auditors' report showed



Irrigation flume

a payout surplus of \$20,111,395 for BPA and the associated projects in operation. Of this, the BPA surplus was \$15,342,903 and that for the associated projects \$4,768,492. The surplus for the associated projects would have been \$14,662,492 on the basis of revised cost allocations for McNary and The Dalles projects. However, our new financial statements beginning with fiscal year 1963 wipe the slate clean, so to speak, in the case of associated projects. We consider them to be just on schedule, no more and no less. This means that a surplus of \$14,662,492 for the associated projects as of June 30, 1962, has been for gone on our books. ^{3/} However, it also means that we have that much less to repay on the remaining capital investment.

^{3/} Although this surplus of \$14,662,492 for the associated projects has been treated in this manner for statement purposes, it might, with considerable logic, have been added to the net surplus that we report as of the beginning of fiscal year 1963, in which case the surplus would have been \$14,662,492 greater than what we have reported. The decision to treat the \$14,662,492 surplus as we did is based largely on the consideration that, henceforth, we plan to include in Bonneville's annual expenses the exact payout requirements of the associated projects; so that, henceforth, such projects will show neither a surplus nor a deficit. This will mean that BPA's surplus or deficit will also be the net result for the system. We believe this will simplify the reports. In order to start 1963 on this basis, the surplus for the associated projects as of the end of 1962 was written down to zero.

Our new financial statements also reflect a change in the cost allocation for the Columbia Basin project (Grand Coulee Dam). Originally, Grand Coulee Dam was not considered useful for flood control and no costs were allocated to that purpose. However, after the disastrous flood in the Lower Columbia River Basin in 1948, changes were made in the operating regulations of Grand Coulee Dam such that the project has since supplied important flood control benefits.

Effective with fiscal year 1963, an interim revision of the cost allocation for the Columbia Basin project was approved by the Secretary of the Interior. The new allocation assigns \$46 million of joint construction costs to flood control and reduces the allocation to power by \$20 million and the allocation to irrigation by \$26 million. Since both of these latter items would have been repayable from commercial power revenues but the flood control allocation is nonreimbursable, this change in the allocation reduced our power payout requirements approximately \$1 million per year.

Additional flood control benefits can be obtained from Grand Coulee with rather inexpensive modifications of some of the outlet tunnels. When and if such modifications are made, a further and definitive revision of the official cost allocations for the Columbia Basin project can be expected.

In our annual report for 1961 at page 28, we reported that BPA's scheduled amortization requirements had been substantially overstated. As a result, of course, the surplus was understated by the same amount. The overstatement of amortization charges resulted because we included in the base amount of investment to be amortized not only plant actually in service but also (1) construction work in progress, (2) property held for future use, and (3) certain current assets, primarily materials and supplies inventories.

Construction work in progress and property held for future use are not properly to be depreciated or amortized until such time as they are placed in service and thereby start producing revenues. This is the policy followed by utility regulatory commissions in fixing the rates of utility companies.

Current assets should not be amortized because they either remain in liquid form or, in due course, they are charged to expenses or to con-

struction costs and then repaid in the regular manner for expenses or plant investment. As of June 30, 1962, the overstatement of Bonneville Power Administration's scheduled amortization requirements was \$14,882,000.

The payout surplus reported last year, after reflecting all adjustments, may be reconciled to the surplus shown in our new financial report, schedule 1, as follows:

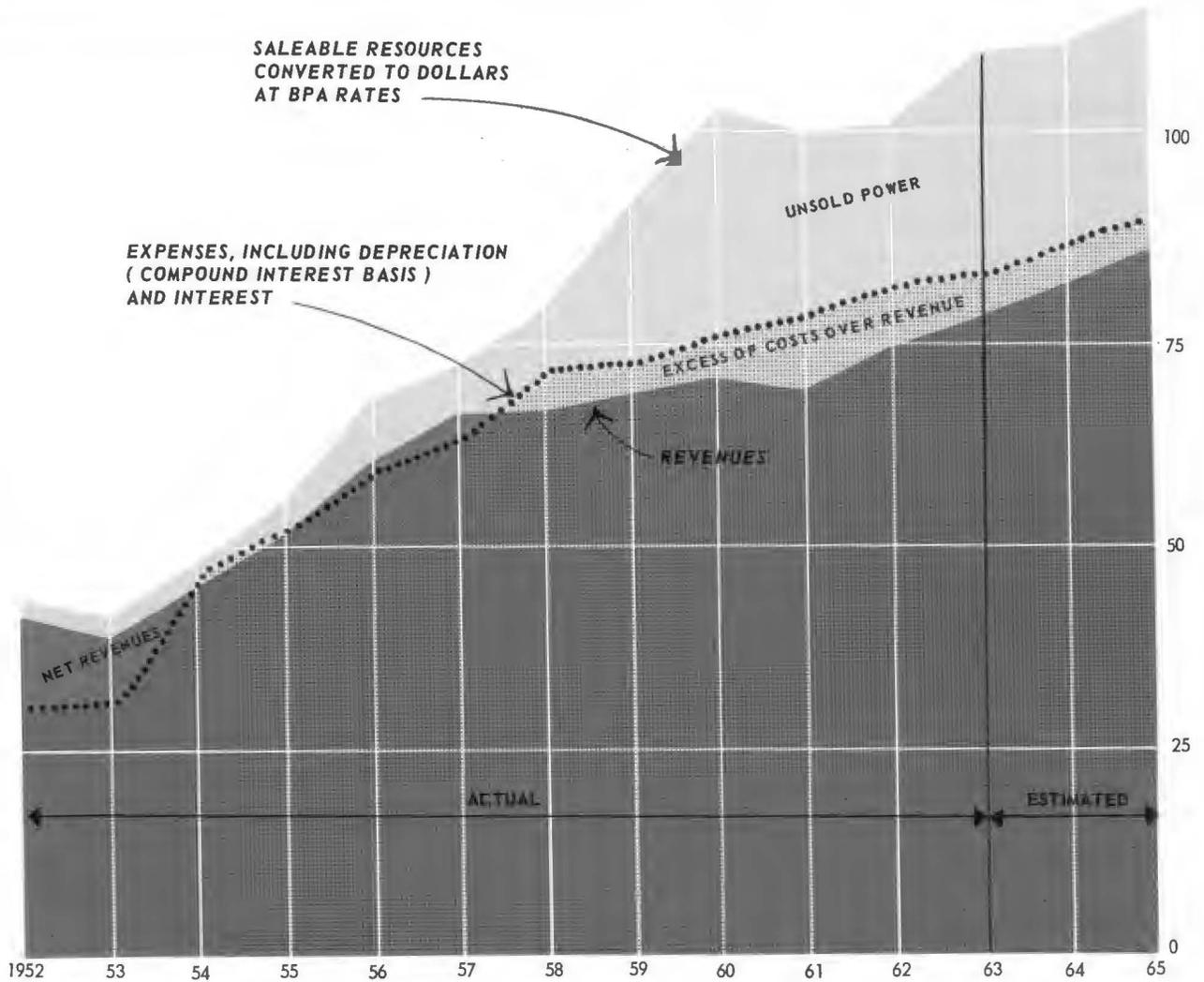
Payout surplus as of June 30, 1962, per schedule 4 of the Auditors' report	\$20,111,000
Adjustment for revised cost allocation at McNary and The Dalles	+9,894,000
Adjustment to correct BPA's scheduled amortization requirements	+14,882,000
Adjusted payout surplus as of June 30, 1962	44,887,000
Deduct the surplus of the associated projects (see text above for explanation)	-14,662,000
Subtotal	30,225,000
Net adjustment to accrual accounting basis from former cash accounting basis	-1,787,000
Payout surplus as of June 30, 1962, on new basis	28,438,000
Deduct payout deficit for fiscal year 1963 per schedule 1	-5,483,000
Surplus as of June 30, 1963, on new reporting basis per schedule 1	<u>\$22,955,000</u>

New Format

As indicated at the beginning of this section we have, as part of our revised financial program, adopted for 1963 a new format for our financial statements.

The new format, under the heading of "Bonneville Power Administration", provides a single set of figures which utilize the official payout accounts for the projects of the Bureau of Reclamation and the Corps of Engineers, and which show the net results for the entire power system as well as BPA, itself. This simplified form of reporting, we believe, will permit the Congress or any other interested party quickly to determine whether our rates are sufficient to assure repayment of our financial obligations within time limits prescribed by various acts of Congress.

These results are computed on a compound interest depreciation basis for BPA which gives, for practical purposes, the same results as an amortization basis. Congress in several instances has shown a preference that payout of the Federal investment in power facilities



BPA RESOURCES & REVENUES BY FISCAL YEARS, IN MILLIONS OF DOLLARS

be accomplished on an amortization basis. In fact, the Bonneville Project Act indicates that rates shall be based upon the amortization of the capital investment over a reasonable period of years. Frequently Congress has indicated that 50 years constitute a reasonable period for amortization, although when the Bonneville Project Act was passed the Congress specifically rejected a proposed amendment that would have specified 50 years as the maximum reasonable amortization period. Should Congress establish a policy different from the 50-year amortization plan herein described, we would, of course, revise our payout methods accordingly.

Formerly, we reported two sets of figures and the Bureau of Reclamation's official accounts constituted a third set. One set of figures with net results was for the "Columbia River Power System" which included BPA and the associated projects. This statement was on the basis of

conventional depreciation cost accounting; it utilized--in the case of Bureau projects--memorandum accounts showing depreciation in lieu of official accounts using amortization and replacement accounting.^{4/} Also, as noted earlier, it relied on obsolete cost allocations. Our second statement was presented on a "payout" basis by substituting amortization requirements for depreciation expense, cash receipts for accrued revenues, and by making partial adjustments of the accrued expenses to a cash basis. The use of two sets of figures has been confusing. Our new format should end the confusion.

^{4/} One purpose of our financial reports heretofore was to present data on the same basis as private utilities -- namely, according to the Federal Power Commission's System of Accounts for Electric Utilities. That system was based on depreciation accounting, which was not necessary for the official accounting and reporting on Bureau of Reclamation projects. The Bureau accommodated us by providing memorandum accounts on a depreciation basis. Now we can use the official payout accounts because for BPA we are showing as an expense item the payout requirements of the associated projects which are based on amortization rather than depreciation.

**UNITED STATES DEPARTMENT OF THE INTERIOR
BONNEVILLE POWER ADMINISTRATION
FINANCIAL STATEMENTS
FISCAL YEAR 1963**

Schedule 1 - Statement of revenues and expenses for fiscal year 1963 and cumulative to June 30, 1963

Schedule 2 - Balance sheet as of June 30, 1963

Schedule A - Net requirements of associated projects for fiscal year 1963 and cumulative to June 30, 1963

Schedule B - Revenues and funds returned to the U.S. Treasury for fiscal year 1963 and cumulative to June 30, 1963

Schedule C - Plant investment of associated projects returnable from commercial power revenues and status of repayment at June 30, 1963

Schedule D - Amount and allocation of plant investment of associated projects at June 30, 1963

Schedule E - Notes to financial statements

Bonneville Power Administration

October 21, 1963

UNITED STATES DEPARTMENT OF THE INTERIOR
 BONNEVILLE POWER ADMINISTRATION
 STATEMENT OF REVENUES AND EXPENSES (NOTE 1)
 FISCAL YEAR 1963 AND CUMULATIVE TO JUNE 30, 1963
 (In thousands of dollars)

	<u>Cumulative to June 30, 1962</u>	<u>F. Y. 1963</u>	<u>Cumulative to June 30, 1963</u>
<u>Operating revenues</u>			
Sales of electric energy	854,291	71,978	926,269
Other operating revenues	<u>24,444</u>	<u>5,726</u>	<u>30,170</u>
Total operating revenues	<u>878,735</u>	<u>77,704</u>	<u>956,439</u>
 <u>Operating expenses</u>			
Net requirements of associated projects (schedule A)	501,161	48,095	549,256
Purchased power	11,582	1,284	12,866
Operation expenses	108,353	9,362	117,715
Maintenance expenses	33,029	4,524	37,553
Provisions for depreciation (amortization) (note 2)	97,857	10,003	107,860
Property losses chargeable to operations	<u>5,224</u>	<u>94</u>	<u>5,318</u>
Total operating expenses	<u>757,206</u>	<u>73,362</u>	<u>830,568</u>
Net operating revenues	<u>121,529</u>	<u>4,342</u>	<u>125,871</u>
 <u>Interest and other deductions</u>			
Interest on Federal investment	100,838	10,048	110,886
Interest charged to construction	(8,629)	(225)	(8,854)
Miscellaneous income deductions, net	<u>882</u>	<u>2</u>	<u>884</u>
Total interest and other deductions	<u>93,091</u>	<u>9,825</u>	<u>102,916</u>
 <u>Net revenues (deficit)</u>	<u>28,438</u>	<u>(5,483)</u>	<u>22,955</u>

"Notes to financial statements" (schedule E) are an integral part of this statement.

() Denotes red figures.

UNITED STATES DEPARTMENT OF THE INTERIOR
 BONNEVILLE POWER ADMINISTRATION
 BALANCE SHEET AS OF JUNE 30, 1963 (NOTE 1)

(In thousands of dollars)

<u>ASSETS</u>		<u>LIABILITIES</u>	
<u>Fixed assets – transmission system</u>		<u>Investment of U.S. Government – transmission system</u>	
Electric plant in service	520,244	Congressional appropriations, including amounts for expenses of operation, maintenance, administration, etc.	712,019
Electric plant leased to others	463	Revenues transferred to continuing fund	2,974
Construction work in progress	16,091	Transfers from other Federal agencies - net	19,736
Electric plant held for future use	<u>1,293</u>	Interest on Federal investment	110,886
Total fixed assets	538,091	Gross Federal investment	845,615
Less reserve for depreciation (amortization) (note 2)	<u>90,760</u>	Less funds returned to U.S. Treasury (schedule B)	
Transmission system original cost, net	<u>447,331</u>	Total funds returned	933,457
		Returned for associated projects	<u>(549,256)</u>
		Funds returned for transmission system	<u>384,201</u>
<u>Deferred charge for repayment obligation at associated projects (schedule C)</u>	<u>1,214,592</u>	Net investment of U.S. Government -- transmission system	<u>461,414</u>
<u>Current assets</u>		<u>Accumulated net revenues</u>	
Unexpended funds	31,123	Balance at June 30, 1962	28,438
Special funds	960	Net revenues (deficit) – current year	<u>(5,483)</u>
Accounts receivable	3,632	Balance at June 30, 1963	<u>22,955</u>
Accrued utility revenue	6,536		
Materials and supplies	<u>4,204</u>	<u>Unamortized investment in associated projects returnable from commercial power revenues (schedule C)</u>	
Total current assets	<u>46,455</u>	Total	1,443,482
		Less repayments to date	549,256
<u>Special funds</u>		Repayments for O&M and interest	<u>(320,366)</u>
Trust funds	334	Repayments for amortization	<u>228,890</u>
Advances -- Bureau of Reclamation	<u>30</u>	Unamortized amount	<u>1,214,592</u>
Total special funds	<u>364</u>		
		<u>Current liabilities and other credits</u>	
<u>Other assets and deferred charges</u>		Accounts payable	7,698
Clearing accounts	(22)	Employees' accrued leave	2,721
Other work in progress	953	Trust fund advances	<u>334</u>
Other deferred charges	<u>41</u>	Total current liabilities and other credits	<u>10,753</u>
Total other assets and deferred charges	<u>972</u>		
	<u>1,709,714</u>		<u>1,709,714</u>

"Notes to financial statements" (schedule E) are an integral part of this statement.

() Denotes red figures.

UNITED STATES DEPARTMENT OF THE INTERIOR
 BONNEVILLE POWER ADMINISTRATION
 NET REQUIREMENTS OF ASSOCIATED PROJECTS
 FISCAL YEAR 1963 AND CUMULATIVE TO JUNE 30, 1963

(In thousands of dollars)

Project	Operation and maintenance expense	Interest expense	1/ Amortization	Gross requirements	Less miscellaneous revenues	Net payout requirements
<u>Fiscal year 1963</u>						
Albeni Falls (CE)	335	709	620	1,664	214	1,450
Bonneville Dam (CE)	1,076	851	285	2,212	12	2,200
Chief Joseph (CE)	1,030	3,630	2,140	6,800	—	6,800
Columbia Basin (BR)	2,380	1,855	4,499	8,734	334	8,400
Detroit-Big Cliff (CE)	339	933	528	1,800	—	1,800
Hills Creek (CE)	114	346	290	750	—	750
Hungry Horse (BR)	434	2,032	892	3,358	8	3,350
Ice Harbor (CE)	396	2,282	1,047	3,725	25	3,700
Lookout Point-Dexter (CE)	304	952	594	1,850	—	1,850
McNary (CE)	1,340	5,712	2,262	9,314	64	9,250
The Dalles (CE)	1,224	5,414	1,574	8,212	12	8,200
Yakima (BR)	212	95	129	436	91	345
Total fiscal year 1963	<u>9,184</u>	<u>24,811</u>	<u>14,860</u>	<u>48,855</u>	<u>760</u>	<u>48,095</u>
<u>Cumulative through F.Y. 1963</u>						
Albeni Falls (CE)	2,351	6,538	3,976	12,865	240	12,625
Bonneville Dam (CE)	18,478	25,923	27,910	72,311	86	72,225
Chief Joseph (CE)	7,149	23,952	12,899	44,000	—	44,000
Columbia Basin (BR)	44,644	55,327	114,009	213,980	5,621	208,359
Detroit-Big Cliff (CE)	3,000	9,350	5,390	17,740	—	17,740
Hills Creek (CE)	125	375	325	825	—	825
Hungry Horse (BR)	4,030	21,295	13,108	38,433	177	38,256
Ice Harbor (CE)	553	3,169	1,513	5,235	35	5,200
Lookout Point-Dexter (CE)	2,316	8,123	4,561	15,000	—	15,000
McNary (CE)	12,633	47,640	31,152	91,425	1,240	90,185
The Dalles (CE)	6,638	23,491	12,458	42,587	67	42,520
Yakima (BR)	946	661	1,589	3,196	875	2,321
Cumulative total June 30, 1963	<u>102,863</u>	<u>225,844</u>	<u>228,890</u>	<u>557,597</u>	<u>8,341</u>	<u>549,256</u>

CE - Corps of Engineers project.

BR - Bureau of Reclamation project.

1/ Includes provision for repayment of initial power investment, interim replacements and irrigation construction costs assigned for return from commercial power revenues.

UNITED STATES DEPARTMENT OF THE INTERIOR
 BONNEVILLE POWER ADMINISTRATION
 REVENUES AND FUNDS RETURNED TO THE U.S. TREASURY
 FISCAL YEAR 1963 AND CUMULATIVE TO JUNE 30, 1963

(In thousands of dollars)

	Fiscal year 1963	Cumulative to June 30, 1963
Total operating revenues	<u>77,704</u>	<u>956,439</u>
Less:		
Accounts receivable 1/	-	9,802
Net change in accounts receivable during the year	(710)	-
Exchange account transactions	<u>1,174</u>	<u>24,068</u>
Net deductions	<u>464</u>	<u>33,870</u>
Remainder	77,240	922,569
Add: Miscellaneous receipts 2/	<u>92</u>	<u>10,888</u>
Funds returned to the U.S. Treasury	<u><u>77,332</u></u>	<u><u>933,457</u></u>
Allocation of funds returned:		
Reclamation fund	12,095	248,936
General fund:		
For account of Corps of Engineers	36,000	300,320
For account of Bonneville Power Administration 3/	28,097	381,228
BPA continuing fund	<u>1,140</u>	<u>2,973</u>
Total allocation	<u><u>77,332</u></u>	<u><u>933,457</u></u>

() Denotes red figures.

1/ Consists of revenues billed or accrued, but uncollected as of June 30, 1963.

2/ Consists of receipts arising out of other than operating revenue transactions; e.g., proceeds from sale of assets or from salvage of plant retirements.

3/ Includes payments made direct to the Federal Power Commission by owners of downstream licensed projects pursuant to section 10 (f) of the Federal Power Act for benefits received from upstream Federal reclamation storage projects. Amounts are \$148 thousand for F.Y. 1963 and \$211 thousand for the period from inception to June 30, 1963. The downstream licensees also have made payments pursuant to section 10 (f) on account of benefits received from Corps of Engineers projects but such sums are taken into the accounts of the Corps of Engineers projects and are netted against the requirements of such projects returnable from the Administration's operating revenues. To date the Albeni Falls project is the only Corps of Engineers project on account of which such payments have been made by licensed projects.

UNITED STATES DEPARTMENT OF THE INTERIOR
 BONNEVILLE POWER ADMINISTRATION
 PLANT INVESTMENT OF ASSOCIATED PROJECTS RETURNABLE 1/ FROM COMMERCIAL POWER REVENUES
 AND STATUS OF REPAYMENT AS OF JUNE 30, 1963

Project	(In thousands of dollars)					
	(1)	(2)	(3)	(4)	(5)	(6)
	Commercial power plant investment (schedule D)	Irrigation plant investment returnable from commercial power revenues (schedule D)	Net retirements from inception to 6-30-63	Total plant investment returnable from commercial power revenues (1+2+3)	Repayments to 6-30-63	Unamortized amount at 6-30-63 (4-5)
Albeni Falls (CE)	31,587	--	--	31,587	3,976	27,611
Bonneville Dam (CE)	61,139	--	640	61,779	27,910	33,869
Chief Joseph(CE)	155,613	1,302	34	156,949	12,900	144,049
Columbia Basin (BR)	175,511	253,756	1,049	430,316	114,009	316,307
Detroit-Big Cliff (CE)	41,872	--	213	42,085	5,390	36,695
Hills Creek (CE)	13,907	--	--	13,907	325	13,582
Hungry Horse (BR)	77,355	--	161	77,516	13,108	64,408
Ice Harbor (CE)	92,361	--	--	92,361	1,513	90,848
Lookout Point-Dexter (CE)	41,899	--	9	41,908	4,561	37,347
McNary (CE)	256,495	--	124	256,619	31,151	225,468
The Dalles (CE)	224,018	--	42	224,060	12,458	211,602
Yakima (BR)	4,542	9,857	(4)	14,395	1,589	12,806
Total	<u>1,176,299</u>	<u>264,915</u>	<u>2,268</u>	<u>1,443,482</u>	<u>228,890</u>	<u>1,214,592</u>

() Denotes red figures.
 CE - Corps of Engineers project.
 BR - Bureau of Reclamation project.

1/ That is, repayable to the U.S. Treasury from commercial power operations.

UNITED STATES DEPARTMENT OF THE INTERIOR
 BONNEVILLE POWER ADMINISTRATION
 AMOUNT AND ALLOCATION OF PLANT INVESTMENT OF ASSOCIATED PROJECTS

AS OF JUNE 30, 1963

(In thousands of dollars)

Project	Total	ALLOCATED TO:									% of total plant investment returnable from commercial power revenues
		Commercial power	IRRIGATION			NONREIMBURSABLE					
			Returnable from commercial power revenues	Returnable from other project revenues	Total irrigation	Navigation	Flood control	Fish & wildlife	Recreation	Other	
Albeni Falls (CE)	32,123	31,587	--	--	--	130	169	--	237	--	98.3
Bonneville Dam (CE)	88,953	61,139	--	--	--	27,814	--	--	--	--	68.7
Chief Joseph (CE) 1/	164,201	155,613	1,302	7,196	8,498	--	--	--	90	--	95.6
Columbia Basin (BR) 2/	553,625	175,511	253,756	74,368	328,124	1,000	48,488	--	--	502 3/	77.5
Detroit-Big Cliff (CE) 1/	66,167	41,872	--	3,797	3,797	131	20,367	--	--	--	63.3
Hills Creek (CE) 1/	48,126	13,907	--	4,918	4,918	614	28,687	--	--	--	28.9
Hungry Horse (BR)	101,965	77,355	--	--	--	--	24,610	--	--	--	75.9
Ice Harbor (CE) 1/	132,548	92,361	--	--	--	39,813	--	--	374	--	69.7
Lookout Point-Dexter (CE) 1/	94,153	41,899	--	5,067	5,067	853	46,273	--	61	--	44.5
McNary (CE) 1/	305,689	256,495	--	--	--	48,954	--	--	240	--	83.9
The Dalles (CE) 1/	265,226	224,018	--	--	--	41,208	--	--	--	--	84.5
Yakima (BR) 1/	<u>62,958</u>	<u>4,542</u>	<u>9,857</u>	<u>47,407</u>	<u>57,264</u>	<u>--</u>	<u>--</u>	<u>1,152</u>	<u>--</u>	<u>--</u>	22.9
Total plant investment at 6-30-63	<u>1,915,734</u>	<u>1,176,299</u>	<u>264,915</u>	<u>142,753</u>	<u>407,668</u>	<u>160,517</u>	<u>168,594</u>	<u>1,152</u>	<u>1,002</u>	<u>502</u>	75.2

CE - Corps of Engineers project.

BR - Bureau of Reclamation project.

1. Allocations for these projects are tentative.

2. This is an interim revision to the tentative allocation reflecting the allocation to flood control.

3. Donations and spillway lighting.

UNITED STATES DEPARTMENT OF THE INTERIOR
 BONNEVILLE POWER ADMINISTRATION
 NOTES TO FINANCIAL STATEMENTS
 FISCAL YEAR 1963

General

These statements reflect the new accounting and reporting policies recommended to the Department of the Interior for adoption by Bonneville Power Administration as the Federal power marketing agency in the Columbia River Basin area. They have been prepared prior to the annual audit by the U. S. General Accounting Office. Audit work was deferred pending submission of the new financial statements to that office. The audit now has been initiated but could not be completed in time for the printing of this report.

Financial results of operations and plant investment information for the associated projects have been furnished to the Bonneville Power Administration and recorded on its records from data furnished by the Bureau of Reclamation and the Corps of Engineers. The Administration does not audit the accounts of the associated projects.

Footnotes

1. These are pro-forma statements for the following reasons:

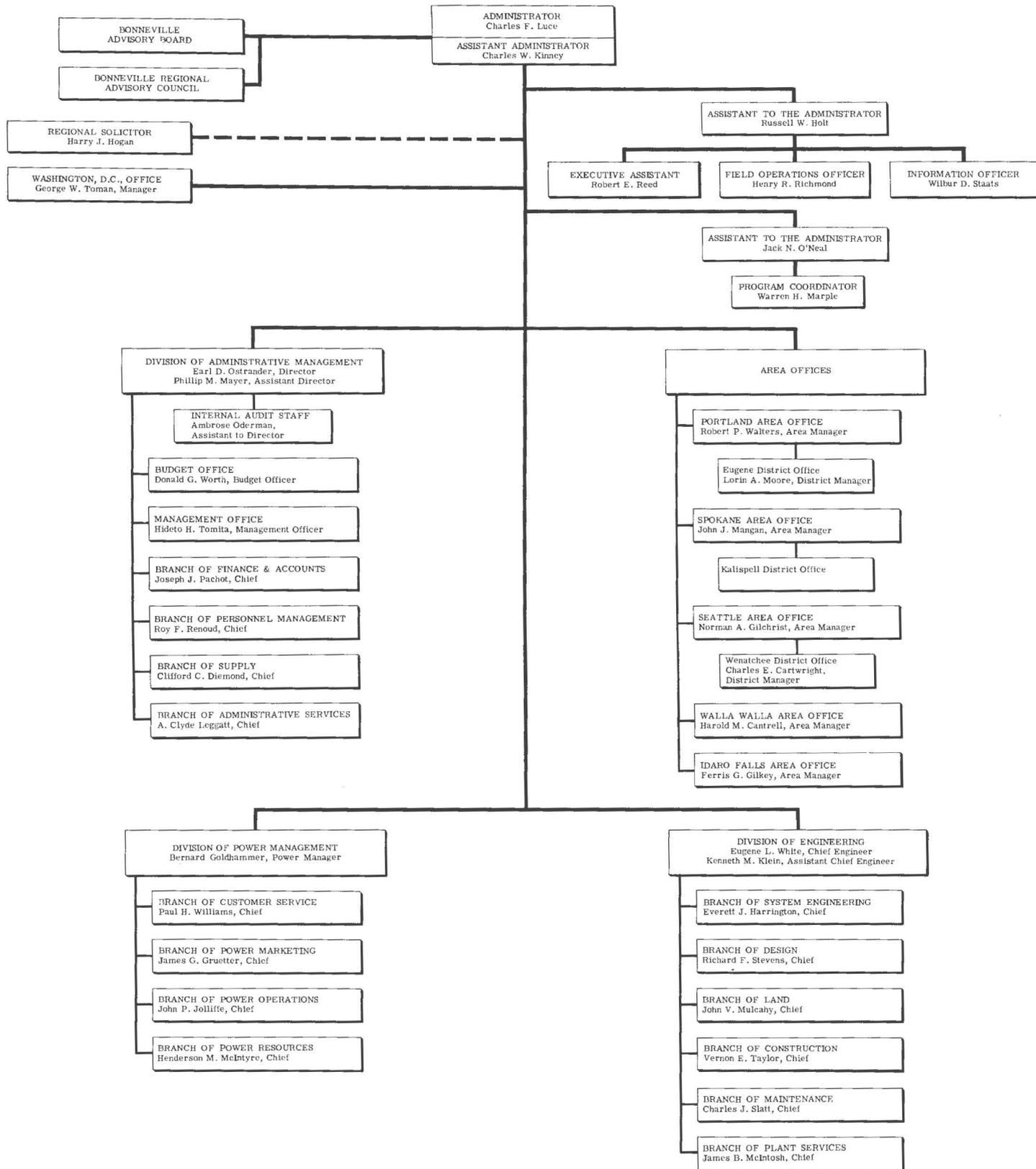
- (a) Tentative cost allocations have been used for the following projects:

Chief Joseph	Lookout Point-Dexter
Detroit-Big Cliff	McNary
Hills Creek	The Dalles
Ice Harbor	Yakima

In addition, an interim revision of the allocation of the costs of the Columbia Basin project has been used. Such allocation was officially adopted by the Department of the Interior in fiscal year 1963 effective as of the first of the year.

- (b) Data for the McNary and The Dalles projects have been based on the latest revisions of their tentative cost allocations, but the projects' official accounts and records continue to be kept according to earlier cost allocations pending definitive action on the allocations.
- (c) The balance sheet data for irrigation costs returnable from power revenues are partially estimated.
2. Effective for fiscal year 1963 and prior periods, Bonneville Power Administration adopted the compound interest method of depreciation for the transmission system in lieu of the straight-line method formerly used. The principal reason for the change was to provide a basis for using provisions for depreciation expense as a measure of scheduled requirements for amortization of the capital investment. This makes possible the use of a single set of financial results in lieu of the dual bases (cost and payout) formerly used. Conventional depreciation methods are used, based on service lives of the various classes of property, except that certain plant items such as land rights and clearing costs are assigned an arbitrary life of 100 years, which is, in effect, amortization. Hence the term "amortization" is used along with the term "depreciation" in account titles and report captions.

Compound interest depreciation parallels very closely the annual amortization requirements for payout of plant investment used in the past in schedule 4 of the Auditors' reports. The cumulative effect of the change from straight-line depreciation to compound interest depreciation through June 30, 1963, is a reduction in the reserve for depreciation (amortization) in the amount of \$38,852,178.



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BONNEVILLE POWER ADMINISTRATOR 1939-1953

Born April 27, 1894

Died April 6, 1963

"A LIFE DEVOTED TO THE HIGHEST STANDARDS OF PUBLIC SERVICE"

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Morrow County Court
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Hon. James Shea, Mayor
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James S. Ueber, President
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Lyle E. Vickers, President
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Harney Electric Cooperative
Burns, Oregon

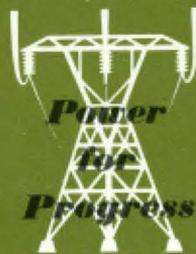
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Inland Empire Waterways Association
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