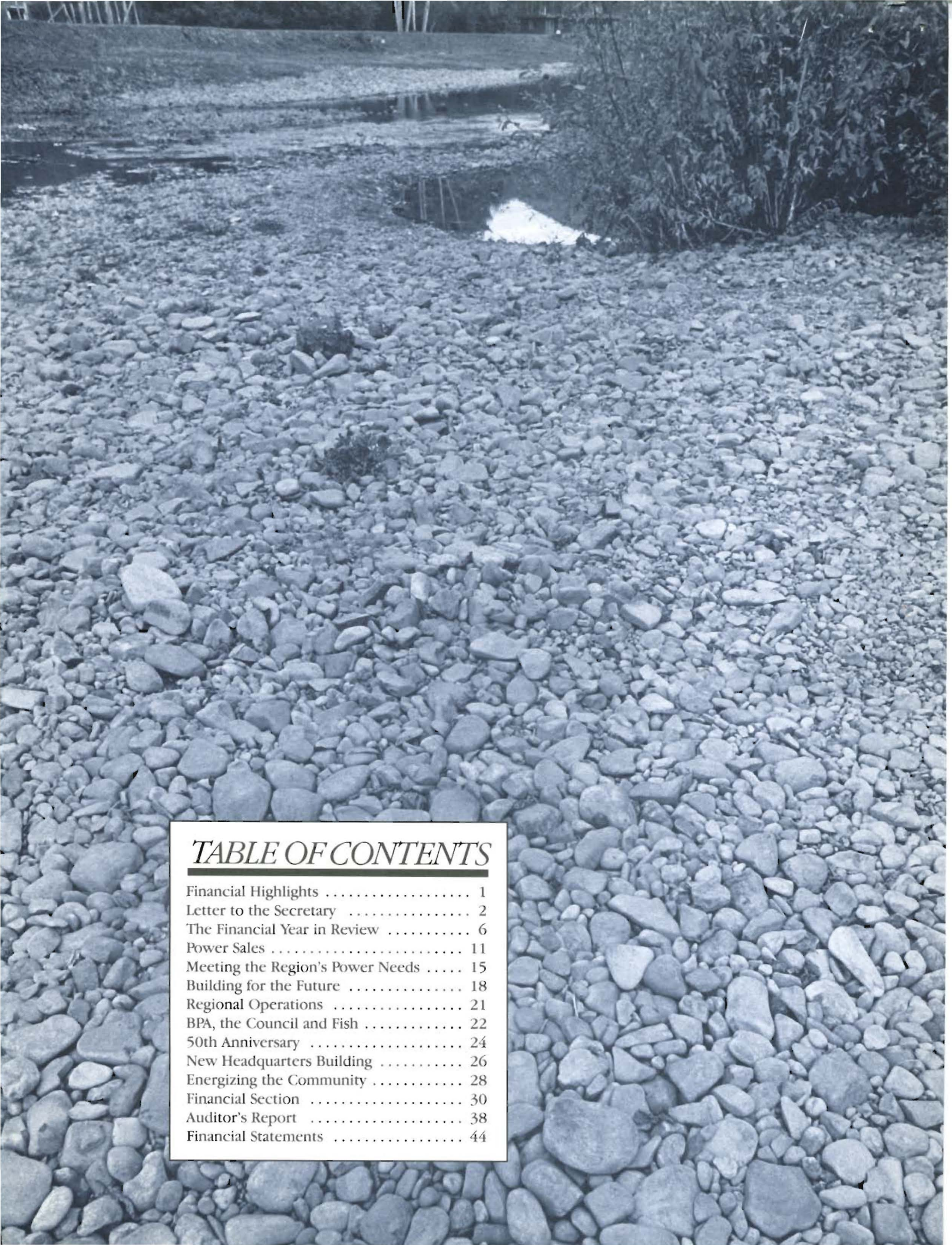
BONNEVILLE POWER ADMINISTRATION

1987 ANNUAL REPORT



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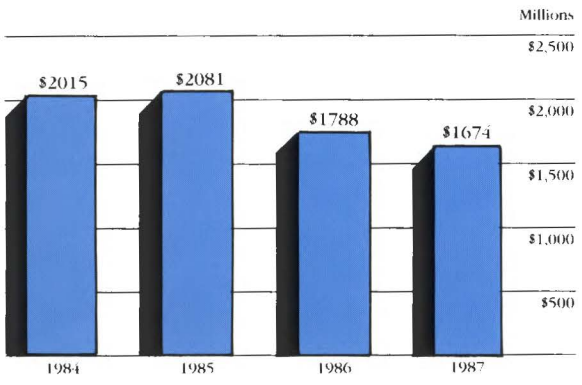
FINANCIAL HIGHLIGHTS

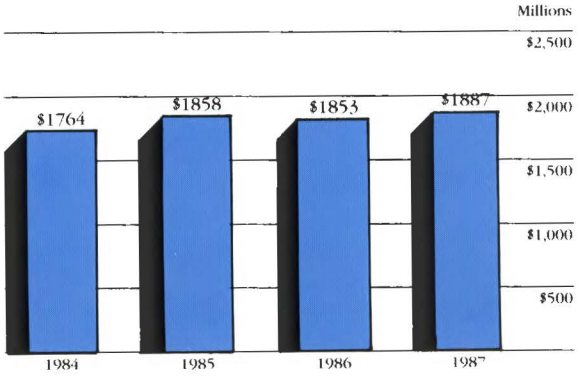
Federal Columbia River Power System
for the fiscal year ended September 30, 1987

	FY 1987	FY 1986
Highlights of the year:	*(Thousands of Dollars)*	
OPERATING REVENUES:		
Sales of electric power —		
Sales within the Northwest region	$ 1,345,434	$ 1,399,484
Sales outside the Northwest region	173,459	258,898
Wheeling and other sales	155,150	129,287
Total operating revenues	1,674,043	1,787,669
TOTAL OPERATING EXPENSES	1,510,125	1,498,868
Net operating revenues	163,918	288,801
NET INTEREST EXPENSE	376,468	353,717
NET EXPENSES	$ (212,550)	$ (64,916)
At end of year:		
TOTAL DEPRECIATED ASSETS	$14,144,582	$13,931,517
TOTAL CAPITALIZATION AND LIABILITIES:		
Accumulated net expenses	$ (586,023)	$ (373,473)
Federal appropriations	6,544,336	6,482,754
Treasury borrowings	1,843,799	1,458,799
Capitalized contract obligations	6,048,650	6,110,244
Other	293,820	253,193
	$14,144,582	$13,931,517
PERMANENT EMPLOYEES	3,269	3,431

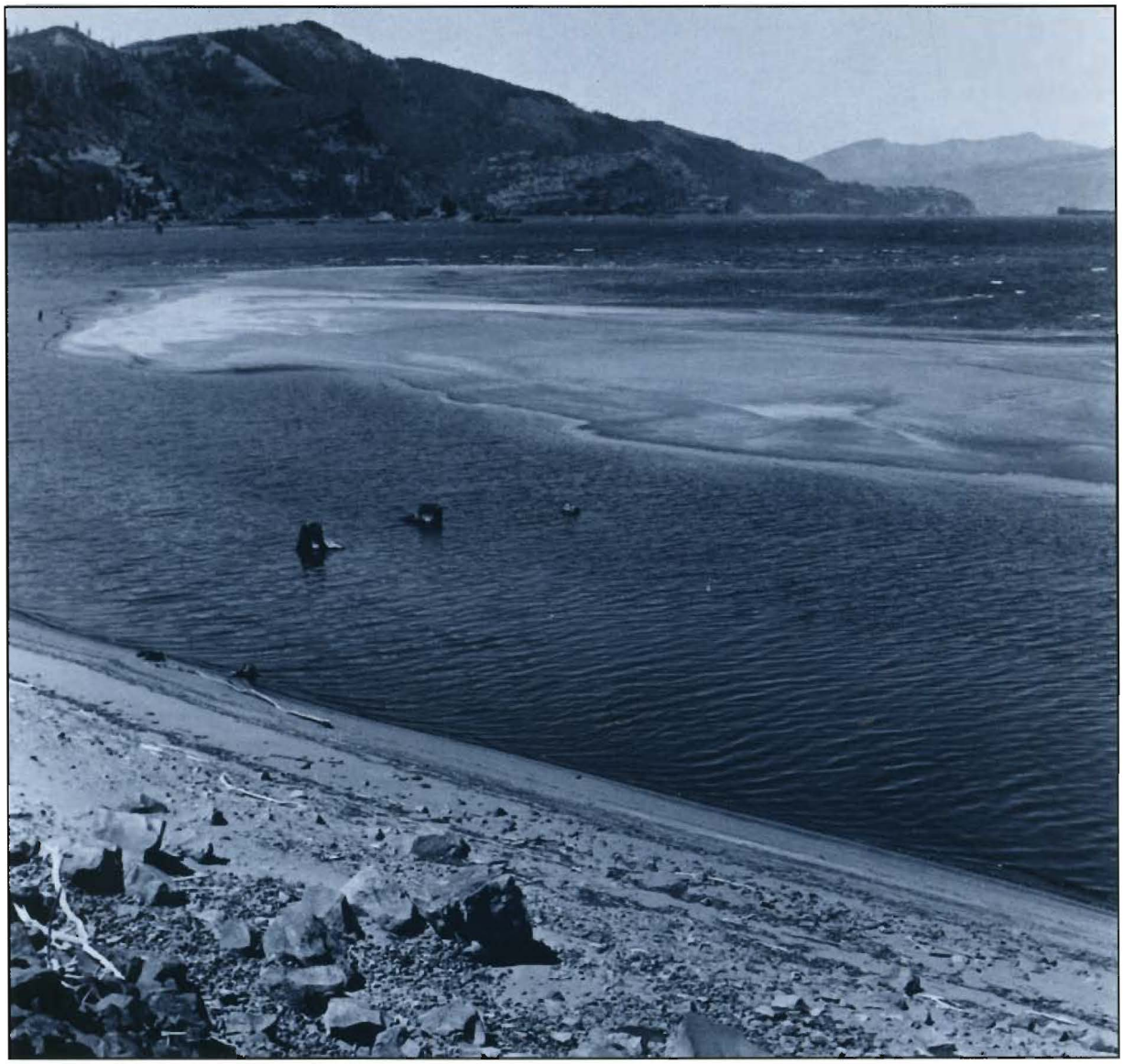
Total Operating Revenues



Total Operating and Net Interest Expense



TO THE SECRETARY



A sandbar shows in the Columbia River

Honorable John S. Herrington
Secretary of Energy
Washington, D.C. 20585

Dear Mr. Secretary:

Nineteen Eighty Seven was both a year of celebration and a year of challenge for the Bonneville Power Administration. The celebration was observance of BPA's 50th anniversary. The challenge was dealing with an unprecedented array of issues that have significant financial impacts on the agency. How BPA handled those will be critical to its future as a reliable long-term power supplier in the Pacific Northwest. I believe we faced the issues squarely and that the steps taken will enable BPA to emerge as a strong, more reliable energy supplier.

During BPA's 50th anniversary celebration the agency's past challenges and difficulties were recalled, and we pointed with pride to the accomplishments and achievements of the past. The celebration also instilled a positive sense of our ability to face new challenges and overcome present adversities.

The financial conditions experienced by BPA during 1987 included:

- one of the worst water years in a century —the tenth lowest water runoff in 62 years of record—that caused curtailment of surplus energy sales and commensurate revenue declines for six months (from February through August);
- extra-regional demands for access to low-cost BPA power;
- tougher competition from inside and outside the region with continuing surpluses of electricity and other energy;
- an unusually mild climate year and reduced demand for electricity; and
- mounting customer dissatisfaction over BPA rates, and concerns about future rate stability.

Revenues of $1,674 million in 1987 were down $114 million from 1986 revenues of $1,788 million. They were $371 million below planned revenues for the year based on rates set in 1985. Prompt and effective management action was required to ensure BPA's scheduled payments to the U.S. Treasury.

Priority firm revenues, which constitute the base of BPA's finances, were down $37 million, from $863 million to $826 million. This was primarily due to warmer weather conditions. The biggest drop was in revenues from surplus sales which declined $133 million, from $329 million in 1986 to $196 million in fiscal 1987.

Revenues from surplus power were $240 million below planned, and that was due to a combination of increased competition in the energy market and BPA's need to curtail surplus sales from February to August because of the low runoff behind the Columbia River Basin hydro dams.

On the plus side, revenues from industrial firm and variable rates increased $20 million, from $383 million in 1986 to $403 million in 1987. All other revenues combined were up $36 million, from $213 million to $249 million.

Although industrial revenues were short by $140 million of planned revenues for the year, the recovery from 1986 was significant. The 1985 rate case could not foresee the later recession in the aluminum industry, and the 1987 industrial revenues increase over 1986 was particularly gratifying from two standpoints. First, it indicated a recovery by the aluminum industry from 1986 which saw the closing of three smelters in the Northwest. Second, it indicated the wisdom and success of the variable rate initiative BPA took in late 1986 to help the aluminum industry survive in the Northwest.

The significant revenue shortfalls in the last two years caused BPA to rigorously examine its competitive position. As a result we see four primary areas of emphasis for the future:

- improving our competitive position in the marketplace;
- increasing internal cost efficiency;
- dealing effectively with revenue uncertainties; and
- improving customer service.

Improving Our Competitive Position in the Marketplace

In the last year BPA faced greater competition in its surplus sales markets as a result of lower costs for oil, gas, coal, and other fuels used for electric generation. BPA needs to increase its competitiveness in the marketplace, and several new programs were initiated in 1987 or implemented after being established in late 1986. These included:

- a variable rate for the aluminum smelting industry that ties power rates to the market price of aluminum;
- block sales of surplus firm power to increase incremental energy sales;
- flexible surplus firm and nonfirm energy rates that can fluctuate with the market;
- firm displacement rates for sales and revenues to regional utilities to replace energy they sell in the extra-regional market;

John S. Robertson, Deputy Administrator, left; James J. Jura, Administrator; and Steven G. Hickok, Executive Assistant Administrator

- capacity sales and energy-capacity exchanges to provide beneficial power arrangements between BPA and utilities outside the region;
- The Bonneville Partnership Program to encourage surplus sales within the region and to enhance regional economic development; and
- an agreement with B.C. Hydro to study the potential for more efficient, coordinated uses of the Columbia River hydro system.

A key to BPA's competitiveness for the future is its continuing ability to devise innovative new programs to market available power.

Increasing Internal Cost Efficiency

In 1987 BPA underwent extensive reorganization to reduce costs by streamlining operations. It was the first major reorganization of the agency in more than 20 years. When completed by 1989, the reorganization will have reduced employment by nearly 9 percent, with approximately 300 positions eliminated. These are savings made possible by the support of the BPA organization, and its employees should be commended.

Reorganization and cost-cutting initiatives had immediate effects during 1987. Reduced expenditures compensated somewhat for the decline in revenues.

Total expenses, including gross residential exchange expense, in fiscal 1987 were $7 million below fiscal 1986 and $192 million below planned expenses for the year. 1987 was the first year since 1975 that BPA's expenses were held below the previous year. They were within just $25 million of fiscal 1985 expenses.

Dealing Effectively with Revenue Uncertainties

Revenue uncertainties for BPA are a relatively recent phenomenon. The new volatility has to do with uncertainty within the aluminum industry and our nonfirm sales competition against oil and gas. Shortfalls in revenues historically have been handled by deferring repayments to the U.S. Treasury for the Federal Columbia River Power System capital investments.

Today BPA needs to be as concerned about long-term debt as it is about annual budgets and revenues. BPA is committed to meet its Treasury obligations. We have paid over $2 billion interest alone in the last 7 years on our Treasury debt, which has reached $8 billion. And the debt has continued to grow. Debt service is a fixed cost, and we need to reduce the proportion of our costs that are fixed.

BPA needs to do more than just reduce borrowing to better deal with revenue fluctuations. We need more flexibility for generating revenues and handling BPA's finances. We have taken steps to provide such flexibility in the future. Among these are: (1) the variable rate to maintain aluminum operations during the down side of their business cycles; (2) a Cost Recovery Adjustment Clause that triggers rate increases or rebates to customers if substantially higher or lower revenues are experienced than programmed; (3) the use of a low water year instead of the average water year for hydro generation supply and planning surplus energy sales and revenues; and (4) an increase in BPA's interest coverage ratio.

Marvin Klinger, Senior Assistant Administrator for Power Facilities, left, and Edward W. Sienkiewicz Jr., Senior Assistant Administrator for Power Management

Improving Customer Service

A number of changes in the past year will improve BPA's customer service. Reorganization decentralizes operations to the area and district offices and upgrades the Area Manager positions. Rate stability and dependability are important aspects of service. They help build needed confidence. All of the programs and activities in which the agency engages are oriented toward helping achieve rate stability and dependability.

Prospects for the Future

The key to BPA's past accomplishments and success, evidenced in the 50th anniversary celebration during 1987, was a combination of regional support and a BPA team of dedicated, capable, energetic employees. I believe the key to BPA's future success will be the same — regional and customer support, and the corps of BPA's hard-working, innovative people.

BPA's prospects for the future are excellent. The many changes and new programs initiated in 1987 will be important to the agency's future success. Most of these are just a beginning. We will need to continue efforts to improve our efficiency by cutting costs and improving services. BPA, its customers, and the region can do it by pulling together.

By holding down costs, and with better marketing of its product, BPA will ensure that it continues to be the region's leading low-cost provider of electricity.

Sincerely,

James J. Jura

James J. Jura
Administrator

THE FINANCIAL YEAR IN REVIEW

The Snake River near where it joins the Columbia

The Bonneville Power Administration paid the U.S. Treasury $624 million in fiscal year 1987. It was the fourth year in a row BPA has paid the Treasury more than $600 million.

BPA's Treasury payment is for the taxpayers' investment in the Federal Columbia River Power System, with interest. It also covers operation and maintenance expenses at dams operated by the U.S. Army Corps of Engineers and the Bureau of Reclamation and operation and maintenance expenses associated with the lower Snake River Fish Facilities administered by the U.S. Fish and Wildlife Service. This year Bonneville paid the Treasury $151 million in principal, $381 million in interest, and $92 million for operation and maintenance expenses at the Federal dams.

BPA was able to make its 1987 payment in full and on time in spite of a decline in revenues.

Total operating revenues fell 6 percent below fiscal 1986 and 18 percent below the rate case projection for 1987. A mild winter resulted in less demand for residential heating in the Northwest.

Revenues from sales to California also dropped. Due to near-record low snowpack and reservoir levels, there were times BPA didn't have power available to sell outside the region. Nonfirm energy sales to California fell far below prior years' levels. When power was available, BPA kept its prices low to meet the competition from low-cost oil and gas in California. We sold virtually all of our surplus, but our income per kilowatt-hour sold was less than anticipated.

The Northwest aluminum industry did make modest gains. The worldwide price of aluminum rebounded from last year's lows. BPA's revenues from sales to the aluminum industry rose $19 million over fiscal 1986. Because the effect of the new variable rate charged to the aluminum companies is delayed — by design — for three months, not all of the substantial economic recovery in the aluminum industry has been translated yet into gains for Bonneville.

BPA was forewarned of lower revenues and already had taken steps to put the brakes on spending. In 1987 BPA expenses, including gross resi-

dential exchange expense, were $192 million below rate case program levels.

The cut in expenses did not, however, fully offset the drop in revenues. Revenues were $371 million below rate case projections. Expenses exceeded revenues by $213 million. BPA still was able to make its payment to the U.S. Treasury with funds built up in fiscal years 1984 and 1985.

Cutting Costs

Only about 11 percent of BPA's costs are under the agency's direct control. The remainder are fixed debt service and operating costs of power projects that are controlled by the Corps of Engineers, Bureau of Reclamation, Washington Public Power Supply System (Supply System), and others. Therefore, BPA has had to initiate severe cuts in its own key programs to balance expenses with revenues.

In June 1986 Bonneville announced that it would spend $613 million less than had been proposed for fiscal years 1987, 1988, and 1989. In September 1986 BPA decided to trim another $148 million from expenditures proposed for those three years, bringing the total reduction to $761 million.

Additional reductions before the 1987 rate filing brought this total to more than $1 billion. Of those cuts, about $350 million occurred in fiscal 1987.

BPA also resolved in 1987 to streamline the agency to meet tomorrow's challenges head-on. The effort is well underway to cut the work force, to restructure the organization, to reduce overhead costs, and to hire fewer outside contractors.

Already BPA has cut the use of 100 worker years from our 1986 level of 3,431 full-time equivalent (FTE) employees. The plan calls for reducing FTE by 80 or more in each of the next two years. BPA will settle at a work force of about 3,200 FTE in 1990. That's a total reduction of nearly 300 FTE, or 9 percent of the 1986 work force.

In the process, over 40 managerial positions will be eliminated at the top.

By 1988 we also expect to reduce our annual support services contracting from about $60 million to about $45 million.

Along with personnel cuts, BPA had to look closely at how we organize and deploy the work force. In some cases our internal structure had become inappropriate to today's challenges. We completely repackaged an administrative structure that had been in place for over 20 years.

The new organization pulls together similar functions and opens up cleaner lines of responsibility. The changes will mean a leaner, more efficient, and more creative BPA. Prime targets for elimination are the layering and excessive coordination that can stifle any large, complex organization.

BPA now has 8 fewer divisions, 24 fewer branches, and 5 fewer sections.

Reorganization included the following major adjustments:

- conservation and power resources were consolidated in a single office;
- construction was consolidated with operations and maintenance;
- power sales was given a clean, clear center for customer service; and
- area managers were made part of the Administrator's top management team, to establish a more responsive link between Bonneville's far-flung customers and those who make policy.

Each of the reorganized offices has completed a study to determine how it will reach the overall goal we call MEO, or Most Efficient Organization. So it's not just size we're looking at. Managers have to find better ways to do the job. BPA will be a more customer-oriented and more dynamic organization, without sacrificing the reliability that BPA customers have come to expect.

A ratepayer speaks

Another efficiency aims at lowering overhead such as rentals, financial management costs, and personnel management expenses. Accountability is the key here. BPA will tighten its distribution and accounting methods to make sure the benefiting programs are charged with — and accountable for — overhead costs.

Bonneville, in cooperation with other Northwest electric power interests, released a report in 1987 that explores the possibility of refinancing high-interest bonds issued to build the Supply System nuclear projects. Refinancing would be worthwhile if new funds can be obtained at interest rates low enough to retire the old bonds, pay the associated costs, and still save money. The report estimates that if interest rates on the bonds could be lowered to an average of 9 percent, Bonneville ratepayers could save $90 million to $130 million a year.

BPA Adjusts Its Rates

Bonneville raised its wholesale priority firm power rates an average of 7.7 percent on October 1. The new rates will be in place for two years, through September 1989.

BPA's rates to its priority firm customers will have gone up at an average annual rate of 1.4 percent for the period 1984 to 1989. The consumer price index for that same period is forecast to rise at an average annual rate of 3.8 percent.

The priority firm rate increased 5.8 percent — from 2.23 cents per kilowatt-hour to 2.36 — for direct sales to BPA's preference customers. These customers include public utility districts, municipal utilities, and rural electric cooperatives in the Pacific Northwest.

The priority firm rate increased 10 percent — from 2.20 cents per kWh to 2.42 — for "purchases" from BPA under the Residential Exchange program. The exchange is for utilities, including investor-owned utilities, that have higher system costs than BPA's. They can sell power to BPA at their average system cost and buy lower-cost Federal power from BPA to serve their residential and small-farm customers.

The exchange priority firm rate is higher than the preference priority firm rate because the Northwest Power Act shields BPA's preference customers from some of the costs BPA incurs as a result of the Act.

BPA's initial rate proposal, in December 1986, was for the average priority firm rate to increase by 13.1 percent. This proposal represented months of cost analysis, including budget review with comments from BPA's customers and the public. The rate review and budget processes led to further cost-cutting measures within the agency.

Risk management was a key issue in the 1987 rate case. The risk management measures adopted in BPA's final rate proposal are designed to recover sufficient revenues under unfavorable and largely unpredictable conditions, such as adverse water conditions, low aluminum prices, low natural gas

Morning sun on a 500-kV BPA line near a Taft substation in northern Montana.

and oil prices, and reduced surplus firm power sales. In order to increase customer confidence that BPA's revenues will be sufficient in the next two fiscal years to make scheduled payments to the U.S. Treasury, the final rate proposal included three measures.

First, BPA based its forecast of revenues on the conservative assumption that water conditions will be similar to 1939, a year of very low water.

Second, BPA set its revenue requirement to provide an average interest coverage ratio of 1.08:1 on interest payments to the Federal Treasury. This enhances BPA's ability to cover interest expenses after all operating expenses have been met.

Third, the rate proposal has a Cost Recovery Adjustment Clause (CRAC). The CRAC will adjust most of BPA's power rates after one year if there is a significant difference between BPA's planned and actual financial performance. If BPA's net revenues from operations in fiscal 1988 are at least $80 million more than projected in the rate, certain rates would be reduced for the last nine months of fiscal 1989. If BPA's net revenues from operations in fiscal 1988 fall short of the level projected by $45 million or more, certain rates could be adjusted upward in 1989. The upward adjustment could not exceed 10 percent. Either of these adjustments would be subject to public review.

POWER SALES

A More Competitive Market

For more than 50 years, America's utilities operated in a stable and growing market. Demand grew predictably. Utilities added new plants regularly. And next year's revenues were generally a constant percentage increase above last year's.

By the mid-1980s, however, the utility market had completely changed. Consumer load growth slumped, due in part to national economic recession, in part to rate increases. The drop in growth, following so many decades of planning for high growth, led to a national surplus in electrical generating capacity. Energy efficiency and conservation, along with legislation that encouraged industries to generate their own power, aggravated the surplus.

Utilities throughout the nation began competing for sales to cover their fixed costs. When oil and gas prices were high, energy from BPA's hydrothermal system held a wide price advantage over oil- and gas-generated energy sold by competitors. In 1986, the collapse of OPEC's lead role in petroleum pricing pulled down the price of all energy sales. BPA continued to sell virtually all its surplus power, but the average price for energy sold to the Southwest dropped from 23.1 mills per kilowatt-hour in 1985 to 14.8 mills in 1987.

Other major Northwest utilities, like BPA, have surplus power. They now compete for sales outside the region without the institutional requirements that protect BPA's existing customers but also constrain BPA's marketing.

Competition, more than ever before, dominates today's energy marketplace.

Selling South

California utilities continued to be some of BPA's most important customers during 1987. But low oil and gas prices, along with low water conditions in the Northwest, sharply reduced revenues from surplus sales to the Southwest. In order to refill reservoirs after a very dry winter and spring, BPA eliminated nonfirm energy sales and sharply curtailed surplus firm power sales. Limited surplus firm sales resumed in August and continued into the dry autumn of 1987.

Revenues from sales outside the Northwest region dropped from $259 million in fiscal 1986 to $173 million in fiscal 1987. The low cost of natural gas hurt BPA's efforts to secure long-term surplus firm power sales. Buyers preferred flexibility. Rather than lock into long-term contracts, they gambled that low gas and oil prices would prevail.

Farming near a 500-kV line

Aluminum on its way to market

No new long-term contracts were executed in fiscal 1987. But early in 1988 Bonneville received signed contract offers from the California cities of Burbank, Glendale, and Pasadena for long-term sales and exchanges of electric power.

Bonneville continued to develop and market the concept of firm displacement sales — sales of BPA's firm surplus to support joint efforts with other utilities for sales to California.

During 1987 BPA began to develop alternative capacity products to replace older contracts as they expire in the early 1990s, and to market capacity to other utilities in and out of the region.

More Focus on the Northwest

In recent years BPA has sold most of its surplus power to California at less than cost and for short periods of time. In order to sell surplus power within the region and to support the marketing efforts of our customer utilities, BPA began to focus more of its surplus power marketing efforts on the Pacific Northwest.

In January 1987 BPA offered blocks of surplus firm power at discount prices to Northwest customers that planned to increase their load above a base level. The price was targeted to equal what BPA could get for short-term sales to California. Proposals were submitted by 43 utilities and 3 direct-service industries. A total of 55 average megawatts were sold.

As a result of this program, BPA developed a consumer marketing program called The Bonneville Partnership. The Partnership proposal anticipates cooperation among BPA and its Northwest partners — utilities, economic development agencies, and others — to market excess power and to spur economic growth in the region.

The Partnership proposal includes:

- assistance with energy-efficient industrial technology and commercial design, and support for utilities' marketing efforts;
- rate incentives to increase short-term electric consumption, such as activating idle industrial capacity and encouraging wood-stove owners to use electric space heating;
- rate incentives for new and expanding businesses that adopt state-of-the-art energy saving technologies; and
- rate incentives to businesses that are in danger of closing permanently.

Although BPA took the lead in proposing these marketing programs, the idea is that the region's utilities, economic development agencies, and other interested parties will implement the programs by working directly with consumers.

These programs are experiments. They can be changed if they don't work or if they have adverse effects.

DSI Variable Rate

Northwest aluminum smelters buy power directly from BPA. Since these direct-service industries (DSIs) buy over 20 percent of BPA power and provide about the same amount of BPA revenues, it is in BPA's interest to stabilize their power purchases and help keep them competitive.

Variable power rates to the aluminum companies turned out to be one of the big success stories of fiscal 1987. Several Northwest aluminum smelters in business today would not have survived without BPA's variable power rate, which changes with the level of worldwide market prices for aluminum.

All of Bonneville's aluminum smelter customers began purchasing under the Variable Industrial Power Rate on August 1, 1986, when the industry was in a slump. Three Northwest smelters already had closed. Low-cost electricity helped keep other Northwest smelters in business.

When aluminum prices rebounded in 1987, the closed plants were able to reopen. The variable rate stabilized BPA revenues at the same time it benefited the entire region by making Northwest aluminum companies more competitive in the world market. In fiscal 1987 BPA not only sold more power to the aluminum companies but also sold it at higher rates.

The basic structure of the variable rate will be in effect for at least 5 years, and up to 10 years. It is adjusted periodically for price inflation, aluminum market prices, and changes in BPA's revenue requirement with each rate proposal.

In addition to the variable power rates, Bonneville offered financial incentives to smelter owners to modernize their equipment and conserve energy. If the smelters can produce each pound of aluminum with less electricity, they will be more competitive. All 10 smelters in the region made application for these incentives in 1987.

Intertie Access Policy

Bonneville's Intertie Access Policy governs access to BPA's share of the Pacific Northwest-Pacific Southwest Intertie. The Intertie consists of three high-voltage transmission lines that carry power back and forth between north central Oregon and southern California. There are two 500-kV alternating current lines and one 1,000-kV direct current line.

In 1984 BPA adopted an interim, or "near-term," policy to determine who gets to use BPA's portion of the intertie, for what kinds of sales, how often, and when. But the near-term policy did not deal with long-term inter-regional power arrangements. Nor did it address long-range environmentally sensitive issues.

Bill Branson: Lowering the line

Since 1984, a Long-Term Intertie Access Policy (LTIAP) has been under development. After several rounds of public review and comment, BPA revised its proposed LTIAP in 1987.

The proposed policy will:

- enable BPA to share its capacity with other utilities and still meet its obligations to the U.S. Treasury;
- give non-Federal users of the intertie the assurance they need to enter into long-term firm power or firm seasonal exchanges; and
- be consistent with Federal policy to protect environmental quality and fish and wildlife populations.

Public review of the proposed new policy will take place throughout the region in January 1988. Bonneville anticipates that a final LTIAP will be in place by May 1988.

Intertie Expansion

Power marketing studies show that the Northwest and Southwest will both benefit from increased transmission capacity between the two regions.

Already underway is a project to expand the capacity of the high-voltage direct-current Pacific Intertie from 2,000 megawatts to 3,100 megawatts. The direct-current Intertie is operated jointly by BPA and the Los Angeles Department of Water and Power.

Also, public and investor-owned utilities in both regions are working on plans to increase the capacity for transmitting alternating current. Two existing alternating-current lines can transmit 3,200 megawatts between the two regions. Technical planning studies are nearing completion for a "Third AC" line that could transmit an additional 1,600 megawatts.

Construction on the Third AC line would begin only after BPA and other Pacific Northwest intertie parties have determined that the project is economically feasible, and after environmental concerns have been addressed.

MEETING THE REGION'S POWER NEEDS

BPA's 1987 Resource Strategy was developed to deal with a large range of uncertainty. Forecasts indicate that BPA will continue to have a firm power surplus for many years. But these forecasts are highly uncertain. Some indicate that no additional power resources will be needed until the next century. Others call for new power resources in the early 1990s.

We don't know, for example, what future loads may be placed on BPA by our customer utilities. Many of BPA's utility customers have stated strongly that they do not plan to place their future loads on BPA. In January, BPA decided to time and size its resource programs to meet only contractually committed loads, rather than potential, though less certain, loads.

The Resource Strategy does not call for building major new power plants in the near future. But it does follow Northwest Power Planning Council (Council) guidance about how to match future resources to future needs.

CONSERVATION

Bonneville considers conservation a valuable power resource. Capturing conservation opportunities as they occur will help delay the time when new power plants are needed. Investments in conservation make electricity available to serve future loads as reliably as producing electricity at a generating plant. And, in many cases, conservation costs less.

Model Conservation Standards

1987 was a banner year for energy efficiency standards in new homes. Over 80 utilities are now part of the Bonneville Super Good Cents program, and 26 jurisdictions (double that of 1986) have adopted the Council's Model Conservation Standards (MCS) as part of their local building codes. Construction of MCS homes increased as more builders and home buyers learned of the benefits. In 1987, 1,400 single family homes and 3,615 multi-family units were built to the Council's standards.

Sid Millman: Ropes, cables, bolts

In 1987 Bonneville and the region concluded a detailed study of cost-effective conservation measures. The Council used that study to amend the MCS.

Residential Weatherization

Because of the continuing power surplus, BPA decided to reduce its weatherization program budget to about $24 million. That's about half of what we spent in fiscal 1986. Still, the program weatherized 15,000 homes. Of these, 22 percent were low-income households.

The 1987 Resource Strategy concluded that BPA's Residential Weatherization Program should be continued, but at a substantially reduced level. We will redesign the program to cut the cost per unit of conservation savings.

Industrial Programs

After region-wide discussions with utilities, industries, and others, BPA developed an Industrial Conservation Strategy. One project, the Energy Savings Plan, is a three-year pilot program that gives financial incentives to Northwest industries that invest to improve their manufacturing processes.

For the ninth consecutive year, BPA and farmers are working cooperatively to lower irrigation costs. The approach uses improved equipment and special weather information. A network of 11 weather stations supplies data that helps farmers water their crops using less energy for pumping.

Commercial Buildings Programs

In 1987 Bonneville continued several programs to encourage energy savings in new and existing commercial buildings.

- Energy Edge gives financial incentives to developers who design and build commercial buildings to a level 30 percent more energy efficient than the MCS adopted by the Council.
- The Smart Design Program encourages Northwest utilities to promote energy efficiency in new commercial buildings. It provides information on energy-efficient design and construction practices.
- The utility-administered Commercial Incentive Pilot Program offers incentive payments to owners who install cost-effective conservation measures in existing commercial buildings.
- The Purchase of Energy Savings project gives incentive payments to encourage retrofit conservation measures in existing commercial buildings.
- The Commercial Audit Program has given BPA a detailed data base of commercial energy use and savings potential.
- The Institutional Buildings Program, a partnership effort with four state energy offices, provides energy audit training. BPA reimburses institutions for technical analysis and for cost-effective conservation measures installed.

Merl Tucker: The digger

WNP PLANTS

Bonneville completed a major study of the Supply System's two unfinished nuclear plants — WNP 1 and WNP 3 — in May. WNP 1 is about 65 percent complete, and WNP 3 about 75 percent. This study concluded that preserving both WNP 1 and WNP 3 continues to be, for now, a better option than terminating the projects or placing them on fixed completion schedules.

The Supply System pays the cost of preserving WNP 1 from unspent proceeds of bonds sold to finance construction of the plant. BPA pays the preservation costs of WNP 3 from the agency's current revenues.

To resolve uncertainties surrounding WNP 1 and WNP 3, BPA is:

- considering filing a declaratory judgment action to resolve the risk of default in the event of a future termination decision;
- examining refinancing options;
- working to keep preservation costs low; and
- reviewing operation and maintenance cost estimates for the projects.

BPA will continue to evaluate its need for the projects and will consult with the public as the resource program develops.

BUILDING FOR THE FUTURE

Reorganization of the Office of Engineering and Construction resulted in Bonneville's planning, design, and testing activities being established in the new Office of Engineering. This reflects a change in the regional need — from the generation and main grid transmission projects of past years to power system additions and modernization.

Except for activities related to the Intertie, BPA's electrical network grows with fewer major, and many more minor, system additions and replacements than in years past.

HVDC Terminal Expansion

Expansion of the high-voltage direct-current (HVDC) Pacific Intertie neared the halfway mark in 1987.

Operated jointly by BPA and the City of Los Angeles Department of Water and Power, the HVDC Intertie consists of a 500-kV transmission line and terminal facilities. The line's 2,000 megawatt power transfer capability will be increased by 1,100 megawatts, enough to supply a city the size of Seattle.

The Expansion Project involves enlarging HVDC converter terminal capacity at both ends of the existing line, one at BPA's Celilo Converter Station at The Dalles and the other near Los Angeles.

Testing and commissioning is scheduled to begin in August 1988. Expanded commercial operation is expected by February 1989.

Construction also progressed at BPA's Big Eddy 500-kV Substation, which will connect the Celilo terminal to BPA's main alternating-current (a.c.) system. Two 500-kV a.c. lines between Big Eddy and Celilo will be completed in the spring of 1988.

Teamwork

Reaching for the hook

The Colstrip Project

The Colstrip Project — a 500-kV transmission line from two coal-fired generating units at Colstrip, Mont. to BPA's Bell Substation in Spokane, Wash. — is one of the largest and most complex projects BPA has participated in. Planning and location work was extensive and controversial. What normally would have taken about 9 years, from conception to energization, took almost 15 years.

The total transmission line length from Colstrip to Spokane is 600 miles, of which 350 miles are Bonneville's. BPA's part of the project, now completed, was divided into three parts: Townsend-to-Garrison, energized in 1983; Garrison-to-Taft, energized in 1985; and Taft-to-Bell, energized in 1987.

To help make up for time lost to planning and environmental studies, construction proceeded at a faster pace than normal. The 96-mile Taft-Bell line went up in less than two years. Normally it would have taken three years to construct that line over steep terrain and through severe winter weather.

Goshen-to-Drummond Line

The 73-mile, 161-kV Goshen-to-Drummond transmission line, in southeastern Idaho, represents a unique three-way partnership among Bonneville, a group of small preference customers, and private financing. The Snake River Power Association borrowed money on the private market and is paying BPA to build the line and upgrade the terminals. This provides local control and uses BPA's long-standing engineering know-how. Since the project uses private financing, it also reduces the need for Federal borrowing. Construction will be completed in 1988.

The Buffalo Flat Line

The LaPine-to-Fort Rock Transmission Project, in central Oregon, will provide a second power line (115-kV, single-pole) to the U.S. Air Force Radar Site under construction at Buffalo Flat. The radar site needs two independent sources of power. A unique aspect of this project for BPA is the use of direct-embedded steel poles. These poles proved to be comparable in cost to an equivalent wood pole line, and they provide the higher level of reliability required by the Air Force.

Acton Substation

To make room for the new navigation lock at Bonneville Dam, BPA had to remove its South Bank Substation, BPA's very first substation. BPA designed and built Acton Substation in record time to replace South Bank. The new substation, dedicated in July, is named in honor of Win Acton, a BPA employee who died in a helicopter crash in Mississippi while evaluating right-of-way spraying methods.

Upgrading the Control Centers

BPA is nearly ready to take delivery on major computer systems to replace older, obsolete systems at Dittmer Control Center in Vancouver, Wash., and the Eastern Control Center in Moses Lake, Wash. From these two centers, BPA monitors, schedules, and dispatches the entire federally-owned transmission system in the Pacific Northwest.

A public conference

Engineering Studies and Conferences

- In August, Bonneville and the U.S. Army Corps of Engineers co-hosted the Waterpower '87 Conference in Portland. Approximately 1,700 people attended. Experts presented technical papers, and companies showcased their new technologies and products in the electricity industry.

- In June BPA and the Electric Power Research Institute co-sponsored a Hydraulic Turbine Testing Workshop in Portland. Experts from the U.S., Canada, and Europe lectured on turbine model and prototype testing, test codes, flow measurement methods, and other topics of interest to hydro project owners and operators.

- The Grizzly Mountain HVDC Research Project, a nine-utility co-sponsored study in eastern Oregon, monitored the effects of high-voltage direct-current lines on cattle and crops. Cattle and crops directly under the 500-kV Celilo-to-Sylmar line were compared to control groups away from the line. The study found no unusual differences between the exposed group of cattle and crops and the control group. At the site, BPA engineers made significant advances in the measurement and characterization of the electrical environment near the HVDC line.

- The recent breakthrough in superconductivity holds great promise of technological advances in the utility industry. Some ceramic materials can conduct electricity with no resistance, at temperatures well within the cooling range of liquid nitrogen. Many technical hurdles must be crossed before practical applications and equipment become available. Known superconductors are brittle, and they still have to be cooled. But BPA is studying how and where future superconductive devices may result in cost-effective energy storage, transformation, and transmission.

REGIONAL OPERATIONS

Contrails parallel a 500-kV BPA line in central Oregon.

The challenge at Bonneville's four Area Offices is to keep the system up and running, no matter what. While others struggle with marketing and resource strategy, maintenance and operations crews must be ready in the face of emergency, as these examples from 1987 show.

At Ferndale, Wash.

On Sunday, March 22, one phase of a 500/230-kV transformer bank at Custer Substation failed. This seriously jeopardized service to the nearby Intalco Aluminum Company plant.

During the 19 days it took to replace the failed phase, one phase of the single remaining transformer bank started to show signs of combustible gas, indicating a possible problem with the equipment. The failure of the remaining transformer bank would have shut down the aluminum plant. Puget Sound Area crews developed a contingency plan to cross-connect phases of the two transformer banks, using good transformers in each bank.

The plan was not needed right away. However, on May 19, with the gassing transformer out of service for repair, the previously-replaced transformer failed again. The plan was put into operation.

While Intalco reduced load to a minimum, and Puget Sound Power and Light Co. picked up additional generation in the Bellingham area, crews completed the cross-connecting of phases during a 7-hour night-time outage. Then Intalco could resume full production while waiting for "normal" service that was restored on August 28.

Near Kalispell, Mont.

On Friday, July 31, a spray plane struck the Flathead-Hot Springs 230-kV line, severing one conductor and jerking the top out of a steel tower. Upper Columbia Area crews restored the line to temporary service the following Sunday morning. They put up temporary wood structures on both sides of the damaged steel tower, and they spliced in a new conductor. A new steel tower, with new footings, eventually replaced the damaged tower. The line returned to normal service three months later.

BPA, THE COUNCIL AND FISH

Bonneville continued to cooperate with, and support the efforts of, the Northwest Power Planning Council in fiscal year 1987.

The Council was created in 1981, shortly after Congress passed the Northwest Power Act. BPA revenues fund the Council and its activities, and BPA staff work with Council members and staff to assure that Council plans and programs will lead to cost-effective and productive results.

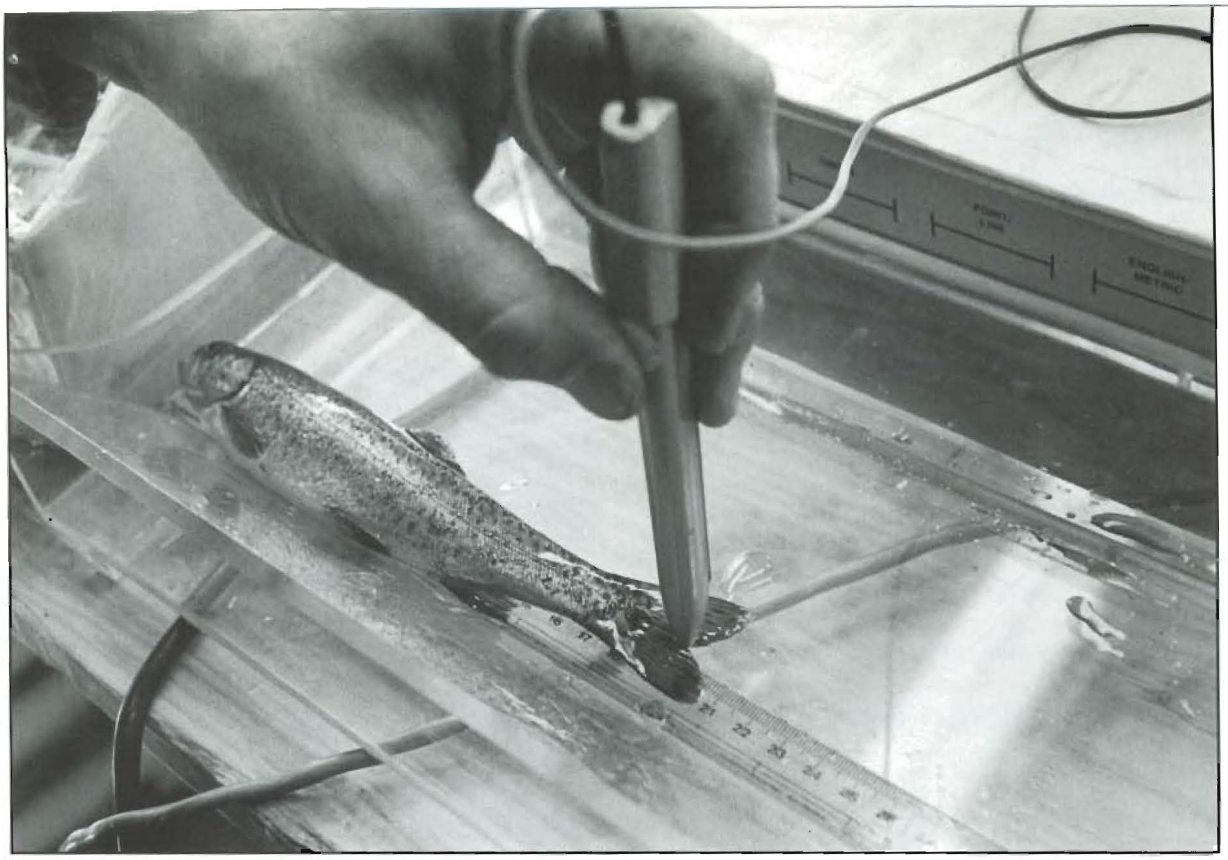
Together Bonneville and the Council have worked out mutually acceptable policies on developing plans to enhance fish and wildlife populations. The Council's amended Columbia River Basin Fish and Wildlife Program was issued in February 1987. The Program will coordinate the activities of nearly two dozen state and Federal agencies, Indian tribes, and land management agencies that have management responsibilities for Columbia River fish and wildlife.

Bonneville was working to enhance Columbia River fish runs before Congress passed the Northwest Power Act in 1980. But the Act expanded BPA's commitment to enhance and protect fish and wildlife that were damaged by Federal dams on the Columbia River and its tributaries.

The total effort to rebuild fish and wildlife populations has been called the most ambitious of its kind on the planet. In the 1980s BPA has spent over $100 million on more than 250 fish and wildlife projects.

BPA also has been involved in the release of sufficient water for fish at critical migration times. Power losses resulting from changing the river flow to meet the Water Budget cost Bonneville approximately $45 million in 1987. Also, BPA ratepayers repay the U.S. Treasury for part of the costs of projects undertaken by the Corps of Engineers and Bureau of Reclamation to build fish ladders, screens, and hatcheries, at an annual rate between $35 million and $50 million.

Setting boulders in Thomas Creek where they make pools for young fish



Measuring a young Chinook

Although the fish projects themselves are easier to focus on, 1987 has been an especially important year for consolidating the overall planning process that must accompany fish enhancement efforts. The Columbia is a vast, interrelated system. Random or piecemeal projects, however well intended, will not necessarily contribute to solving the fish problem as a whole.

The Council's amended Columbia River Basin Fish and Wildlife Program addresses the need for system-wide planning. It identifies, for each of more than 30 Columbia River subbasins, mitigation and enhancement actions that promise to be most effective. The goal is to double the size of steelhead and salmon runs, from 2.5 million fish to 5 million fish.

Below are some of the key programs BPA funded in 1987.

- OSU Wet Lab — Bonneville signed an agreement with Oregon State University to build a research laboratory to study fish diseases. When completed, this state-of-the-art lab will, for the first time, bring many Northwest disease research activities under one roof.

- PIT Tag Program — BPA is using Passive Integrated Transponders, or PIT tags, to electronically monitor juvenile fish as they pass the dams. Fish managers can harmlessly inject the tags, about the size of a grain of rice, in young fish. The device reflects a signal to a monitoring machine at the dam, to tell how and when fish are moving past.

- Water Budget and Flows — Agreement was reached among utilities and fishery managers to protect spawning sites at Vernita Bar on the upper Columbia. This agreement ensures that there will be enough water in the river, after the fish spawn, to avoid exposing the redds of fish that spawned when the water was high.

- Yakima Basin — BPA-funded fish ladders at Yakima Basin dams, and fish screens at the irrigation canals, are about 90 percent complete. BPA pays for a spring chinook study conducted by the Yakima Indian Nation, and for projects to improve up-river habitat. BPA also has taken steps leading to the construction of the $25 million Yakima hatchery complex, one of the largest salmon and steelhead production facilities in the Pacific Northwest.

It is too early, of course, to attribute specific results to BPA's support of these efforts. But fish biologists are encouraged by salmon and steelhead runs in the past three years that exceeded those of other recent years in the Columbia. A number of factors — natural and man-induced — help account for the improvement. Yet the efforts taken so far are vital steps toward building up the Columbia River fish runs.

THE 50th ANNIVERSARY

A military band, a color guard, Woody Guthrie songs, and a host of dignitaries marked BPA's big birthday celebration on August 8 at Bonneville Dam.

In temperatures that topped 100 degrees, a crowd of 3,500 attended this joint celebration of BPA and the U.S. Army Corps of Engineers. Special guests of the Corps were some of the people who helped build Bonneville Dam 50 years ago. And BPA invited over 100 "power pioneers" who had been instrumental in bringing electricity to the Pacific Northwest.

Oregon Senator Mark O. Hatfield, Washington Governor Booth Gardner, and Donald P. Hodel, Secretary of the Interior and former BPA Administrator, focused their remarks on the profound impact Bonneville Dam has had on the economic development of the Pacific Northwest.

Earlier in the year Bonneville had launched its 50th anniversary celebration with a ceremony opening its new exhibit at the Bonneville Dam Visitors' Center.

The songs of folk-singer Woody Guthrie provided the theme for the entire year's celebration. In 1941 Guthrie had worked briefly for BPA, writing ballads about the dam builders and the glories of taming North America's second largest river. Included were the standouts "Roll On, Columbia" and "Pastures of Plenty." Many of the original Guthrie songs had been lost. But Bill Murlin, a BPA audio-visual specialist, collected what could be found of them. He and BPA turned over to the National Archives six old acetate discs, with a Guthrie song on each side.

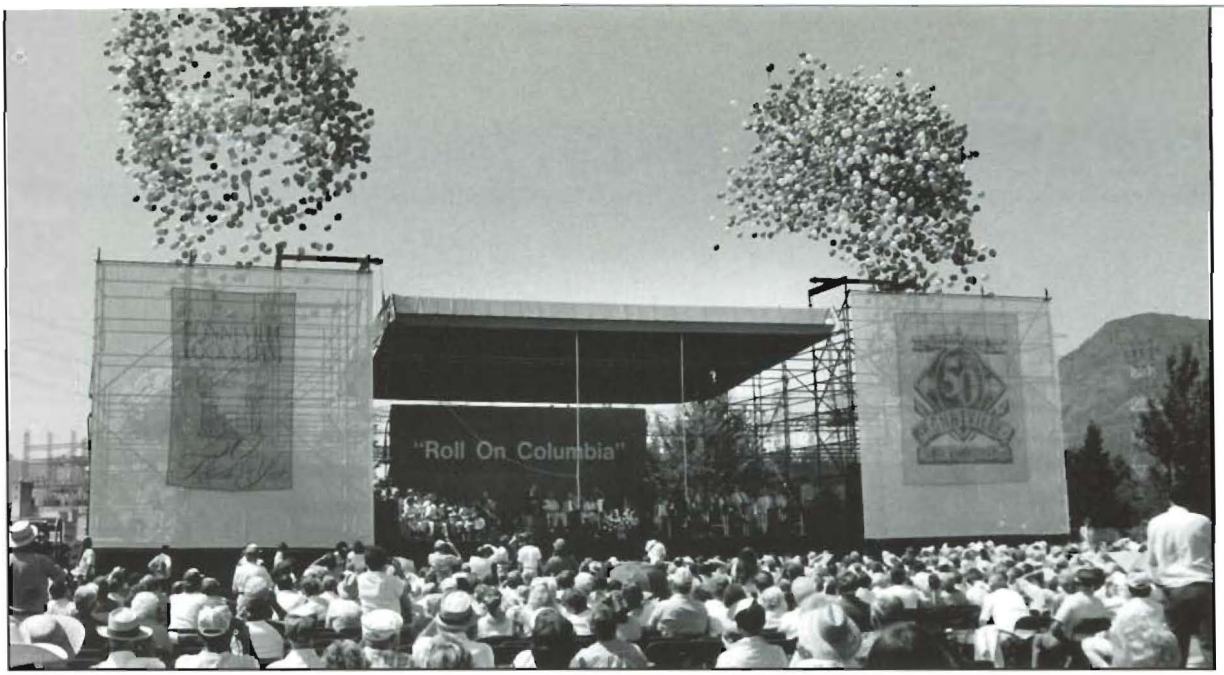
On June 1, Bonneville released a new book, a history of electric power in the Pacific Northwest entitled, "BPA and the Struggle for Power at Cost."

Other events during the 50th anniversary year included the completion of an award-winning educational film — "River of Power" — about the Federal Columbia River Power System and the history of power development in the Pacific Northwest.

Chief Nelson Wallulatum, Wasco tribe

Ramblin' Jack Elliott, friend of Woody Guthrie

Photo at right: U.S. Senator Mark Hatfield, left; Washington State Governor Booth Gardner; U.S. Representative Sid Morrison; BPA Administrator James J. Jura; and Lt. Gen. E. R. Heiberg III, Chief of Engineers, U.S. Army Corps of Engineers.


"Roll On Columbia"

THE NEW HEADQUARTERS BUILDING

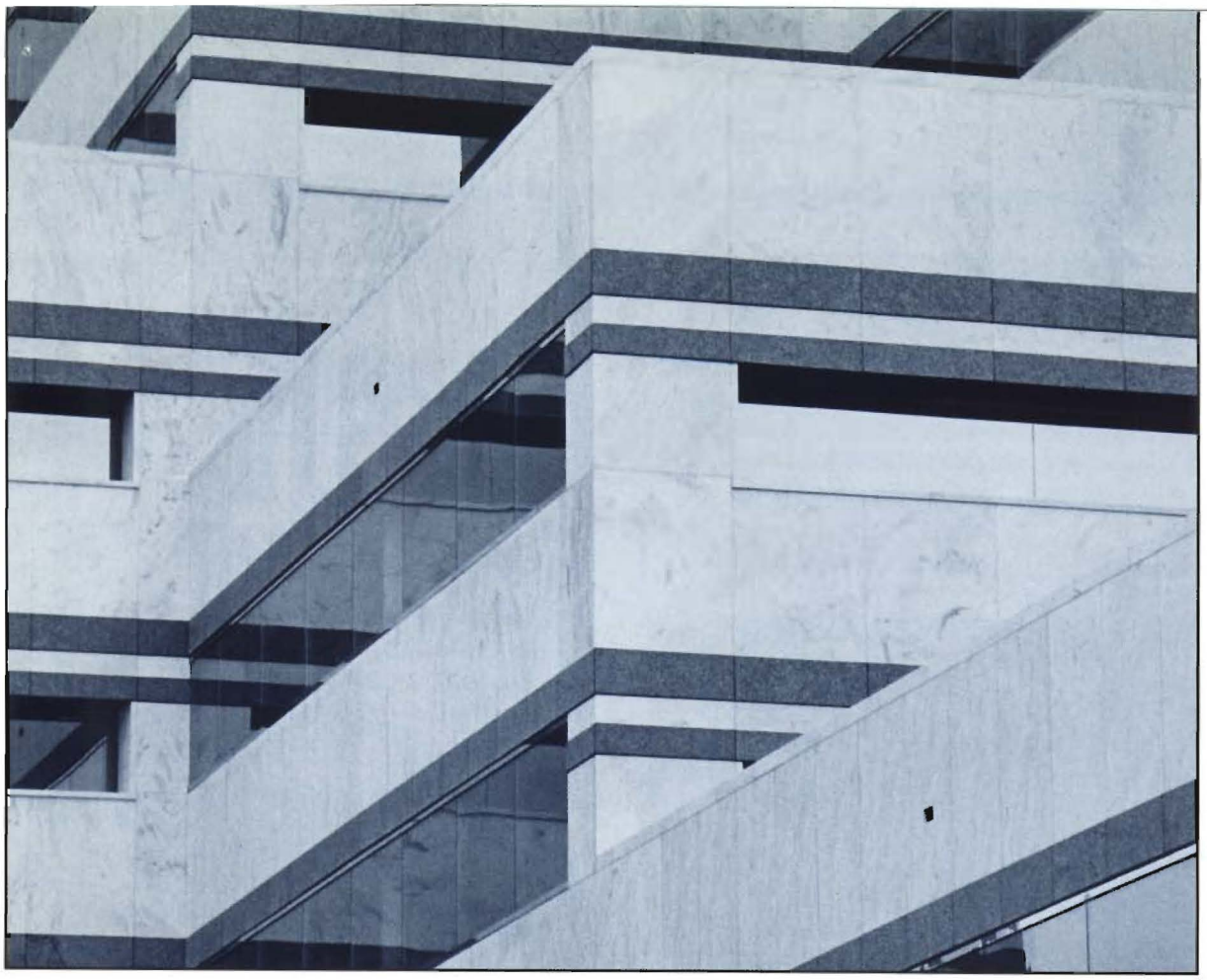
On May 16 the first of about 1,900 BPA employees moved into the new Headquarters Building at 905 N.E. 11th Ave. in Portland, immediately south of the former headquarters building. The General Services Administration began constructing this $58 million building in September 1984. GSA now leases the building to Bonneville.

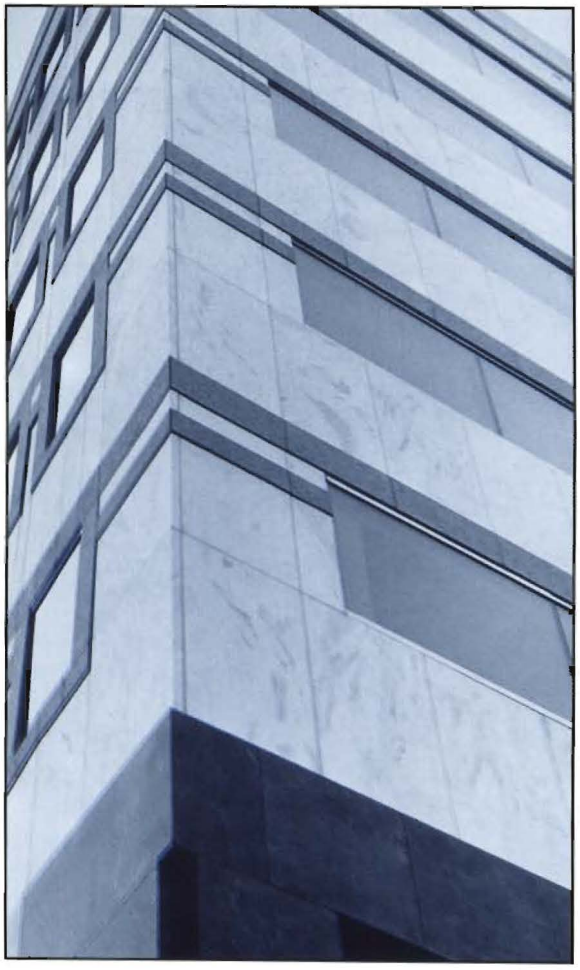
The new headquarters is one of the most energy-efficient buildings in the nation. Computers manage nearly all mechanical services, reduce energy costs, maintain security, and provide a high level of fire safety. The system is sophisticated enough to recycle heat generated by lights, telephone equipment, computers — and people.

A Portland architectural firm — the Zimmer Gunsul Frasca Partnership — designed the building. The prime contractor was Blount Brothers Corp. of Montgomery, Ala.

The building houses Bonneville employees who had been scattered among seven buildings on the east side of Portland. For the first time in many years, headquarters staff can work under the same roof. The result will be a substantial savings through improved communications and consolidated support services.

GSA will renovate the old BPA building and lease space to other Federal agencies.





ENERGIZING THE COMMUNITY

Four years ago, a contingent of Bonneville employees, acting on impulse, raised more than $3,000 for the Portland Symphonic Choir. A year later BPA employees raised $11,000 to help street kids in Portland. These fund-raising efforts have evolved into an annual BPA benefit that has become known as "Energizing the Community."

Helping others: George E. Bell, Assistant Administrator, left, and Sara Stocks, an executive secretary

This year a corps of BPA volunteers raised $11,500 to benefit Silent Victims of Innocence. SVOI is a nonprofit corporation that assists adults who were molested as children. It also assists families in crisis due to the trauma of sexual abuse.

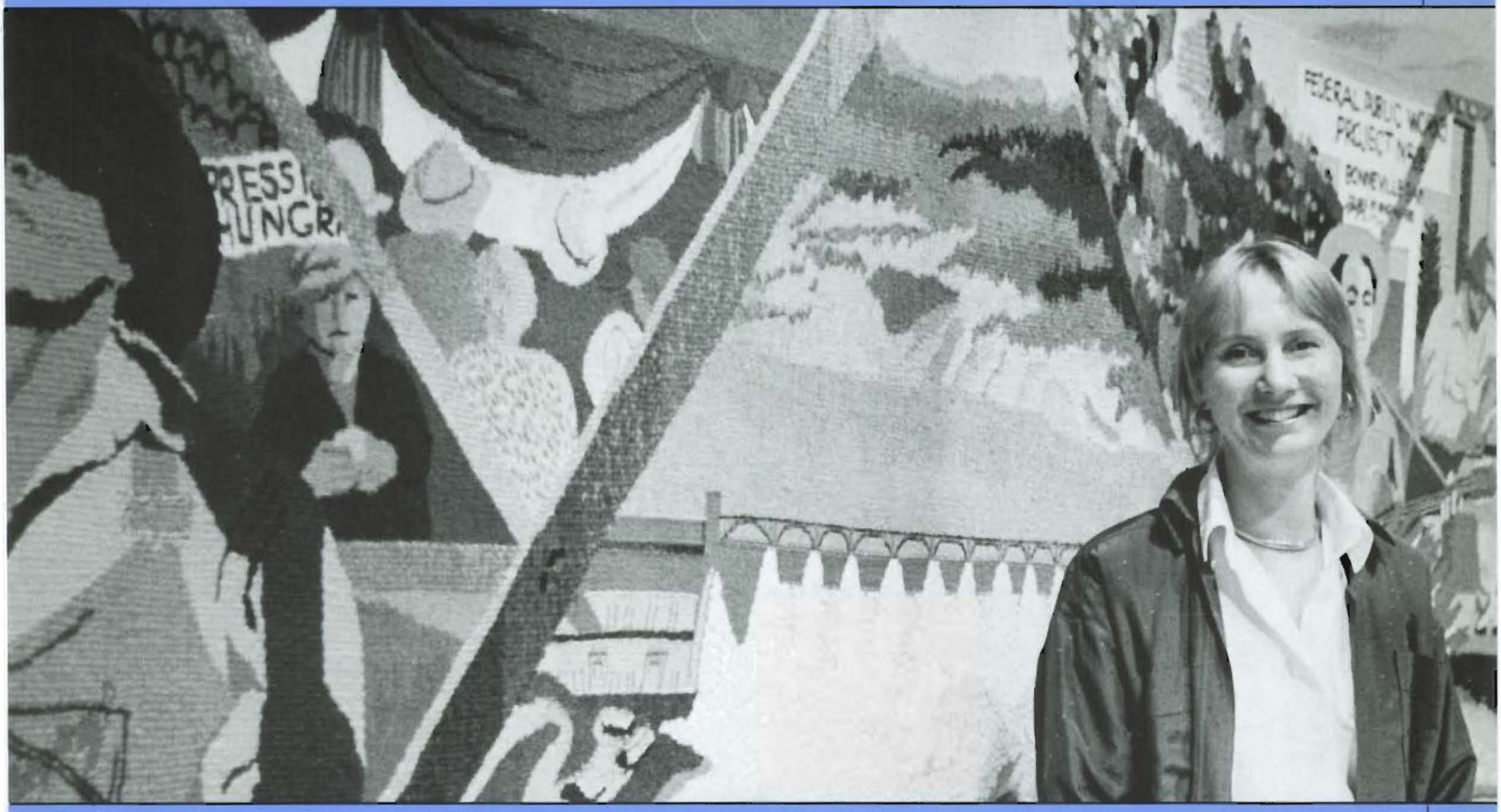
BPA volunteers coordinate the fund-raising effort. They screen qualified organizations and select one. Once the selection is made, the volunteers plan a series of events to raise funds for that organization.

This year's auction — of goods and services donated by BPA employees and sold to other BPA employees — took in $9,000. On the auction block, for example, were four hours of yardwork, a custom-built graphite steelhead rod, and a crocheted blanket. Shirt sales, balloon sales, and cook book sales also raised money. And a group of BPA runners collected pledges for the Hood-to-Coast relay.

Energizing the Community lets BPA employees get personally involved in their community. These efforts do not detract from BPA's annual Combined Federal Campaign that benefits hundreds of local organizations, including the United Way.

Jill Raile, one of the top ten in the U.S.

Jill M. Raile, an employee of the Bonneville Power Administration, was one of ten persons selected to receive this country's top award for handicapped workers in 1987. She has worked for BPA for 11 years and is now a realty assistant in the Division of Land Resources. Despite a handicap that permits her to walk only with the aid of crutches or braces, she has made her mark in the world as an honor student, a college graduate with a bachelor of science degree, and an excellent employee.



Cecilia Blomberg, artist, with her tapestry depicting the history of power in the Pacific Northwest; the tapestry hangs in the new lobby of the headquarters building.

FINANCIAL SECTION

Management's Discussion and Analysis of Financial Condition

Results of Operations Total Federal Columbia River Power System expenses, including gross residential exchange expense and interest expense were held $7 million below the prior fiscal year. However, expenses continued to exceed revenues. At the end of fiscal year 1987 expenses exceeded revenues by $213 million.

BPA was able to make total cash payments of $624 million to the U.S. Treasury. This amount covers interest and amortization on the Federal investment in the Federal Columbia River Power System. It also reimburses the Treasury for expenses associated with operation and maintenance of dams operated by the Corps of Engineers and the Bureau of Reclamation.

Operating Revenues

Operating revenues were down $114 million from fiscal year 1986. Decreased revenues from sales outside the Northwest region accounted for 75 percent of this drop. These revenues decreased for two principal reasons:

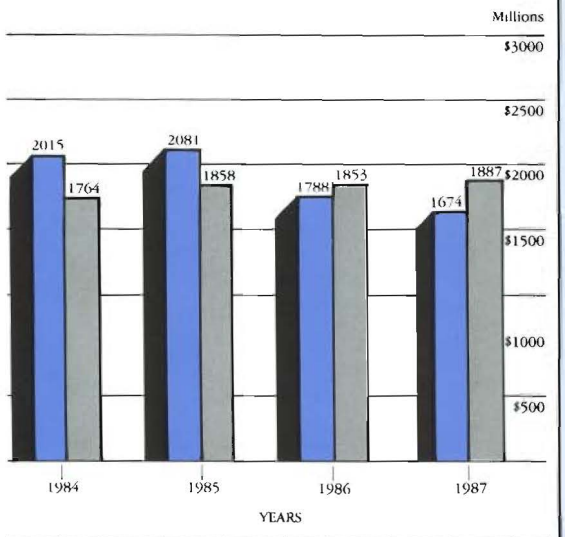
(1) California utilities have the option of using oil and gas to generate electricity rather than buying power from Bonneville Power Administration. When fuel prices dropped, BPA reduced the price it charges utilities outside the Northwest region in order to remain competitive.

(2) The amount of energy sold outside the Northwest region dropped by nearly 23 percent due to low streamflows and poor thermal resource performance which precluded open market sales. This year's mild Northwest weather, in contrast to the record-setting cold in some periods a year earlier, accounted for the balance of the decline in revenues.

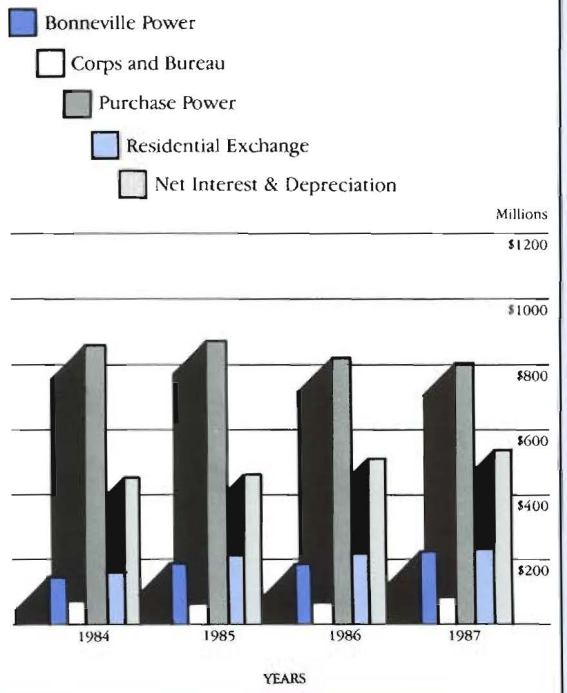
Operating Expenses

In 1987, BPA determined to hold operating expenses to fiscal year 1986 levels. This resulted in fiscal year 1987 total operating expenses before residential exchange being within $3 million of the prior fiscal year. The amount of residential energy exchanged fell by 4 percent. This drop appears due to warmer weather in fiscal year 1987. Residential exchange costs increased as a result of a settlement agreement with several exchanging utilities and higher average system

Revenues and Expense Trend



Expense Trend



costs, and so larger subsidy payments, for some utilities.

Interest Expense
Compared to last year, net interest expense increased $23 million for the fiscal year ended September 30, 1987. Interest expense on appropriated funds increased reflecting the cost of new property placed in service by the Corps of Engineers. Over $10 million of the increase was for interest on property placed in service in prior years. The average interest rate was reduced by 1 percent through prudent refinancing, and repaying high interest bonds.

Net Revenues (Expense)
Because BPA is a not-for-profit Federal power marketing agency, net revenue over time is committed to repayment of the Federal investment in the Federal Columbia River Power System. When BPA's revenue is less than its expenses, it experiences a "net expense." Net *expense* for the fiscal year ended September 30 was $213 million, compared to $65 million net *expense* in the prior year. Although energy markets remain volatile, BPA has taken a number of actions to mitigate against the effects of revenue swings in the coming year.

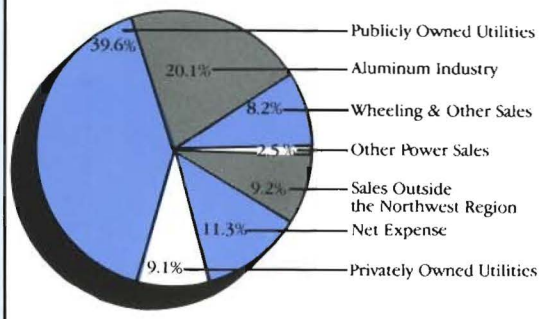
Basis for Financial Reporting

BPA prepares financial statements for the FCRPS to report its financial condition as if it were a public utility.

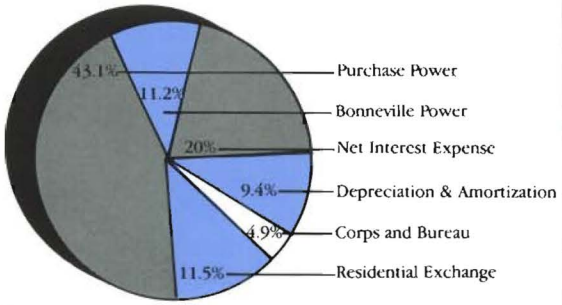
The financial statements are independently audited by Arthur Andersen & Co., independent public accountants, in accordance with generally accepted auditing standards.

Power rates are based on the FCRPS revenue requirement study. While the financial statements show historical results, the revenue requirement study shows projected costs to be recovered from rates. The revenue requirement study considers BPA's obligation to recover costs and sets a revenue level sufficient to meet those obligations. Costs include operation and maintenance; purchase and exchange power; interest and recovery of the FCRPS investment in power generating, conservation, and fish and wildlife, and transmission facilities. The two sets of financial reports measure different things; historical results in the financial statements and projected obligations in the revenue requirement study.

1987 Sources of Revenue and Net Expense



1987 Disposition of Revenue



Revenue Requirement Study
The revenue requirement study, which demonstrates repayment of Federal investment, reflects revenues and costs from the 1987 Wholesale Power and Transmission Rate Proceedings. On September 29, 1987, the Federal Energy Regulatory Commission (Commission) approved the proposed rate increases on an interim basis.

Repayment Demonstration
BPA is required by PL 89-448 to demonstrate that the reimbursable costs of the FCRPS are scheduled to be returned to the U.S. Treasury from BPA net revenues within the period prescribed by law. BPA is required to make a similar demonstration for the costs of irrigation projects which are beyond the ability of the irrigation water users to

repay. These requirements are met by conducting a revenue requirement study.

Since 1985 BPA has prepared separate repayment demonstrations for generation and transmission in accordance with an order issued by the Commission on January 27, 1984, 26 FERC 61,096.

Repayment Obligation

BPA's rates must be designed to collect enough revenue to return the reimbursable power costs of each FCRPS investment and each irrigation assistance obligation within the time prescribed by law. In the absence of a specific legislated period, the costs must be returned within 50 years from the date the investment is capable of producing revenue or within the investment's average service life, whichever is less. If existing rates are not likely to meet this requirement, BPA must take action to adjust its rates.

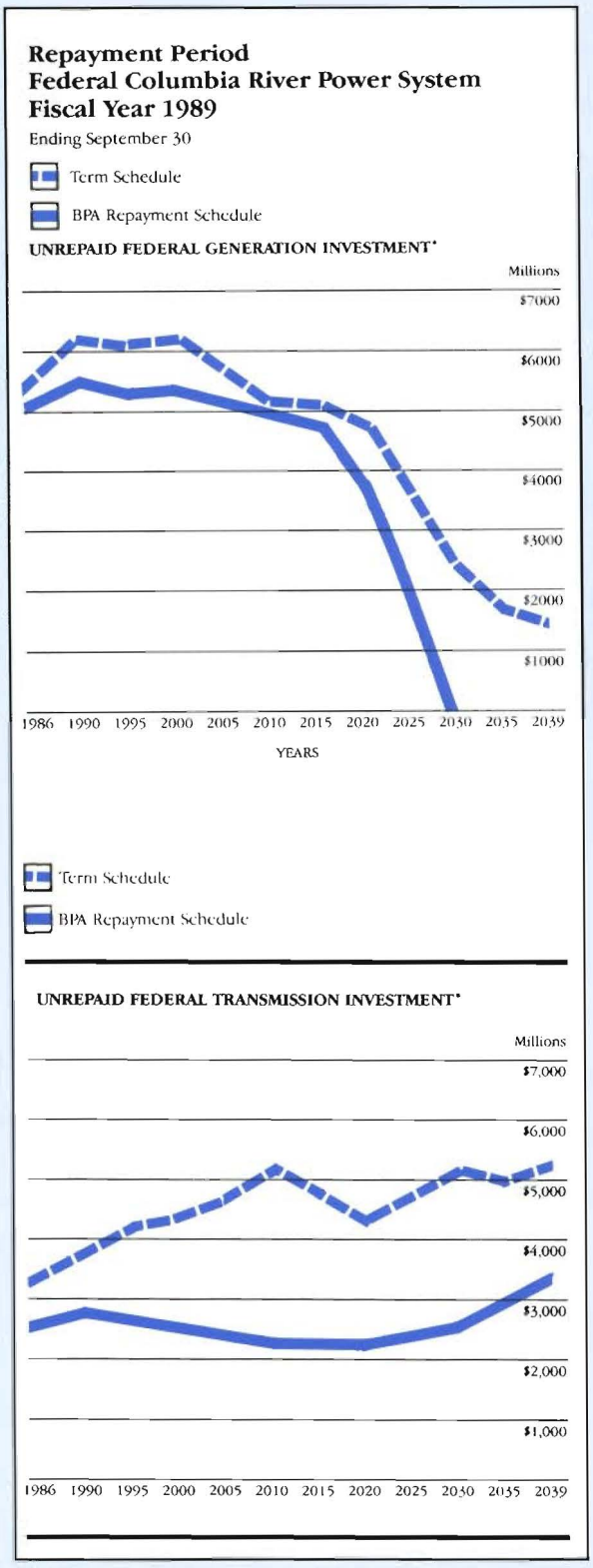
Whether the Federal investment is repaid within the time allowed can be shown by comparing the unrepaid investment resulting from BPA's repayment schedule with the allowable unrepaid investment resulting from a "term schedule" on a year-by-year basis. A term schedule represents a repayment schedule whereby each investment would be repaid in total in the year it was due.

The reporting requirements of PL 89-448 are met as long as the unrepaid FCRPS investment and irrigation assistance resulting from BPA's repayment schedule is less than or equal to the allowable unrepaid investment in each year. Although the comparison is illustrated by graphs representing total FCRPS generation and total FCRPS transmission investment, the actual comparison is performed on an investment by investment basis.

Repayment of FCRPS Investment

The graphs for Unrepaid Federal Generation and Transmission investment illustrate that the unrepaid investment resulting from BPA's generation and transmission repayment schedules is always less than the allowable unrepaid investment. This shows that BPA's current rates are scheduled to recover all reimbursable costs of FCRPS investments on or before their due dates.

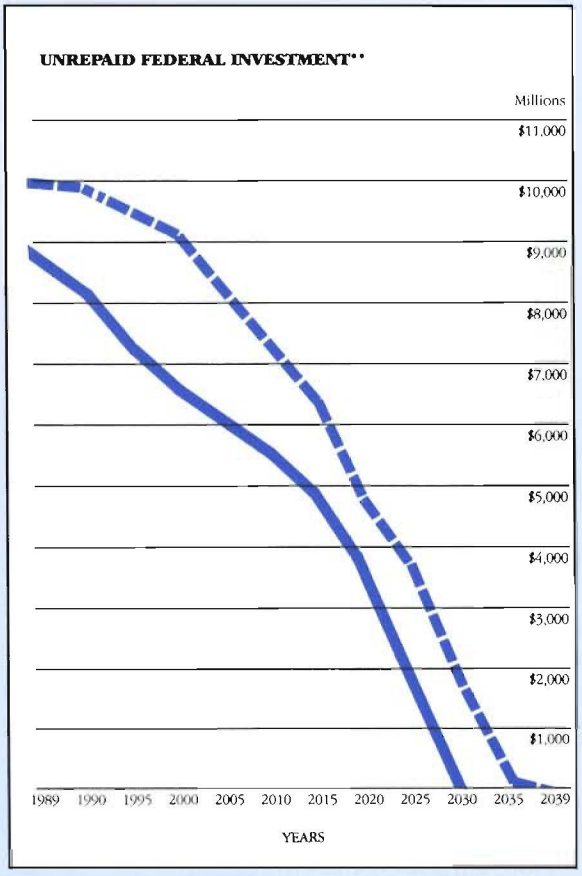
The *term schedule* lines in the graphs show how much of the investment can remain unpaid in accordance with the repayment period for the generation and transmission components of the



*Includes future replacements.

FCRPS. The *BPA repayment schedule* lines show how much of the investment remains to be repaid according to BPA's repayment schedules. In each year, BPA's repayment schedule is ahead of the term schedule.

This occurs because BPA plans repayment both to comply with investment due dates and to minimize costs over the 50 year repayment period. Costs are minimized by repaying highest interest bearing investments first, to the extent possible. This will result in some investments being repaid before their due dates, while assuring that all other investments will be repaid by their due dates.



**Includes generation and transmission investments through fiscal year 1989. Excludes future replacements.

The graphs include the costs of replacements necessary to maintain the existing FCRPS generation and transmission facilities.

The Unrepaid Federal Investment graph displays the total planned unrepaid FCRPS investment compared to allowable total unrepaid FCRPS investment omitting replacements. This shows that the FCRPS investment through FY 1989 is scheduled to be returned to the U.S. Treasury within the 50 year repayment period and ahead of due dates.

Repayment of Irrigation Assistance
BPA plans to meet irrigation assistance obligations in the year they are due over the next 50 years. It is Federal policy that BPA will pay irrigation assistance on or before due dates until all irrigation assistance obligations have been met.

Repayment Policy
BPA's repayment policy is considered in determining its revenue requirements and rate levels. This policy, based on BPA's interpretation of laws and Department of Energy regulations, requires that FCRPS revenues be sufficient to:

1. Pay the cost of obtaining power through purchase and exchange agreements.

2. Pay the cost of operating and maintaining the power system.

3. Pay interest on and repay the outstanding revenue bonds sold to the Treasury to finance transmission system construction, conservation, and fish and wildlife.

4. Pay interest on the unrepaid investment in power facilities financed with appropriated funds (Federal hydroelectric projects are all financed with appropriated funds, as were BPA transmission facilities constructed before 1978).

5. Pay, with interest, any outstanding deferral.

6. Repay the power investment in each Federal hydroelectric project within 50 years after it goes into service (except for the Chandler Project, which has a legislated repayment period of 66 years).

7. Repay each increment of the investment in the BPA transmission system financed with appropriated funds within the average service life of the transmission facilities (45 years).

8. Repay the investment in each replacement at a Federal hydroelectric project within its service life.

9. Repay construction costs at Federal reclamation projects which are beyond the ability of the

irrigators to pay, and which are assigned for payment from commercial power revenues, within the same period available to the water users for making payments. These periods range from 40 to 66 years with 60 years being applicable to most of the irrigation payment assistance.

Investments bearing the highest interest rate will be repaid first to the extent possible while still completing repayment of each increment of investment within its prescribed repayment period.

GENERATION BY THE PRINCIPAL ELECTRIC UTILITY SYSTEMS OF THE PACIFIC NORTHWEST (a)

TABLE 1 — 1987

	Thousands of MWH	Percent of Total
Publicly Owned:		
Federal Columbia River Power System (b)	80,600	47.4
Grant County PUD	3,350	2.0
Chelan County PUD	2,800	1.6
Seattle City Light	7,050	4.1
Douglas County PUD	650	.4
Tacoma City Light	2,900	1.7
Eugene Water and Electric Board	550	.3
Pend Oreille County PUD	450	.3
Total Publicly Owned	98,350	57.8
Privately Owned:		
Pacific Power and Light	20,150	11.8
Idaho Power Company	12,700	7.5
Montana Power Company	8,550	5.0
Portland General Electric	10,000	5.9
Washington Water Power Company	6,900	4.1
Puget Sound Power and Light	13,400	7.9
Total Privately Owned	71,700	42.2
Total Generation	170,050	100.0

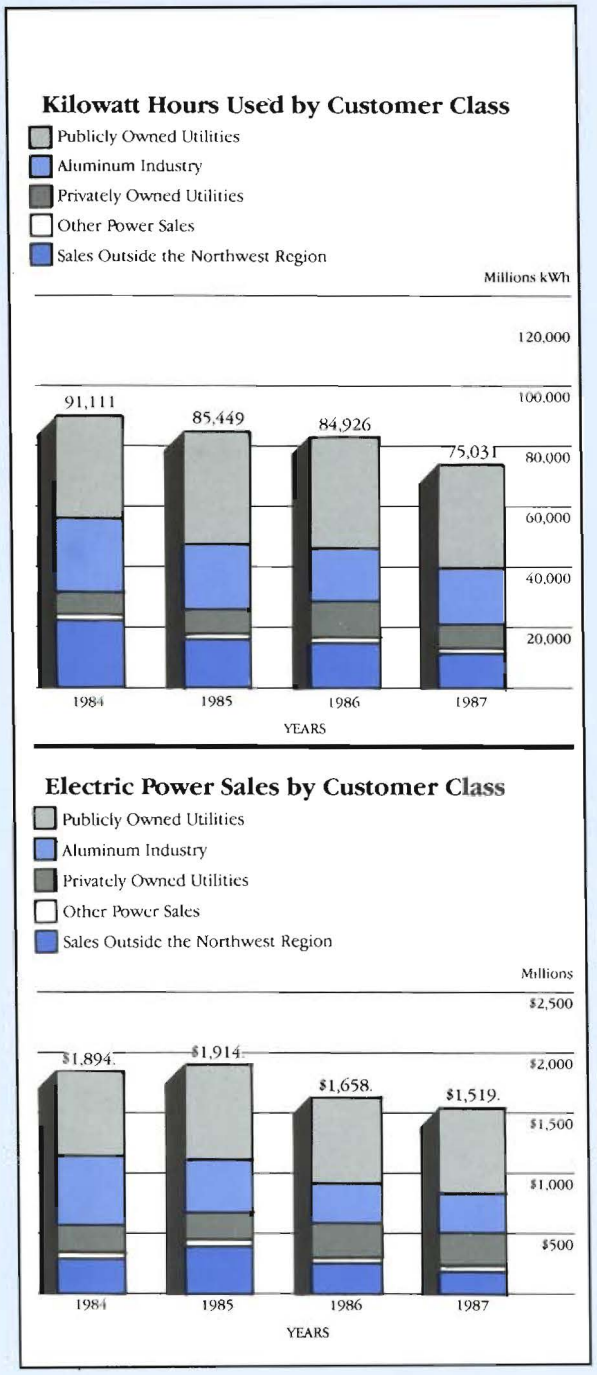
(a) Generation shown is for members of the Northwest Power Pool plus Pend Orielle County PUD and the Washington Public Power Supply System. British Columbia Hydro and Power Authority, Sierra Pacific Power Co., Trans Alta Utilities, Utah Power & Light Co., and West Kootenay Power and Light, who are members of the Power Pool, are not included because their service areas are outside the Pacific Northwest.

(b) Includes: Pacific Northwest generating facilities of the Bureau of Reclamation and Corps of Engineers; Washington Public Power Supply System's nuclear plant (WNP-2), Hanford steam plant (NPR), and Packwood hydro plant; the Okanogan PUD share of Wells; the municipality shares (Forest Grove, McMinnville, and Milton-Freewater) of Priest Rapids; the Snohomish PUD share of the Centralia steam plant and the Jackson hydro plant; the Federal share of the Trojan nuclear plant; the Pacific NW Generating Companies' share of Boardman; the PGE-Kinzua co-generation project; the Clark County PUD-Great Western Malting co-generation project; the Seattle City Light and Tacoma City Light shares of Southern Columbia Basin Irrigation District hydro generation; the Seattle City Light Rocky Brook Project; and the PPL Mid-Fork co-generation and Whiskey Run projects.

SALES OF ELECTRIC ENERGY — *(Revenue in Thousands of Dollars)*

TABLE 2 — 1987

Northwest Region — Municipalities	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Albion, ID	7	$ 27	3,076	$ 48
Ashland, OR	302	1,042	136,420	2,101
Bandon, OR	117	404	49,590	762
Blaine, WA	91	313	43,100	665
Bonners Ferry, ID	87	302	30,274	476
Burley, ID	201	687	100,252	1,543
Canby, OR	240	833	101,022	1,558
Cascade Locks, OR	61	210	26,621	410
Centralia, WA	326	1,116	121,233	1,884
Cheney, WA	213	739	96,988	1,496
Cons. Irrig. Distr., WA	6	19	1,471	23
Coulee Dam, WA	30	108	14,466	227
Declo, ID	6	24	2,902	45
Drain, OR	55	190	26,504	405
Eatonville, WA	38	129	15,777	245
Ellensburg, WA	299	1,008	149,163	2,295
Eugene, OR	2,476	8,156	1,502,306	22,690
Fircrest, WA	91	312	41,114	636
Forest Grove, OR	358	942	131,896	2,035
Heyburn, OR	149	498	81,876	1,258
Idaho Falls, ID	1,022	3,556	515,217	7,974
McCleary, WA	76	258	31,546	484
McMinnville, OR	721	2,425	359,783	5,537
Milton, WA	83	286	38,121	589
Milton-Freewater, OR	164	522	74,785	1,161
Minidoka, ID	2	6	871	14
Monmouth, OR	126	438	52,043	802
Port Angeles, WA	1,041	3,521	617,658	9,495
Richland, WA	1,193	4,100	519,983	7,997
Rupert, ID	152	528	70,401	1,086
Seattle, WA	121	54	1,226,452	17,888
Soda Springs, OR	37	128	18,052	277
Springfield, OR	1,193	4,150	625,924	9,706
Steilacoom, WA	88	312	38,129	592
Sumas, WA	19	64	9,378	143
Tacoma, WA	3,464	11,259	2,655,669	38,269
Vera Irrig. Dist., WA	329	1,164	144,218	2,231
WA Public Power Supply System, WA	293	1,005	79,898	1,181
Total Municipalities (38)	15,277	$50,835	9,754,179	$146,228



SALES OF ELECTRIC ENERGY (Revenue in Thousands of Dollars)

TABLE 2 Continued — *1987*

Public Utility Districts	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Benton Co.	2,711	$ 8,968	1,246,725	$ 18,210
Central Lincoln	2,307	7,790	1,298,273	19,837
Chelan Co.	392	180	115,112	1,198
Clallam Co.	939	3,025	391,791	5,650
Clark Co.	4,567	16,098	2,436,966	37,642
Clatskanie	1,202	4,032	728,746	11,122
Columbia River	445	1,488	222,489	3,397
Cowlitz Co.	4,743	15,385	3,377,120	51,376
Douglas Co.	410	187	2,400	5
Emerald	805	2,538	349,235	4,951
Ferry Co.	127	402	64,482	921
Franklin Co.	1,170	3,872	552,978	8,058
Grant Co. #2	1,162	645	119,044	795
Grays Harbor	1,986	6,839	1,069,606	16,467
Kittitas Co.	57	169	24,377	347
Klickitat Co.	455	1,429	205,899	2,835
Lewis Co.	1,017	3,334	606,957	8,928
Mason Co. #1	110	349	45,392	649
Mason Co. #3	900	3,097	393,789	6,062
Northern Wasco Co.	421	1,448	189,650	2,918
Okanogan Co.	23	119	200,727	3,073
Pacific Co. #2	515	1,763	233,809	3,589
Pend Oreille Co.	—	—	(72,077)	(72)
Skamania Co.	218	698	99,115	1,425
Snohomish Co.	7,752	26,847	3,894,831	59,877
Tillamook	656	2,250	284,027	4,328
Wahkiakum Co.	67	218	30,686	426
Whatcom Co.	246	823	150,077	2,309
Total Public Utility Districts (28)	35,403	$113,993	18,262,226	$276,323

SALES OF ELECTRIC ENERGY (Revenue in Thousands of Dollars)

TABLE 2 Continued — *1987*

Cooperatives	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Alder Mutual Light	5	$ 15	1,990	$ 29
Benton Rural Elec. Assn.	591	1,826	273,169	3,774
Big Bend Coop.	719	1,975	348,556	4,041
Blachly-Lane Coop.	278	893	119,084	1,727
Central Elec. Coop.	666	2,119	284,085	3,946
Clearwater Power Co.	306	977	130,636	1,866
Columbia Basin Coop.	219	662	106,248	1,421
Columbia Power Coop.	53	161	23,884	337
Columbia Rural Elec. Assn.	350	944	173,714	2,034
Consumers Power	708	2,261	299,299	4,259
Coos-Curry Elec. Coop.	523	1,669	236,963	3,378

Continued on page 36

Continued from page 35

SALES OF ELECTRIC ENERGY (Revenue in Thousands of Dollars)

TABLE 2 Continued — *1987*

Cooperatives	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Douglas Elec. Coop.	246	791	115,140	1,638
East End Mutual Elec.	32	100	14,482	192
Elmhurst Mutual P&L	460	1,606	204,568	3,169
Fall River Elec. Coop.	291	860	120,235	1,613
Farmers Elec. Co.	8	29	3,685	57
Flathead Elec. Coop.	292	916	133,568	1,874
Glacier Elec. Coop.	287	926	153,246	2,216
Harney Elec. Coop.	265	758	137,595	1,786
Hood River Elec. Coop.	177	598	84,260	1,301
Idaho Co. L&P Coop.	5	210	30,487	435
Inland P&L	969	3,125	437,327	6,226
Kootenai Elec. Coop.	369	1,162	168,689	2,389
Lakeview L&P	464	1,589	229,577	3,541
Lane Elec. Coop.	519	1,625	227,016	3,194
Lincoln Elec. Coop. – MT	161	517	72,186	1,034
Lincoln Elec. Coop. – WA	193	527	98,080	1,159
Lost River Elec. Coop.	113	320	52,942	644
Lower Valley P&L	560	2,390	346,456	4,978
Midstate Elec. Coop.	448	1,418	200,782	2,758
Missoula Elec. Coop.	256	809	119,280	1,690
Nespelem Valley Elec. Coop.	76	240	34,681	484
Northern Lights	400	1,247	211,661	2,990
Ohop Mutual Light Co.	81	266	34,441	505
Okanogan County Coop.	56	184	24,834	385
Orcas P&L	241	769	109,557	1,570
Pacific NW Generating Co.	12	40	3,180	50
Parkland Light & Water	189	656	93,044	1,441
Peninsula Light Co.	752	2,621	322,834	4,997
Prairie Power Coop.	22	61	9,170	113
Raft River Elec. Coop.	306	815	156,783	1,740
Ravalli Elec. Coop.	174	551	75,389	1,053
Riverside Elec. Co.	27	84	12,390	162
Rural Elec. Co.	159	524	75,522	1,071
Salem Elec.	554	1,917	268,017	4,128
Salmon River Coop.	295	878	159,091	2,239
South Side Elec. Lines.	77	220	35,138	412
Surprise Valley Elec.	216	625	99,096	1,266
Tanner Elec.	61	196	25,640	369
Umatilla Elec. Coop.	1,024	3,033	542,010	6,992
Unity P&L	129	413	61,540	852
Vigilante Elec. Coop.	228	663	99,211	1,250
Wasco Elec. Coop.	202	631	89,568	1,248
Wells Rural	319	931	179,749	2,548
West Oregon Coop.	133	422	59,833	857
Total Cooperatives (55)	16,266	$51,765	7,729,608	$107,428

SALES OF ELECTRIC ENERGY (Revenue in Thousands of Dollars)

TABLE 2 Continued — *1987*

Federal Agencies	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
U.S. Department of Energy	814	$2,467	495,808	$ 7,348
U.S. Bureau of Mines	15	52	5,263	82
U.S. Air Force	70	235	35,535	544
U.S. Bureau of Reclamation	–	–	113,712	285
U.S. Bureau of Indian Affairs	427	1,448	176,692	2,634
U.S. Navy	677	2,257	359,745	5,545
Total Federal Agencies (6)	2,003	$6,459	1,186,755	$16,438

SALES OF ELECTRIC ENERGY (Revenue in Thousands of Dollars)

TABLE 2 Continued — *1987*

Privately Owned Utilities	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
California Pacific National Corp.	–	$ –	7,261	$ 109
Colockum Transmission Co.	428	196	27,767	211
Idaho Power Co.	–	–	171,646	1,729
Montana Power Co.	960	3,188	838,908	12,004
Pacific Power & Light Co.	13,126	44,895	1,187,233	14,051
Portland General Elec. Co.	8,619	27,565	1,465,802	23,428
Puget Sound P&L Co.	2,654	3,964	1,510,248	23,018
Utah Power & Light Co.	–	–	183,292	1,740
Washington Water Power	1,301	3,344	823,809	12,998
Total Privately Owned Utilities (9)	27,088	$83,152	6,215,966	$89,288

SALES OF ELECTRIC ENERGY (Revenue in Thousands of Dollars)

TABLE 2 Continued — *1987*

Aluminum Industry	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Alcoa	3,001	$ 15,666	2,091,844	$ 25,855
Columbia Aluminum Co.	54	246	31,509	489
Columbia Falls Aluminum Co.	3,959	21,525	2,958,923	34,750
Commonwealth Aluminum Co.	1,044	5,715	371,043	3,620
Intalco Aluminum Co.	5,290	27,934	3,839,282	45,157
Kaiser Aluminum Co.	6,279	32,978	4,489,571	55,091
Northwest Aluminum Co.	1,060	5,593	762,653	9,739
Reynolds Metals Co.	6,606	34,870	4,787,338	58,071
Vanalco, Inc.	162	841	107,630	1,668
Total Aluminum Industry (9)	27,455	$145,368	19,439,793	$234,440

SALES OF ELECTRIC ENERGY (Revenue in Thousands of Dollars)

TABLE 2 Continued — *1987*

Other Industries	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Carborundum Co.	1	$ 2	1	$ –
Georgia Pacific Corp.	364	1,697	284,090	4,448
Gilmore Steel	3	15	1,421	29
Hanna Nickel Smelting	–	–	3,178	172
Oregon Metallurgical	76	338	36,763	590
Pacific Carbide	77	371	44,524	722
Pennwalt Corporation	785	3,782	565,372	9,356
Port Townsend Paper	152	745	90,122	1,450
Stewart Elsner/Camp High Cliff	–	–	4	–
Total Other Industries (9)	1,458	$6,950	1,025,475	$16,767

Sales Within the NW Region (154)	124,950	$458,522	63,614,002	$886,912

Sales Outside the Northwest Region	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Burbank, CA – Public	–	$ –	174,730	$ 2,826
Glendale, CA – Public	–	–	162,443	2,300
Los Angeles, CA – Public	–	–	1,679,801	26,844
No. California Power Agency – Public	–	–	33,000	462
Pacific Gas & Elec. Co. – Private	1,800	4,501	5,344,833	79,614
Pasadena, CA – Public	–	–	76,415	1,058
Riverside, CA – Public	–	–	515	8
Sacramento, CA – Public	–	–	270,665	4,584
San Diego Gas & Elec. – Private	–	–	128,190	1,859
Sierra Pacific Power Co. – Private	–	–	728	9
So. Cal. Edison Co. – Private	–	–	2,248,935	31,131
State of California – Public	–	–	499,245	6,976
WAPA – Mid Pacific Region – Federal	–	–	797,450	11,287
Total Sales Outside the NW Region (13)	1,800	$ 4,501	11,416,950	$168,958

Sales of Electric Power (167)	126,750	$463,023	75,030,952	$1,055,870

AUDITORS' REPORT

To the Administrator of
Bonneville Power Administration,
United States Department of Energy:

We have examined the balance sheets of the Federal Columbia River Power System (FCRPS) as of September 30, 1987 and 1986, and the related statements of revenues and expenses, changes in capitalization and source and use of funds for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As discussed in Note 7, pending and threatened litigation surrounding the Washington Public Power Supply System may have a significant impact on FCRPS. The ultimate impact on FCRPS, if any, cannot be presently determined.

In our opinion, subject to the effect of such adjustments, if any, as might have been required had the outcome of the litigation discussed in the preceding paragraph been known, the financial statements referred to above present fairly the financial position of FCRPS as of September 30, 1987 and 1986, and its revenues and expenses, changes in capitalization and source and use of funds for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Our examinations were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The Schedule of Amount and Allocation of Plant Investment as of September 30, 1987 (Schedule A) is presented for purposes of additional analysis and is not a required part of the basic financial statements. The information in Schedule A has been subjected to the auditing procedures applied in our examinations of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Arthur Andersen & Co.

Portland, Oregon,
January 6, 1988.

Federal Columbia River Power System
Statements of Revenues and Expenses
For the Years Ended September 30, 1987 and 1986

	1987	1986
	(Thousands of Dollars)	
OPERATING REVENUES:		
Sales of electric power —		
Sales within the Northwest region —		
Publicly owned utilities	$ 746,572	$ 786,751
Aluminum industry	379,808	361,261
Privately owned utilities	172,440	205,867
Other power sales	46,614	45,605
Sales outside the Northwest region	173,459	258,898
	1,518,893	1,658,382
Wheeling and other sales	155,150	129,287
Total operating revenues	1,674,043	1,787,669
OPERATING EXPENSES:		
Bonneville Power Administration —		
Operation and maintenance	182,226	177,558
Conservation	10,849	3,356
Fish and wildlife	17,580	15,368
Corps of Engineers and Bureau of Reclamation —		
Operation and maintenance	92,125	83,788
Purchase power (Note 4)	812,755	848,775
Residential exchange (Note 5)	217,231	208,287
Depreciation and amortization	177,359	161,736
Total operating expenses	1,510,125	1,498,868
Net operating revenues	163,918	288,801
INTEREST EXPENSE:		
Interest on Federal investment —		
Appropriated funds	231,508	209,955
Long-term debt	163,981	167,570
Allowance for funds used during construction	(19,021)	(23,808)
Net interest expense	376,468	353,717
NET EXPENSES	$ (212,550)	$ (64,916)

The accompanying notes are an integral part of these statements.

Federal Columbia River Power System
Balance Sheets
September 30, 1987 and 1986

ASSETS	1987	1986
	(Thousands of Dollars)	
UTILITY PLANT (Notes 1 and 3):		
Completed plant	$ 8,503,261	$ 8,216,771
Accumulated depreciation	(1,802,999)	(1,662,640)
	6,700,262	6,554,131
Construction work in progress	316,289	412,914
Net utility plant	7,016,551	6,967,045
CAPITALIZED CONTRACTS (Notes 1 and 4):		
Purchase power		
Hanford	23,500	27,585
Trojan	129,060	132,075
WNP No. 1	2,094,090	2,109,560
WNP No. 2	2,233,775	2,258,700
WNP No. 3	1,574,905	1,583,830
Other	40,005	40,415
Conservation	15,655	16,345
Total capitalized contracts	6,110,990	6,168,510
CONSERVATION, net of accumulated amortization of $88,554 in 1987 and $60,910 in 1986 (Notes 1 and 2)	510,321	472,007
FISH AND WILDLIFE, net of accumulated amortization of $1,420 in 1987 and $646 in 1986 (Note 1)	13,197	9,262
CURRENT ASSETS:		
Cash	271,533	123,019
Accounts receivable	11,617	11,597
Accrued unbilled revenues	78,078	95,758
Materials and supplies, at average cost	35,477	35,607
Prepaid expenses	71,645	34,842
Total current assets	468,350	300,823
OTHER ASSETS:		
Investment in Teton Dam (Note 6)	7,269	7,269
Other	17,904	6,601
Total other assets	25,173	13,870
	$14,144,582	$13,931,517

CAPITALIZATION AND LIABILITIES	1987	1986
	(Thousands of Dollars)	
ACCUMULATED NET EXPENSES	$ (586,023)	$ (373,473)
FEDERAL APPROPRIATIONS (Note 3)	6,544,336	6,482,754
LONG-TERM DEBT (Notes 2 and 3)	1,843,799	1,458,799
CAPITALIZED CONTRACT OBLIGATIONS, net of current portion (Notes 1 and 4)	6,048,650	6,110,244
COMMITMENTS AND CONTINGENCIES (Notes 6 and 7)		
CURRENT LIABILITIES:		
Current portion of capitalized contract obligations (Notes 1 and 4)	62,340	58,266
Accounts payable	201,617	175,427
Employees' accrued leave	11,460	11,094
Total current liabilities	275,417	244,787
DEFERRED CREDITS	18,403	8,406
	$14,144,582	$13,931,517

The accompanying notes are an integral part of these balance sheets.

Federal Columbia River Power System
Statements of Changes in Capitalization
For the Years Ended September 30, 1987 and 1986

	Accumulated Net Expenses	Federal Appropriations	Long-Term Debt	Capitalized Contract Obligations	Total Capitalization
			(Thousands of Dollars)		
BALANCE AT SEPTEMBER 30, 1985	$(308,557)	$6,439,843	$1,340,000	$6,218,640	$13,689,926
Congressional appropriations:					
Operations and maintenance	–	83,788	–	–	83,788
Construction	–	53,212	–	–	53,212
Increase in long-term debt	–	–	500,000	–	500,000
Repayment of long-term debt	–	–	(381,201)	–	(381,201)
Decrease in capitalized contract obligations	–	–	–	(50,130)	(50,130)
Repayment of Congressional appropriations:					
Operations and maintenance	–	(83,788)	–	–	(83,788)
Construction	–	(10,301)	–	–	(10,301)
Net expenses	(64,916)	–	–	–	(64,916)
BALANCE AT SEPTEMBER 30, 1986	(373,473)	6,482,754	1,458,799	6,168,510	13,736,590
Congressional appropriations:					
Operations and maintenance	–	92,125	–	–	92,125
Construction	–	62,913	–	–	62,913
Increase in long-term debt	–	–	620,000	–	620,000
Reduction of long-term debt:					
Repayment	–	–	(150,000)	–	(150,000)
Refinance	–	–	(85,000)	–	(85,000)
Decrease in capitalized contract obligations	–	–	–	(57,520)	(57,520)
Repayment of Congressional appropriations:					
Operations and maintenance	–	(92,125)	–	–	(92,125)
Construction	–	(1,331)	–	–	(1,331)
Net expenses	(212,550)	–	–	–	(212,550)
BALANCE AT SEPTEMBER 30, 1987	$(586,023)	$6,544,336	$1,843,799	$6,110,990	$13,913,102

The accompanying notes are an integral part of these statements.

Federal Columbia River Power System
Statements of Source and Use of Funds
For the Years Ended September 30, 1987 and 1986

	1987	1986
	(Thousands of Dollars)	
SOURCE OF FUNDS		
Operations —		
Net expenses	$(212,550)	$(64,916)
Charges not requiring funds:		
Depreciation	148,941	138,122
Amortization	28,418	23,614
Funds provided (used) by operations	(35,191)	96,820
Congressional appropriations:		
Operation and maintenance	92,125	83,788
Construction	62,913	53,212
Increase in long-term debt	620,000	500,000
Realization of capitalized contracts	57,520	50,130
Write off of investment in Libby re-regulating dam	—	19,568
Decrease (increase) in current assets —		
Cash	(148,514)	30,774
Receivables and unbilled revenues	17,660	(5,062)
Materials and supplies	130	(1,967)
Prepaid expenses	(36,803)	10,895
Increase (decrease) in current liabilities —		
Accounts payable	26,190	26,741
Employees' accrued leave	366	156
Other sources (uses), net	(1,306)	5,762
Total funds provided	$655,090	$870,817
USE OF FUNDS:		
Investment in utility plant, net	$198,447	$242,189
Additions to conservation	65,958	97,618
Additions to fish and wildlife	4,709	5,590
Repayment of Congressional appropriations:		
Operations and maintenance	92,125	83,788
Construction	1,331	10,301
Reduction of long-term debt:		
Repayment	150,000	381,201
Refinance	85,000	—
Payment of capitalized contract obligations	57,520	50,130
Total funds used	$655,090	$870,817

The accompanying notes are an integral part of these statements.

Federal Columbia River Power System
Notes to Financial Statements
September 30, 1987 and 1986

1. Summary of Accounting Policies:

General

The Federal Columbia River Power System (FCRPS) includes the accounts of the Bonneville Power Administration (BPA), which purchases, transmits, and markets power, and the accounts of the Pacific Northwest generating facilities of the Corps of Engineers (Corps) and the Bureau of Reclamation (Bureau) for which BPA is the power marketing agency. Each entity is separately managed and financed, but the facilities are operated as an integrated power system with the financial results combined under the FCRPS title. Costs of multipurpose Corps and Bureau projects are assigned to specific purposes through a cost allocation process. Only the portion of total project costs allocated to power is included in these statements.

FCRPS accounts are maintained in accordance with generally accepted accounting principles and the uniform system of accounts prescribed for electric utilities by the Federal Energy Regulatory Commission (Commission). FCRPS accounting policies also reflect specific legislation and executive directives issued by U.S. Government departments (BPA is a unit of the Department of Energy; the Bureau is part of the Department of Interior and the Corps is part of the Department of Defense). FCRPS properties and income are tax-exempt.

Regulatory Authority

FCRPS power rates must be confirmed and approved by the Commission.

Revenues

Operating revenues are recorded on the basis of service rendered.

Utility Plant

Utility plant is stated at original cost. Cost includes direct labor and materials, payments to contractors, indirect charges for engineering, supervision and similar overhead items, and an allowance for funds used during construction. The costs of additions, major replacements, and betterments are capitalized. Repairs and minor replacements are charged to operating expense. The cost of utility plant retired, together with removal costs and less salvage, is charged to accumulated depreciation when it is removed from service.

Allowance for Funds Used During Construction

The allowance for funds used during construction (AFUDC) constitutes interest on the funds used for utility plant under construction. AFUDC is capitalized as part of the cost of utility plant and results in a noncash reduction of interest expense.

AFUDC capitalization rates are stipulated for certain generating projects (2.5% to 8.9% in 1987 and 2.5% to 11.4% in 1986) and approximate the cost of borrowings from the U.S. Treasury for other construction (11.1% in 1987 and 12.3% in 1986).

Depreciation and Amortization

Depreciation of utility plant is computed on the straight-line method based on estimated service lives of the various classes of property, which average 45 years for transmission and 85 years for generation. Since power rates are established in contemplation of recovery of the cost of transmission facilities within their average service lives and within 50 years for generating facilities, the annual depreciation charges are not matched directly with the related revenue recovery period and will, in the case of generating facilities, continue beyond the period in which such costs will have been recovered through revenues. Amortization of conservation and fish and wildlife is computed on the straight-line method based on estimated service lives of the various classes of intangible assets, which is 20 years for conservation and 15 years for fish and wildlife.

Capitalized Contracts and Capitalized Contract Obligations

BPA has agreed to purchase all or part of the generating capability of five nuclear power plants and one hydro project. BPA has also agreed to fund debt service on Eugene Water and Electric Board (EWEB) bonds issued to finance conservation programs sponsored by BPA. The capitalized contracts will be amortized as such costs are scheduled to be recovered in rates.

Retirement Benefits

FCRPS employees belong to the U.S. Government's Civil Service Retirement Fund (the Fund). FCRPS and employees contribute equally to the Fund. Retirement benefits are payable by the U.S. Treasury and not by the FCRPS, and are redetermined from time to time by the Fund or the U.S. Government.

Net Revenues

Because BPA is a nonprofit U.S. Government power marketing agency, net revenues over time are committed to repayment of the U.S. Government investment in the FCRPS and the payment of certain irrigation costs as discussed in Note 6.

Reclassifications

Certain reclassifications of prior year amounts have been made to conform to 1987 financial statement presentation.

2. Long-Term Debt:

To finance its capital programs, BPA is authorized by the Federal Columbia River Transmission System Act to issue to the U.S. Treasury up to $3.75 billion of interest-bearing debt with terms and conditions comparable to debt issued by U.S. Government corporations. A portion ($1.25 billion) of the $3.75 billion is reserved for conservation and renewable resource loans and grants. At September 30, 1987, $565 million of this reserved amount and $1,279 million of other borrowings were outstanding. The following table reflects the terms and amounts of long-term debt.

Issue Date	First Call Date	Maturity Date	Interest Rate	Construction Debt	Conservation Debt	Cumulative Total
				(Thousands of Dollars)		
Note:						
Sep 1987	none	1988 (a)	8.20%			$ 150,000
Bonds:						
Sep 1985	none	1990	10.15%	$ –	$ 50,000	50,000
Mar 1986	none	1991	7.80%	–	50,000	100,000
Jun 1987	none	1992	8.35%	100,000	–	200,000
Jun 1987	none	1992	8.35%	–	50,000	250,000
Mar 1986	none	1996	8.15%	100,000	–	350,000
Mar 1986	none	1996	8.15%	–	50,000	400,000
Sep 1983	1988	2003	12.20%	–	140,000	540,000
Sep 1984	1989	2004	13.05%	–	150,000	690,000
Apr 1987	1992	2007	9.30%	–	75,000	765,000
Sep 1978	1983	2013	8.95%	50,000	–	815,000
Jun 1979	1984	2014	9.45%	28,799	–	843,799
Jul 1987	1992	2017	9.55%	95,000	–	938,799
Nov 1982	1987	2017	10.85%	40,000	–	978,799
Jun 1983	1988	2018	11.70%	30,000	–	1,008,799
Sep 1983	1988	2018	12.25%	45,000	–	1,053,799
Nov 1983	1988	2018	12.30%	30,000	–	1,083,799
Sep 1984	1989	2019	13.05%	60,000	–	1,143,799
Jun 1985	1990	2030	11.25%	100,000	–	1,243,799
Jun 1986	1991	2031	8.95%	300,000	–	1,543,799
Apr 1987	1992	2032	9.30%	100,000	–	1,643,799
Jul 1987	1992	2032	9.55%	50,000	–	1,693,799
				$1,128,799	$565,000	1,693,799
Total						$1,843,799

(a) Convertible to a bond in the future.

The weighted average interest rate was 10.1% and 11.1% on outstanding long-term debt as of September 30, 1987 and 1986, respectively. While all the construction and conservation bonds are term bonds, most have a call provision that allows them to be paid back beginning five years after the date of issuance.

3. Federal Appropriations:

Construction and replacement of Corps and Bureau generating facilities is financed by annual Congressional appropriations. Annual appropriations are also made for their operation and maintenance costs, although these are repaid by BPA to the U.S. Treasury by the end of each fiscal year. BPA construction and operations and maintenance costs were also financed by appropriations before the Federal Columbia River Transmission System Act was passed in 1974.

Interest rates on the appropriated funds range from 2.5% to 12.4% (the weighted average rate was 3.3% in 1987 and 3.5% in 1986). The rates have been set by law, administrative order pursuant to law, or administrative policies.

Federal appropriations and long-term debt in generating projects and the transmission system are to be repaid to the U.S. Treasury within 50 and 45 years, respectively, from the time each facility is placed in service. The cumulative amount of Federal appropriations and long-term debt repaid through September 30, 1987 exceeded the amount required to be repaid.

The following table shows the planned and term repayments of the remaining Federal appropriations ($6,544,336) and long-term debt ($1,843,799) as of September 30, 1987:

	Planned to be Repaid (a)	Term Repayments (a)
	(Thousands of Dollars)	
1988	$ 183,196	$ –
1989	148,057	–
1990	170,041	50,000
1991	180,741	50,000
1992	197,543	151,408
1993-1997	810,342	178,005
1998-2002	301,697	227,967
2003-2007	549,698	1,000,755
2008-2012	528,661	508,173
2013-2017	602,294	756,661
2018-2022	1,586,657	1,407,069
2023-2027	2,490,443	1,471,641
After 2027	638,765	2,586,456
	$8,388,135	$8,388,135

(a) Excludes planned payments on future replacements.

If, in any given year, there are not enough revenues to cover all cash needs, including interest, any deficiency becomes unpaid annual expense. Interest is accrued on unpaid annual expense until paid. This must be paid from subsequent years' revenues before any repayment of Federal appropriations and long-term debt can be made.

4. Purchase and Exchange Power:

BPA has acquired all or part of the generating capability of five nuclear power projects. The contracts to acquire the generating capability of the projects, referred to as "net billing agreements," require BPA to pay all or part of the annual project budgets, including debt service, whether or not the projects are completed. BPA has also acquired all of the output of the Idaho Falls Bulb Turbine project and has agreed to fund debt service on EWEB bonds issued to finance conservation programs sponsored by BPA. The projected payments under these agreements are:

Project and Percent Capability Acquired	Project Status	Megawatts Acquired		Actual (a)		Estimated Annual Project Costs				
				1986	1987	1988	1989	1990	1991	1992
				(Thousands of Dollars)						
Hanford Generating Project (72%)	Operational	430	Interest (b)	$ (400)	$ (405)	$ (100)	$ (100)	$ (100)	$ (100)	$ (300)
			Principal	3,255	4,085	2,700	3,500	3,600	5,100	5,600
			Operations	34,645	13,420	18,000	37,600	47,800	46,500	46,700
				37,500	17,100	20,600	41,000	51,300	51,500	52,000
Trojan Nuclear Project (30%)	Operational	339	Interest	7,700	7,231	7,400	7,200	7,100	6,900	6,700
			Principal	2,885	3,015	3,100	3,300	3,500	3,700	3,800
			Operations	43,531	46,292	45,100	46,500	49,900	52,400	55,100
				54,116	56,538	55,600	57,000	60,500	63,000	65,600
WNP No. 1 (100%)	Preservation	1,250	Interest	184,191	184,198	193,100	193,100	190,400	187,800	186,300
			Principal	14,855	15,470	18,000	19,600	21,700	22,900	24,200
			Preservation (c)	–	–	–	–	–	–	–
				199,046	199,668	211,100	212,700	212,100	210,700	210,500
WNP No. 2 (100%)	Operational	1,100	Interest	172,400	167,876	197,200	195,700	193,200	190,700	188,200
			Principal	23,295	24,925	26,600	29,000	31,100	33,400	35,900
			Operations	180,242	153,551	151,600	156,700	170,600	175,800	171,500
				375,937	346,352	375,400	381,400	394,900	399,900	395,600
WNP No. 3 (70%) (d)	Preservation	868	Interest	127,372	142,340	145,700	155,100	152,900	151,100	150,100
			Principal	6,530	8,925	10,500	11,500	12,400	13,300	14,300
			Preservation (c)	42,200	32,404	14,400	11,400	9,200	15,000	14,700
				176,102	183,669	170,600	178,000	174,500	179,400	179,100
Idaho Falls Hydro (100%)	Operational	24	Interest	3,092	3,103	3,200	3,100	3,100	3,100	3,000
			Principal	10	410	400	500	500	500	600
			Operations	809	1,095	1,100	1,100	1,200	1,200	1,300
				3,911	4,608	4,700	4,700	4,800	4,800	4,900
EWEB Conservation	N/A	N/A	Interest	1,298	1,201	1,300	1,300	1,200	1,100	1,100
			Principal	655	690	700	800	800	900	1,000
				1,953	1,891	2,000	2,100	2,000	2,000	2,100
				$848,565	$809,826	$840,000	$876,900	$900,100	$911,300	$909,800

(a) Purchase power expense stated in the statements of revenues and expenses also includes $210 and $2,929 of other purchase power in 1986 and 1987, respectively, for a total of $848,775 in 1986 and $812,755 in 1987.

(b) Interest income on project funds is anticipated to exceed interest expense on project obligations.

(c) Estimated preservation costs during the delay period for WNP No. 1 are not shown separately because it is anticipated such costs will be funded by WNP No. 1 bond funds currently available. Estimated preservation costs for WNP No. 3 include the 30% IOU share assumed by BPA pursuant to the settlement agreements.

(d) Pursuant to the WNP No. 3 settlement agreement, BPA has an irrevocable offer to acquire the remaining 30% capability of the project.

BPA's commitment under the net billing agreements extends for the life of the projects. Construction on two projects, WNP No. 1 and WNP No. 3, has been delayed indefinitely. A construction restart of WNP No. 1 and WNP No. 3 and the need for additional financing will depend on factors such as the forecasted power needs in the Pacific Northwest and the cost effectiveness of these projects compared to other resources.

Future principal and interest payments required under capitalized contract obligations are $18.4 billion, of which $12.3 billion represents interest.

5. Residential Energy Exchange:

As provided for in the Pacific Northwest Electric Power Planning and Conservation Act of 1980, Section 5(c), BPA entered into Residential Purchase and Sale Agreement contracts with several electric utilities. These contracts allow each utility to sell to BPA its qualified residential and irrigation load at the average system cost of the utility's resources. In exchange, BPA sells to the utilities electric power for their residential and irrigation loads at BPA's priority firm power rates. Purchases and sales of electric power by BPA during fiscal years 1987 and 1986 under these contracts were as follows:

	1987	1986
	(Thousands of Dollars)	
Residential exchange expense	$1,013,956	$1,046,379
Residential exchange revenues	796,725	838,092
Residential exchange	$ 217,231	$ 208,287

6. Commitments and Contingencies:

Irrigation Assistance

Legislation requires that FCRPS net revenues be used to pay the U.S. Treasury for costs allocated to irrigation of certain Pacific Northwest projects that are determined to be beyond the ability of the irrigation water users to repay. The first planned irrigation assistance payment from power revenues will be made in 1997, and cumulative payments will ultimately total $738 million. Although paid by power ratepayers, such costs are for the benefit of the water users and are not a regular operating cost of the power program. Accordingly, they are not reflected in the balance sheets.

Investment in Teton Dam and Libby Reregulating Dam

On June 5, 1976, Teton Dam was extensively damaged before it had been completed. The total investment in the project at September 30, 1987 (excluding interest totaling $2.2 million after June 1976 which has been charged to expense) was $79.1 million. The portion allocated to power was $7.3 million, and the portion allocated to irrigation but repayable from power revenues was $56.6 million.

The final decision about repayment obligations for Teton Dam depends on Congressional action. If repayment is not required, the investment will be paid by the U.S. Government. Should FCRPS be directed to pay, the costs will be recovered through rates. Until a decision is made, the investment allocated to power is included as a deferred charge in the balance sheet and costs of irrigation assistance are included in the total of irrigation assistance described above.

On September 8, 1978, the Corps was enjoined from constructing a reregulating dam at Libby, Montana because it lacked specific Congressional authority. Later appeals by the Corps to remove the injunction were denied. Investment in the reregulating dam was $19.6 million at September 30, 1985. On November 13, 1986 the Corps determined that these costs are non-reimbursable from commercial power revenues. Therefore, the investment in the reregulating dam and the related Federal appropriation have been removed from the financial statements as of September 30, 1986.

Residential Energy Exchange

Section 7(b)(3) of the Pacific Northwest Electric Power Planning and Conservation Act of 1980 provides that if there is an overall net revenue surplus or deficiency for the period ending June 30, 1985, a portion of it shall be repaid to or recovered from customers, over a reasonable period of time, on the basis of power sales during that period. The surplus or deficiency must relate to (1) a difference between projected and actual power deliveries to the direct service industrial customers and (2) recovering too little or too much of the net residential exchange.

In it s 1987 rate case, BPA tentatively determined the aforementioned Section 7(b)(3) adjustment was not warranted. In the opinion of BPA management, any challenges to this determination will

not have a material effect on the FCRPS financial statements.

Nuclear Insurance

BPA is a member of Nuclear Electric Insurance Limited (NEIL) which was established to provide insurance coverage for replacement power costs resulting from an accidental outage at a member's nuclear site and for excess property damage and decontamination liability. Under its property and decontamination coverage, BPA could be subject to a maximum assessment of $8.1 million in the event of a loss to any NEIL-insured nuclear plant, including WNP No. 2. In addition, the Nuclear Regulatory Commission's indemnity for public liability coverage under the Price-Anderson Act is supported by a mandatory industry-wide program. Under the program, owners of nuclear generating facilities could be assessed in the event of nuclear incidents. BPA could be subject to a retrospective assessment of $5 million in the event of an incident, limited to a maximum of $10 million in any calendar year.

7. Litigation:

Involving the Washington Public Power Supply System (the Supply System)

On January 22, 1982, the Supply System stopped construction of two nuclear projects: WNP No. 4 at Hanford and WNP No. 5 at Satsop. After the termination, the Supply System defaulted on $2.25 billion of outstanding WNP Nos. 4 and 5 bonds for which FCRPS has no obligation, and delayed construction of WNP Nos. 1 and 3. The above actions of the Supply System have led to a number of lawsuits which involve BPA. BPA has been dismissed, subject to appeal, from the securities fraud litigation (MDL 551). In the opinion of BPA General Counsel, BPA has valid defenses to the direct claims against BPA and the possibility of the plaintiffs prevailing against BPA is remote.

In addition to direct claims against BPA, there are lawsuits against the Supply System which have asserted a right to execute on all the assets of the Supply System, including WNP Nos. 1, 2 and 3, to satisfy judgments related to WNP Nos. 4 and 5. The Washington Supreme Court has ruled that the utilities who loaned money to the Supply System to pay for the mothballing and termination of WNP Nos. 4 and 5 were limited to satisfying their judgment from the funds of WNP Nos. 4 and 5. Three claims for goods and services provided for WNP Nos. 4 and 5 have resulted in money damages against the Supply System; however, a Washington state court judge has ruled in one case that the judgment is only recoverable from WNP Nos. 4 and 5 funds.

In another case the Federal District Court ruled that a debt for work performed on WNP No. 5 was only payable from WNP 4/5 project funds. BPA will vigorously oppose any attempt of these litigants to satisfy their claims from the assets of WNP Nos. 1, 2 and 3, and in the opinion of BPA General Counsel, the likelihood of the litigants being able to satisfy their claims from the assets of WNP Nos. 1, 2 and 3 to the extent they are WNP Nos. 4 and 5 debt, is remote.

WNP Nos. 1 and 4 and WNP Nos. 3 and 5 share certain common facilities. The participants of the terminated projects have demanded that the heretofore equitably shared costs be reallocated retroactively to WNP Nos. 1 and 3. If the plaintiffs are successful, this could result in these two projects assuming additional costs of $192 to $400 million. Because of the net billing agreements discussed in Note 4, which require BPA to pay the participants' portion of the annual project costs for WNP Nos. 1, 2, and 3, BPA might be required to fund judgments against the Supply System affecting the net-billed projects. BPA General Counsel cannot predict the outcome of this matter.

Involving Rates

BPA is involved in litigation concerning various rate matters. In the opinion of BPA General Counsel, either the likelihood of success by the filing party is remote; the ultimate outcome will not have a material effect on the FCRPS financial statements; or any payments by BPA resulting from the litigation would be recovered through future rates.

Other Matters

Certain other claims, suits and complaints have been filed or are pending against entities of FCRPS. In the opinion of counsel and management for those entities, the actions are either without merit or involve amounts which are not material to the FCRPS financial statements.

Federal Columbia River Power System
Schedule of Amount and Allocation of Plant Investment
September 30, 1987

Schedule A

	Total	Commercial Power			Irrigation			Nonreimbursable					Percent of Total Returnable From Commercial Power Revenues
		Completed Plant	Construction Work in Progress	Total Commercial Power	Returnable From Commercial Power Revenues	Returnable From Other Sources	Total Irrigation	Navigation	Flood Control	Fish and Wildlife	Recreation	Other	
		(Thousands of Dollars)					*(Thousands of Dollars)*						
Bonneville Power Administration —													
Transmission Facilities	$ 3,330,191	$ 3,128,938	$ 201,253	$ 3,330,191	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	110.0%
Bureau of Reclamation —													
Boise	80,753	7,361	3,090	10,451	17,636	35,864	53,500	—	16,802	—	—	—	34.8%
Columbia Basin	1,723,236	1,009,056	18,362	1,027,418	487,060	150,674	637,734	1,000	51,597	4,807	154	526	87.9%
Hungry Horse	101,789	76,960	178	77,138	—	—	—	—	24,651	—	—	—	75.8%
Minidoka-Palisades	238,619	14,258	1	14,259	10,334	57,686	68,020	—	62,553	1,406	5,791	86,590	10.3%
Yakima	161,381	6,305	2	6,307	11,225	119,869	131,094	—	944	22,797	239	—	10.9%
Total Bureau projects	2,305,778	1,113,940	21,633	1,135,573	526,255	364,093	890,348	1,000	156,547	29,010	6,184	87,116	72.1%
Corps of Engineers —													
Albeni Falls	34,840	32,670	393	33,063	—	—	—	143	182	—	1,452	—	94.9%
Bonneville	834,382	778,118	7,069	785,187	—	—	—	45,844	—	—	1,289	2,062	94.1%
Chief Joseph	536,409	526,703	80	526,783	752	—	752	—	—	—	3,851	5,023	98.4%
Cougar	61,840	18,774	936	19,710	—	3,075	3,075	547	38,300	—	—	208	31.9%
Detroit-Big Cliff	67,687	40,973	174	41,147	—	5,126	5,126	237	21,177	—	—	—	60.8%
Dworshak	360,028	302,060	661	302,721	—	—	—	9,520	34,399	—	13,388	—	84.1%
Green Peter-Foster	90,725	50,088	24	50,112	—	5,858	5,858	367	30,477	—	1,856	2,055	55.2%
Hills Creek	49,085	17,540	3	17,543	—	4,323	4,323	627	26,320	—	—	272	35.7%
Ice Harbor	222,172	171,565	1,327	172,892	—	—	—	46,438	—	—	2,842	—	77.8%
John Day	582,363	425,120	8,700	433,820	—	—	—	89,316	21,267	—	11,551	26,409	74.5%
Libby	607,088	412,384	59,476	471,860	—	—	—	—	98,123	874	5,594	30,637	77.7%
Little Goose	280,210	237,400	1,424	238,824	—	—	—	34,731	—	—	4,051	2,604	85.2%
Lookout Point-Dexter	98,739	46,962	93	47,055	—	1,388	1,388	741	48,940	—	521	94	47.7%
Lost Creek	150,284	27,007	7	27,014	—	2,021	2,021	—	53,427	24,511	29,442	13,869	18.0%
Lower Granite	435,890	361,454	1,391	362,845	—	—	—	52,562	—	—	12,641	7,842	83.2%
Lower Monumental	297,795	253,775	1,388	255,163	—	—	—	39,393	—	—	2,822	417	85.7%
McNary	353,180	274,661	7,182	281,843	—	—	—	68,171	—	—	3,166	—	79.8%
The Dalles	333,168	283,129	3,075	286,204	—	—	—	44,843	—	—	2,099	22	85.9%
Total Corps projects	5,395,885	4,260,383	93,403	4,353,786	752	21,791	22,543	433,480	372,612	25,385	96,565	91,514	80.7%
Irrigation assistance at 12 projects having no power generation	187,270	—	—	—	143,402	43,868	187,270	—	—	—	—	—	76.6%
Total plant investment	11,219,124	8,503,261	316,289	8,819,550	670,409	429,752	1,100,161	434,480	529,159	54,395	102,749	178,630	84.6%
Repayment obligation retained by Columbia Basin project	4,639	2,836(a)	—	2,836	1,803	—	1,803	—	—	—	—	—	100.0%
Other repayment obligation	9,282	—	30	30	9,252	—	9,252	—	—	—	—	—	100.0%
Investment in Teton project (b)	79,107	—	7,269	7,269	56,573	3,681	60,254	—	9,151	—	2,433	—	80.7%
	$11,312,152	$8,506,097	$323,588	$8,829,685	$738,037	$433,433	$1,171,470	$434,480	$538,310	$54,395	$105,182	$178,630	84.6%

(a) Amount represents joint facilities transferred to Bureau of Sports Fisheries and Wildlife. This is included in other assets in the accompanying balance sheets.
(b) The $7,269 commercial power portion of the Teton project is included in other assets in the accompanying balance sheets. Teton amounts exclude interests totaling approximately $2.2 million subsequent to June 1976 which has been charged to expense.

Federal Columbia River Power System
General Specifications of Projects
September 30, 1987

Project	State	River	Initial Date In Service	Existing Number of Units	Existing Nameplate Rating-kW	Authorized-Licensed Number of Units	Authorized-Licensed Nameplate Rating-kW	Potential Number of Units	Potential Nameplate Rating-kW	Project Totals Number of Units	Project Totals Nameplate Rating-kW
Minidoka	Idaho	Snake	May 7, 1909	7	13,400	—	—	—	—	7	13,400
Boise River Div.	Idaho	Boise	May 1912	3	1,500	—	—	—	—	3	1,500
Black Canyon	Idaho	Payette	Dec 1925	2	8,000	—	—	—	—	2	8,000
Grand Coulee	Washington	Columbia	Sep 28, 1941	24	6,180,000	—	—	6	4,200,000	30	10,380,000
Anderson Ranch	Idaho	S Fk Boise	Dec 15, 1950	2	40,000	—	—	1	13,500	3	53,500
Hungry Horse	Montana	S Fk Flathead	Oct 29, 1952	4	285,000	—	—	4	150,000	8	435,000
Chandler	Washington	Yakima	Feb 13, 1956	2	12,000	—	—	—	—	2	12,000
Palisades	Idaho	Snake	Feb 25, 1957	4	118,750	—	—	2	135,000	6	253,750
Roza	Washington	Yakima	Aug 31, 1958	1	12,950	—	—	—	—	1	12,950
Grand Coulee PG (a)	Washington	Columbia	Dec 30, 1974	6	300,000	—	—	—	—	6	300,000
Teton (b)	Idaho	Teton			—	3	30,000	—	—	3	30,000
Total Bureau of Reclamation				55	6,971,600	3	30,000	13	4,498,500	71	11,500,100
Bonneville	Ore-Wash	Columbia	Jun 6, 1938	18	1,086,600	3	7,600	—	—	21	1,094,200
Detroit	Oregon	North Santiam	Jul 1, 1953	2	100,000	—	—	—	—	2	100,000
McNary	Ore-Wash	Columbia	Nov 6, 1953	14	980,000	6	768,000 (c)	—	—	20	1,748,000
Big Cliff	Oregon	North Santiam	Jun 12, 1954	1	18,000	—	—	—	—	1	18,000
Lookout Point	Oregon	M Fk Willamette	Dec 16, 1954	3	120,000	—	—	—	—	3	120,000
Albeni Falls	Idaho	Pend Oreille	Mar 25, 1955	3	42,600	—	—	—	—	3	42,600
Dexter	Oregon	M Fk Willamette	May 9, 1955	1	15,000	—	—	—	—	1	15,000
Chief Joseph	Washington	Columbia	Aug 28, 1955	27	2,274,000	—	—	6	525,000	33	2,799,000
The Dalles	Ore-Wash	Columbia	May 13, 1957	22	1,807,000	—	—	—	—	22	1,807,000
Ice Harbor	Washington	Snake	Dec 18, 1961	6	602,880	—	—	—	—	6	602,880
Hills Creek	Oregon	M Fk Willamette	May 2, 1962	2	30,000	—	—	—	—	2	30,000
Cougar	Oregon	S Fk McKenzie	Feb 4, 1964	2	25,000	1	35,000	—	—	3	60,000
Green Peter	Oregon	Middle Santiam	Jun 9, 1967	2	80,000	—	—	—	—	2	80,000
John Day	Ore-Wash	Columbia	Jul 17, 1968	16	2,160,000	4	540,000	—	—	20	2,700,000
Foster	Oregon	South Santiam	Aug 22, 1968	2	20,000	—	—	—	—	2	20,000
Lower Monumental	Washington	Snake	May 28, 1969	6	810,000	—	—	—	—	6	810,000
Little Goose	Washington	Snake	May 19, 1970	6	810,000	—	—	—	—	6	810,000
Dworshak	Idaho	N Fk Clearwater	Sep 18, 1974	3	400,000	3	660,000	—	—	6	1,060,000
Lower Granite	Washington	Snake	Apr 15, 1975	6	810,000	—	—	—	—	6	810,000
Libby	Montana	Kootenai	Aug 29, 1975	5	525,000	—	—	3	315,000	8	840,000
Lost Creek	Oregon	Rogue	Dec 1, 1975	2	49,000	—	—	—	—	2	49,000
Strube	Oregon	S Fk McKenzie		—	—	1	4,600	—	—	1	4,600
Total Corps of Engineers				149	12,765,080	18	2,015,200	9	840,000	176	15,620,280
				204	19,736,680	21	2,045,200	22	5,338,500	247	27,120,380

(a) PG-Pump Generation
(b) Teton Dam ruptured June 5, 1976.
(c) McNary Second Powerhouse estimate includes 6 units of 124,500 kW each.

ADMINISTRATOR
James J. Jura
DEPUTY ADMINISTRATOR
John S. Robertson
EXECUTIVE ASSISTANT ADMINISTRATOR
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Planning — Paul H. Schrader

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- DIVISION OF PERSONNEL MANAGEMENT — **Dir., Mary L. Herring**
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- DIVISION OF POWER SUPPLY — **Dir., Robert D. Griffin**
- DIVISION OF FISH AND WILDLIFE — **Dir., John R. Palensky**
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- DIVISION OF NUCLEAR PROJECTS — **Dir., James R. Lewis**

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Deputy Area Manager
Frederic D. Rettenmund

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- OPERATIONS & MAINTENANCE — **Asst. Area Mgr., Earl C. Schoer**
- ENGINEERING — **Asst. Area Mgr., Paul E. Eichin**
- MANAGEMENT SERVICES — **Asst. Area Mgr., Randy L. Ridenhour**
- MONTANA DISTRICT — **Dist. Mgr., George E. Eskridge**
- WENATCHEE DISTRICT — **Dist. Mgr., Ronald R. Rodewald**

LOWER COLUMBIA AREA
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Deputy Area Manager
Thomas M. Noguchi
Area Liaison Officer
Wallace E. Helm

- POWER MANAGEMENT — **Asst. Area Mgr., Phillip A. Livesley**
- OPERATIONS & MAINTENANCE — **Asst. Area Mgr., Charles W. Spiker**
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- MANAGEMENT SERVICES — **Asst. Area Mgr., Glenn E. Ball, Jr.**
- EUGENE DISTRICT — **Dist. Mgr., Ladd Sutton**

PUGET SOUND AREA
Area Manager
Terence G. Esvelt
Deputy Area Manager
L. Kirk Hall

- POWER MANAGEMENT — **Asst. Area Mgr., George T. Reich**
- OPERATIONS & MAINTENANCE — **Asst. Area Mgr., Donald W. Spragg**
- ENGINEERING — **Asst. Area Mgr., Donald D. Rempe**
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SNAKE RIVER AREA
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- POWER MANAGEMENT — Asst. Area Mgr., (Vacant)
- OPERATIONS & MAINTENANCE — **Asst. Area Mgr., Truman W. Conn**
- ENGINEERING — **Asst. Area Mgr., Robert R. Goranson**
- MANAGEMENT SERVICES — **Asst. Area Mgr., Allan D. Polvi**
- IDAHO FALLS DISTRICT — **Dist. Mgr., Robert N. Laffel**
- BOISE DISTRICT — **Dist. Mgr., Thomas H. Blankenship**

Official Organization Chart
U.S. Department of Energy
Bonneville Power Administration
February, 1988

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503-230-3478
Toll-free lines:
Oregon — 800-452-8429
Other Western States — 800-547-6048

Lower Columbia Area
1500 Plaza Building, Suite 288
1500 N.E. Irving Street
P.O. Box 3621
Portland, OR 97208
(503) 230-3490

Eugene District Office
U.S. Federal Building
Room 206
211 E. 7th Street
Eugene, OR 97401
(503) 687-6952

Upper Columbia Area
U.S. Court House, Room 561
W. 920 Riverside Avenue
Spokane, WA 99201
(509) 456-2515

Wenatchee District
301 Yakima Street, Room 307
P.O. Box 741
Wenatchee, WA 98801
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(406) 329-3060

Puget Sound Area
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Seattle, WA 98109
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Snake River Area
W. 101 Poplar
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Idaho Falls District
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Idaho Falls, ID 83401
(208) 523-2706

Boise District
Federal Building, Room 376
550 W. Fort Street
Boise, ID 83724
(208) 334-9137

Washington, DC Office
Bonneville Power Administration
Forrestal Building
Room 8G033
Washington, DC 20585
(202) 586-5640

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3040 George Washington Way
P.O. Box 968
Richland, WA 99352
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BONNEVILLE POWER ADMINISTRATION: A Profile

Congress enacted the Bonneville Project Act in 1937, creating the Bonneville Power Administration to market and transmit the power produced by Bonneville Dam on the Columbia River. Since then, Congress has directed BPA to sell at wholesale the power produced at a total of 30 Federal dams in the Pacific Northwest, and to acquire non-Federal power and conservation resources sufficient to meet the growing needs of BPA's customer utilities.

To accomplish its mission, BPA has built about 14,500 circuit miles of high voltage transmission lines and 385 substations, and has acquired 1,850 megawatts of non-Federal generating capacity. The dams and electrical system are known as the Federal Columbia River Power System. This system serves a 300,000 square mile area with a population of over 8 million.

Bonneville sells wholesale power to public and private utilities, rural cooperatives, large industries, and several Federal agencies. BPA also sells or exchanges power with utilities in California over the Pacific Intertie.

BPA uses revenues from the sale of power and transmission services to recover its own expenses, to repay the Federal investment in the power system, and to repay the non-Federal investment in generating capability it has acquired. BPA has paid the U.S. Treasury more than $4 billion in interest and more than $1 billion in principal. It also has provided funds for operation and maintenance expenses at the Federal dams and at non-Federal power plants, for irrigation works, and for fish and wildlife projects.

This year BPA celebrated the 50th anniversary of its founding in 1937.

DOE/BP-946
FEBRUARY, 1988
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