Chapter 14
Power to the people

In some ways, World War II could be considered America's third industrial revolution. But with the focus on military needs, consumer product development lagged until several years after the war ended. At the same time, there was a huge adjustment in the late 1940s, as many factories went idle or re-tooled and new workers appeared in the millions – women returning home to raise families were replaced by veterans looking for jobs. All that change can be hard on an economy – like a giant ship at sea, it takes a lot of time to turn around. The 1950s were witness to these turns, as the industrial sector surged and then settled, buoyed by the Korean War in the early 1950s and then suffering under conditions of oversupply in the second half of the decade. In the Pacific Northwest, the Bonneville Power Administration faced additional constraints – periods of extreme drought that reduced available hydropower and harsh winters that increased demand. But the BPA was also trying to increase supply and distribution by planning for new power generation, new regional transmission lines and even connecting to neighboring regions – Canada and the Southwest.

BPA revenues in 1937, the first year it sold power, amounted to $49,835. Sixty years later, power revenues came to more than $112 million, and the cumulative revenue for those 60 years came to $1.5 billion. [1] The BPA's historical average priority firm power rate stayed at $3.30 per megawatt-hour from 1938 through 1974 before starting a slow but steady climb. Firm power was guaranteed by the BPA except when uncontrollable forces created shortages. A small 40 cent increase from 1974 through 1979 then doubled to $7.40 in 1979 through 1981. Rates continued to climb – to $11 in 1981 through 1982, then to $18 in 1982 through 1983, then to $22.70 in 1983 through 1985 before falling slightly to $21.30 in 1985 through 1987. Firm power rates then began to rise again, to $22.50 in 1987 through 1991, to $23 in 1991 through 1993, to $26.70 in 1993 through 1995, and to $29 in October 1995 through September 1996 before falling again to $23.50 in October 1996 through September 2001. [2] That 19% decrease in the late 1990s followed federal deregulation of the electrical power industry, when many Pacific Northwest aluminum plants opted to leave the BPA and turn to the private sector. It was very bad timing for the BPA's big customers, utilities and smelters alike – the 2000-2001 West Coast Energy Crisis that emerged from deregulation destabilized regional power supplies and marked the beginning of the end for the Pacific Northwest aluminum industry.

The marketing of BPA power to the aluminum industry began in earnest in March 1945 when BPA Administrator Paul J. Raver testified before a Senate Small Business

Committee in support of creating new aluminum producers. The BPA also loaned their chief of market analysis to the Senate committee. [3] Immediately following the war, aluminum production in the U.S. crashed and hundreds of workers were laid off. Production rebounded, and by 1946 aluminum smelters in the Pacific Northwest produced about 36% of the nation's supply of aluminum ingots. That grew to 40% by the 1950s. [4] The BPA was also finding new customers in the residential and commercial markets both in the U.S. and Canada. In 1947, the BPA signed contracts to provide five major investor-owned utilities (IOUs) with 335 megawatts of power. That same year, the BPA completed construction of a 230-kilovolt transmission line linking the British Columbia Electric Co. of Canada with the BPA grid. The agency's 10th annual report in 1947 reported record-high revenues, chiefly a result of sales of secondary power to industry that also helped to keep rates stable. [5] On March 30, 1950, the BPA published its first set of objectives, which stressed widespread use of electric power, economic development and full repayment of its federal investment. [6]

In 1950, there were five smelters in the Pacific Northwest that altogether produced about 44% of all U.S. primary aluminum. Just 10 years earlier, not a pound of aluminum was being produced west of the Mississippi River. The speed and the magnitude of this development were mostly attributable to war-time demands. The five smelters used about 5.5 million megawatt-hours per year, with about 40% of that delivered by the BPA. Firm power was sold by the BPA to the aluminum companies at $2.00 per megawatt-hour, a favorable rate compared to the $2.70 per megawatt-hour rate paid by Alcoa in a 1937 Tennessee Valley Authority contract and the $4.30 per megawatt-hour rate paid by Reynolds in a 1949 TVA contract. But offsetting the low-cost power was higher freight costs – the cost for alumina for Pacific Northwest smelters came to about 35% of the total cost of operation, carbon products came to about 10% to 15%, and fluoride or other chemicals came to about 5%. [7]

Early power shortages

While electric power was a surplus commodity in the Pacific Northwest in 1940, growth in demand by 1950 had created a shortage of firm power. The population in Oregon and Washington increased about 37.3% from 1940 to 1950 and by 11.7% in Idaho. Along with population growth was a sharp increase in residential and industrial utilization of electrical power. It didn't go unnoticed that aluminum smelting did not create many jobs considering the amount of power consumed. According to U.S. Census data, the aluminum reduction industry required 814 kilowatt-hours per wage earner, compared to 5.4 for the textile industry, 5.3 for the steel and iron industry and 7.0 for aluminum fabrication. Furthermore, most of the aluminum produced in the Pacific Northwest was shipped elsewhere for fabrication. Kaiser's Trentwood rolling facility in Spokane, Wash.,

the only aluminum rolling mill west of the Mississippi River, was capable of producing 150,000 tons of sheet products per year. While new hydroelectric dams were planned for the Pacific Northwest, three developments threatened the growth of the regional aluminum industry: 1) Alcoa's new smelter in Port Lavaca, Texas, would run on electricity generated with natural gas, a new source of power; 2) new hydroelectric plants were proposed along the St. Lawrence River near industrial centers in New York and Canada; and 3) atomic-powered generating plants were discussed that could theoretically compete with hydroelectric plants. [8]

From its inception through 1951, the BPA had sold $101 million worth of electrical power to Pacific Northwest aluminum plants – about 45% of the total revenue from all classes. Annual figures through 1956 included $13.3 million in 1952, about 33% of total revenue; $13.5 million in 1953, about 34%; $15.9 million in 1954, about 35%; $16.9 million in 1955, about 32%; and $20 million in 1956, about 33%. [9] Between 1940 and 1952, the Pacific Northwest aluminum industry paid the BPA more than $114 million, amounting to an average annual power bill of $9.5 million, or about 45% of all BPA power revenue for that period. BPA power rates were fixed by statute as low as possible so long as the initial capital investment was paid back with interest within 50 years. Some analysts argued that by 1952 the aluminum industry was paying the wages of workers employed during the Great Depression, before aluminum even came to the Pacific Northwest. Other analysts argued that the aluminum industry paid for power that otherwise might have remained surplus, and that additional revenue enabled the government to build new dams, such as McNary and Chief Joseph on the Columbia River. [10]

The BPA increased the availability of interruptible power to Pacific Northwest aluminum producers in 1951. Interruptible power was generated by hydroelectric dams when streamflows exceeded historical minimums and was subject to curtailment at any time. Statistics through 1978 showed that interruptible power was available from 70% to 75% of the time since it was introduced by the BPA. The Pacific Northwest aluminum industry made good use of interruptible power in 1951 by producing 800,000 tons of primary aluminum, and this production record was seen as a demonstration of the practicality of such power for production purposes. But the decision came after some tough years in the Pacific Northwest. In the winter of 1948-1949, extreme cold created peak load conditions beyond the capability of the BPA power system. Utilities were forced to curtail power by staggering hours for industrial operations and by appealing to the public for conservation measures. A three-fold growth in consumer demand in the Pacific Northwest from 1940 through 1949 had left a lag in generating capacity. The growth in demand was attributed to population growth coupled with a rapid expansion

of farming, business and industry in the region. The population in the Pacific Northwest had grown 44% compared to 13% for the nation as a whole. [11]

In December 1948, the Oregon Business Review published an article describing energy crises in both California and the Pacific Northwest. “While perhaps attracting less attention than the California experience, the Pacific Northwest is facing a probably more critical power problem than any comparable area in the West,” the article said. “This situation has arisen primarily from the rapid development of the electrometallurgical industry in that region and from the large prospective demand on the power supply to be expected for irrigation pumping, as the huge acreage of the Columbia Basin Project is gradually brought under cultivation.” The article cited growing concerns by private and municipal power utilities over the narrowing margin between power supply and demand and the need for more federal hydropower facilities. “In fact, plans for the establishment of new factories in the lower Columbia River basin have had to be dropped or indefinitely postponed because of the available supply of firm electric power in that region is barely sufficient for the needs of already existing plants,” the article said. [12]

Power consumption by the Pacific Northwest aluminum industry accounted for half of the total regional supply during World War II, then dropped in 1945 to 1946 when many smelters were shut down, and accounted for about one quarter to one third of total regional power by 1948. “Because of its concentration in a small group of highly mechanized plants, which employ a relatively small labor force and hence present only a minor employment problem, the aluminum reduction industry of the Pacific Northwest offers a ready opportunity for the adjustment of the industrial power use to seasonal fluctuations in total demand and output,” the Oregon Business Review said. The 1948 article also cited the December 1947 Tenth Annual Report of the BPA, which noted that 10 years earlier the great dams on the Columbia River were called “white elephants” because there was no regional demand for the power. All told, the federal generating capacity in the Pacific Northwest had increased about 10% from January 1946 to June 1948, but about 90% of that increase came from installing two 75-megawatt generators at Grand Coulee that had been slated for use at the Shasta Dam in California – the Pacific Northwest’s gain was California’s loss. Still, Grand Coulee was only up to half its ultimate capacity. The article also noted a drawback in the generating system as individual generating units ranged from 50 megawatts to 108 megawatts, so down time for repairs came in huge blocks. [13]

While the federal government was more than happy to encourage competition in the U.S. aluminum industry, it was also cautious about where the industry developed. In 1950, aluminum newcomer Kaiser began planning construction of a new aluminum

smelter. The U.S. at the time was facing a deficit of aluminum for military purposes as the Korean War began, and the U.S. government was encouraging U.S. companies to construct additional aluminum reduction facilities. Kaiser was already in an expansion mode and proposed a greensite smelter with four potlines and 100,000 ton-per-year capacity in the Pacific Northwest – using low-cost BPA power. [14] But Interior Secretary Oscar Chapman, together with the Federal Munitions Board, turned down Kaiser's plan and instructed the company to build in Texas or Louisiana, where a plentiful supply of natural gas could be found to generate electricity. The federal government offered Kaiser good incentives to build along the Gulf Coast – a 5-year amortization of loans and a guarantee that the government would purchase surplus aluminum production for stockpiling. [15]

Chapman and the Munitions Board opposed locating the new plant in the Pacific Northwest for a number of reasons, including that BPA power supplies were already in short supply and because resident representatives wanted an industrial operation that provided more jobs per consumed kilowatt-hour than another aluminum smelter. Chapman "somewhat forcefully" "suggested" that Kaiser build its plant in the Texas or Louisiana coastal region and use natural gas to generate electricity. The federal government wielded considerable leverage with the offer for a 5-year amortization of loans and a guaranteed market for seven years at full capacity production at market price. [16] Construction of the new plant was started in February 1951 by Kaiser Engineers, a subsidiary of Kaiser Aluminum and Chemical Corporation, at Chalmette, La., seven miles downstream from New Orleans. The plant produced its own electricity from the beginning – the first two potlines were powered by burning natural gas in 11-cylinder Nordberg radial engines that became available during early mobilization days of the Korean War. Additional potlines later were powered by steam turbines. By the time the plant closed in 1983, about 85% of its electrical power came from Kaiser's natural gas-fired boilers and steam turbines. The plant had a favorable 30-year natural gas contract that had helped the plant survive the 1970s energy crisis, but the contract's expiration date came during an economic recession in the early 1980s, and Kaiser decided to close the plant in 1983. [17]

The federal government took extra steps to protect the Pacific Northwest power network on Sept. 17, 1951, when Defense Electric Power Administration Order EO-4 went into effect restricting the use of electric power in Washington state and parts of Montana, Idaho and Oregon. The order was issued under the authority of the Defense Production Act. DEPA Administrator James Fairman sent a letter to Rep. Mike Mansfield of Montana the same day explaining the order and enclosing a copy of the 21-page order. "Needless to say, this action is being taken after all other possibilities have been considered," Fairman wrote. "We hope that it can be revoked before the termination

date of March 31, 1952." The reasons for limiting electric power consumption and deliveries included increased needs for defense, seasonal changes in water conditions, and essential civilian and other uses. According to the order, no power supplier could take essential equipment offline for routine maintenance when there was an acute shortage, the overall aim was to coordinate power supplies, DEPA would issue directions restricting or prohibiting power delivery when necessary, quota limitations would be established, preferred customers would be established, and curtailments in deliveries and consumption would be ordered from time to time. Among the preferred customers were a magnesium plant and the Pennsylvania Salt Co., which was producing chlorine, chlorates and caustic soda. Among the customers facing curtailments were aluminum smelters. [18]

In the fall of 1951 and again in the winter of 1951-1952, the Pacific Northwest power industry experienced serious shortages for the first time as a result of drought, according to Carleton Green's 1954 account. This was an unexpected development since the region had 6% of the nation's hydroelectric power and only 3% of the nation's population. The Pacific Northwest at that time was thought to hold about 40% of the nation's potential for hydroelectric power, and the public had been encouraged to use more and more power to heat homes, heat water, pump irrigation water and drive factories. State and local governments along with unions and business groups had lobbied hard to draw industry into the area, particularly the aluminum industry. As the public dealt with the shortages, the problem became political, as explained by the Stanford Research Institute: "Fingers of blame were pointed in all directions. Any large user of power was a suspected culprit, and conspicuous among this group, naturally, was the aluminum industry." [19] Drought conditions arose again on Sept. 19, 1956, when the BPA notified 13 of its direct-service industrial customers operating 17 plants to be ready for a 100% curtailment of interruptible power beginning Oct. 1, 1956, due to drought conditions. The contract for the one-year-old Anaconda Aluminum Co. smelter near Columbia Falls, Mont., provided 111 megawatts of firm power out of a total of 128 megawatts used in production, so the BPA curtailment amounted to about 13% of the smelter's total needs. [20] The BPA fully restored interruptible power on Oct. 26, 1956, as drought conditions eased up. [21]

Drought conditions, however, returned. On March 7, 1957, the BPA restored 9.9 megawatts of interruptible power to the AAC plant as precipitation that spring increased streamflows in Washington's Cascade Mountains. The smelter returned to its normal load of 120.9 megawatts. AAC's contract with the BPA called for 111 megawatts of firm power and 19 megawatts of interruptible power. Unlike most aluminum plants in the Pacific Northwest, the AAC plant was able to continue production by taking 18 megawatts of power from the Montana Power Co.'s Kerr Dam at the outlet of Flathead

Lake. [22] Then on Aug. 31, 1957, the BPA curtailed all interruptible power again because of drought. AAC weathered the curtailment because it relied much less on interruptible power and had already idled production by 25% because of weak demand in the aluminum market. As a result, all 111 megawatts of power consumed by AAC was firm power. By contrast, 40% of the power used at Kaiser's Mead smelter in Spokane, Wash., was interruptible power. [23] The BPA temporarily restored 60% of interruptible power on Oct. 21, 1957, after streamflows improved in the Columbia River system. Relatively low industrial loads compared to 1956 were also considered a factor in the decision. [24]

Montana dam building

Shortages typically are met by increased investment in production capacity. In the Pacific Northwest, that meant building more dams. The federal government had long been aware of the abundant water supply stored in mountain snowpack in Northwest Montana. In 1935, when the Northwest Regional Planning Commission conducted studies for possible hydroelectric dam sites, the site at Hungry Horse Creek on the South Fork of the Flathead River in Montana was considered a possible location for a hydroelectric facility. [25] On March 23, 1935, the U.S. Geological Survey announced it had completed topographic maps of the South Fork for a proposed Hungry Horse Dam and Hungry Horse Reservoir. The maps covered the river from its mouth, where it merged with the Flathead River, upstream about 44 miles into an area that was de facto wilderness if not so designated by Congress. The 1935 maps showed a 450-foot high dam about four miles upstream from the mouth. [26]

The Hungry Horse Creek site was not the only hydropower candidate. In 1942, a proposal by the federal government for a new hydroelectric dam on Flathead Lake was made public. As proposed, the dam would have raised the lake several feet to increase capacity at an existing power plant at Polson, Mont. [27] The BPA at the time supported the proposal. In June 1943, a storm of protest by farmers and valley residents at public hearings killed the proposal and directed the government toward the Hungry Horse Creek site. [28] By 1944, a group of local boosters led by Don Treloar, James G. Edmiston and Al Winkler promoted development of the Hungry Horse Dam project through the Flathead Citizens Committee. Looking back in 1954, Hungry Horse News publisher Mel Ruder credited the trio with doing more than any other group to make the Hungry Horse Dam a reality. [29] Freshman U.S. Rep. Mike Mansfield successfully fought the Army Corps of Engineers' plans to raise the level of Flathead Lake in 1944. His efforts helped promote the development of the Hungry Horse Dam instead. Mansfield told biographer Don Oberdorfer fifty years later that stopping the Flathead Lake proposal was his greatest accomplishment. [30]

Mansfield was born in Brooklyn, N.Y., on March 16, 1903. His parents were both Irish Catholic immigrants. When his mother died in 1906, his father sent him and his two sisters to live with an aunt and uncle in Great Falls, Mont. Mansfield turned into a habitual runaway and was sent to the state orphanage in Twin Bridges for six months. At 14, he dropped out of school, lied about his age and enlisted in the Navy during World War I. He was discharged when his true age was discovered. He then enlisted in the Army and served from 1919 to 1920, then joined the Marines and served from 1920 to 1922. Returning to Montana, Mansfield found work as a "mucker" in the copper mines of Butte, shoveling ore and waste for eight years. He had never attended high school, but he passed the entrance examinations at the Montana School of Mines and attended from 1927 to 1928, studying to be a mining engineer. Mansfield met a schoolteacher named Maureen Hayes, who became his wife and who encouraged him to further his education. He attended the University of Montana, completing both high school and college courses and earning a bachelor's degree in 1933. Mansfield later earned a master's degree from the Tufts University School of Law and Diplomacy and taught college level classes in history from 1934 to 1942. He made an unsuccessful run for the U.S. House in 1940 and then ran again and won in 1942. He served five successive terms in the House and then ran for the U.S. Senate in 1952. Mansfield served in the Senate until 1977 and was the longest serving Senate Majority Leader in the Senate's history. [31]

On June 5, 1944 – one day before the D-Day invasion of France by Allied troops – the Hungry Horse Act was passed by Congress, authorizing construction of a hydroelectric dam on the South Fork of the Flathead River and establishing a Montana preference for power generated by the dam. Also known as the "Mansfield Act," the Act specified that construction of the dam would provide for "the generation of electrical energy, and for other beneficial uses primarily in the State of Montana." The Act stated, "That for the purposes of irrigation and reclamation of arid lands, for controlling floods, improving navigation, regulating the flow of the South Fork of the Flathead River, for the generation of electric energy, and for other beneficial uses primarily in the State of Montana, but also in the downstream areas, the Hungry Horse Dam was authorized." [32] Under rate schedules existing at the time of the dam's completion, the lowest power rates were available for facilities within a 15-mile radius of the power station. [33]

One of the biggest boosters for the Hungry Horse Dam, and later the Anaconda Aluminum Co. smelter in Columbia Falls, was Don Treloar. He was born on Aug. 8, 1905, in Meaderville, a suburb of Butte. He left the mining city after completing college in 1925 and taught high school in Hobson, Mont., for one year. Treloar moved to Kalispell in 1926 to work as the Kalispell Chamber of Commerce's secretary. He purchased the KGEZ radio station from the Chamber in December 1930 and spent the next four years managing the station and teaching at Flathead High School. Treloar later devoted all his

time to the radio station until retiring in 1954, when he and his family moved to Los Angeles. He died in Modesto, Calif., on Oct. 13, 1974. [34]

On April 21, 1948, General-Shea-Morrison, a group of 12 construction companies, won the prime contract for building the Hungry Horse Dam with a bid of $43.4 million. The project was the second largest Bureau of Reclamation dam since World War II. Construction peaked at 2,550 employees before the dam's completion. Laborers started the dam at $1.25 per hour. The accident rate was considered low at the time, with only 26 men dying in construction accidents. The dam was built ahead of schedule at a cost of $101.5 million, below the estimated $108 million. Since the reservoir and the dam site were located on mostly Flathead National Forest land, there was very little cost in moving families or property. The fourth largest concrete dam in the world at the time, it measured 564 feet above bedrock and was 2,115 feet across. The last of 3.1 million cubic yards of concrete and more than 18 million pounds of steel was placed on Oct. 4, 1952. [35]

Thirty-seven square miles of land was cleared for the Hungry Horse Reservoir, yielding 90 million board-feet of sawn timber, along with utility poles, pulp, railroad ties and fuel wood. [36] The dam created the 34-mile long reservoir, a popular recreation area, reduced the threat of flooding and provided irrigation water to farmlands in the Flathead Valley. [37] The last segment of wire was strung on the transmission line between the Hungry Horse Dam and the BPA line at Hot Springs, Mont., in mid-October 1952. Completion of the line took nearly a year and included 374 galvanized steel towers. The ACSR cable was made of 0.408-inch thick steel cable wrapped with 26 strands of aluminum. [38] Power generated by the dam was utilized by the AAC smelter near Columbia Falls as well as the Victor Chemical Co. near Butte, the Montana Power Co., Pacific Power & Light and the Flathead Electric Co-op. [39]

The dam project drew thousands of new residents to the Flathead. The population of Columbia Falls nearly doubled from 637 in 1940 to 1,232 in 1950. [40] By 1947, a small town site was established west of the dam site consisting of prefabricated housing for about 100 government families. In 1948, a camp was established next to Government Town for contractors and their workers, with large bunkhouses, residences, office buildings, a school and warehouses. New communities grew up nearby, including the villages of Hungry Horse, Martin City, Coram and Columbia Heights. In 1950, the populations of Martin City and Coram reached more than 1,000 people each, but by 1960 their populations had fallen to about 300. [41] The Columbia Falls Chamber of Commerce called for building codes and zoning in response to the boomtown days during the construction of the Hungry Horse Dam. [42]

In August 1949, peak employment at the Hungry Horse Dam reached 1,900 men. By mid-December, employment had fallen to 650. This was the second winter with more than 2,000 men out of work in the Flathead Valley. At the time, Plum Creek had only 58 men employed at its lumber mill. [43] That winter, the Flathead Valley's economy hit a low with 2,778 workers unemployed, amounting to about one wage earner out of three. Many of the unemployed were construction workers at the Hungry Horse Dam or lumber mill and logging workers. [44] While the dam was being built, workers with free time "ran the trapline," stopping at each of the bars along the highway in the canyon through which the Middle Fork of the Flathead River flowed. [45] Between 1950 and 1951, the peak years of construction, the dam employed 2,500 workers who created new, small communities around the dam site. As the dam approached completion, the temporary prosperity in Flathead County seemed threatened. [46]

In 1950, Flathead County encompassed 5,280 square miles – nearly as much land as the state of Connecticut. Seventy-one percent, or 3,789 square miles, remained in the hands of the federal government. Farms and ranches took up 673 square miles, compared with 4,539 square miles of timber lands. The county's population had grown to 31,495, with 41.3% living in towns and another 41.8% living in rural area but not actively farming. Only 16.9% of the population was rural farmers. The county's population had increased by 29.8% since 1940. Only 57.2% of the county's dwelling units had hot running water and toilets. Major industry employed 10,313 workers. [47] Employment in the Flathead remained high from 1950 through 1952 thanks to the boom brought by the Hungry Horse Dam. During that time, home buyers paid as much as $1,500 for 50-foot lots recently cleared of jack pine. By September 1952, however, the boom was ending, the local economy was on the skids and the jack pine was growing back on empty building lots. When news of a new aluminum plant spread in the Flathead, outsiders thought a second real estate boom would take place, but it never did. Most of the post-war expansion in homes and businesses in the Flathead Valley that took place as a result of the Hungry Horse Dam project dampened the need for more building to accommodate workers at the new aluminum plant project. [48]

According to a June 23, 1950, Hungry Horse News editorial, predictions for peak employment at the Hungry Horse Dam had reached 4,000 and even 7,000 workers, but the reality was closer to only 2,500 workers. With the dam construction boom fading, area residents saw numerous closed businesses, for sale signs and platted town sites with raw bulldozed blocks but no buildings and no buyers. [49] On top of that, the Somers Mill at the north end of Flathead Lake closed for good in 1950, and its equipment was sold to a junk dealer in Seattle. The closure was a major economic setback for the valley. [50] On March 2, 1951, Mel Ruder wrote about future industrial growth in the Flathead in a Hungry Horse News editorial. He criticized the county's tax structure and cited the

high freight costs for the isolated region, but he pointed out the biggest advantage to the valley – the availability of cheap power from the Hungry Horse Dam. [51] In mid-July 1952, rumors ran rampant throughout the Flathead that 30% of the dam's workforce would be laid off soon, amounting to about 400 to 600 men. At the time, the work force at the dam's construction site was as big as it had been since 1951, but Ruder expressed hope that construction of a new aluminum plant would begin soon. [52]

The Anaconda Aluminum Co. recited the history of this period in its promotional literature as late as 1980, noting that residents in the Flathead were concerned about an economic slump as work on the Hungry Horse Dam approached completion and construction workers began their exodus in search of other jobs. AAC quoted from a Hungry Horse News editorial at the time: "For 18 months here in the Flathead we've had our hopes raised skyward, and then smashed down when it came to creating a sizeable year-around industry." From the same editorial, "Ahead is economic slump with population moving to the coast as Hungry Horse Dam is completed." And finally from the same editorial, "Wouldn't it be something to have a $100 million tax-free dam in the Flathead serving just to benefit industry downstream on the Columbia?" [53] By mid-April 1953, employment offices in Flathead County were reporting 850 jobless workers, up from 777 a year ago. Many of the dam workers had already left the valley for jobs elsewhere. A survey was in progress to find out how many locals would be interested in working at the new aluminum plant once it was operational. [54]

On Sept. 30, 1952, President Harry Truman passed through Columbia Falls on his way to a dedication ceremony for the new Hungry Horse Dam in Kalispell. A 48-foot long sign with 3 1/2 foot high lettering was erected near the site of the new AAC smelter, the construction clearly visible from the Great Northern railroad tracks. The sign said "Site Anaconda Aluminum Co. Reduction Works" and was intended to be seen by Truman as he passed by in the train. The President addressed the public in the Flathead County High School gymnasium in Kalispell on Oct. 1, 1952, along with Montana Gov. John W. Bonner, Rep. Mansfield, Sen. James Murray, Interior Secretary Chapman and Commissioner of Reclamation Michael W. Strauss. At the end of his address, President Truman threw a mock switch that symbolized putting the first of the dam's four 71.25-megawatt generators on line. [55]

Montana's preference for power

From 1929 through 1951, before the Hungry Horse Dam was constructed, the mean annual stream flow of the South Fork of the Flathead River below the dam site was 3,305 cubic feet per second. The mean annual stream flow from 1954 through 2008 was 3,588 cubic feet per second. That worked out to about 109 average megawatts of

potential electrical power, or about 25% of the generators' nameplate rating. [56] By July 10, 1954, the Hungry Horse Reservoir filled to capacity for the first time since it was built – nearly 3.5 million acre-feet. The reservoir measured 34 miles long, up to 3.5 miles wide and covered 22,500 acres. The original four generators at the dam were capable of producing 285 megawatts of power. From July 1, 1953 to June 30, 1954, the dam's generators produced 685,023 megawatt-hours of power. The benefits of water storage to downstream hydroelectric facilities were estimated to be 563 megawatts of steady power for a year. [57] On Feb. 24, 1956, the Bureau of Reclamation began operating the Hungry Horse Dam beyond its rated capacity, generating up to 325 megawatts of electrical power to test the equipment. [58]

The Hungry Horse Dam was built and operated by the federal Bureau of Reclamation, and its power was sold and distributed by the Bonneville Power Administration, but a sharp philosophical debate over ownership of Montana water and who should benefit from the dam continued for decades. Montanans who worried about losing water rights in the project had inserted a clause into the 1944 Hungry Horse Act providing two things: 1) all power generated by the dam must be sold for use in the state of Montana; and 2) an equal amount of power, generated by downstream dams that took advantage of water that originated in the Flathead's wilderness mountains and was stored behind the Hungry Horse Dam, must be sent back to Montana for use within the state. [59]

Looking back in 1961, Mansfield pointed out that the Hungry Horse Act was "the first such preference established by an Act of Congress through legislative history." The priority position of Montana was discussed by the project's sponsors during hearings in the 78th Congress on House Resolution 3570, which led to the Act, and in reports by the Department of Interior and the House Committee on Irrigation and Reclamation, which recommended enactment. On Feb. 19, 1944, Acting Secretary of the Interior Abe Fortas wrote to the House and Senate Committees on Irrigation and Reclamation explicitly recognizing the Montana preference for power from the Hungry Horse Dam. On March 4, 1944, Mansfield placed into the Congressional record a full statement justifying construction of the Hungry Horse Dam that specified the needs of Montana for additional power. During hearings on House Resolution 3570, both Mansfield and Sen. Murray, explicitly stated that one purpose of the new dam was to provide electrical power to meet the needs of Montana. Other committee members clarified this intention, Mansfield recalled. As the dam was being built, subsequent appropriations for construction referred to the Montana preference for power, including statements in the Congressional Record by Mansfield on May 27, 1948 and July 5, 1949. [60]

On July 7, 1950, Rep. Mansfield wrote to Stuart Symington, then chairman of the National Security Resources Board, about the BPA and the power situation in Montana.

Mansfield said he was concerned that the power supply was very tight in the Pacific Northwest, and there was a lot of public and private criticism about firm power being tied to aluminum plants in the region. As a result, the BPA was hesitant about providing more power to the aluminum industry, such as in Montana. But if allocation of Hungry Horse Dam power was not clarified soon, he said, "power flow from Hungry Horse will be westward and absorbed by domestic consumption – and will not be used for any essential industrial production – i.e. it will be lost as far as national defense use is concerned." [61]

On Oct. 5, 1951, Mansfield wrote to Jess Larson, administrator of the General Services Administration, expressing his concern about Montana's rights to water and hydroelectricity. "A rumor had come to my attention that there may be an attempt to divert practically all the power from the Hungry Horse Dam in Northwest Montana to the state of Washington, and specifically the Spokane area," he wrote. Mansfield noted that the Hungry Horse Act specifically said that beneficial uses of the dam were to be "primarily in the state of Montana." Mansfield wrote to Larson, "Montana has been mined and milked of its great resources for the past fifty years, and we have contributed greatly to the welfare and security of people and industries outside of our borders. It is high time that Montana is developed for the benefit of Montana and its people." [62]

In a Jan. 9, 1953 editorial, Mel Ruder criticized how water resources in the Hungry Horse Reservoir were being managed. The reservoir had been drawn down low in order to provide water to downstream power plants with small reservoirs, and the dam's generators put out six times as much power as could be used locally – power that was transmitted out of state. Ruder specifically mentioned the Cabinet Gorge Dam's reservoir, in Montana on the Clark Fork River near Idaho, which held less water than the Hungry Horse Dam could release in a week's time. He pointed out that fish in the Hungry Horse Reservoir could be endangered by the draw down, and that Montanans were interested in protecting their water resources. "The situation of draining Hungry Horse lake for the sole benefit of downstream plants would be like exporting logs from the Flathead to be sawed into boards in Spokane mills," he wrote. [63]

BPA Assistant Administrator Byron Price touched on these issues in a speech about the Hungry Horse Dam and the Northwest Power Pool that he gave in Missoula on Dec. 28, 1954. Water stored behind the Hungry Horse Dam passed through the turbines of eight successive generating plants at downstream dams, with four more under construction. The combined power generated at the Hungry Horse Dam and downstream plants added up to 822 megawatts of prime power. The Northwest Power Pool was created during World War II on a strictly voluntary basis to coordinate power generation in the Pacific Northwest grid. Price described the system as one of the great electrical

engineering achievements in history. By 1954, the pool consisted of 11 principal utilities joined with the BPA to produce a peaking capacity of 7,000 megawatts over a 17,000 mile long transmission system. Through integration, the system was able to gain between 485 and 685 megawatts of power. The BPA accounted for about 42% of the pool's capacity and supplied about 85% of the pool's net energy requirements in the fiscal year ending June 30, 1954. [64]

On Jan. 30, 1959, Sen. Mansfield sent a letter to Assistant Secretary of the Interior Fred G. Aandahl asking about the legislative history establishing a Montana preference for power generated at the Hungry Horse Dam. Aandahl replied in a Feb. 19 letter, "The legislative history and the Hungry Horse Act of June 5, 1944 did firmly establish a power preference for the State of Montana." [65] The issue of Montana preference for water became important again as plans developed for the proposed Libby Dam on the Kootenai River. On May 27, 1961, Mansfield discussed the Libby Dam project before the Senate Committee on Appropriations. Mansfield, along with Sen. Lee Metcalf, sought to appropriate $350,000 so the Army Corps of Engineers could resume planning the project. Mansfield pointed out that in previous testimony before the committee, he and Metcalf had stated "that it was our understanding that insofar as the Libby project was concerned, there would be a power preference for Montana, based on the Hungry Horse project." The committee agreed, and Mansfield referred back to the Hungry Horse authorizing legislation of June 5, 1944. [66]

In November 1961, as the issue of the proposed Libby Dam drew public debate, James Murphy, a Kalispell attorney and a Republican National Committeeman for Montana, wrote a lengthy reply to an editorial in the Hungry Horse News about the history of hydroelectric power in Montana. Murphy claimed that, contrary to statements made by Ruder, no legal protection existed in federal law that safeguarded hydroelectric power generated from Montana waters from being used outside the state. Murphy claimed to have long been a champion of Montana water rights and was worried about what would happen in the case of the proposed Libby Dam. He cited the history of dams all over the state, including Cabinet Gorge, Yellowtail, Noxon Rapids, Canyon Ferry and Fort Peck. In the case of the Hungry Horse Dam, Murphy claimed that the Anaconda Company made a "shaky arrangement" in order to hold onto the power from the dam for their proposed aluminum plant near Columbia Falls. Murphy argued that power received by the AAC plant was by contract with the BPA and could be cut off completely at the expiration of the contract. [67]

Mansfield soon wrote to Ruder in an attempt to clarify an historical point about Montana's preference for power generated at Hungry Horse Dam. After speaking with Metcalf about the issue, the two senators gathered together information to forward to

Ruder, and Mansfield summed up his position this way: “The enclosures firmly establish the fact that there is a power preference for Montana at Hungry Horse, and similar reservations will be needed at Libby and Yellowtail. The enclosures indicate what has been done to date in the way of establishing legislative history for such a preference at these two projects.” Mansfield pointed out that the Cabinet Gorge Dam and Noxon Rapids Dam, which became private dams delivering power out of Montana, were authorized by the Federal Power Commission, an agency that the Senate and House had no control over. Mansfield also pointed out that the Montana preference at Hungry Horse Dam “is the first such preference established by an Act of Congress through legislative history” and that only one other hydroelectric dam in the U.S. had a similar preference – the Oahe Dam in South Dakota, which was built by appropriation. [68]

The Hungry Horse News published a statement by the BPA on Montana’s preference for power generated by the Hungry Horse Dam on Dec. 1, 1961. The BPA began by quoting from Section 1 of the 1944 Hungry Horse Act, which stated that the benefits of the generation of electric power and other beneficial uses would be “primarily in the State of Montana but also in downstream areas.” According to the BPA, “This language has been interpreted to require that a geographical preference to be given to the State of Montana. Accordingly, the Bonneville Power Administration has determined that all of the at-site power generated at Hungry Horse or one-half of the total power developed at Hungry Horse and at downstream plants from Hungry Horse storage, whichever is less, would be made available for sale in Montana in order to meet the geographical preference requirements of the Hungry Horse Act.” The BPA went on to explain that the reference to “downstream areas” in the Act referred back to all the other purposes for the dam, including irrigation, flood control and navigation. Referring to Public Law 329 of the 78th Congress, the BPA stated that the power generated by the dam was to “benefit primarily the State of Montana.” [69]

The BPA argued that its own policy was proof of a preference for Montana, saying, “At the present time, 221,000 kilowatts of Hungry Horse power is being sold or held in reserve for use in the State of Montana. This represents exactly 100% of the total at-site prime power capability of Hungry Horse Dam.” Finally, the BPA referred to hearings in the 85th Congress on Senate Bill 2206, Bonneville Project Act Amendments, in which J.E. Corette, president and general manager of the Montana Power Co., referred to the “geographic allocation of power to States which contribute resources,” specifically the Hungry Horse project. According to Corette, Senate Bill 2206 would “destroy the geographical allocation of Hungry Horse power in Montana.” Corette believed the Montana Power Co. was currently purchasing 50 megawatts of power from Hungry Horse Dam that was subject to Montana preference. [70]

Murphy responded to the evidence presented by Mansfield and Metcalf in a letter to the Hungry Horse News on Dec. 1, 1961. He claimed that what was lacking in federal law was a specific reference to an amount of electrical power, measured in kilowatts, which would be reserved for use in Montana. Murphy argued that evidence presented in the Hungry Horse News was nothing more than conversations between officials recorded in the Congressional Record. Ruder disagreed, summing up Murphy's opinions as "political comments of Montana's Republican National Committeeman." [71] Flathead Electric Co-op Manager J.M. Garrison added to the debate in a letter to the editor on Dec. 15, 1961. Garrison pointed out that although no reservation of power had been stipulated in any private license, the "fact is pretty generally understood by everyone that has studied the situation." Garrison then referred to a recent talk by Corette who said, "West of the divide the government operates Hungry Horse Dam, which by Legislation and Administrative practice has a geographical preference for Montana. Under this geographical preference 206,000 KW of Hungry Horse Power is reserved for use within the State." [72]

Dam-building and transmission

The dam building enthusiasm of the 1930s grew after World War II. In Northwest Montana, a few mountain locations had attracted attention, but none had the streamflow of the South Fork at Hungry Horse Creek. On Sept. 29, 1950, BPA Administrator Paul Raver told the Kalispell Chamber of Commerce that the 300 megawatts of power produced by the Hungry Horse Dam was just the beginning – another 2,000 megawatts of power generation existed within 75 miles of the Flathead Valley. Raver stressed that industrial development of the entire Pacific Northwest depended on development of additional hydroelectric facilities, and he called on Flathead Valley residents to support development of nearby sites. Already the idea of building the Glacier View Dam on the North Fork of the Flathead River had become a controversial political issue, as it was perceived to be a threat to the adjacent Glacier Park. [73]

The President's Water Resources Policy Commission released its report on hydroelectric sites in the U.S. in July 1951. Included in the report was a two-page section discussing the proposed Glacier View Dam. The report noted three objections to the proposed dam: 1) impairment of views of nearby Glacier Park; 2) destruction of an 8,000-acre stand of virgin ponderosa pine not owned by the Park; and 3) destruction of winter habitat for a major part of the Park's white-tailed deer and about 30% of the Park's mule deer, along with 70% of the Park's beaver habitat. The report noted that the dam would be inexpensive to build, and only about 1% of the Park's land would be flooded by the dam. "Experience has shown that in general, where Park encroachments are

commenced, additional changes may succeed and the character of the Park finally be lost," the Hungry Horse News commented. [74]

By March 1956, the federal government's plans for dam development in the upper basins of the Columbia River included two proposals for the North Fork of the Flathead River – the Glacier View Dam and the much smaller Smoky Range Dam. The latter would provide about half as much power as the Hungry Horse Dam and would involve building a 370-foot high earthen dam that would back up water all the way to Polebridge and store 1.5 million acre-feet of water at a cost of $65 million. The Smoky Range Dam would flood only 8,700 acres of Glacier Park compared to 19,500 acres with the Glacier View Dam. According to the Hungry Horse News, most residents of the Flathead Valley favored construction of the dam to provide year-round employment, but the Department of the Interior and the National Park Service were expected to fight the proposal by taking the stance that not one drop of reservoir water should be allowed to cross Park boundaries. [75]

In a July 13, 1956 editorial, Mel Ruder commented on the Army Corps of Engineers' current dam-building proposals. A petition supporting the Glacier View Dam had garnered 2,000 signatures. The Army Corps had also proposed the Spruce Park Dam on the Middle Fork of the Flathead River. Ruder supported the Spruce Park Dam as a way to boost the economy, the same way the Hungry Horse Dam had boosted the local economy and brought in the AAC aluminum smelter near Columbia Falls. Other Army Corps dam proposals included enlarging the Kerr Dam to deepen Flathead Lake, building the Nine Mile Prairie Dam on the Blackfoot River east of Missoula and building the Libby Dam on the Kootenai River. [76] Ruder continued to lobby for more hydropower dams in Northwest Montana in a February 1959 editorial, calling for construction of a new hydroelectric dam near Columbia Falls to supply enough power for expansion of smelting capacity at the AAC plant. Glacier View was a good site, he argued, but national opposition to flooding 1% of Glacier Park was stronger now than it was 10 years earlier, when the dam was first proposed. Opposition to the Spruce Park site came from wildlife supporters worried about grizzly bears, he noted. There appeared to be more agreement about the Libby Dam proposal, and agreement would eventually be worked out with Canada about its construction, Ruder suggested. [77]

Dam building and transmission line construction were paralleled by the BPA's new marketing strategies. On Jan. 15, 1954, William A. Pearl became the new BPA administrator. A new direction was underway by the Republican Eisenhower administration away from federally sponsored projects toward local public and private enterprises, according to Vera Springer's 1977 history of the BPA. The change triggered immediate and vigorous opposition, and the old battle of public versus private power

was fought once again. The BPA responded to the development of nonfederal power projects with wheeling contracts, whereby power produced by isolated private generating facilities was carried over BPA transmission lines to population centers. This eliminated the need to build duplicate transmission lines and helped promote the BPA's master plan of integrating the region's power. By 1971, wheeling contracts earned the BPA more than $10 million per year. [78]

By 1954, the BPA had 2,500 employees and $300 million invested in transmission lines, substations and other equipment across the Pacific Northwest. The BPA's total annual revenues were approximately $40 million. Twenty-four BPA employees lived and worked in Western Montana maintaining $24 million worth of transmission lines, substations and other equipment. The BPA also collected $2 million in revenues from sales in Montana. In a June 18, 1954 letter to the Hungry Horse News, Don Treloar, a member of the BPA Advisory Council, criticized the BPA for not keeping enough employees in Montana and for proposing to shut down its Kalispell office and cutting the BPA force in Montana by one half. "It all adds up to the fact that Montana still has colonial status, at least so far as Spokane, Seattle and Portland is concerned," he argued. [79]

Regional power forecasts

On Sept. 3, 1954, the BPA released its 1954 Advance Program report on the BPA's present and future capabilities. The BPA had increased its hydroelectric capacity by more than 1,000 megawatts between Jan. 1, 1953 and July 1, 1954, and it expected to add another 4,000 megawatts of hydroelectric power over the next eight years. The federal government had already invested $1.5 billion in power projects in the Pacific Northwest, and it was committed to spending another $1 billion on projects already under construction. Despite this additional power, the BPA forecast serious deficits under low water conditions of 200 megawatts by 1961-1962 and 800 megawatts by 1963-1964. Increasing demand on the BPA system mostly came from population growth and increased residential consumption. [80]

Power requirements in the Pacific Northwest were expected to grow about 7% per year for the next 10 years, with a sharp rise in domestic and farm use, according to the 1954 Advance Program report. The population of the region was expected to rise 21%, and utilities could expect 500,000 new domestic customers by 1960, on the average consuming an estimated 9.7 megawatt-hours per year in 1963 as compared with 5.7 megawatt-hours in 1953. These projected deficits did not take into consideration a possible additional load of 3,000 megawatts from new aluminum plants that might be attracted to the Pacific Northwest. Growth in industrial loads in the region could also

result from modernization efforts, particularly with lumber mills. With these possible industrial loads added in, the power requirements of the Pacific Northwest could be expected to grow about 11% per year through 1963, or about 1.5 times the national average. The BPA proposed not only building more hydroelectric facilities but also integrating control of all federal and non-federal power plants in the region to improve economies. [81]

In November 1956, the BPA published a 10-year forecast for power consumption in the Pacific Northwest. The BPA felt it could meet all firm and interruptible loads through 1965 with median levels of rainfall despite substantial growth in demand. The biggest factor improving power supply was a scheduled six-fold increase in power generated by non-federal sources, along with plans for new federal generating facilities. New federal projects on the Columbia River included the McNary, Chief Joseph, Dalles, Roza, Cougar, Hills Creek and Ice Harbor dams, which would add 2,363 megawatts of power to the BPA system. A total of 18 non-federal generating facilities with an installed capacity of 4,147 megawatts of power were planned, including the Rocky Reach, Priest Rapids, Wanapum, Noxon Rapids, Brownlee, Oxbow and Hells Canyon dams. The BPA forecasted an 81% increase in demand by domestic consumers by 1965. Commercial loads were expected to increase by 25% with the construction of urban shopping centers and modernization of existing facilities. According to the BPA forecast, industrial consumption was expected to grow from 19 million megawatt-hours in 1956 to 32 million megawatt-hours by 1965, but other estimates put the growth much higher. [82]

An alternative to dam-building was proposed in the 1950s. The Joint Congressional Committee on Atomic Energy recommended in 1957 that a dual purpose nuclear reactor be built at the Hanford Works in Washington that would produce weapons-grade plutonium and electric power. With Congressional authorization, the Atomic Energy Commission contracted with the Washington Public Power Supply System (WPPSS) for the sale of byproduct steam from the New Production Reactor. The 800-megawatt reactor began supplying power to the BPA grid in April 1966. At the time, it was the largest nuclear generating plant in the world. The nuclear power plant filled a development gap for the BPA until new dams could come on line, and allowed the BPA to continue selling power for industry while meeting its commitments to public and private utilities. [83]

In November 1958, the BPA published another 10-year forecast. According to BPA Administrator Pearl, based on information from public and private power sources, the BPA expected to be able to meet all firm power requirements for public preference customers through 1968-1969 and for private utilities through 1962-1963. The estimate was based on all existing power sources along with those under construction, even

under minimum or critical steam flows. The improved power outlook resulted from three factors: 1) increased public power, especially with the new John Day Dam; 2) accelerated construction of nonfederal power, especially with the new Priest Rapids Project; and 3) a moderate cutback in estimated loads for public and private utilities. Domestic power usage in the Pacific Northwest for the next 10 years was expected to increase per capita as a result of new technology and uses. [84]

Air conditioners, appliances and electric heaters could increase domestic use from 8.5 megawatt-hours per year to 14 megawatt-hours by 1968, according to the BPA's 10-year forecast. Consumption by large industry was expected to increase by about 5% per year, from about 21 million megawatt-hours in 1957 to about 36 million megawatt-hours in 1968. Potential expansion by large industry in the aluminum reduction and chemical industries could add 9 million megawatt-hours, but most of the expansion was expected to be in pulp and paper plants. By 1968, the total capacity of federal generating power on the Columbia River system was expected to be about 7,818 megawatts, compared to only 5,344 megawatts in 1958. There were 16 nonfederal projects in various stages of construction that would add 3,400 megawatts of power to the BPA system area, or 40% more than the capacity of public projects under construction. The BPA's high voltage long-range transmission lines were expected to play an important role in integrating the various power sources through long-term wheeling contracts. The forecast anticipated a total regional load of 17,500 megawatts by 1970. [85] In January 1959, President Eisenhower requested $35.2 million for the BPA in his proposed budget for the fiscal year 1959. Of that amount, $18.1 million would be used to build additional carrying capacity for 2,000 megawatts of new federal and non-federal hydroelectric generating facilities in the BPA grid. [86]

The Bonneville Power Administration, however, did not have 100% support from the regional power industry. In 1958, the Northwest Public Power Association's proposal for the creation of a new organization to replace the BPA was put in a bill and introduced into Congress. The Columbia River Development Corporation that would replace the BPA would be self-financing as it developed water and power resources in the region. The bill was never adopted, but 15 years later the BPA finally became a self-financing agency. [87] The Hungry Horse News ran a guest editorial from The Oregonian on the proposed Columbia River Development Corporation on Dec. 5, 1958. The new corporation would be a planning, financing and transmitting agency that would absorb the BPA's marketing functions. The BPA at the time forecasted needs and then turned to Congress for funding, but it had no means of self-financing. According to the editorial, Congress was "more often niggardly in the appropriation of funds" for the BPA. [88] In his own editorial on the proposal, Ruder reminded his readers how the Montana Power Co. fought against construction of the federally funded Hungry Horse Dam, and of the

benefits the Hungry Horse Dam had brought to the Flathead economy. Ruder divided opponents to the bill into two political camps, with conservative Republicans backing Montana Power and other private utilities opposing the bill, and with the Democrats backing public utilities in support of the bill. [89]

Powering the regional aluminum plants

On Nov. 18, 1959, the Oregon Journal of Portland published an editorial about the Pacific Northwest aluminum industry, by then 19 years old and the target of critics who claimed the five aluminum plants consumed too much of the BPA's cheap hydroelectric power. The Alcoa, Harvey, Kaiser, Reynolds and AAC plants were capable of producing 30% of the nation's primary aluminum and contributed $1.75 billion to the Pacific Northwest economy over the past 19 years, the editorial said. The plants were an important part of the BPA's success, providing the BPA with a $68 million surplus over its U.S. Treasury payment obligations. Over those 19 years, however, freight prices and local and state taxes had increased, wiping out any advantage gained by cheaper hydroelectric power. As a result, new aluminum plants were being built in the Ohio Valley, within 500 miles of 70% of the domestic aluminum market. Good news for the Pacific Northwest aluminum industry was the announcement by the BPA administrator that sufficient power was available in the future to renew 20-year power contracts with the aluminum plants at approximately the same rates. [90]

BPA Administrator Pearl noted in his annual report to the Interior Secretary on Dec. 15, 1960, that the BPA had signed 20-year contracts to provide 364 average megawatts of combined firm and secondary power for industrial expansion in the Pacific Northwest. Pearl reported that "for the first time in nearly 15 years," the BPA found itself in a period of surplus power rather than scarcity. Installed generating capacity in the BPA's marketing area had increased by 2.5 times since Jan. 1, 1953, of which half was federal projects. "There has probably never been a time in the history of the Pacific Northwest when we have faced a brighter outlook for the sound and continuing development of all aspects of our regional economy," he reported. In 1945, about 70% of power sales by the BPA went to Pacific Northwest industries. That figure had dropped to about 40% by 1960. For the aluminum industry alone, the figure had fallen from about 52% in 1945 to about 25% in 1960. [91]

Pearl reported that the power capacity of the BPA's 19 large industrial customers was 1,829 megawatts, but they purchased only 1,417 megawatts, leaving about 412 megawatts of idled capacity. Pacific Northwest aluminum companies increased their purchase of firm power from the BPA by 10% in 1960 over 1959, while sales of interruptible power fell by 7%. Most of that decrease came from plants that turned to

more expensive but guaranteed firm power. About 87% of the aluminum industry's power purchases from the BPA were firm power in 1960, compared to 85% in 1959. Sales to individual plants in 1960 included Alcoa in Vancouver, 1.3 million megawatt-hours; Alcoa in Wenatchee, 832,000 megawatt-hours; AAC in Columbia Falls, 1 million megawatt-hours; Harvey Aluminum in The Dalles, 1.1 million megawatt-hours; Kaiser in Spokane, 2.4 million megawatt-hours; Kaiser rolling mill in Trentwood, 272,000 megawatt-hours; Kaiser in Tacoma, service temporarily discontinued; Reynolds in Longview, 1.1 million megawatt-hours; and Reynolds in Troutdale, 748,000 megawatt-hours. [92]

In 1960, the BPA's gross operating revenues totaled more than $71 million, an increase of more than $2.5 million over 1959. The revenues met all expenses for operation, maintenance and interest but fell short by $8.4 million for depreciation. [93] According to the BPA's 1961 annual report, wheeling contracts increased 31.7% over the past year. The number of connection points in the 8,244-mile grid had increased from 256 to 436 since 1950. Energy sales since 1950 had increased by 224% to public utilities, by 20% to private utilities, by 31% to aluminum companies, and by 198% to federal agencies and other customers. The aluminum industry accounted for about 30% of the BPA's energy sales at an average price of $2.19 per megawatt-hour. Sales to aluminum companies, however, dropped by 4.2% for firm power and by 3.3% for nonfirm power, as the region's aluminum industry idled about 425 megawatts of load. The regional aluminum industry's share of total energy sales showed a continuous decline from 51.5% in 1945 to 37.4% in 1951 to 24.3% in 1961, but the dollar value of firm power sales to aluminum plants had increased every year except 1961. [94]

In 1961, Charles F. Luce, the newly-appointed BPA administrator, faced three consecutive years of annual operations deficits. The problem was blamed on delays in completing new generating plants, the lack of a market in the Pacific Northwest for surplus secondary power, higher project costs due to rising construction costs, and the shortage of economical hydroelectric sites. Luce saw three solutions in the near future: 1) the U.S.-Canadian Columbia River Treaty, which would increase generating capacity throughout the year; 2) the proposed Pacific Northwest-Pacific Southwest Intertie, which would provide markets for surplus secondary power outside the Pacific Northwest; and 3) the New Production Reactor at the Hanford Atomic Works in Washington. [95] Secondary energy referred to power that could be generated when streamflows were higher than critical, but which could not be guaranteed for delivery over long periods of time. By July 1961, the BPA had entered into $25,000 worth of contracts with several regional universities to conduct business research in an attempt to establish new power markets. The BPA was expected to have more than 400 megawatts of firm power available for immediate sale to industries once generating

facilities were approved for the Hanford nuclear reactor and additional power was gained through the U.S.-Canadian River Treaty. [96]

By the time of the agency's 25th annual report in January 1962, Congress had budgeted $300,000 to continue studies on the proposed Pacific Northwest-Pacific Southwest Intertie. Luce pointed out in the report that in each of the BPA's deficit years, the combined value of unsold firm power, secondary energy and peaking capacity was nearly twice the value of the corresponding deficit, totaling nearly $30 million annually. "There has not been… a sufficient market within the Northwest to absorb all the short-term firm power, secondary energy and peaking capacity the Bonneville system can produce," Luce explained, "It is clear that we will have to look outside the region to find markets for the system's total power capability." Sens. Warren G. Magnuson and Henry M. Jackson of Washington insisted on protective legislation before supporting a bill funding construction of the Intertie. A bill introduced earlier in 1962 stated in part that "the sale, delivery and exchange of electric energy generated at… federal hydroelectric plants in the Pacific Northwest for use outside the Pacific Northwest shall be limited to surplus energy and surplus peaking capacity." Peaking capacity referred to the ability of a power-generating system to produce large quantities of power for brief periods of time to meet peak loads. Peak loads in the Pacific Southwest occurred during the summer months and included air conditioning and irrigation loads. Peak loads in the Pacific Northwest occurred in winter months, mainly for heating. [97]

Equitable distribution and sales of power was a common issue for politicians. In August 1962, Sen. Metcalf criticized the high prices charged for power generated by the Montana Power Co. He argued that the Anaconda Company would never have built its aluminum plant near Columbia Falls without cheap power provided by the BPA from the Hungry Horse Dam. Metcalf pointed out that Montana Power charged $5 per megawatt-hour while the BPA only charged $2, and he argued that these high rates were discouraging industry from coming to Montana. [98] Improper accounting principles also attracted scrutiny. On Oct. 23, 1970, U.S. General Accounting Office Civil Division Director A.T. Samuelson sent a letter to Interior Secretary Walter Hickel advising him that the Bureau of Reclamation failed to capitalize interest on money borrowed to build hydroelectric dams in the Pacific Northwest. Samuelson said the Army Corps of Engineers and the BPA had included interest payments in the costs of their projects when repaying the U.S. Treasury. Loan repayments were required by law to come out of revenue from power sales within the system. Samuelson said of the Bureau's six hydroelectric projects assessed in June 1969, four projects and one division of a fifth project had not capitalized interest. Based on 3% interest per year, the capitalized interest for the Columbia Basin and the Hungry Horse Dam amounted to $15 million during the time of construction and another $13 million accumulated by June 1969.

Samuelson noted that the Bureau of Reclamation had capitalized interest on some projects, but not all. [99]

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