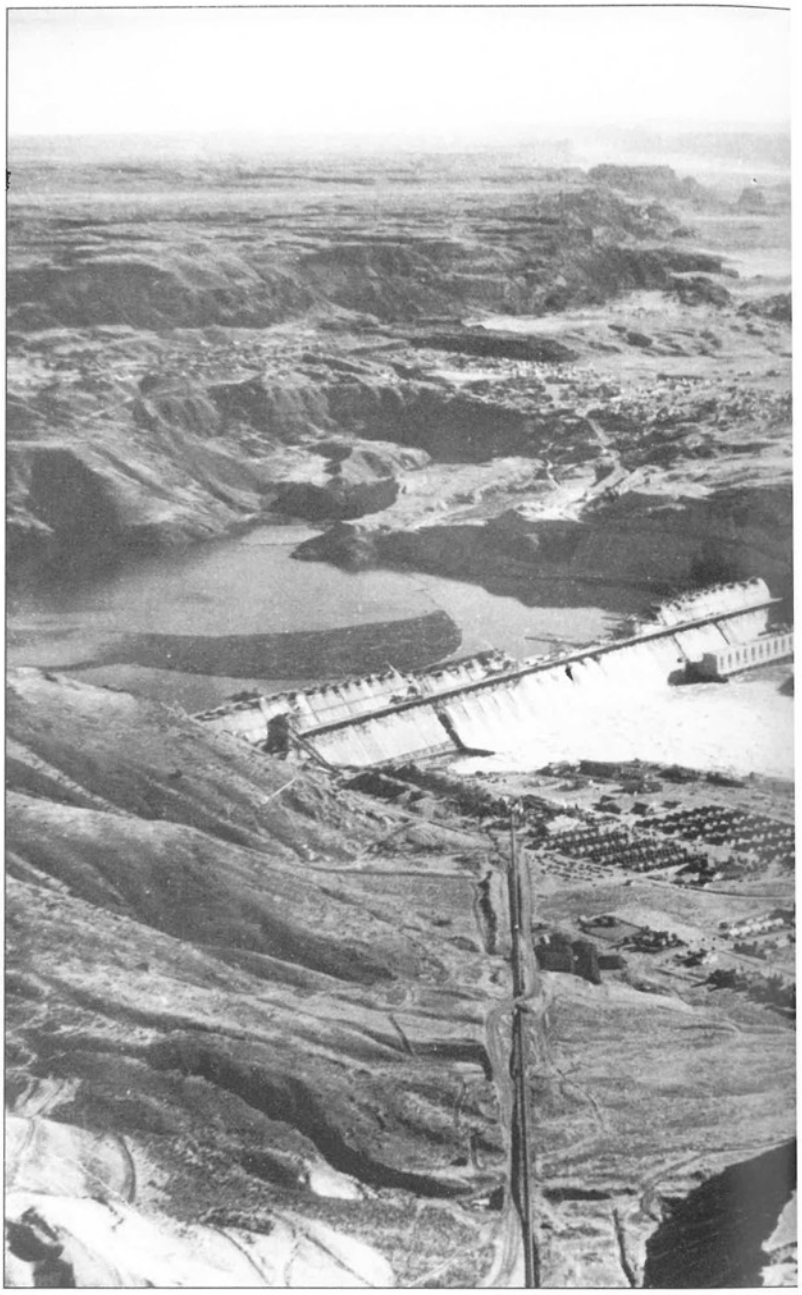
# COLUMBIA RIVER DEVELOPMENT IN THE 1930S

**By Richard Lowitt**

*IN HIS FAMOUS campaign address at Portland on September 21, 1932, Franklin Roosevelt set the tone for developments on the Columbia River during the Great Depression when he said, "The next great hydroelectric development to be undertaken by the federal government must be that on the Columbia River." Water power, he added, "means cheap manufacturing production, economy and comfort on the farm and in the household." Public power, in brief, could help launch the broad-gauged and balanced development of the Pacific Northwest.*

*Roosevelt at Portland made no mention of multipurpose river valley development. His focus was on "the question of power, of electrical development and distribution." Hydroelectricity was a national issue, and it underwent its greatest development during the New Deal era in the Pacific Northwest.*



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***This 1940 aerial photograph shows the final stage in construction of Grand Coulee Dam. In the foreground is Mason City; across the river, the government town of Coulee Dam.***

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PRESIDENT ROOSEVELT'S SPEECH found a receptive audience. In effect, he restated what others had proclaimed—namely, that development of hydroelectric power was necessary if the Pacific Northwest was to be anything more than a dependent region mining its abundant agricultural, forest, fishery, and mineral resources for the benefit of consumers elsewhere in the United States and abroad. Public officials clamored for power development and both the Reclamation

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Service and the Army Corps of Engineers, culminating with its famous "308 Report" in 1932, all called for power development on the Columbia River.

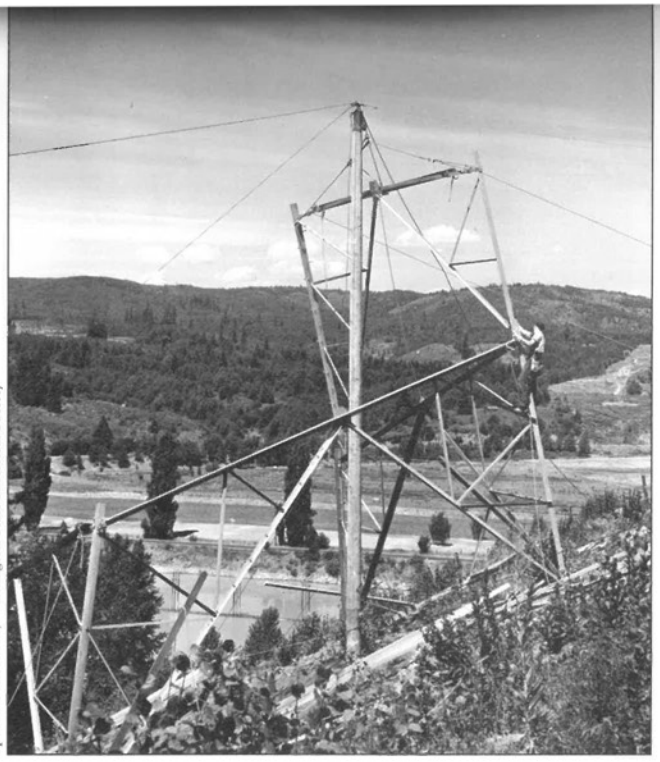
Indeed, Roosevelt himself, while campaigning in 1920, had called attention to the hydroelectric power potential in the Pacific Northwest. Now, with the New Deal, its potential would begin to be realized in the public interest. To be sure, other aspects of river valley development would be considered, and the threat to the salmon fishery could not be ignored; nevertheless, generating hydroelectric power was the dominant concern during the Depression years. Putting tax dollars into the Northwest gave back in some measure the wealth derived from its soil and forests, and helped create a new economy.

RISING IN THE Canadian Rockies and crossing the international border into Washington near its northeast corner, the Columbia River is the second largest river in the country in terms of runoff. The Columbia flows for 750 miles through Washington and along its southern border to the Pacific Ocean, falling 1,300 feet on its way. In the eyes of planners in the region and the nation's capital, this has earned it the distinction of being by far the largest river in the nation in terms of potential power development. The two major projects launched prior to World War II, Bonneville and Grand Coulee Dam, followed different patterns of development in generating hydroelectric power; one was constructed by the Corps of Engineers, the other by the Bureau of Reclamation. It is worthwhile to discuss each separately before discussing, by way of conclusion, efforts at coordinating them prior to World War II.

In 1933, largely with funding from the Public Works Administration, the Corps of Engineers began the construction at Bonneville—42 miles upstream from Portland, Oregon, and 140 miles from the sea—of a dam as a navigation and power project. This was considered the first step in the complex process of opening an inland waterway and developing the region, a process planners envisioned would take several decades. The Bonneville Dam, it was anticipated, would upon completion have an installed capacity of 432,000 kilowatts of electrical energy.

The first two generators of 43,000 kilowatts each were in operation by the summer of 1937. However, at the onset, greater concern was expressed over the plight of salmon prevented by dams from reaching upriver spawning grounds. At Bonneville a series of elaborate fish ladders and locks were constructed, and a daily count was taken of the various species passing over them. One hundred fish pools, each a little higher than the one before, spiral to the top of the dam while water cascades down this watery stairway. The ladders were pools 16 feet long, 30 feet wide, with a one-foot rise between each. On the trip downriver, engineers left openings in the dam large enough for the baby fish to pass through and avoid being crushed in the giant turbines and generators. At Grand Coulee refrigerated tank trucks successfully removed salmon trapped below the dam site to spawn elsewhere.

These developments attracted widespread public attention and assuaged the concerns of a fish industry worth about $6 million annually to some 20,000 people who, in one way or another, were dependent on it for their livelihood. The president was not so easily assuaged. In a 1935 memo he wrote, "All I can hope is that the salmon will approve the spillways and



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find them really useful, even though they cost almost as much as the dam and the electric power development." More than $6 million was expended on the Bonneville fish ladders.

But hydroelectric power for commercial and domestic use was the chief motive for the construction of Bonneville Dam two miles below the Cascade Rapids in the famous Columbia River Gorge. It was the first federal step in developing the Columbia River as the greatest power resource on the American continent. As power was generated, regional planners concluded, other growth—including population—would follow. Envisioned, in addition to Bonneville and Grand Coulee, was a series of ten dams by which it was proposed to ultimately utilize 92 percent of the 1,300-foot fall of the river for power plants with an aggregate installed capacity of more than 10 million horsepower.

With the completion of the dam in 1937 at a cost of $53 million, and with the first electric power available for public distribution late in that year, it became necessary to set up machinery for the administration of the dam, locks, fishways and power plant. The Bonneville Power Administration (BPA) was intended to be a provisional agency pending the completion of other federal projects in the Columbia River basin. Its primary function was to administer the generation, transmission and sale of the energy developed at Bonneville.

Led by J. D. Ross and, following Ross's death in 1939, Paul Raver, the BPA constructed a network of transmission lines interconnecting the power facilities at both Bonneville and Grand Coulee with the major load centers in Oregon and Washington. The first transmission line went to Grand Coulee to provide power in facilitating the construction of the dam. The BPA also sold power to municipalities, cooperatives, public utility districts and privately owned utilities. After a little over a year, the BPA had contracted for the delivery of 218,000 kilowatts of firm power, all of which was generated at Bonneville Dam.

Equally as important as power generation was the rate structure. J. D. Ross promised "a simple, understandable rate structure for Bonneville power." His first rate order, released in 1938, gave electric power to the Pacific Northwest at the lowest wholesale cost in America. Moreover, the rates were uniform. "Everybody," Ross explained, "will pay the same price for power from the Columbia River, the small rural district or the large city," thereby encouraging the widest possible use.

THE BPA, OF COURSE, did not sell power directly to consumers. The "retail" rates depended on the method of distribution and the manner in which the power was used. Rates on the transmission network were set at $17.50 per kilowatt year, thereby encouraging long-hour loads of all sorts—for residential service, irrigation and factories. Ross also noted that "every cent allocated to hydroelectric power will be repaid to the federal government, together with 3½ percent interest." The larger the amount of electricity generated, the sooner the cost of federal funds utilized for generating electricity—about 23 percent of the initial cost of the dam—would be repaid, and rates could, presumably, be further reduced in the process.

Once the rate policy was determined, Ross launched a program to develop substations throughout the region to switch power from the main transmission lines to lower tension circuits, known as "finger lines," into adjacent territories. Initially, as would be expected, the bulk of the demand came from 18 public utility power districts in Washington and from cooperatives and municipalities in both Oregon and Washington. Industrial dam site demand was relatively

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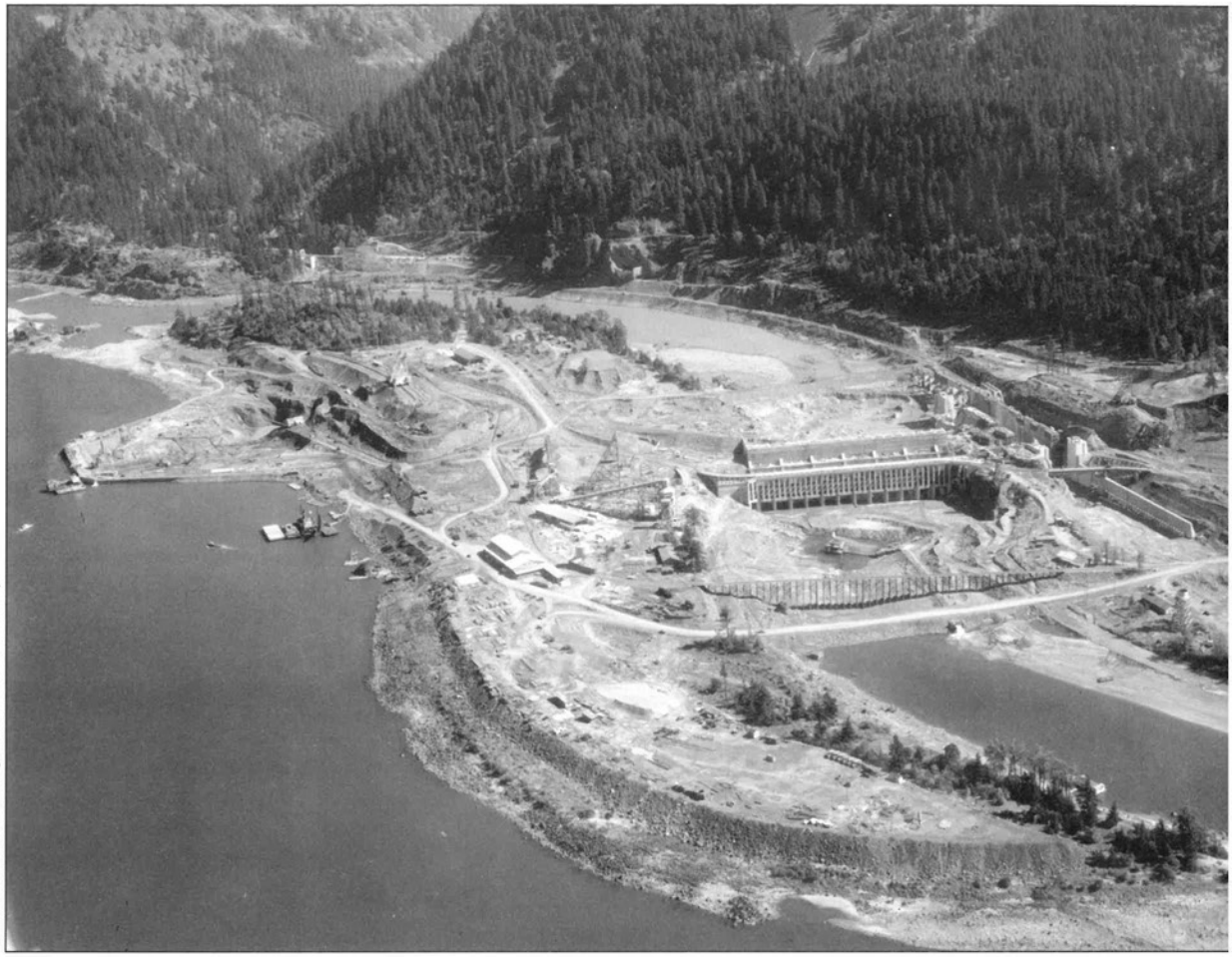
*OPPOSITE PAGE, TOP: Line clearing operations and tower erection were among the first steps in building a Bonneville transmission line.*

*OPPOSITE PAGE, BOTTOM: Constructing the BPA grid that became operative in 1937, providing public power to Washington and Oregon.*

*RIGHT: Bonneville Dam, built by the Army Corps of Engineers, was completed and brought on line in 1938.*



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unimportant. Ross's uniform, or postage-stamp, rate structure resolved a controversy in the Northwest between factions that desired differential wholesale or uniform rates. Ross's decision was in accord with the public power outlook of the New Deal and gave a definite cast to the BPA that would influence the further development of the region.

As J. D. Ross was establishing himself and formulating BPA rate policies, upriver operations at Grand Coulee were attracting greater attention. Secretary of the Interior Harold Ickes visited the site in October 1938 and was duly impressed. He explained, "In normal course the dam and the power plant will not be completed for about four years. . . . It will take still longer to complete the irrigation dam which will bring into cultivation 1,125,000 acres of exceedingly rich land. This project, when completed, will cost $394 million and will be the largest man-made structure in the world." Constructed under the auspices of the Bureau of Reclamation, the dam's potential for irrigation as well as power generation were matters of primary concern. But it was power first and irrigation second because land could not be put under the ditch until the dam was constructed.

Construction at Grand Coulee got under way in the summer of 1934. The envisioned project was so stupendous—Grand Coulee would be the initial dam in a vast Columbia Basin Project—that it would be constructed in parts with a low dam at Grand Coulee as the first step. Power generated from it could help pay for the high dam later. Like Bonneville, Grand Coulee was launched with an initial grant—this one for $63 million—from the Public Works Administration.

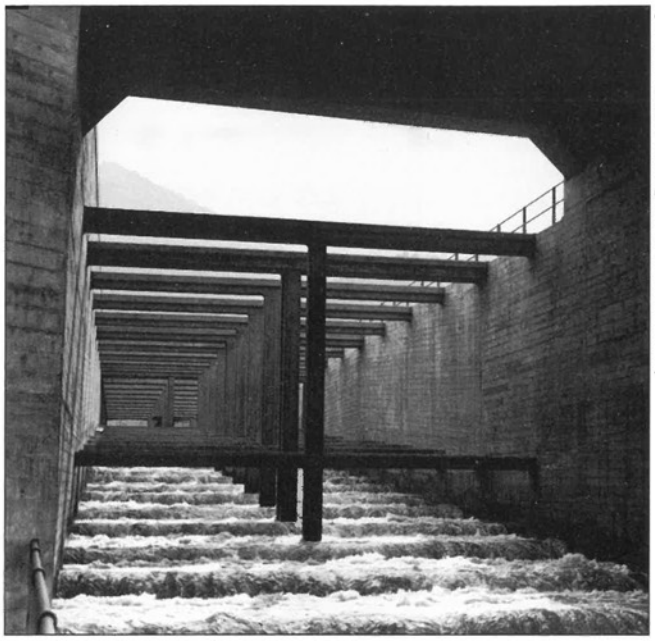
A GLACIAL SLIDE OR ice dam thousands of years ago forced the Columbia River to cut itself a new channel through walls of basalt rock. When the ice receded and the river returned to its old bed, a deep gash lay across the lava plateau in central Washington. Known as Grand Coulee, this became the site of the major dam in the planned development of the entire river basin. The coulee was 52 miles long, 600 to 800 feet deep, and from two to five miles wide. Now high and dry, Grand Coulee had its bottom 600 feet above the ordinary water level of the river. The challenge facing the engineers was to raise the water level 355 feet by the construction of Grand Coulee Dam and then pump water representing one-seventh of the average flow of the river 280 feet higher still into the coulee. When distributed, this water would turn the semi-arid desert of sagebrush and sand into cultivated lands.

The dam would create a huge reservoir of over 5,000 acre feet extending to the Canadian border, a distance of 150 miles. It would thus add considerably to the navigable waters

*RIGHT: The fish ladders at Bonneville Dam were a prime tourist attraction.*

*BELOW: Area at Grand Coulee initially projected to be irrigated under supervision of the Bureau of Reclamation.*

*OPPOSITE PAGE: Nez Perce Indians participated in a celebration on March 22, 1941, marking the initial commercial delivery of power from Grand Coulee Dam.*



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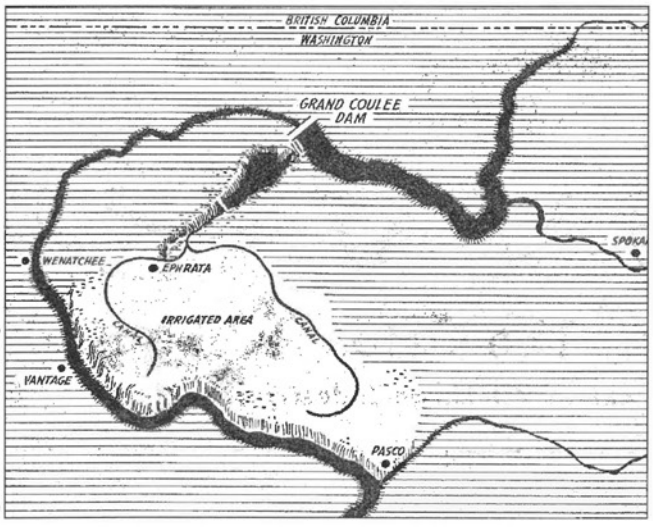
of the state and likewise enhance the amount of firm power that could be sold by Bonneville.

Grand Coulee Dam was the key structure in the development of the Columbia Basin Project. And its dimensions—4,300 feet long, 550 feet high above the lowest bedrock, and 500 feet thick at the base, tapering to a crest of 30 feet, with a spillway 1,650 feet long—made it the biggest thing on Earth. The power installation, it was envisioned, would generate almost 2 million kilowatts, of which about 800,000 kilowatts would be for the generating of firm, or continuous, power while the balance would supply secondary power available for irrigation pumping and standby service. Every aspect of the construction of Grand Coulee Dam involved dimensions exceeding anything previously constructed by human endeavor.

WHILE THE ENERGY dimensions of Grand Coulee were being realized during the New Deal, those pertaining to irrigation, though still paper projections, were equally impressive. In extemporaneous remarks at the dam in October 1937, President Roosevelt said, "We look forward not only to the great good this will do in the development of power but also in the development of thousands of homes, the bringing in of millions of acres of new land for future Americans."

One of the principal reasons for the development of the Columbia River basin, as Roosevelt now saw it, was "the settling of families from other parts of the country who have migrated for economic reasons from submarginal farms" along with families operating similar farms in the region. To meet this contingency, that of settling farm families on lands to be irrigated with water from Grand Coulee Dam, Congress approved in May 1937 the Columbia Basin Anti-Speculation Act. It placed restrictions on the size of farms and sought to curb excess profits in the sale of lands. It also gave the government an option to purchase excess lands.

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The legislation was enacted to resolve problems emanating from the dissolution of large dry-land farming operations in the 1.25-million-acre area to be irrigated. Acreage in excess of 80 acres per family would not be eligible for water, and owners who refused to sell their excess lands under conditions satisfactory to the secretary of the interior and at prices fixed by appraisal likewise could not receive water. To further this process landowners in this central Washington area in February 1939 voted overwhelmingly to form the largest irrigation district in the United States. At the time it was estimated that it would take another three years before a huge canal to carry pumped water from the reservoir behind the dam into the coulee could be constructed and another two years (1944) before water would be ready for delivery to the first unit of the project.

To formally launch the irrigation project it was necessary to survey and map the 2.5 million acres of project land below Grand Coulee Dam. To lay out the projected canal system more than 100 townships—an area of 3,780 square miles—had to be resurveyed. When completed, the records would show the location, ownership, topography and soil constituency of every parcel of land. About 600,000 acres of public domain within this area would be available for public settlement. The survey records would become the basis of the Bureau of Reclamation's land ownership records. They would be indispensable to the design and right-of-way purchase for the canal system and in determining compliance with provisions of the anti-speculation act.

To direct the entire survey the bureau recruited Harlan H. Barrows, chairman of the Department of Geography at the University of Chicago. Barrows's assignment was considerably broadened because the president, envisioning at least half a million people settling in the project area, suggested "a comprehensive agricultural and industrial economic survey." By January 1940 over a hundred specialists were at work compiling information. They represented 32 federal, state and local agencies involved in one way or another with the vast undertaking. Among other things, they prepared studies on clearing, grading and irrigating desert land, on the adaptability of crops and livestock, and numerous other matters relating to farm development and operation. Also included were studies of community problems such as highways, electrical services, domestic water supplies, town locations, and educational and recreational facilities. In all, 28 topics were investigated, all of which were designed to facilitate the establishment of successful family-sized farms and farming communities.

At the end of the New Deal, before the nation entered World War II, construction of irrigation canals had not yet begun, and officials were suggesting that some of the land in the area might be without water for 20 years or more, although the entire acreage in the project area already was classified and appraised. Completion of all the investigations was a major job of technical planning. The work of Barrows and his associates provided guidelines to the settlement and development of the Columbia Basin Project and suggested appropriate action programs for carrying out accepted proposals. Every family that cast their lot on the project, it was believed, would have enhanced opportunities for success. However, by 1940 requirements of national defense were superseding concern for irrigation and the development of arid lands in the area, and requirements of national defense involved coordinating the great power resources of the Columbia River.

IN DECEMBER 1939 the first hydroelectric power from the generators of Bonneville surged over transmission lines into the Vancouver substation and then across the river into Portland. Bonneville power was vitalizing new defense industries, lighting houses, electrifying farms, running factories, producing new electrometallurgical and electrochemical plants, and was well on its way toward stimulating the development of substantial metals industries in the Pacific Northwest. In March 1941, two years ahead of schedule, the turbines at Grand Coulee generated initial power at the dam. Two 10,000-kilowatt generators were tuned. During the war years the dam was generating almost 2 million kilowatts, making it the largest single source of hydroelectric power in the world.

In coordinating the power resources of the Columbia River and combining the marketing of power produced at Bonneville and Grand Coulee under one agency—low cost power from both developments utilized one transmission

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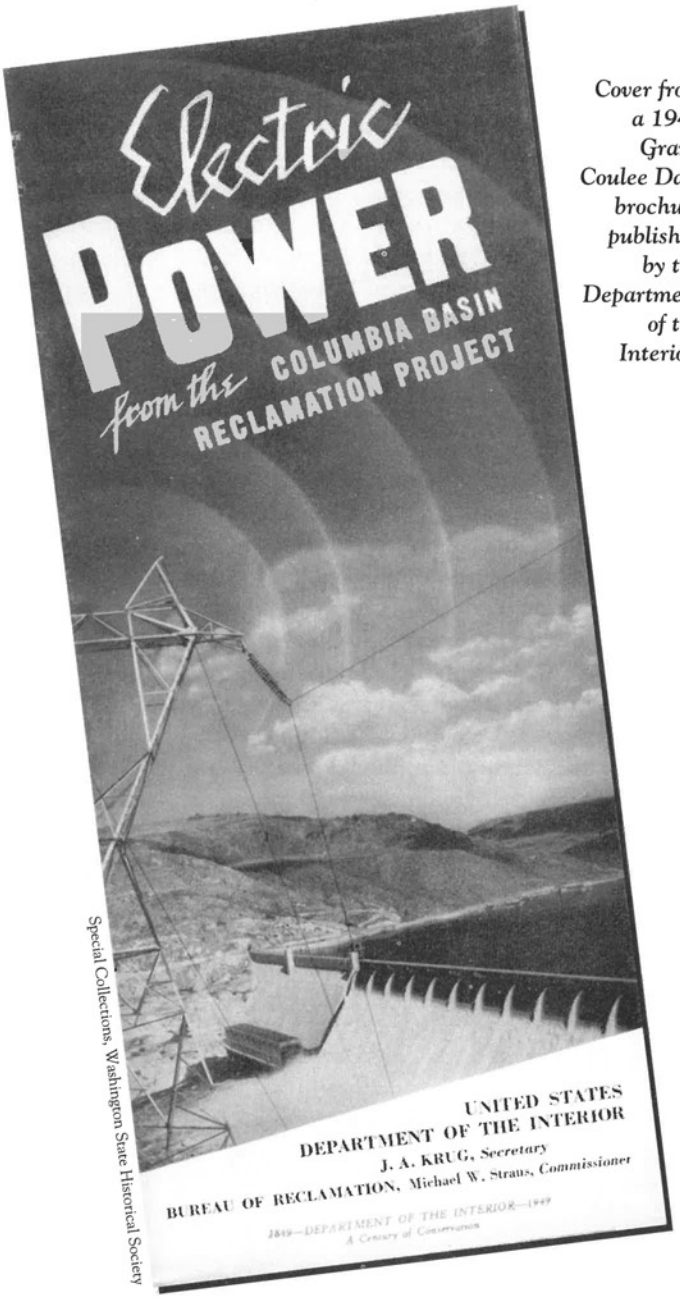


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*Cover from a 1949 Grand Coulee Dam brochure published by the Department of the Interior.*

network—the BPA reached consumers throughout the Pacific Northwest and accelerated the supply of necessary minerals for national defense. Roosevelt proposed to institutionalize the arrangement by expanding the jurisdiction of the BPA, originally created as a temporary agency for the marketing of Bonneville power, and making it the established agency for the sale and distribution of electrical power and energy. By 1942 the BPA was transmitting more than 6 million kilowatts to consumers in the Pacific Northwest.

Roosevelt's action led some in Congress and the Northwest to call for the creation of a Columbia Valley Authority (CVA) to manage the river in a way comparable to the multipurpose program of the Tennessee Valley Authority (TVA). The BPA would become one component, albeit a major one, of CVA. However, in 1941, with defense needs mounting, public power marketing was regarded as the primary function of any agency proposed for the Pacific Northwest. In the nation's capital the emergency power program developed by the Federal Power Commission made it desirable to begin creating federal power-marketing agencies as soon as possible. Officials there did not believe the same clear need for developing a TVA-type agency existed. Both the president and the secretary of the interior agreed. Ickes, never a friend of the TVA, a regionally administrated agency, was enthusiastic about the BPA, which would come under his jurisdiction and keep as its sole function the transmission and selling at wholesale the huge blocks of power generated in the Columbia River basin. The BPA would neither build dams nor have any control over them. Bonneville continued to be administered by the Corps of Engineers, and Grand Coulee by the Bureau of Reclamation.

MOST PEOPLE IN the Northwest were in accord with this perspective, though there was some sentiment for a CVA. At the time of Pearl Harbor over 40 percent of the region was still either federally or state owned. A plethora of federal agencies to conserve and develop these publicly owned lands and water resources were already established and active in the Northwest. A TVA-type agency with a comprehensive and far-flung range of activities would challenge, compete with, and weaken the already established federal agencies. The BPA in 1941, emerging as one of the biggest dispensers of electricity in the world, would carve out its own bailiwick, serve its own constituency, and compete with no other public agency as "a regional agency in the Department of the Interior."

Congressmen seeking an agency with power to coordinate federal activities within the Columbia River basin drafted a measure calling for a CVA in 1941 to counter an administration measure that would translate Roosevelt's executive order and make the BPA a permanent agency. Senator George W. Norris, "father" of the TVA, opposed the measure and in forceful language told the president of his opposition. While nothing came of either measure owing to wartime concerns, the BPA continued and continues to this day to market the electric power produced at federal dams on the Columbia River. The agency established for the transmission and sale of power would not be burdened with other types of service. Indeed, from Roosevelt's 1932 speech at Portland to the wartime performance of the BPA in meeting the demand for electric energy, the theme pertaining to the Columbia River during these years was consistent and can be summed up in a phrase Roosevelt uttered in his extemporaneous remarks at the Bonneville Dam site in August 1934: "More power to you."

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# COLUMBIA

*The Magazine of Northwest History*

A quarterly publication of the

WASHINGTON STATE HISTORICAL SOCIETY

VOLUME TWELVE, NUMBER FOUR

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**COLUMBIA** (ISSN: 0892-3094) is published quarterly by the Washington State Historical Society.



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***COVER: Celilo Falls in the mid 1930s, 20 years before it was obliterated by construction of The Dalles Dam. This hand-tinted photograph is from a series of postcard pictures taken along the route of the scenic Columbia River Highway, on the Oregon side of the river. See related story beginning on page 4. (Special Collections, Washington State Historical Society)***