



P.O. BOX 3537, PORTLAND 8, OREGON

BELMONT 4-3361

U.S. DEPARTMENT OF THE INTERIOR

**B O N N E V I L L E   P O W E R   A D M I N I S T R A T I O N**

FEDERAL BUILDING, 1002 N.E. HOLLADAY

*News*

August 1, 1962

Memo to:           Editors of Pacific Northwest newspapers

From:             Wilbur D. Staats, Information Officer

Bonneville Power Administration observes its 25th Anniversary August 20, 1962. This era represents a period of unparalleled hydroelectric and industrial development in the Pacific Northwest. During this quarter century the region has become over 99 percent electrified, and has the highest average farm and residential use, and among the lowest power rates in the nation.

You may be interested in the attached series of seven articles dealing with the growth of BPA and its impact on the Pacific Northwest. They are offered for release starting the week of Monday, August 13. They may be used in whole, in part, or as reference material for a feature or local stories you may wish to develop. There also is enclosed a compilation of BPA shorts that you may wish to consider for filler.

If you wish pictures or other illustrated material we will be glad to supply pictures of transmission facilities and hydroelectric projects such as are available.

If you wish to assign a photographer to take pictures of the facilities in your area, our area and district managers located in Portland, Seattle, Spokane, Walla Walla, Wenatchee, Kalispell and Eugene will be glad to work with you.

*Wilbur D. Staats*

Wilbur D. Staats  
Information Officer

Enclosures



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## BONNEVILLE POWER ADMINISTRATION'S 25th ANNIVERSARY--PART I

(This is the first in a series of articles on Bonneville Power Administration's first 25 years in the Pacific Northwest. The second article will deal with BPA as a billion-dollar business.)

### BPA CELEBRATES ITS 25th BIRTHDAY

Nation's Largest Hydroelectric Utility Operation Serves Oregon, Washington,  
Northern Idaho and Western Montana

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President Franklin Delano Roosevelt on August 20, 1937, signed the Bonneville Project Act, marking the birth of Bonneville Power Administration. With a stroke of his pen, he heralded an unparalleled quarter century of Pacific Northwest hydroelectric and economic growth.

Bonneville Power Administration, in two and a half decades has become the nation's largest hydroelectric utility operation, serving an area of about 220,000 square miles with a population of 5,000,000 people. No other river basin in the world surpasses the hydroelectric development of the U. S. Columbia River power system.

More      More

The first projects, Bonneville and Grand Coulee dams, although planned and dreamed of for years, were finally started as "make work" projects during the great depression of the early 1930s. By 1943 Bonneville Power Administration was supplying to the Pacific Northwest 7 billion kilowatt-hours of power from these two projects or over half of all power generated in the region.

Bonneville and Grand Coulee dams were greeted with profound skepticism even by many people in the Pacific Northwest. They were assailed as "white elephants" and follies of the New Deal. However, a few years later the two dams contributed some 26 billion kilowatt-hours of power to the defense and war effort.

BPA's transmission system fed power into the gigantic Hanford Works, the airplane and shipyard plants and hundreds of vital industries of the region that helped shorten and win the war. It was not until after the war that construction was started on new projects: McNary dam, 1947, and Hungry Horse, 1948. However, all major projects in the present system were authorized for construction by 1954.

Since delivering the first power generated at Bonneville dam to the City of Cascade Locks, BPA has become the power and transmission agency for 20 U. S. multipurpose dams on the Columbia river and its tributaries, with an installed generating capacity of 8,379,250 kilowatts by 1968.

Fifteen projects are now in service including four Bureau of Reclamation dams--Grand Coulee, Hungry Horse, Chandler and Roza--and 11 Corps of Engineer projects--Bonneville, McNary, Detroit, Big Cliff, Lookout Point, Dexter, Albeni Falls, Chief Joseph, The Dalles, Ice Harbor and Hills Creek--have an installed generating capacity of 6,489,250 kilowatts. Five Corps projects under construction--Cougar, Green Peter, Foster, John Day and Lower Monumental--

will add 1,890,000 kilowatts to the system.

Bonneville Power Administration was directed by the Act to "construct, operate and maintain transmission lines and substations." Today, BPA's 8,600 mile high-voltage transmission grid threads the rugged Cascade range, rolling range lands, forests and farming lands of Oregon, Washington, northern Idaho and western Montana to bring the power sinews of electric energy to every corner of the region.

Power is delivered through 215 substations to 20 municipalities, 25 public utility districts, 35 rural electric cooperatives, 8 private utilities, 19 industrial plants and 8 federal agencies. Most customers distribute the power to the ultimate consumers--residences, stores, commercial establishments, diversified industries, farms and ranches. Large electroprocess industries and federal agencies are served directly.

During the 25 years of steady growth, BPA has brought "Power for Progress" to all the people of the Pacific Northwest.

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U.S. Columbia River Power System - General specifications, projects existing, under construction and authorized  
June 30, 1962

Project	Operating Agency 1/	Location	Stream	Plant Installations		Date in Service (initial unit)	Generation Fiscal Year 1962 3/
				Number of Units	Total Capacity Kilowatts 2/		
<u>Existing:</u>							
Bonneville	CE	Washington-Oregon	Columbia	10	518,400	June 1938	3,461
Grand Coulee	BR	Washington	Columbia	18	1,944,000	September 1941	11,433
Hungry Horse	BR	Montana	South Fork Flathead	4	285,000	October 1952	796
Detroit	CE	Oregon	North Santiam	2	100,000	July 1953	338
McNary	CE	Washington-Oregon	Columbia	14	980,000	November 1953	4,859
Big Cliff	CE	Oregon	North Santiam	1	18,000	June 1954	97
Lookout Point	CE	Oregon	Middle Fork Willamette	3	120,000	December 1954	223
Albeni Falls	CE	Idaho	Pend Oreille	3	42,600	March 1955	176
Dexter	CE	Oregon	Middle Fork Willamette	1	15,000	May 1955	58
Chief Joseph	CE	Washington	Columbia	16	1,024,000	August 1955	4,446
Chandler	BR	Washington	Yakima	2	12,000	February 1956	40
The Dalles	CE	Washington-Oregon	Columbia	16	1,119,000	May 1957	4,985
Roza	BR	Washington	Yakima	1	11,250	August 1958	50
Ice Harbor	CE	Washington	Snake	3	270,000	December 1961	537
Hills Creek	CE	Oregon	Middle Fork Willamette	2	30,000	May 1962	11
Subtotal					6,489,250		31,510
<u>Under Construction:</u>							
Cougar	CE	Oregon	South Fork McKenzie	2	25,000	November 1963	
Green Peter	CE	Oregon	Middle Santiam	2	80,000	April 1966	
Foster	CE	Oregon	South Santiam	2	30,000	April 1967	
John Day	CE	Washington-Oregon	Columbia	10	1,350,000	June 1967	
Lower Monumental	CE	Washington	Snake	3	405,000	December 1967	
Subtotal					1,890,000		
<u>Authorized:</u>							
Libby	CE	Montana	Kootenai	4	344,000		
Little Goose	CE	Washington	Snake	3	405,000		
Lower Granite	CE	Washington	Snake	3	405,000		
Subtotal					1,154,000		
TOTAL, 23 Projects					9,533,250		

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

2/ Nameplate Rating

3/ Millions of kilowatt-hours



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## BONNEVILLE POWER ADMINISTRATION'S 25th ANNIVERSARY--PART II

(This is the second in a series of articles on Bonneville Power Administration's first 25 years in the Pacific Northwest. The third article will deal with low cost power and industrial development.)

### BPA HAS BECOME BIG INVESTMENT

#### Capital Investment in U. S. Columbia Power System Approaching Two and One-Half Billion

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Bonneville Power Administration, born 25 years ago with signing of the Bonneville Act August 20, 1937, is today a billion-dollar business. The capital investment in power facilities of the U. S. Columbia River power system will exceed \$2,500,000,000 by 1968.

Power sold since beginning of operations in 1938 totals over a third of a trillion kilowatt-hours. This is enough to meet the current needs of Seattle for 95 years or the entire nation for eight months. Gross power revenues as of July 1, 1962 passed the \$875,000,000 mark and annual power revenues are now exceeding \$70,000,000.

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Power revenues from BPA are scheduled to repay, in addition to the transmission investment, all of the costs of the multiple purpose dams allocated to power and a substantial portion of the costs allocated to irrigation. The latter consists of both the specific irrigation works and portions of the dams.

As a result, BPA power revenues pay for about 81 percent of the total costs of the 20 multiple purpose dams and all associated facilities, including navigation, flood control, irrigation, recreation, hydroelectric power generation and transmission.

When the 20 dams and related facilities are completed in 1968, such aggregate cost will be about \$3,850,000,000 of which power will pay about \$3,150,000,000 including more than \$600,000,000 of costs allocated to irrigation but repayable from power revenues.

BPA is currently \$20,000,000 ahead in its scheduled repayment of total power investment despite recent annual operating deficits. Power revenues to June 30, 1962, have retired more than \$315,000,000 of the federal government's capital investment plus \$318,000,000 interest and about \$225,000,000 in operations and maintenance costs.

After operating nearly a quarter of a century with a large reserve of accumulated net revenues, BPA entered a period of annual deficit operations in 1958. The deficit in fiscal year 1962 was about \$18,000,000, during the same time a market in the region could not be found for some \$32,000,000 worth of power, most of it secondary power (the kind that cannot be guaranteed for delivery day in and day out).

Five factors stand out in an analysis of BPA's recent annual deficit situation:

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1. Failure to construct new projects on an orderly schedule, thus leaving temporary surpluses of firm power which had to be held for normal load growth and which could not be sold because there was no new generation coming on the line in time to meet normal load growth;
2. Inability to find markets for large quantities of secondary power which is available in uneven amounts and for uncertain periods of time;
3. Higher cost projects, the most economical sites already having been developed;
4. Construction of large amounts of new generation by public and private utilities during an eight-year period of "no new starts" by the federal government, and
5. Economic conditions which made it necessary for large industrial customers to curtail operations and power purchases.

BPA's famed "Postage Stamp" rate of \$17.50 a kilowatt year anywhere in the region has been in effect since the first power was sold in 1938. Whether this rate will have to be raised in the next few years will depend on how effective BPA's current program will prove to be.

This program is designed to meet on schedule the region's power requirements, including potential new electroprocess industries, finding new markets for secondary energy through interties and new uses for large unsold blocks of secondary power, seeking more realistic scheduling of payout requirements, coordination of all power reserves, and achieving economies in every sector.

With continued public support for its programs, BPA will be able to contribute much more to the economic growth and development of the region through "Power for Progress."



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### BONNEVILLE POWER ADMINISTRATION'S 25th ANNIVERSARY--PART III

(This is the third of a series of articles on Bonneville Power Administration's first 25 years in the Pacific Northwest. The fourth article will deal with "Power for People.")

#### LOW-COST POWER SPURS INDUSTRY

Quarter Century of U. S. Columbia River Power Fosters Complex of Electro-process Industries.

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Bonneville Power Administration, created 25 years ago on August 20, 1937, started a never-ending flow of low-cost hydroelectric power that spurred an industrial revolution in the Pacific Northwest. Large blocks of power generated at giant federal multipurpose dams were to serve a complex of electro-process industries and add immeasurable new job opportunities and wealth to the region's economy.

A quarter of a century ago, the Pacific Northwest was almost entirely dependent upon farming, lumbering, mining and fishing. There was little industry except milling of timber and manufacture of wood products, flour milling, and fish canneries. There were no local oil or gas deposits available

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for industrial energy. Scattered low-grade coal deposits could be used to only a limited extent.

Harnessing the Columbia river to produce low-cost energy from perpetually falling waters provided opportunity for new industries and started electrification of existing industries. Electricity was put to thousands of new uses in manufacturing enterprises, businesses, and commercial establishments of the region.

Bonneville Power Administration's 14 electroprocess customers with 18 industrial plants today represent a gross investment of nearly \$400,000,000. These industries account for nearly one-third of the nation's aluminum ingot production, as well as substantial production of elemental phosphorus, ferromanganese, calcium carbide, ferronickel, chromium, ferrosilicon, caustic soda, chlorine, ammonium, pulp, paper and plywood.

These Pacific Northwest electroprocess industries contribute nearly \$400,000 a day to the region's economy in terms of the product value and expenditures for transportation, materials, services and taxes. Taxes paid by these industries, alone, to state and local governments range from \$5,000,000 to \$7,000,000 annually.

The five major aluminum companies alone, in 1961 produced half a million tons of primary aluminum, had an annual payroll in excess of \$51,000,000, spent \$24,000,000 on transportation, \$22,000,000 on materials, supplies and services, and paid over \$5,000,000 in state and local taxes.

The U. S. Bureau of Mines estimates that within two decades, primary aluminum production in the Northwest will reach 2,000,000 tons annually out of a projected national total of 8,000,000 tons.

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Fabrication and processing of aluminum has spawned new industries in the region as new uses and new products are developed. Current estimates indicate that about one out of every nine workers engaged in manufacturing is employed in producing aluminum transportation equipment and such specialty items as golf bag carriers, sprinkler irrigation pipe and couplers, ladders, shingles, siding, kitchen cabinets and furniture, home appliances and similar industries.

Next to electroprocess industries, forest products are becoming one of the greatest users of hydroelectric power with about 90 percent of the industry electrified. Today's modern electrified sawmills, paper and plywood plants, together with wood fabrication of every description, provide employment for about two out of every five workers gainfully employed in manufacture.

Abundant low-cost power has nurtured an unprecedented expansion of the quick-frozen food industry in the Pacific Northwest during the last two decades. The most spectacular expansion in this field has been growth of frozen cooked potato products which represented 76 percent of the total U. S. pack in this category in 1959. Today the region accounts for about half of the berries, a third of the vegetables and a fourth of the frozen fruit packed in the United States. Electricity is also used extensively in other food processing plants including canning of vegetables, fruit, fish and meat products.

BPA itself is a major Pacific Northwest industry with a plant investment of over \$520,000,000. BPA employs 2,300 workers and has an annual payroll of over \$16,000,000.

Every industry in the Pacific Northwest has been affected directly or indirectly by the flow of low-cost power from the U. S. Columbia River power system. Bonneville Power Administration, during the past two decades, has

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**Supplied** more electric energy to the region than all other generating utilities combined.

The power for modernization, automation and new industrial technologies **has** truly become the "Power for Progress."



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## BONNEVILLE POWER ADMINISTRATION's 25th ANNIVERSARY--PART IV

(This is the fourth in a series of articles on Bonneville Power Administration's first 25 years in the Pacific Northwest. The fifth article will deal with engineering achievements.)

POWER FOR PEOPLE  
IS POWER PROGRESS

Pacific Northwest celebrates Bonneville Power Administration's 25th  
Birthday with Highest Family Power Use

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The Pacific Northwest celebrates Bonneville Power Administration's 25th birthday August 20 with the world's highest standard of electrical living. Pacific Northwest families today use about 10 times as much electricity as they did in 1940 and nearly two and one-half times the U. S. average use. Residential and farm rates are among the lowest in the nation.

The Bonneville Act, signed by President Roosevelt, August 20, 1937, directed the Administrator to operate facilities for generating electric energy "for the benefit of the general public, and particularly of domestic and rural consumers . . .".

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A typical farm or residential family in Oregon or Washington today uses about 9,500 kilowatt hours of electricity a year, pays a power bill averaging less than \$10 a month, and has an investment of about \$2,000 in electrical appliances. Food grinders and mixers, refrigerators and freezers, electric ranges, dish washers, garbage disposals and hot water heaters take the drudgery out of the kitchen. TV, Hi-Fi and radio sets provide entertainment. The house is air-conditioned and heated by electricity, and vacuum cleaners, floor polishers, wash machines and dryers take over the cleaning and washing tasks. Electric motors power hobby crafts and automatically open and close garage doors with the help of an "electric eye."

Twenty-five years ago the typical northwest farm family pumped water by hand and did other chores at the cost of an aching back. The wife slaved over a hot wood range with coils to heat the dish water. Children attended a one-room "little red schoolhouse" and studied by the dim light of a kerosene or carbide light. A battery radio, if it worked, brought a modicum of news and entertainment.

Most farms and ranches of the Pacific Northwest today enjoy all the electrical conveniences of urban families in addition to using power for milking, grinding feeds, powering machine shops, sprinkler and pumping irrigation, home freezing of meats and produce, hay drying, barnyard lighting, sterilization of milking equipment, electric hoists and elevators and myriad other tasks.

Modern urban schools and the schools serving consolidated rural areas have undergone an evolution during the last two decades through the use of abundant low-cost electrical energy for ideal lighting, heating and air-conditioning, educational sound and TV equipment, and athletic field lighting. All these facilities are conducive to safeguarding the health and producing

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~~I~~deal conditions for education of today's children.

New uses of electricity to serve or entertain every member of the family appear almost daily. Electric tooth brushes and shoe polishers can be purchased. Flashlights, shavers and transistor radios with batteries that can be recharged by plugging into an electrical outlet are on the market. Factories and public places are increasingly using electrically operated self-service equipment that dispenses hot and cold drinks, foods and a variety of small commodities.

Today nearly half of the power marketed by Bonneville Power Administration is used by public municipalities, utility districts, electric cooperatives and federal agencies. A little over half of the farms of the region had electric service in 1940, but today over 99 percent are electrified.

Bonneville Power Administration has played a key role in bringing "Power for Progress" to the people of the Pacific Northwest since Bonneville was established 25 years ago.

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## **BONNEVILLE POWER ADMINISTRATION'S 25th ANNIVERSARY--PART V**

(This is the fifth in a series of articles on Bonneville Power Administration's first 25 years in the Pacific Northwest. The sixth article will deal with the history of the Bonneville Act.)

**BPA ENGINEERING  
WORLD RENOWNED**

**High Voltage Grid and Technological Advances Recognized Throughout  
the World**

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Bonneville Power Administration observes its 25th birthday August 20 with the nation's largest high voltage transmission grid and as a world leader in the technological advances of high voltage transmission. Comparatively unheralded, BPA engineers have nonetheless received international recognition for technical breakthroughs and achievements that have saved the industry and electric consumers millions of dollars.

The first transmission line, less than four miles long, delivered Bonneville dam power to the City of Cascade Locks. It was completed July 9, 1938. Today, nearly a quarter of a century later, 8,600 miles of transmission line and 215 substations carry low cost U. S. Columbia river power to every corner of the Pacific Northwest.

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Bonneville Power Administration's transmission grid represents about 80 percent of all high voltage lines in the region, and a plant investment in excess of \$520,000,000. If strung in one continuous line, it would reach all the way around the continental United States, excluding Alaska and Hawaii.

As a result of technological advances, the cost of transmission per kilowatt hour on the BPA system is substantially the same as it was 20 years ago even though construction and other costs have more than doubled.

Most spectacular savings have been achieved in gaining acceptance for lower insulation levels in high voltage transformers, developing automatic reclosing of high voltage circuit breakers, design of economical light steel transmission towers and other system engineering innovations in moving large blocks of power and reducing line losses.

An intensive experimental and development program is now under way to explore the economies of high voltage direct current transmission.

Bonneville Power Administration's system control and dispatching center at the Portland, Oregon, headquarters, is one of the nation's largest and most modern. Instant communication by microwave, carrier current, leased wire and ultra high frequency radio is available to every generating plant, major substation and maintenance crew. Nearly a hundred telemeter recorders give instantaneous and continuous readings from all parts of the system of generation, power loads, stream flows and other information vital to precise system control and efficient operation.

BPA engineers are pioneering in applications of electronics that will ultimately provide nearly automatic electronic computer control of hydro-electric generation and power flows. Recently engineered and newly installed system deviation and generator allocator consoles compute load changes from

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moment to moment based on system frequency, power transfers and time error, and then send microwave signals to five major dam powerhouses which balance system generation and loads in a matter of seconds. Initial installations have also been completed to provide supervisory control from Portland of major substation operations.

Ever since the Northwest Power Pool was organized to marshal all power resources of the region for World War II, BPA's high voltage transmission grid has served as the "backbone" for integrated pool operations. Today electrical and hydraulic coordination is achieved through nearly 500 interconnections with both public and private generating and distributing utilities of the Pacific Northwest, and operation through a contractual coordinating agreement with the pool.

It is estimated that well over 1,000,000 kilowatts of firm power capacity is added to the region's power resources by taking advantage of diversities in loads and streamflows, exchanges of power and storage through coordinated operation. Tremendous savings in transmission facilities are made possible through use of the federal grid to "wheel" or transmit power from large non-federal projects such as Priest Rapids, Rocky Reach and Wanapum to area load centers.

BPA's transmission system provides the arteries for carrying the lifeblood of "Power for Progress" to the people of the Northwest.