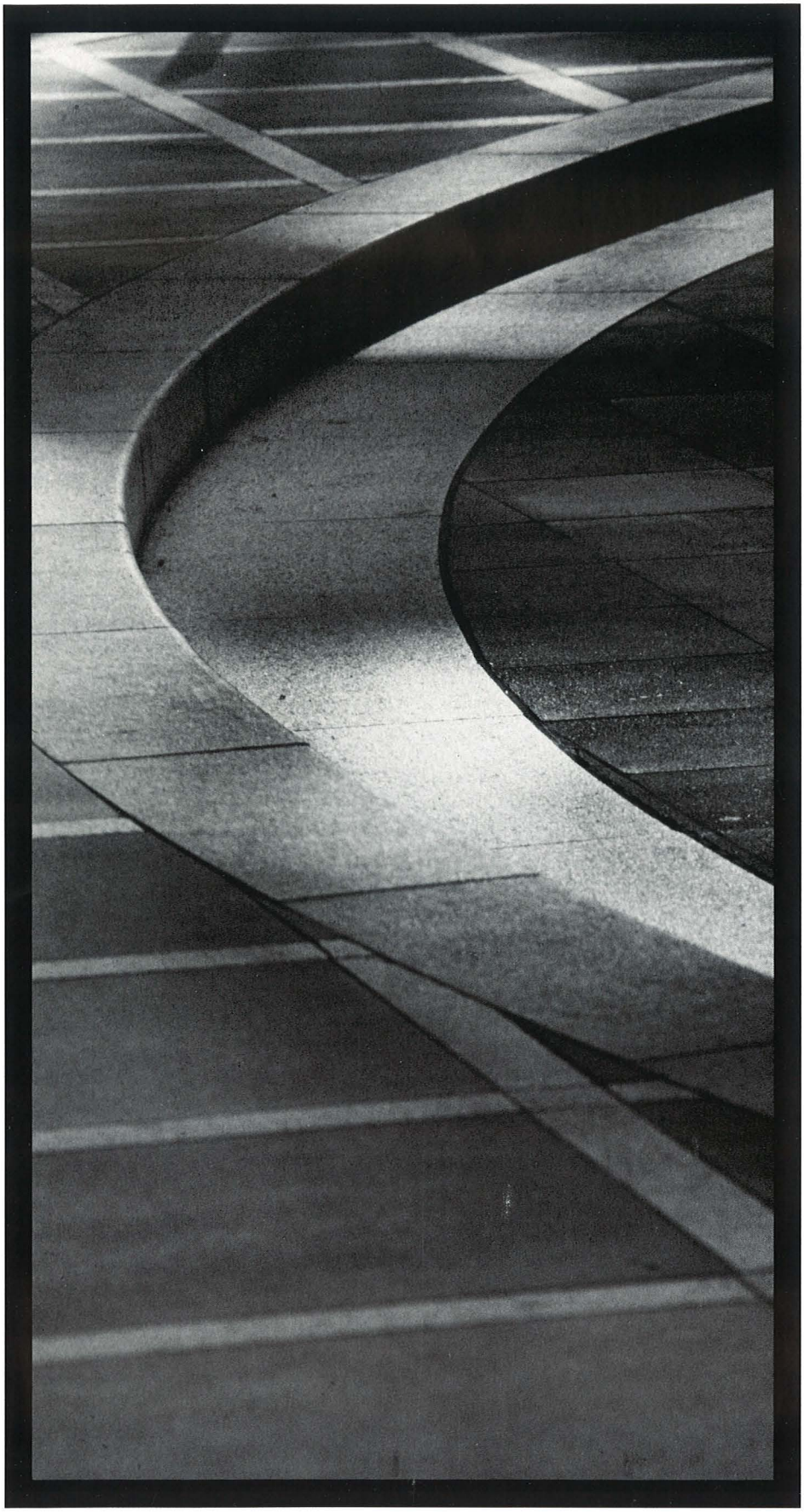


Bonneville Power Administration

1993 Annual Report

Reinventing Bonneville

Market-Driven

Customer-Focused

Cost-Conscious

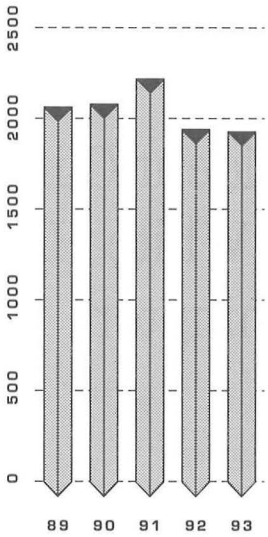
Results-Oriented

Financial Highlights

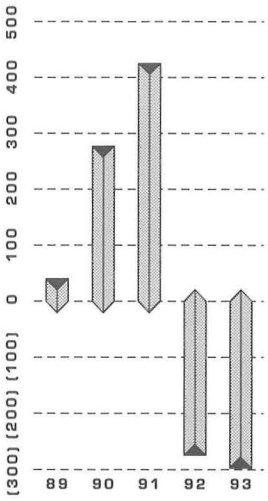
For the fiscal years ended September 30, 1993 and 1992
(Thousands of Dollars)

Operating Results:	1993	1992
Operating Revenues:		
Sales of electric power		
Sales within the Northwest region	$ 1,738,768	$ 1,731,209
Sales outside the Northwest region	75,262	60,025
Wheeling and other sales	128,429	137,569
Total operating revenues	1,942,459	1,928,803
Total operating expenses	1,879,694	1,888,896
Net operating revenues	62,765	39,907
Net interest expenses	359,725	313,500
Net expenses	$ (296,960)	$ (273,593)
End of Year:		
Total Assets:		
(Net of Accumulated Depreciation)	$16,274,391	$15,766,878
Total Capitalization and Liabilities:		
Accumulated net expenses	$ (409,636)	$ (112,676)
Federal appropriations	6,867,316	6,809,229
Long-term debt	2,331,873	1,905,573
Non-federal projects debt	7,144,736	6,875,786
Other	340,102	288,966
	$16,274,391	$15,766,878
Employees (Staff Years)	3,655	3,666

Total Operating Revenues
($ in millions)



Net Revenues (Expenses)
($ in millions)



To
President Clinton
The White House
Washington, D.C.

Dear Mr. President:

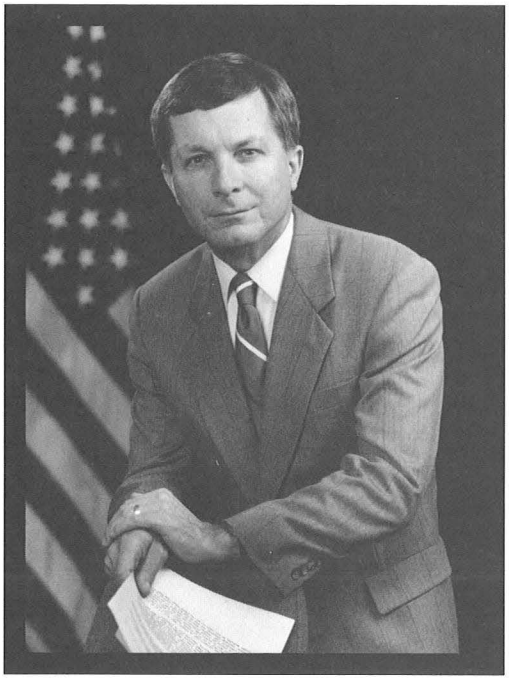
For the first time in a decade, Bonneville had to propose a double digit rate increase in 1993. Many of the causes were beyond our control, but self-examination and painful budget cuts put the focus squarely where it should be — on the changes needed for BPA to compete in an increasingly market-driven business environment.

As deregulation and change sweep the electricity industry, BPA has launched a major Competitiveness Project. It's clear that we can, and will, cut costs and make ourselves more efficient. We can shape our products and services to better reflect what customers want and are willing to pay for. And more than ever we will measure and reward output — results — more than process.

BPA today is the Northwest's low-cost supplier of electricity and transmission services. To stay that way, we must adopt a more business-like model. The move does not signal a rejection of our role as a federal agency. In fact, close attention to sound business principles is the only way to *strengthen* our commitment to fish and wildlife, environment, and other community values.

The time for dramatic change is now. Government at all levels is looking to deliver more for less, and the Vice President has named Bonneville as a government "reinvention laboratory." If — the sooner the better — BPA gains government corporation status, we can cut red tape and move faster, while maintaining our accountability to the Secretary of Energy, the Congress, the Northwest Power Planning Council, and our customers.

We have an opportunity here, as urgent as it is unique and exciting, to make BPA a more dynamic place. This annual report addresses how we're building that New BPA.



ADMINISTRATOR RANDY HARDY

Respectfully,

Randall W. Hardy
Administrator

The Financial Squeeze

Bonneville began the year with its tank less than full. Reservoir levels had not recovered from six years of low runoff, and the last two were the worst since 1944-45. Drought, along with more water than ever dedicated to fish, meant BPA had less power to sell. At the same time, a cold winter boosted demand. The Market drove BPA to spend $222 million on power purchases, when only $91 million was budgeted.

Due to energy shortages through much of the year, Bonneville withheld the top quartile of energy normally delivered to its Northwest aluminum company Customers. And the variable industrial rate, which is tied to worldwide aluminum prices, remained low all year. As a result, revenues from power sales to the aluminum industry fell to $351 million, an 11-year low.

BPA cut Costs in nearly every category of operations that it could control. The size of the cuts, however, was limited by the need to keep the power delivery system reliable. BPA also had to buy new resources and meet its legal obligations to protect fish and wildlife. Although BPA cut its direct expenditures on fish and wildlife programs, for example, changes in power operations to benefit wild fish led to sizeable lost revenues. Altogether — including direct program expenses, water budget and other special water releases related to the Endangered Species Act — Bonneville contributed over $300 million in 1993 to the regional fish and wildlife effort.

The final Result was that expenses exceeded revenues in 1993 by $297 million.

Despite the revenue shortfall, BPA made its annual payment to the U.S. Treasury in full — $730 million in 1993 — for the tenth year in a row. But financial reserves, which consist of cash and unused borrowing authority built up over prior years, have dwindled from $877 million at the end of fiscal year 1991 to $221 million at the end of 1993.

In January, BPA proposed a rate increase of 11.6 percent for 1994 and 1995. As the year progressed, water conditions and revenue forecasts worsened. Analysts began predicting a rate increase of more than 20 percent. Emergency cost-cutting lowered the final rate proposal to approximately 15 percent.

More than just a bump in the road, the short-term financial squeeze showed the urgent need for new direction. The danger is that if Bonneville cannot keep its rates competitive, it may begin to lose customers. Already, some are looking around to see if they can find power suppliers that are in the same price range as BPA and easier to work with.

To keep pace in this rapidly-changing environment, BPA must adopt a more Market-Driven and Customer-Focused model for doing business. On a scale where one is pure government and ten is pure business, BPA has been a two or a three. Our challenge is to become a six or a seven. The move does not signal a rejection of BPA's social and environmental responsibilities. But only by becoming more Cost-Conscious and Results-Oriented can Bonneville compete successfully and carry out those responsibilities in the new marketplace.

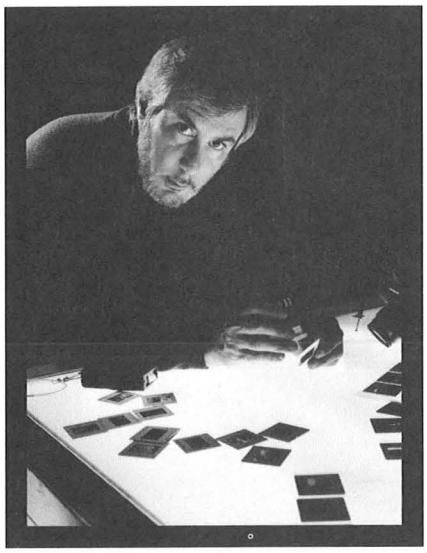
Market-Driven

Bonneville's competitiveness has a big impact on the region's economic prosperity and quality of life. We provide half the region's electric power and three-fourths of the high-voltage transmission. Over 1.2 million jobs depend on low-cost BPA power. We contribute millions of dollars every year to fish and wildlife, as well as for clean air, clean water, and hazardous waste cleanup.

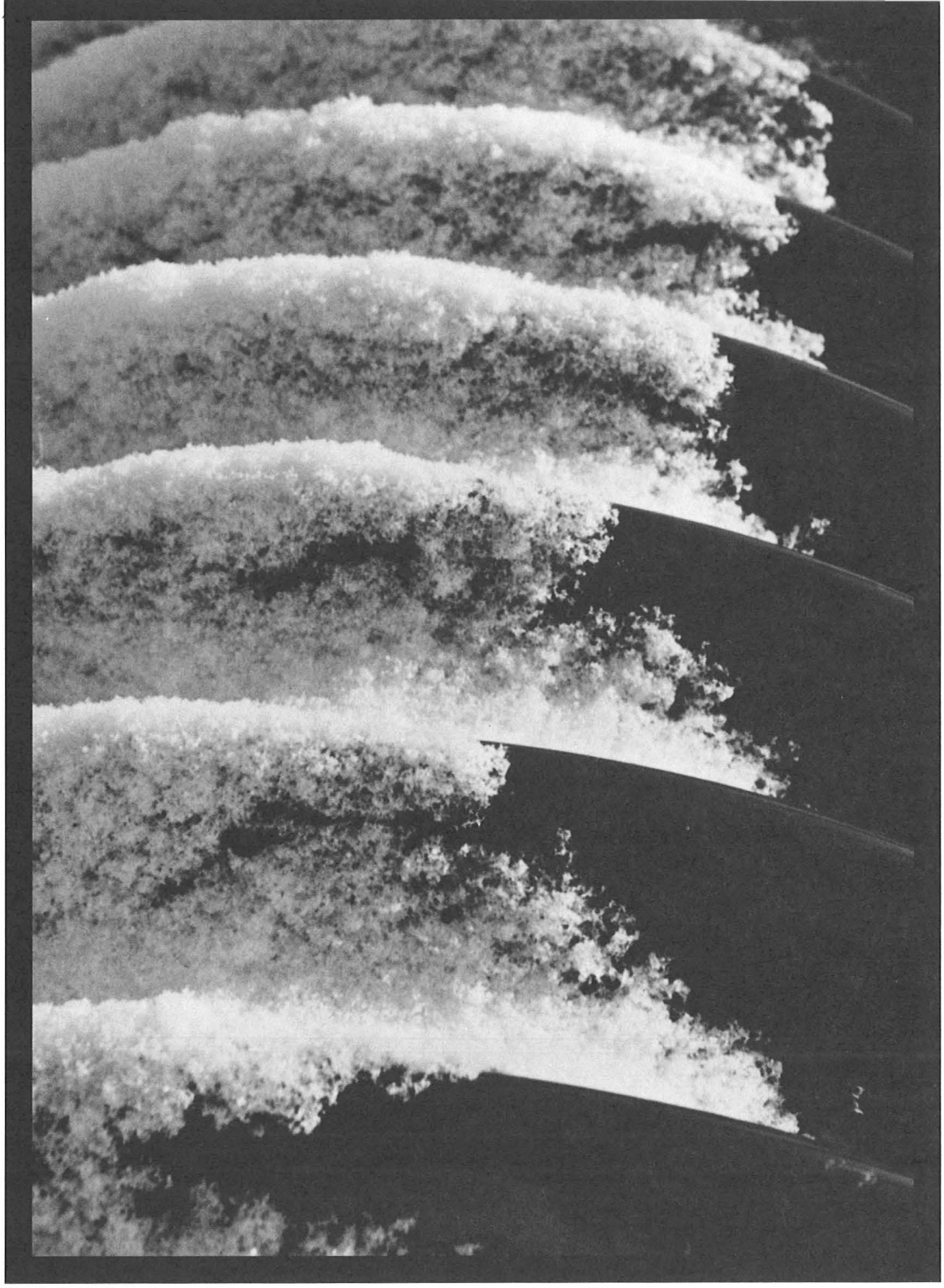
In the past, BPA offered power rates and delivery services nobody else could match. Now the gap has narrowed dramatically. Ten years ago, power from gas-fired turbines cost more than twice as much as BPA charged. Today those costs are only 25 percent higher. As the electricity industry now becomes less tightly regulated, we see cheaper power producers gaining greater access to transmission routes. Customers who could realistically be served only by BPA now have an expanding range of choices. BPA power is still the best buy, but we have been going slow in the fast lane.

The Bonneville Competitiveness Project, launched in February, aims to change that by seeking greater efficiencies in BPA processes and services. BPA drafted a set of specific business objectives and set out to develop a marketing plan aimed at providing top-value products, and getting solid return on investments.

A new business plan, to be in place by mid-1994, includes revision of 10-year strategic plans for each of BPA's key activities. The new business plan also aims to create the internal cultural changes that will turn BPA from a traditional process-oriented agency into an organization that responds quickly to market opportunities and delivers services that are specifically tailored to customers' needs.

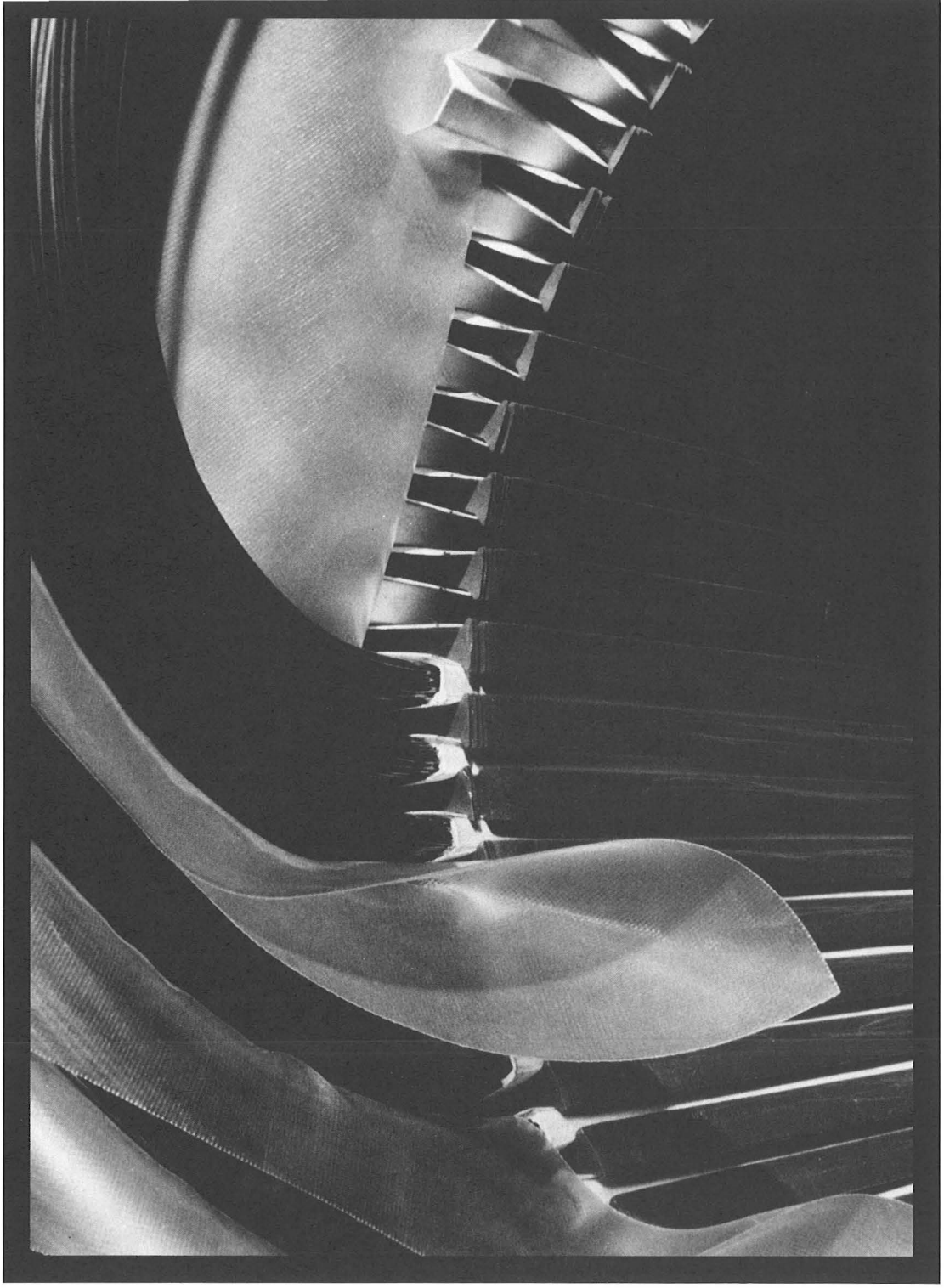


ROBERT HEIMS, BPA PHOTOGRAPHER, CAME UP WITH A WAY TO RECLAIM SILVER FROM THE FILM DEVELOPMENT PROCESS, EARNING BPA ABOUT $2,000 A YEAR ON THE SILVER MARKET.



"DON'T FIGHT FORCES; USE THEM."

R. BUCKMINSTER FULLER



"IF GOVERNMENT IS TO BECOME CUSTOMER-ORIENTED, THEN MANAGERS CLOSEST TO THE CITIZENS MUST BE EMPOWERED TO ACT QUICKLY."

SENATOR WILLIAM ROTH, JR.

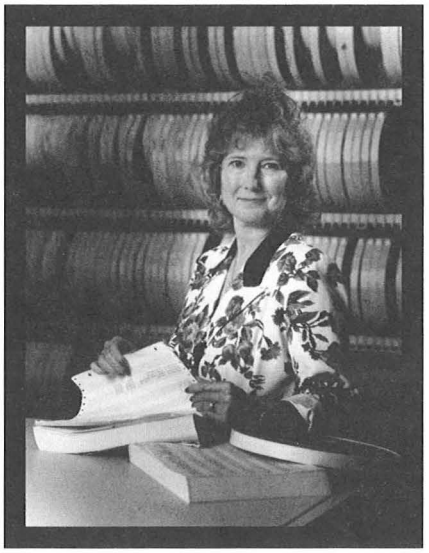
Customer-Focused

At the core of the new market-driven Bonneville is the need to keep customers satisfied. Their ability to compete is closely tied to BPA's competitiveness.

Beating the competition doesn't always mean big price breaks. A better mix of price and service levels can be just as important. Instead of offering one large package, take it or leave it, BPA seeks to unbundle its products and services. Possibilities include different combinations of transmission, load shaping, storage, and wheeling for different customers. BPA could market special products to discrete market segments, providing customized services at more competitive prices. At the same time, unbundling should let BPA collect appropriate revenues for products and services that no one else in the region can provide. Done right, unbundling can make both BPA and our customers more competitive.

Tiered rates may well play a role in sending the right price signals to customers. Mix-and-match rates — to reflect timing and size of loads — could promote more efficient resource acquisitions and create incentives for energy conservation. We're working on the idea, with customers and interested parties, to see if tiered rates make sense for the 1995-96 rate case and for long-term power sales contracts that are up for renewal in 2001.

A better understanding of our customers' world will help only when we change our own. A cultural audit completed in May concluded that BPA has some strengths that will help us meet the competition, but the audit also found serious weaknesses. An important part of the Competitiveness Project is the effort to promote teamwork, empower employees to take risks, and respond faster and better to customer needs.



BETTE BECK, IN POWER SALES, SUGGESTED COMPUTER PROGRAM CHANGES THAT SIMPLIFIED WHEELING REPORTS. SHE SAVED 20 HOURS A MONTH, AND GAVE CUSTOMERS MUCH CLEANER INFORMATION.

Cost-Conscious

Bonneville will have to be smaller and more efficient if it is to succeed in the new competitive market. At the start of the fiscal year, BPA had frozen staffing and trimmed spending levels for 1993 through 1995 by $173 million. To bring the 1994–95 rate proposal down to 15 percent, BPA in July slashed an additional $286 million from projected programs. Cuts included a 30 percent decrease in the budget for new generating resources. Fish and wildlife budgets were cut 15 percent without affecting programs related to the Endangered Species Act. Energy conservation programs lost 12 percent.

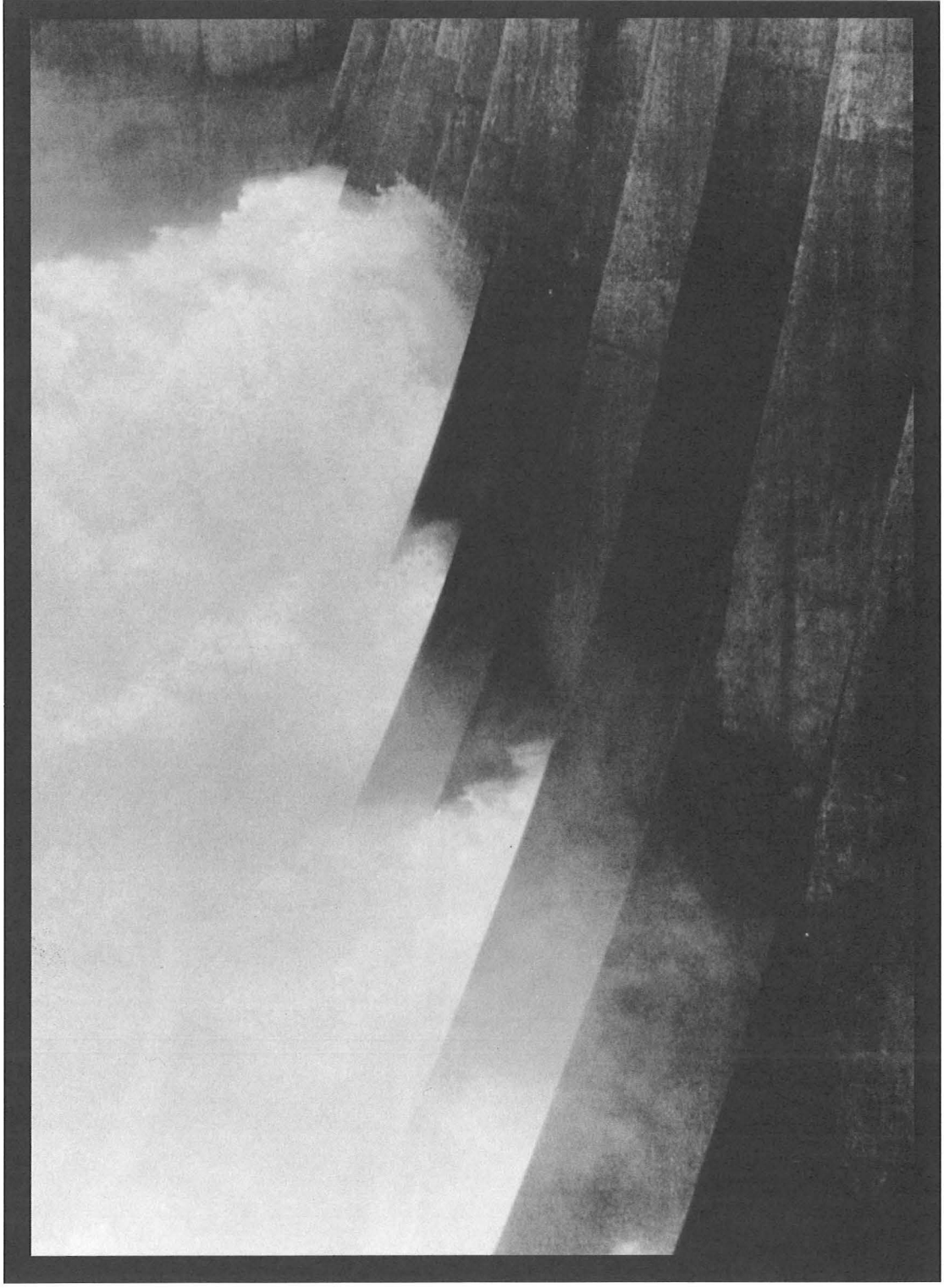
The short-term cost-cutting may open the door to significant long-term savings. But some of the reductions, such as cuts in transmission system maintenance and development, were simply deferrals.

So, with customers looking over our shoulder, we conducted an internal review of everything BPA does, to see if we can do it with fewer staff and at lower cost. Even before the results are in, the BPA Administrator announced in September he will reduce the Bonneville work force by 600 to 800 within the next four years. BPA has asked the Secretary of Energy for relief from procedural barriers — rules on hiring and firing, procurement, and reporting — that hamper change.

All programs are under review in light of the new realities. In energy conservation, for example, BPA is working with customers to cut future conservation costs 15 to 20 percent while achieving the same energy savings targets.

Long-range savings will accrue from steps taken this year to make the BPA transmission system more efficient. This year the Third AC Intertie between Oregon and California was energized, facilitating energy exchanges and opening new markets. At Slatt Substation, BPA installed advanced power-switching equipment that — with wider use in the future — promises to save $150 million over the next 20 years.

JANE O'LEARY, IN MECHANICAL ENGINEERING, FOUND A BETTER WAY TO ACCOUNT FOR ALL BPA-PURCHASED FUEL FOR VEHICLES AND WORK EQUIPMENT. BY USING KEYCARD INFORMATION, SHE SAVED TIME AND LABOR WORTH OVER $60,000 A YEAR.



"WE NEED A FEDERAL GOVERNMENT THAT DELIVERS MORE FOR LESS." VICE PRESIDENT AL GORE

"IN SHORT, IT'S TIME GOVERNMENT ADJUSTED TO THE REAL WORLD, TIGHTENED ITS BELT — AND PUT A PREMIUM ON SPEED AND FUNCTION AND SERVICE, NOT RULES AND REGULATIONS." PRESIDENT BILL CLINTON

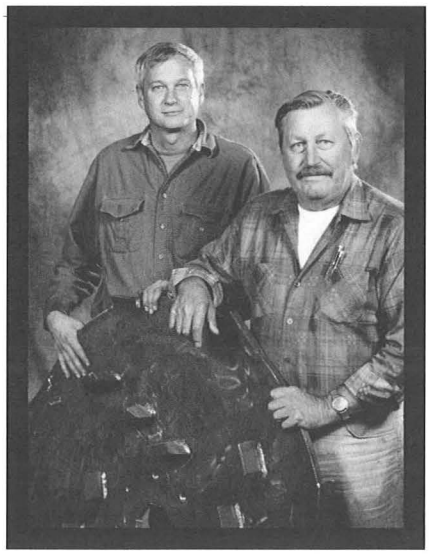
Results-Oriented

With government, what you get sometimes bears little resemblance to what you pay for. It's been too easy to view BPA as the deep pocket in a big entitlements game. Now the game has changed. Instead of pushing programs and process, BPA will be more attuned to costs and values. Results, in this New BPA, are what matter.

In buying new resources, the test is whether or not BPA can meet its customers' growing power needs cheaper and better than independent power producers can. We're doing it now. Through a competitive bid selection, BPA in 1993 moved to add the 240-megawatt Tenaska gas-fired turbine to its power base at a very competitive cost. On the energy conservation side, we have completed most of the pilot projects and demonstrations that are best run centrally. Now we can tailor proven programs to fit customers' local needs. And we want to use market mechanisms, as much as possible, to capture energy conservation potential.

In funding fish and wildlife programs, BPA has been reporting money spent and revenues forgone — $1.4 billion since 1980. The more business-like approach is to focus on results. BPA is examining each and every program to make sure the ratepayers' investments are actually helping fish and wildlife. Programs that can't be shown to be working will be dropped.

Since we can't talk results without measurement, BPA has drafted a set of Performance Measures related to the agency's mission statement and business goals. From power supply to environment, BPA is developing tools to gauge its progress in the new marketplace.



Monty Malcolm and Ray Gonzales designed and built a new brush-cutter blade that's cheaper, lasts longer, and works better. The machine can clear seven acres a day, cutting costs in half.

"We will now discuss in a little more detail the struggle for existence."

CHARLES DARWIN

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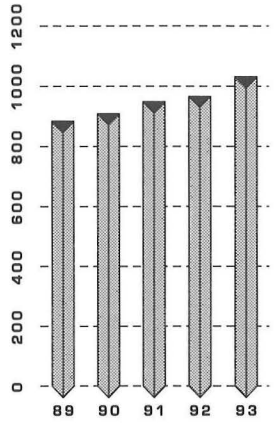
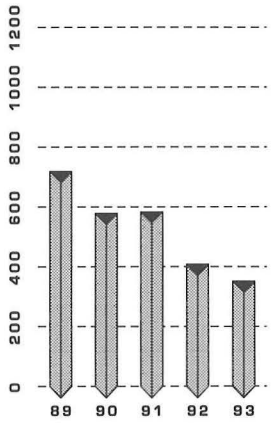
Management's Discussion & Analysis

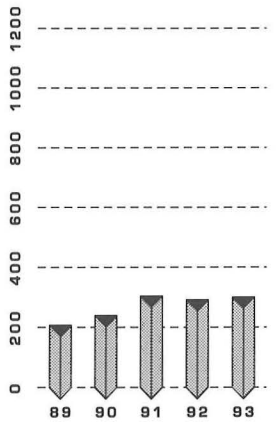
Public-Owned Utilities
($ in millions)



Aluminum Industry
($ in millions)



Investor-Owned Utilities
($ in millions)



Results of Operations

Total Federal Columbia River Power System expenses exceeded revenues by $297 million in 1993. Low streamflows, a depressed aluminum market, and special water releases devoted to wild fish were major factors. For the second year in a row, revenues failed to cover expenses. BPA's 1992 deficit was $274 million. In 1991, BPA had a surplus of $425 million, and that was the fourth straight year of positive net revenues.

Revenues

Total FCRPS operating revenues were $1,942 million — an increase of only $14 million, or less than 1 percent, from 1992. And 1992 was an off year, down 13 percent from the year before.

This year and last was the driest two-year period in the last 48 years. Reservoirs in the Columbia River basin were down to start 1993, so BPA had less power to sell. And as a result of the Endangered Species Act, much of the good spring rainfall that might have been stored for fall was released early to provide faster flows for fish. The surplus power generated by those flows sold at prices lower than when BPA had to buy power back, in fall and winter. A cold winter boosted sales of power to Northwest public and private utilities, but gains in that area were all but canceled by the continuing decline in revenues from aluminum companies. Revenue trends vary by customer class, as indicated in the accompanying charts and in the following descriptions.

Northwest Public-Owned Utilities

Public utilities — BPA's largest customer group — account for about half of total BPA revenues. They include 40 municipalities, 28 public utility districts, and 56 cooperatives.

Revenues from power sales to public utilities rose $65 million, or 7 percent, to $1,031 million in 1993. From 1991 to 1992 they were up only 2 percent. Megawatthour sales of energy to public utilities have increased 17 percent over the last 5 years. Steady load growth in a slowly expanding Northwest economy is the main factor. This year a colder-than-average winter boosted demand for BPA power. Also, because of dry weather, public utilities that generate some of their own hydropower were not able to generate as much in 1993. They bought more from BPA.

Aluminum Industry

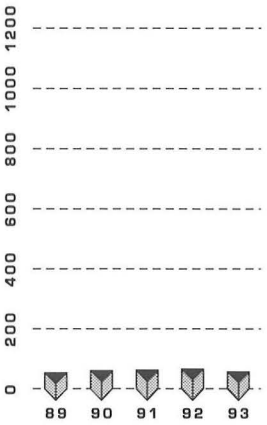
Revenues from aluminum companies were down $57 million, or 14 percent, to $351 million in 1993. And 1992 was a bad year, when BPA earned $175 million less from aluminum power sales than in 1991. Normally the eight Northwest aluminum smelting companies that buy power directly from BPA account for over one-fourth of BPA's total revenues. In 1993 it was less than one-fifth.

The drop in revenues is due mainly to slumping aluminum prices. In 1986 BPA established a variable rate to help stabilize power sales to Northwest

aluminum companies. When the global aluminum market is soft, they can stay in production by paying less for power. A worldwide recession has lowered the demand for aluminum, and former republics of the Soviet Union have exported large amounts of aluminum to earn hard currencies. With demand low, and supply high, the price of aluminum fell from $1.06 a pound in 1988 to an average 66 cents a pound in 1991, 57 cents in 1992, and 55 cents this year. As a result, BPA's variable rate has stayed at the minimum level — 1.79 cents per kilowatt-hour in 1993, and 1.72 cents/kWh for 1992. In 1991, the variable rate averaged 2.25 cents/kWh.

The low variable rates were not the only reason BPA earned less income. BPA also sold less power to aluminum companies. Except for two weeks in January and during fish migration in spring and early summer, BPA exercised its contractual right to restrict 25 percent of the power it normally sells to aluminum smelters. Because of drought conditions and high demand for power, BPA needed that energy to serve other firm loads. At the end of the fiscal year, nine of the region's 10 aluminum smelters were operating, but only three were running at full production.

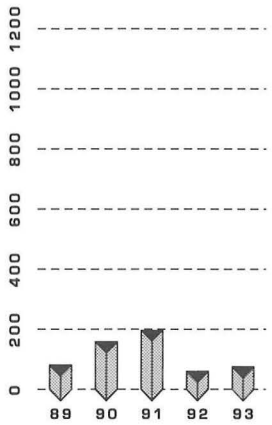
Other Northwest Power Sales ($ in millions)



Northwest Investor-Owned Utilities

Revenues from Northwest IOU's were up $8 million to $300 million, a 3 percent rise in 1993, after a 4 percent drop in 1992. Seven of nine Northwest investor-owned utilities buy power from BPA to supplement their own resources. The cold winter raised demand for power in 1993, but BPA had little nonfirm energy available for spot-market sales.

Sales Outside the Northwest ($ in millions)



Other Northwest Power Sales

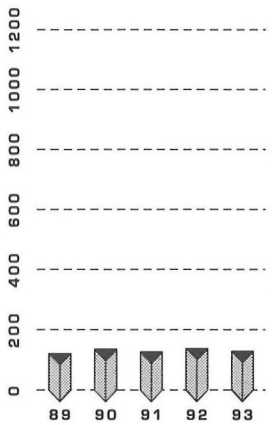
BPA sells directly to seven federal agencies and eight non-aluminum industries. Revenues from this group dropped in 1993 from $66 million to $56 million, but had risen $4 million the year before. The decrease in 1993 was primarily due to a reduction in energy sales to the non-aluminum industries.

Sales Outside the Northwest

For the second straight year, BPA had very little excess energy to deliver over the federal intertie to California. The volume of export sales fell from 12.6 million megawatt-hours in 1991 to 2.1 million mWh in 1992. This year it was 4.9 million mWh. Revenues from export power sales were $75 million in 1993; $60 million in 1992. In neither year did BPA come close to matching its $196 million in export power sales during 1991, the last normal — not abundant — water year.

Customers outside the Northwest include 19 public utilities, seven investor-owned utilities, and one federal agency. By law, BPA serves Northwest customers first. Low streamflows and high regional demand for power limited export sales. The only energy BPA sold outside the region in 1993 was generated by passing water through dams to speed the out-migration of fish in spring and early summer.

Wheeling & Other Sales ($ in millions)



Wheeling and Other Sales

Wheeling and other revenues in 1993 were $128 million. Revenues had increased from $126 million in 1991 to $138 million in 1992, due partially to a rate increase that took effect in 1992

Expenses

Total FCRPS operating and net interest expenses rose $37 million to $2,239 million in 1993, up less than 2 percent. In 1992, overall expenses had risen $407 million.

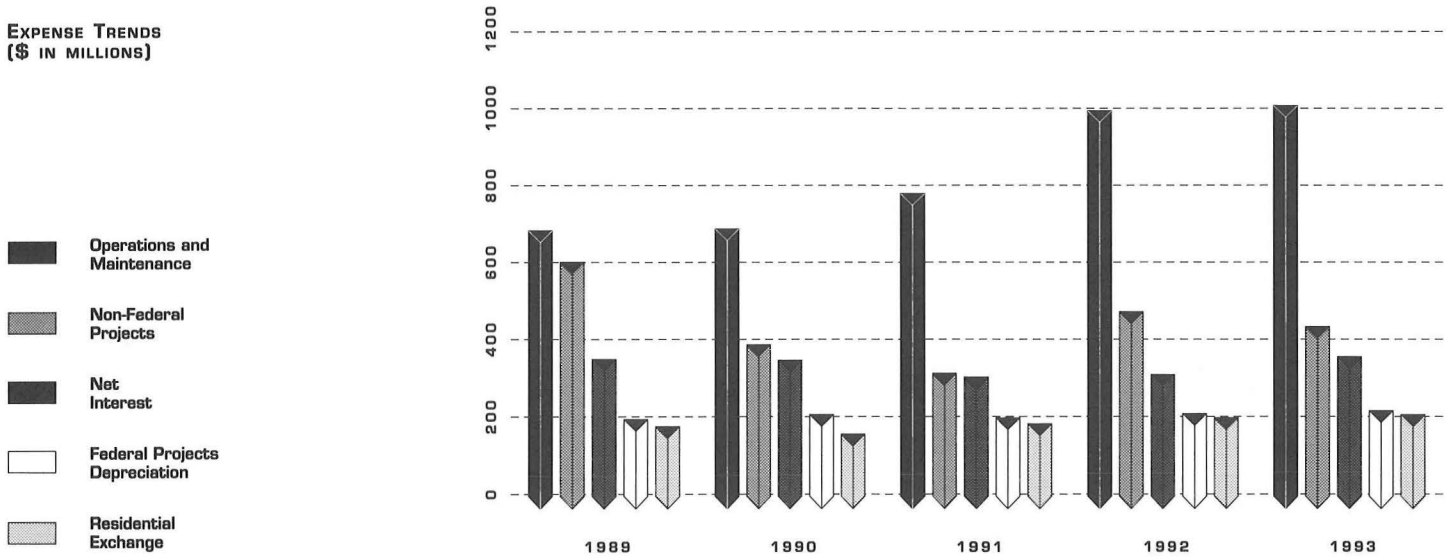
As in 1992, weather was the chief problem this year. To meet its firm power commitments and to provide adequate flows for fish in a year of low streamflows, BPA had to buy $222 million worth of power in 1993. Power purchases were over 50 percent higher than in 1992, and more than seven times what BPA spent on power purchased in 1991.

Another major factor was an increase in net interest expenses. With its cash reserve balance falling, BPA had less cash on deposit to earn interest on. And new borrowings increased the amount of annual interest BPA paid out. In 1992, net interest expense on federal investments increased $6 million. This year it was up $46 million, or 15 percent, to $360 million.

To offset these factors, BPA controlled expenditures for several programs in 1993. Energy conservation expenses dropped by $10 million. BPA's transmission system maintenance expenses were $22 million lower than in 1992, and transmission system development expenses declined by $5 million. Direct expenses for fish and wildlife programs decreased by $27 million, to $39 million, in areas that do not threaten wild fish runs.

Operating expenses for the Washington Public Power Supply System plants decreased $48 million, from $289 million in 1992 to $241 million in 1993, partly related to a property tax settlement on WNP No. 3. At WNP No. 2, BPA spent $30 million less than the year before primarily because the Supply System bought more than a year's worth of nuclear fuel in 1992. Expenses at Trojan, which closed permanently in January, fell from $64 million in 1992 to $45 million in 1993.

Debt service on non-federal projects decreased by $38 million, to $438 million, after a $159 million increase in 1992. Due to the structure of advanced refundings from refinancing Supply System bonds, BPA saved much more in 1991 than in 1992. The $438 million paid in 1993 is well below pre-refinancing levels of expenses in this category, which were over $600 million in years prior to 1990.



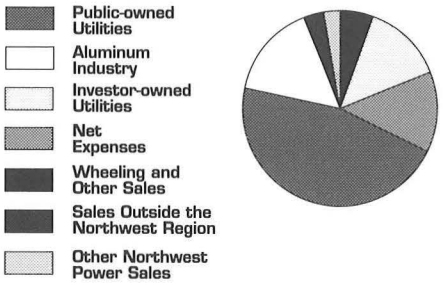
The residential energy exchange cost BPA $186 million in 1991, $202 million in 1992, and $210 million in 1993. The increase was due to higher average system costs of participating utilities.

Depreciation on federal projects rose $11 million in 1992 and $8 million in 1993 to $220 million.

Financial Condition

FCRPS operating results in 1992 and 1993 depleted most of BPA's financial reserves — cash and deferred borrowing authority built up during the four prior years. The agency's reserves had reached $877 million at the end of 1991. The reserve balance stands at $221 million at the end of 1993.

1993 Sources of Revenue & Net Expenses



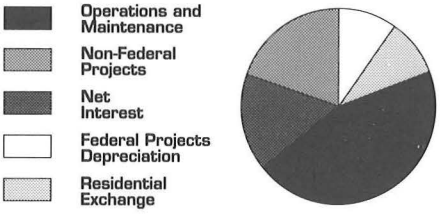
Rates

BPA had raised its wholesale power rates an average 1.7 percent to start the 1992 fiscal year. It was the first increase in BPA rates since 1987. The modest rate increase for 1992 and 1993 was expected to yield annual net revenues of $80 million. But the weather, the economy, power system adjustments for fish, low aluminum prices, and outages at nuclear plants combined to depress revenues. At the same time, BPA experienced new costs related to wild fish and the Endangered Species Act. Annual net revenues for the two years averaged a negative $285 million.

BPA entered 1993 knowing it would need a double-digit increase for the next rate period, 1994-95, to assure its Treasury repayments and to cover the costs of preserving endangered salmon runs, acquiring new energy resources, and upgrading the federal transmission system. Early in the fiscal year, BPA and its customers were trying to settle on an average rate increase of 11.6 percent. As water conditions worsened and revenue forecasts plummeted, possible rate increases as high as 24 percent came under discussion. By cutting programs, adjusting long-term goals for building up financial reserves, and adopting the new model for a smaller and less costly organization, BPA brought the proposed rate increase down to 15.7 percent for preference customers. The overall priority firm rate increase was 14.6 percent.

In September the Federal Energy Regulatory Commission approved BPA's proposed higher rates on an interim basis. The new rates took effect Oct. 1, 1993, and are expected to apply for two years, until Sept. 30, 1995.

1993 Disposition of Revenue



Financing

BPA's current long-term policy is to finance its capital investments by borrowing. To finance capital programs such as transmission system development, conservation, and fish and wildlife programs, BPA exercises its authority to borrow from the U.S. Treasury. At the end of fiscal year 1993, BPA's debt in this category totaled $2.3 billion. BPA's maximum borrowing authority is $3.75 billion. Using current capital program estimates, this limit is projected to be reached by fiscal year 1999.

The Corps of Engineers and Bureau of Reclamation use federal appropriations for new construction and replacement investments at the dams they operate. These appropriations, like BPA's borrowings, are to be repaid to the Treasury by BPA. The total remaining to be paid at the end of the year was $6.9 billion.

BPA owes another $7.1 billion to non-federal sources for the financing of three Washington Public Power Supply System nuclear projects, the FCRPS share of the Trojan nuclear power plant, and several smaller generation and conservation investments. BPA backs bonds issued by others in the capital markets to finance these projects.

Whenever appropriate, BPA takes advantage of low interest rates to refinance its debt. This year over $2.5 billion of Supply System bonds were refinanced. Bonneville also has been refinancing its debt to the U.S. Treasury. In 1992 BPA refinanced $375 million worth of Treasury bonds. None was refinanced in 1993, but the agency always plans its borrowing to keep interest rates as low as possible. The table on page 32 details the terms and amounts of BPA's long-term debt.

Looking Forward

Several important contracts, which together form the foundation for the Northwest hydroelectric system, will expire around the year 2000. Much of BPA's attention over the next few years will be devoted to renewing or replacing those contracts. Included is the Pacific Northwest Coordination Agreement, which is the basis for the inter-utility and interagency coordination of the Columbia River power system. BPA's power sales contracts with its utility and industrial customers are up for renegotiation. And agreement must be reached between the U.S. and Canada under the Columbia River Treaty on how to return the Canadian Entitlement to Downstream Benefits, which in 1964 was sold to U.S. utilities for 30 years. The outcome of talks already underway will have a big impact on BPA costs, revenues, and power supply for years to come.

Other major influences, not yet quantifiable, will come from BPA's current effort to re-establish itself as a more businesslike and customer-oriented organization. Changes such as unbundling services and products go to the very core of how BPA conducts power marketing. Tiered rates, if BPA adopts them, will alter the way we operate on the demand side in energy conservation. The impacts of these possible changes are under study with BPA customers and other parties, and will be folded into the new BPA Business Plan that is expected to be ready by mid-1994.

10-Year Financial Plan

In January 1993, after thorough discussions with customers and the public, BPA issued a 10-year financial plan that addresses risk mitigation and capital funding options.

Risk mitigation means finding the tools to cover financial uncertainties such as the drought conditions and depressed aluminum market BPA faced in the current rate period. The plan calls for power rates high enough to assure at least a 95 percent probability that BPA will meet its annual Treasury payments in full and on time. Program deferrals and a one-year rate adjustment would be used, if necessary, to respond to poor results in the first year of a two-year rate period. As an interim step to introducing the long-term policy, BPA adopted in its 1993 rate proposal an 85 percent probability of meeting Treasury payments on time for 1994 and 1995. The long-term financial goal is still the 95 percent, but it would have put too much pressure on rates to reach that level of certainty in a single step.

The 10-year financial plan also examines ways to reduce BPA's traditional reliance on borrowing from the Treasury. It identifies alternative sources of capital, and it compares the availability, reliability, and cost of various funding sources. The plan proposed that tax-exempt third-party sources be used as often as possible to finance BPA capital investments.

Environment

BPA is committed to the axiom that wise environmental investments make good business sense. BPA understands that making environmental investments beyond those required by law can reduce our long-term cost, reduce risk and uncertainty, increase our efficiency, and improve our future ability to demonstrate compliance. To this end we are improving our measurement of and our internal accountability for environmental impacts and costs.

In order to be both a good business partner and an effective decision maker, BPA must accomplish two environmental objectives. First, BPA must meet the intent of the National Environmental Policy Act by fully integrating environmental factors into the decision-making process. Just as we consider the financial and engineering implications, we must consider up front how our decisions affect the environment. Second, BPA must streamline the procedures the agency follows to comply with NEPA. In order to be competitive, we must conduct our environmental reviews faster and smarter.

A big part of any electric utility's environmental investment is to reduce hazardous wastes, clean up residues from past practices, and prevent future contamination at transmission and other sites. BPA cleanup activities are well under way. Among them are those at our Ross Complex, in Vancouver, Washington. After $7 million of detailed site characterization, no surface or groundwater remediation will be required. BPA expects it will have to spend less than $2 million over the next two to three years to clean up the isolated soil contamination at the Ross Complex.

The EPA has named BPA a Potentially Responsible Party at five Northwest sites not owned by BPA. These are mostly equipment scrapyards and waste-disposal sites. To date, BPA's share of the allocated responsibility at these sites has been low. BPA may eventually be identified as a PRP at up to 20 such sites, but so far there are no associated costs that would be material to the FCRPS financial statements.

Washington Public Power Supply System

Throughout the year Bonneville took advantage of low interest rates to refinance more Supply System bonds, saving about $29 million from 1993 through 1995. BPA backs the bonds issued by the Supply System to finance three nuclear power projects. Construction on WNP No. 1 and WNP No. 3 was suspended at BPA's request in the early 1980s. WNP No. 2 was completed and began operating in 1984.

In April, BPA and the Supply System agreed to examine legal and financial implications of terminating the two partially-built plants. The plants had been mothballed because they were thought to be possible cost-effective resources for the future. Now it appears certain that gas-fired and other lower-cost generating resources, along with aggressive conservation programs, will meet BPA's projected

resource needs over the next 20 years. The Supply System Board of Directors is expected to decide in early 1994 whether or not to terminate the two plants.

In October 1993, public utility districts in Clark and Mason counties, Washington, filed suit to hasten the termination of WNP No. 1 and WNP No. 3. The suit named as defendents BPA, the Supply System, and utilities that signed net-billing agreements to finance the plants. See Note 7, Litigation, on page 38 regarding other litigation related to the Supply System.

Energy Resources

Growth in demand and changes in river operations have combined to end the power surplus in the Pacific Northwest. Now the demand for BPA energy exceeds supply by about 225 average megawatts per year. Because BPA is changing its business strategy to better compete in a changing utility market, there is new uncertainty about how much power BPA will need in the future. The 1992 Resource Program outlined a flexible and environmentally sound plan for responding to a range of possible load-growth rates. For the past 10 years, Bonneville has relied primarily on its conservation programs to meet growth in power needs. Conservation is the first priority resource because it can be brought on in small, manageable increments, and is generally less expensive than other energy resources.

We intend to maintain the options for new power resources in the Resource Contingency Program, but BPA decided to terminate several billing credits proposals it was negotiating with customers in 1993. If tiered rates go into effect for the 1995-96 rate period, or if BPA products and services are unbundled and sold in different ways, we may need less power than the 1992 Resource Program has been forecasting. The prudent course right now is to go slowly on the acquisition of new resources until we have a better idea how much will be needed.

On Nov. 9, 1992, Trojan nuclear power plant was shut down due to cracks in the tubes of the steam generators. Two months later, the Portland General Electric Co. board of directors decided to retire the plant rather than invest in replacement of the steam generation system. The FCRPS lost its 30 percent share of Trojan power, which contributed about 3 percent of total FCRPS capacity. BPA made short-term power purchases to replace this resource in 1993.

Transmission

In transmission system development, BPA has deferred some of its capital investments in order to ease the impact of higher rates for the 1994-95 rate period. The deferral of a major transmission line project from the Puget Sound area to Eastern Washington and a large series capacitor project was made possible because of reduced load forecasts, an increase in proposed new generation, the installation of voltage support equipment and the re-configuration of the main grid system. Capital investments are budgeted to drop from $192 million in 1993 to $134 million in 1994 and $132 million in 1995.

A similar pattern holds for transmission system replacements. Emphasis will be on replacing obsolete breakers and control equipment, replacing PCB-contaminated capacitors, and increasing the use of diagnostic testing to avoid catastrophic failure in high voltage equipment. BPA's budget for transmission system replacements was $98 million in 1993. It drops to $77 million in 1994 and rebounds to $92 million for 1995.

Fish and Wildlife

BPA, since its founding, has actively supported regional efforts to protect fish and wildlife that were affected by federal hydro projects. Since 1980 and passage of the Northwest Power Act, BPA ratepayers have contributed over $1.4 billion to the Northwest Power Planning Council's fish and wildlife program. The program aims to build up salmon and steelhead runs in the Columbia River basin by such measures as restoring fish habitat, improving fish passage at dams, and helping fish escape disease and predation. In 1992 the National Marine Fisheries Service listed runs of Snake River sockeye and chinook salmon under the Endangered Species Act. As a result, goals established by the Council took on a new urgency and a new focus on wild fish. One of the most pressing environmental challenges facing BPA and the Pacific Northwest today is the serious decline in wild salmon stocks.

While awaiting a formal recovery plan from the NMFS, BPA — along with the U.S. Army Corps of Engineers and the Bureau of Reclamation — conducted a biological assessment to make sure its water management actions for 1993 would cause "no jeopardy" to the listed salmon stocks.

Just after the close of the fiscal year, in October 1993, the NMFS recovery team presented its draft plan to recover Snake River sockeye and chinook listed under the ESA. Bonneville will now review the plan to see that it is based on good science, that it promises to produce tangible results, and that it includes ongoing evaluation so that measures that are not working can be dropped. The recovery team's draft plan builds substantially on the foundation laid by the Council in its salmon strategy. BPA is committed to full implementation of the Council's program. We have to put high priority on those measures that show the greatest promise of paying back the ratepayers' investment to fish.

In 1993 BPA agreed to spend $45.5 million over the next five years to fund six wildlife projects in the state of Washington. The projects total more than 38,000 acres of habitat, including 5,000 acres for big game and upland bird habitat on the north side of Lake Roosevelt and 4,870 acres of riparian wetlands near the Yakima Indian Reservation. The idea is to establish trust funds for wildlife. To meet its wildlife mitigation responsibilities, BPA puts up the money. Wildlife experts — tribes, state and federal agencies, and others — do the work.

The 1994 and 1995 budget levels for fish and wildlife (expenses plus capital) are $91.5 million and $87.9 million respectively, after the 1993 level of $82.5 million. Funding priority goes to salmon and steelhead runs, particularly wild stocks originating above Bonneville Dam and those listed under the Endangered Species Act.

Balance Sheets

September 30, 1993 and 1992
(Thousands of Dollars)

Assets	1993	1992
Utility Plant (Notes 1 and 3):		
Completed plant	$ 9,739,877	$ 9,327,346
Accumulated depreciation	(2,620,473)	(2,489,880)
	7,119,404	6,837,466
Construction work in progress	536,072	548,538
Net utility plant	7,655,476	7,386,004
Non-Federal Projects (Notes 1 and 4):		
WNP No. 1	2,377,432	2,305,540
WNP No. 2	2,474,435	2,394,539
WNP No. 3	1,948,514	1,843,877
Trojan	107,570	111,625
Conservation	10,475	11,630
Idaho Falls	36,845	37,480
Cowlitz Falls	189,465	171,095
Total non-federal projects	7,144,736	6,875,786
Trojan Decommissioning Cost (Note 4)	108,899	—
Conservation, net of accumulated amortization of $309,509 in 1993 and $265,499 in 1992 (Notes 1 and 2)	630,966	577,066
Fish and Wildlife, net of accumulated amortization of $20,433 in 1993 and $14,905 in 1992 (Notes 1 and 2)	72,567	60,757
Current Assets:		
Cash	246,186	485,881
Accounts receivable	25,875	48,011
Accrued unbilled revenues	75,077	68,758
Materials and supplies, at average cost	75,946	70,387
Prepaid expenses	193,057	139,058
Total current assets	616,141	812,095
Other Assets	45,606	55,170
	$16,274,391	$15,766,878

Capitalization and Liabilities	1993	1992
Accumulated Net Expenses (Note 1)	$ (409,636)	$ (112,676)
Federal Appropriations, net of current portion (Note 3)	6,857,240	6,791,444
Long-Term Debt (Note 2)	2,331,873	1,905,573
Non-Federal Projects Debt, net of current portion (Notes 1 and 4)	7,049,796	6,795,991
Trojan Decommissioning Reserve, net of current portion (Note 4)	106,872	—
Total capitalization and long-term liabilities	15,936,145	15,380,332
Commitments and Contingencies (Notes 6 and 7)		
Current Liabilities:		
Current portion of federal appropriations	10,076	17,785
Current portion of non-federal projects debt	94,940	79,795
Current portion of Trojan decommissioning reserve	2,027	—
Accounts payable	188,963	247,472
Employees' accrued leave	14,361	15,438
Total current liabilities	310,367	360,490
Deferred Credits	27,879	26,056
	$16,274,391	$15,766,878

The accompanying notes are an integral part of these statements.

Statements of Revenues & Expenses

For the years ended September 30, 1993, 1992 and 1991
(Thousands of Dollars)

	1993	1992	1991
Operating Revenues:			
Sales of electric power-			
Sales within the Northwest region-			
Public-owned utilities	$ 1,031,186	$ 965,849	$ 948,747
Aluminum industry	351,178	408,024	582,847
Investor-owned utilities	299,953	291,663	303,650
Other power sales	56,451	65,673	62,317
Sales outside the Northwest region	75,262	60,025	196,225
	1,814,030	1,791,234	2,093,786
Wheeling and other sales	128,429	137,569	126,445
Total operating revenues	1,942,459	1,928,803	2,220,231
Operating Expenses:			
Operations and maintenance	1,012,082	998,541	783,247
Non-federal projects (Note 4)	437,545	476,030	316,906
Federal projects depreciation	220,073	212,349	201,778
Residential exchange (Note 5)	209,994	201,976	186,216
Total operating expenses	1,879,694	1,888,896	1,488,147
Net operating revenues	62,765	39,907	732,084
Interest Expense:			
Interest on federal investment-			
Appropriated funds	240,426	231,579	228,196
Long-term debt	159,027	111,783	101,425
Allowance for funds used during construction (AFUDC)	(39,728)	(29,862)	(22,604)
Net interest expense	359,725	313,500	307,017
Net (expenses) revenues	(296,960)	(273,593)	425,067
Accumulated net (expenses) revenues, Oct. 1	(112,676)	160,917	(264,150)
Accumulated net (expenses) revenues, Sept. 30	$ (409,636)	$ (112,676)	$ 160,917

The accompanying notes are an integral part of these statements.

Statements of Changes in Capitalization & Long-Term Liabilities

For The Years Ended September 30, 1993, 1992 and 1991
(Thousands of Dollars)

	Accumulated Net Revenues (Expenses)	Federal Appropriations	Long-Term Debt	Non-federal Projects Debt	Trojan Decommissioning Reserve	Total
Balance at September 30, 1990	$ (264,150)	$ 6,697,535	$ 1,694,499	$ 6,708,549	—	$ 14,836,433
Increase in federal appropriations:						
Operations and maintenance	—	109,841	—	—	—	109,841
Construction	—	82,934	—	—	—	82,934
Repayment of federal appropriations:						
Operations and maintenance	—	(109,841)	—	—	—	(109,841)
Construction	—	(52,587)	—	—	—	(52,587)
Increase in long-term debt	—	—	110,000	—	—	110,000
Repayment of long-term debt	—	—	(132,926)	—	—	(132,926)
Net increase in non-federal projects debt	—	—	—	270,936	—	270,936
Repayment of non-federal projects debt	—	—	—	(85,200)	—	(85,200)
Net revenues	425,067	—	—	—	—	425,067
Balance at September 30, 1991	$ 160,917	$ 6,727,882	$ 1,671,573	$ 6,894,285	—	$ 15,454,657
Increase in federal appropriations:						
Operations and maintenance	—	119,245	—	—	—	119,245
Construction	—	84,753	—	—	—	84,753
Repayment of federal appropriations:						
Operations and maintenance	—	(119,245)	—	—	—	(119,245)
Construction	—	(3,406)	—	—	—	(3,406)
Increase in long-term debt	—	—	854,000	—	—	854,000
Reduction of long-term debt:						
Repayment	—	—	(245,000)	—	—	(245,000)
Refinance	—	—	(375,000)	—	—	(375,000)
Net increase in non-federal projects debt	—	—	—	85,431	—	85,431
Repayment of non-federal projects debt	—	—	—	(103,930)	—	(103,930)
Net expenses	(273,593)	—	—	—	—	(273,593)
Balance at September 30, 1992	$ (112,676)	$ 6,809,229	$ 1,905,573	$ 6,875,786	—	$ 15,477,912
Increase in federal appropriations:						
Operations and maintenance	—	126,800	—	—	—	126,800
Construction	—	83,350	—	—	—	83,350
Repayment of federal appropriations:						
Operations and maintenance	—	(126,800)	—	—	—	(126,800)
Construction		(25,263)	—	—	—	(25,263)
Increase in long-term debt	—	—	650,000	—	—	650,000
Repayment of long-term debt	—	—	(223,700)	—	—	(223,700)
Net increase in non-federal projects debt	—	—	—	341,390	—	341,390
Repayment of non-federal projects debt	—	—	—	(72,440)	—	(72,440)
Establishment of Trojan decommissioning reserve	—	—	—	—	108,899	108,899
Net expenses	(296,960)	—	—	—	—	(296,960)
Balance at September 30, 1993	$ (409,636)	$ 6,867,316	$ 2,331,873	$ 7,144,736	$ 108,899	$ 16,043,188

The accompanying notes are an integral part of these statements.

Statements of Cash Flows

For the years ended September 30, 1993, 1992 and 1991
(Thousands of Dollars)

	1993	1992	1991
Cash from Operating Activities:			
Net (expenses) revenues	$ (296,960)	$ (273,593)	$ 425,067
Expenses (Income) not requiring cash:			
Depreciation	170,535	168,168	161,262
Amortization	49,538	44,181	40,516
Amortization of non-federal projects	72,440	103,930	85,200
AFUDC	(39,728)	(29,862)	(22,604)
Gain on WNP No. 3 property tax settlement	(16,702)	—	—
(Increase) decrease in:			
Receivables and unbilled revenues	15,817	(32,754)	19,935
Materials and supplies	(5,559)	(21,034)	(7,341)
Prepaid expenses	(53,999)	70,928	(27,736)
Increase (decrease) in:			
Accounts payable	(41,807)	86,845	23,655
Employees' accrued leave	(1,077)	(134)	1,289
Other	11,388	(56,867)	1,937
Cash (used for) provided by operating activities	(136,114)	59,808	701,180
Cash from Investment Activities:			
Investment in:			
Utility plant	(400,280)	(336,111)	(246,529)
Conservation	(97,910)	(74,668)	(45,593)
Fish and Wildlife	(17,338)	(11,178)	(17,680)
Cash used for investment activities	(515,528)	(421,957)	(309,802)
Cash from Borrowing and Appropriations:			
Increase in federal appropriations:			
Operations and maintenance	126,800	119,245	109,841
Construction	83,350	84,753	82,934
Repayment of federal appropriations:			
Operations and maintenance	(126,800)	(119,245)	(109,841)
Construction	(25,263)	(3,406)	(52,587)
Increase in long-term debt	650,000	854,000	110,000
Repayment of long-term debt	(223,700)	(245,000)	(132,926)
Refinance of long-term debt	—	(375,000)	—
Repayment of non-federal projects debt	(72,440)	(103,930)	(85,200)
Cash provided by (used for) borrowing and appropriations	411,947	211,417	(77,779)
(Decrease) increase in cash	(239,695)	(150,732)	313,599
Beginning cash balance	485,881	636,613	323,014
Ending cash balance	$ 246,186	$ 485,881	$ 636,613

The accompanying notes are an integral part of these statements.

Notes to Financial Statements

1. Summary of General Accounting Policies

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 U.S. Army Corps of Engineers (Corps) and the Bureau of Reclamation (Reclamation) 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 Reclamation 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; Reclamation 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 and Net Revenues

Operating revenues are recorded on the basis of service rendered, which includes estimated unbilled revenues. Bonneville's rates are established in accordance with several statutory directives. Rates proposed by Bonneville are subjected to an extensive formal review process, after which they are established by Bonneville and reviewed by the Commission. The Commission's review is limited to three standards set out in the Northwest Power Act. The Commission reviews Bonneville's rates for all firm power, for nonfirm energy sold within the Region, and for transmission service under such statutory standards that include a requirement that these rates be sufficient to assure repayment of the federal investment in the FCRPS over a reasonable number of years after first meeting Bonneville's other costs.

After final Commission approval, Bonneville's rates may be reviewed by the United States Court of Appeals for the Ninth Circuit. Action seeking such review must be filed within 90 days of the final Commission decision. The Commission and the Court of Appeals may either confirm or reject a rate proposed by Bonneville. It is the opinion of Bonneville's General Counsel that, if a rate were rejected, it would be remanded to Bonneville for reformulation. By contract, Bonneville has agreed that rates for the sale of power pursuant to its present contracts may not be revised on less than nine month's notice and may not be increased more than once in a 12-month period.

The Commission has approved on an interim basis Bonneville's rates for fiscal years 1994 and 1995 which increased average rates by approximately 15%.

Because BPA is a 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.

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 non-cash reduction of interest expense. While cash is not realized currently from this allowance, it is realized under the rate-making process over the service life of the related property through increased revenues resulting from higher plant in-service and higher depreciation expense.

AFUDC capitalization rates are stipulated in the Congressional Acts authorizing construction for certain generating projects (2.5 percent to 8.2 percent in 1993, 2.5 percent to 8.9 percent in 1992, and 2.5 percent to 9.0 percent in 1991). Capitalization rates for other construction approximate the cost of borrowing from the U.S. Treasury (7.9 percent in 1993, 8.5 percent in 1992, and 8.8 percent in 1991).

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. Amortization of conservation and fish and wildlife is computed on the straight-line method based on estimated service lives, which are 20 years for conservation and 15 years for fish and wildlife.

Non-federal Projects and Non-federal Projects Debt

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

Retirement Benefits

FCRPS employees belong to either the Civil Service Retirement System (CSRS) or the Federal Employees' Retirement System (FERS). FCRPS and employees contribute to the systems. Both are contributory pension plans. Retirement benefit expense under CSRS is equivalent to 7 percent of eligible employee compensation and under FERS is variable based upon options chosen by the participant but does not exceed 24.2 percent of eligible employee compensation. Retirement benefits are payable by the U.S. Treasury and not by the FCRPS.

Cash

For purposes of reporting cash flows, cash includes cash in the BPA fund and unexpended appropriations of Reclamation and the Corps. Cash paid for interest was $362 million in 1993, $318 million in 1992, and $306 million in 1991.

Non-cash transactions include changes in Non-federal Projects and Non-federal Projects Debt, other than debt service payments made by BPA and amortizations of Non-federal assets of $341 million in 1993, $85 million in 1992 and $270 million in 1991 and the establishment of the Trojan Decommissioning Reserve of $109 mil-lion in 1993.

Financial Instruments

All significant financial instruments of the FCRPS were recognized in the Balance Sheet as of September 30, 1993. The carrying value reflected in the Balance Sheet approximates fair value for the FCRPS's financial assets and current liabilities. The fair values of long-term liabilities are discussed in the respective footnotes.

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, 1993, $542 million of this reserved amount and $1,790 million of other borrowings were outstanding. The average interest rate of the BPA's borrowings from the U.S. Treasury exceeds the rate which could be obtained currently. As a result, the fair value of the BPA long-term debt, based upon discounting future cash flows using rates offered by the United States Treasury as of September 30, 1993, for similar maturities exceeds carrying value by approximately $291 million or 12.5%. BPA's policy is to refinance debt that is callable when associated benefits exceed costs. The following table reflects the terms and amounts of long-term debt.

Long Term Debt [a]

(Thousands of Dollars)

Issue Date	First Call Date	Maturity Date	Interest Rate	Construction & Fish & Wildlife	Conservation	Cumulative Total
Bonds:						
February 1991	none	1995	7.55 %	$ 60,000	$ —	$ 60,000
September 1989	none	1995	8.60 %	—	66,000	126,000
April 1992	none	1995	6.20 %	80,000	—	206,000
March 1986	none	1996	8.15 %	100,000	—	306,000
March 1986	none	1996	8.15 %	—	50,000	356,000
May 1991	none	1996	7.95 %	50,000	—	406,000
April 1992	none	1997	7.00 %	50,000	—	456,000
April 1992	none	1997	7.00 %	28,300	—	484,300
July 1992	none	1997	5.80 %	—	80,200	564,500
October 1992	none	1997	6.05 %	50,000	—	614,500
May 1989	none	1999	8.95 %	25,000	—	639,500
May 1989	none	1999	8.95 %	75,000	—	714,500
August 1992	none	2000	6.60 %	107,800	—	822,300
September 1989	none	2002	8.65 %	—	66,000	888,300
July 1992	1997	2007	7.14 %	—	100,000	988,300
August 1992	1997	2007	7.25 %	107,700	—	1,096,000
February 1993	1998	2008	6.95 %	20,000	—	1,116,000
July 1989	none	2009	8.55 %	—	40,000	1,156,000
October 1992	1997	2012	8.05 %	—	50,000	1,206,000
February 1993	1998	2013	7.40 %	—	50,000	1,256,000
August 1993	1998	2013	6.75 %	—	40,000	1,296,000
January 1990	2000	2030	9.25 %	50,000	—	1,346,000
June 1986	1991	2031	8.95 %	95,873	—	1,441,873
April 1992	1997	2032	8.80 %	150,000	—	1,591,873
July 1992	1997	2032	8.13 %	150,000	—	1,741,873
October 1992	1997	2032	8.35 %	100,000	—	1,841,873
February 1988	1993	2033	9.50 %	150,000	—	1,991,873
February 1993	1998	2033	7.80 %	130,000	—	2,121,873
April 1993	1998	2033	7.50 %	100,000	—	2,221,873
August 1993	1998	2033	6.95 %	110,000	—	2,331,873
				$ 1,789,673	$ 542,200	$ 2,331,873

(a) The weighted average interest rate was 7.9% and 8.2% on outstanding long-term debt as of September 30, 1993 and 1992 respectively. All the construction, conservation, and fish and wildlife bonds are term bonds.

3. Federal Appropriations

Construction and replacement of Corps and Reclamation generating facilities are financed through annual federal 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 transmission construction and operations and maintenance costs were also financed by appropriations before the Federal Columbia River Transmission System Act in 1974.

Interest rates on the appropriated funds range from 2.5 percent to 8.5 percent (the weighted average rate was 3.5 percent in 1993 and 3.4 percent in 1992 and 1991). The rates are set by law, administrative order pursuant to law, or administrative policies.

Federal appropriations relating to generating projects and the transmission system are 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 repaid through September 30, 1993, exceeded the amount required to be repaid.

If, in any given year, revenues are not sufficient to cover all cash needs, including interest, any deficiency becomes an unpaid annual expense. Interest is accrued on the unpaid annual expense until paid. This must be paid from subsequent years' revenues before any repayment of federal appropriations can be made.

The fair value of the federal appropriations debt, based upon the rate BPA could currently obtain through borrowings from the U.S. Treasury, is below the carrying value. This is because the majority of the federal appropriations were obtained at times when lower rates were in effect.

The table below shows the term repayments on the remaining federal appropriations as of September 30, 1993.

Federal Appropriations

	Term Repayments[a] (Thousands of Dollars)
1994	$ 10,076
1995	—
1996	—
1997	—
1998	37,199
Post - 1998	6,820,041
	$ 6,867,316

(a) Includes payments on historic replacements but excludes planned future replacements and irrigation assistance.

4. Non-federal Projects

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 projects budgets, including debt service, whether or not the projects are completed. BPA has also acquired all of the output of the Idaho Falls and Cowlitz Falls projects and has agreed to fund debt service on EWEB bonds issued to finance conservation programs sponsored by BPA.

BPA recognizes expenses for these projects based upon total project cash funding requirements reflected in project budgets that are adopted by BPA and the Washington Public Power Supply System (72% of Hanford Generating Project, 100% of WNP Nos. 1 & 2, 70% of WNP No. 3), Eugene Water and Electric Board (30% of Trojan, EWEB conservation), City of Idaho Falls (Idaho Falls hydro), and PUD No. 1 of Lewis County (Cowlitz Falls hydro). Operating expense for the projects is included in operations and maintenance in the accompanying Statements of Revenues and Expenses.

Following restoration of the Supply System's bond rating in late 1988, BPA and the Supply System developed a refunding plan to refinance outstanding high-interest rate net-billed bonds. By the end of fiscal year 1993, ten advance refunding sales were completed.

In total $7.3 billion of refunding bonds were issued to refinance $5.9 billion of previously outstanding bonds. These advance refundings reduced the cash requirements pursuant to the project budgets BPA is required to pay under the net-billing agreements by $183 million in fiscal 1991, $131.6 million in 1992, and $106.7 million in 1993 from 1989 levels. Additionally the structure of the advance refundings allowed the use of cash reserves held by the bond trustee to further reduce the project budgets for fiscal 1991 and 1993. This resulted in $107.1 million and $58.2 million of lower project budgets for fiscal 1991 and 1993 respectively. Cash reserves were not available to reduce project budgets in fiscal 1992.

In summary, non-federal project expense included in the Statement of Revenues and Expenses was reduced by $290.1 million, $131.6 million, and $164.9 million for fiscal 1991, 1992, and 1993, respectively, relating to the above factors. The table on the following page shows future principal and interest payments required for non-federal projects total $13 billion, of which $5.9 billion represents interest.

Construction on two projects, WNP No. 1 and WNP No. 3, has been delayed indefinitely. However, in April 1993, the Executive Board of the Supply System advised Bonneville that, in the view of the Executive Board, the completion of these projects as nuclear generating stations was unlikely and that the time was appropriate to examine the issues associated with termination of the plants or their modification for alternative uses. In November 1993, BPA presented the preliminary findings of its study of termination or conversion of the plants to the Executive Board which indicate that termination of the plants is the best alternative. It is anticipated that BPA will present its final conclusions to the Supply System board of directors in January. The board of directors has the sole authority to approve the terminations. The financial statements as of September 30, 1993 do not reflect any adjustments which may be necessary if the plants are terminated.

Non-federal Projects Debt Service

Project (Thousands of Dollars)	Actual			Forecasted Non-federal Debt Service [a]						
	1991	1992	1993	1994	1995	1996	1997	1998	1999+	Total
Hanford										
Principal	$ 4,835	$ 7,385	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Interest[b]	322	(2,159)	100	(639)	(320)	—	—	—	—	(959)
	5,157	5,226	100	(639)	(320)	—	—	—	—	(959)
WNP No. 1										
Principal	24,455	28,165	35,050	40,930	43,500	46,565	50,770	53,020	2,142,647	2,377,432
Interest	83,542	151,667	128,501	146,620	140,499	138,577	135,311	134,926	1,322,946	2,018,879
	107,997	179,832	163,551	187,550	183,999	185,142	186,081	187,946	3,465,593	4,396,311
WNP No. 2										
Principal	32,800	37,160	—	7,085	2,345	46,260	61,810	65,225	2,291,710	2,474,435
Interest	48,397	105,279	125,988	155,339	165,728	160,510	152,104	159,090	1,075,556	1,868,327
	81,197	142,439	125,988	162,424	168,073	206,770	213,914	224,315	3,367,266	4,342,762
WNP No. 3										
Principal	17,995	25,715	31,545	40,735	41,760	47,475	36,490	34,555	1,747,499	1,948,514
Interest	89,723	107,403	100,988	99,685	98,260	91,323	91,511	102,693	1,250,381	1,733,853
	107,718	133,118	132,533	140,420	140,020	138,798	128,001	137,248	2,997,880	3,682,367
Trojan										
Principal	3,660	3,840	4,055	4,275	4,500	4,755	5,030	5,310	83,700	107,570
Interest	5,773	6,077	6,060	4,725	4,500	4,245	3,970	3,690	15,300	36,430
	9,433	9,917	10,115	9,000	9,000	9,000	9,000	9,000	99,000	144,000
EWEB										
Principal	915	1,090	1,155	1,230	1,305	1,390	1,485	1,575	3,490	10,475
Interest	992	808	746	672	597	516	429	334	351	2,899
	1,907	1,898	1,901	1,902	1,902	1,906	1,914	1,909	3,841	13,374
Idaho Falls										
Principal	540	575	635	685	755	815	890	985	32,715	36,845
Interest	2,957	3,025	2,722	3,182	2,662	3,050	2,973	2,888	22,794	37,549
	3,497	3,600	3,357	3,867	3,417	3,865	3,863	3,873	55,509	74,394
Cowlitz Falls										
Principal	—	—	—	—	600	2,645	2,775	2,925	180,520	189,465
Interest	—	—	—	—	10,564	9,532	9,399	9,252	149,097	187,844
	—	—	—	—	11,164	12,177	12,174	12,177	329,617	377,309
	$316,906	$476,030	$ 437,545	$ 504,524	$ 517,255	$ 557,658	$ 554,947	$576,468	$ 10,318,706	$13,029,558

(a) Estimates in these columns are consistent with BPA's 1993 Rate Filing adjusted for Supply System Refunding Revenue Bonds, Series 1993C, and Cowlitz Series 1993.
(b) When negative amount is shown, interest income on project funds exceeds interest expenses. Principal of $1,639 and $134 due in 1993 and 1994, respectively, was paid in September 1992.

As discussed, BPA is required to pay a portion of the respective Non-federal Projects annual budgets, including debt service, which are established by the respective asset owners. As BPA is not the primary borrower, no alternative current market rates are available to BPA. Therefore, it is not practicable to calculate the fair value of this debt.

In January 1993, the Portland General Electric (PGE) Board of Directors formally notified BPA of its intent to terminate the operation of the Trojan Plant. PGE's rate filing in November 1993 with the Oregon Public Utility Commission included an estimated decommissioning liability of $401 million (in 1993 dollars). BPA's thirty percent share of the estimated liability of $120.3 million, net of the decommissioning trust fund balance of $11.4 million at September 30, 1993, has been included in the accompanying balance sheet. Contributions to the decommissioning trust fund are made pursuant to the net-billing agreement for the plant and were $1.9 million for each of the years ended September 30, 1993, 1992 and 1991. PGE plans to make a final proposal in 1994 regarding the decommis-sioning method to be implemented. The method selected could impact BPA's funding of the decommissioning trust. The decision to terminate the plant is not expected to result in the acceleration of debt service payments. BPA will continue to recover its share of Trojan's costs through rates.

5. Residential Exchange

As provided for in the Pacific Northwest Electric Power Planning and Conservation Act of 1980, Section 5(c), BPA entered into Residential Exchange 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 rate. Purchases and sales of electric power by BPA during fiscal years 1993, 1992, and 1991 under these contracts are shown in the table below.

Residential Exchange

(Thousands of Dollars)	1993	1992	1991
Expense	$ 919,078	$ 844,587	$ 888,338
Revenue	(709,084)	(642,611)	(702,122)
Net Residential Exchange Expense	$ 209,994	$ 201,976	$ 186,216

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 irrigation assistance payment from power net revenues is planned to be made in 1997, and cumulative payments could ultimately total $826 million. Although such costs may be paid by power ratepayers, these costs are for the benefit of the water users and are not a regular operating cost of the power program. Accordingly, these costs will be reflected in the financial statements if paid.

Net-Billing Agreements

BPA has agreed with the Supply System that, in the event any Participant shall be unable for any reason, or shall refuse, to pay to the Supply System any amount due from such Participant under its net-billing agreement for which a net-billing credit or cash payment to such Participant has been provided by the BPA, BPA will be obligated to pay the unpaid amount in cash directly to the Supply System, unless payment of such unpaid amount is made in a timely manner pursuant to the net-billing agreements.

Nuclear Insurance

BPA is a member of the Nuclear Electric Insurance Limited (NEIL) established to provide insurance coverage for replacement power costs resulting from an accidental outage at a member's nuclear site, and excess property damage and decontamination liability. Under its replacement power cost insurance coverage (NEIL-I), BPA could be subject to a maximum assessment of $4.5 million in the event of a NEIL-I member's replacement power loss exceeding NEIL-I reserves and reinsurance. Under its property and decontamination coverage, BPA could be subject to a maximum assessment of $9.8 million in the event of a NEIL-II member insured loss exceeding the NEIL-II reserves and reinsurance.

As a separate requirement, BPA is liable under the Nuclear Regulatory Commission's (NRC) indemnity for public liability coverage under the Price-Anderson Act. In the event of a nuclear incident, BPA could be subject to a retrospective assessment of $79.3 million for WNP No. 2 and $23.8 million for Trojan limited to an annual maximum of $10 million for WNP No. 2 and $3 million for Trojan.

Decommissioning Costs

Decommissioning costs are charged to operations over the operating life of each project. External decommissioning sinking funds for costs are being funded monthly or annually, as payments are made pursuant to the net-billing agreements, for WNP No.2 and Trojan, respectively. The sinking fund for WNP No. 2 is expected to provide for decommissioning at the end of the project's operating life in accordance with NRC requirements. Sinking fund requirements for WNP No. 2 and currently for Trojan are based on estimates of decommissioning cost, and assume 40-year project lives.

The estimated decommissioning sum of expenditures for WNP No. 2 is $403 million (1987 dollars). Payments to the sinking fund for the years ended September 30, 1993, 1992, and 1991 were $3.0 million, $2.9 million, and $2.7 million, respectively.

Decommissioning costs are included in operations and maintenance expense in the Statements of Revenues and Expenses.

Environmental Cleanup

The Ross Complex in Vancouver, Washington has been identified as a superfund site. In addition, there are other sites where BPA has been or may be identified as a potential responsible party. Costs associated with cleanup are not expected to be material to the FCRPS financial statements.

Endangered Species Act

Actions related to the Endangered Species Act are adding to BPA's costs. These expenses are expected to recur and increase. These additional costs will be recovered through future rate increases.

7. Litigation

Involving the Washington Public Power Supply System (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. WNP Nos. 1 and 4 and WNP Nos. 3 and 5 were to be built as two sets of twin plants, sharing many common elements, including design and some shared facilities. Costs of constructing the twin plants were to be shared on the basis of proportion of respective benefit to each project. Chemical Bank, the WNP Nos. 4 and 5 bond trustee, now seeks to have the terminated plants' portion of those shared costs retroactively reallocated to WNP Nos. 1 and 3. On October 5, 1990, the court ruled that principles of incremental cost sharing were required. The court stated that because such principles were not applied, WNP Nos. 4 and 5 apparently have paid more than their fair and equitable share of construction costs. BPA and several other parties appealed the District Court's October 1990 decision. On February 25, 1992, the United States Court of Appeals reversed the District Court's ruling that incremental cost sharing should have been applied and concluded that the cost sharing principles which the Supply System used were proper. The case was then remanded back to the District Court to determine whether the Supply System correctly applied proportional cost sharing. In August 1992, the parties filed status reports regarding settlement discussions with the District Court and are awaiting communications from the Court.

If Chemical Bank is successful, this could result in WNP Nos. 1 and 3 assuming additional costs. Chemical Bank is claiming approximately $1 billion, including interest through September 30, 1993. 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.

Other Matters

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

Selected Quarterly Information (Unaudited)[a]

3 Months Ended (Thousands of Dollars)	December 31	March 31	June 30	September 30
1993				
Operating revenues	$ 513,288	$ 561,482	$ 431,412	$ 436,277
Operating expenses	422,801	569,848	420,338	466,707
Net interest expenses	82,978	81,979	94,920	99,848
Net revenues (expenses)	$ 7,509	$ (90,345)	$ (83,846)	$ (130,278)
1992				
Operating revenues	$ 550,683	$ 534,283	$ 411,119	$ 432,718
Operating expenses	431,749	496,770	455,538	504,839
Net interest expenses	76,618	75,800	73,050	88,032
Net revenues (expenses)	$ 42,316	$ (38,287)	$ (117,469)	$ (160,153)
1991				
Operating revenues	$ 617,878	$ 659,582	$ 499,813	$ 442,958
Operating expenses	263,389	382,765	404,099	437,894
Net interest expenses	85,933	80,622	70,404	70,058
Net revenues (expenses)	$ 268,556	$ 196,195	$ 25,310	$ (64,994)

(a) BPA's net revenues are normally higher in the first and second quarters of the fiscal year than in the third and fourth. In fall and winter, loads grow to serve Northwest heating needs. In warmer weather, loads decline and BPA spends more on yearly maintenance.

Schedule of Amount & Allocation of Plant Investment

September 30, 1993

Schedule A (Thousands of Dollars)	Total	Commercial Power: Completed Plant	Commercial Power: Construction Work in Progress	Commercial Power: Total Commercial Power	Commercial Power: Returnable from Commercial Power Revenues	Irrigation: Returnable from Other Sources	Irrigation: Total Irrigation	Non-reimbursable: Navigation	Non-reimbursable: Flood Control	Non-reimbursable: Fish and Wildlife	Non-reimbursable: Recreation	Non-reimbursable: Other	Percent of Total Returnable from Commercial Power Revenues
Bonneville Power Administration													
Transmission facilities	$ 4,386,118	$ 3,957,950	$ 428,168	$ 4,386,118	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	100.0%
Bureau of Reclamation													
Boise	105,974	11,122	1,327	12,449	23,161	41,025	64,186	—	29,339	—	—	—	33.60%
Columbia Basin	1,829,141	1,072,760	17,277	1,090,037	565,358	109,238	674,596	1,000	57,040	5,788	154	526	90.50%
Hungry Horse	121,272	81,321	14,845	96,166	—	—	—	—	25,106	—	—	—	79.30%
Minidoka-Palisades	317,477	14,330	29,745	44,075	10,104	64,357	74,461	—	64,444	1,693	9,771	123,033	17.07%
Yakima	189,570	6,514	1,005	7,519	11,697	122,915	134,612	—	918	46,521	—	—	10.14%
Total Bureau projects	2,563,434	1,186,047	64,199	1,250,246	610,320	337,535	947,855	1,000	176,847	54,002	9,925	123,559	72.58%
Corps of Engineers													
Albeni Falls	38,422	35,641	227	35,868	—	—	—	164	207	—	2,183	—	93.35%
Bonneville	1,196,566	810,535	1,509	812,044	—	—	—	381,171	—	—	1,289	2,062	67.86%
Chief Joseph	593,103	554,660	201	554,861	230	—	230	—	—	—	4,035	33,977	93.59%
Cougar	62,530	20,349	3	20,352	—	3,287	3,287	548	38,343	—	—	—	32.55%
Detroit-Big Cliff	68,066	41,428	1	41,429	—	5,146	5,146	232	21,259	—	—	—	60.87%
Dworshak	363,710	304,019	2,076	306,095	—	—	—	9,642	34,377	—	13,596	—	84.16%
Green Peter-Foster	90,732	50,123	6	50,129	—	5,856	5,856	367	30,469	—	1,856	2,055	55.25%
Hills Creek	49,133	17,549	—	17,549	—	4,602	4,602	627	26,355	—	—	—	35.72%
Ice Harbor	188,571	138,255	793	139,048	—	—	—	46,617	—	—	2,906	—	73.74%
John Day	619,635	455,552	5,648	461,200	—	—	—	99,118	21,361	—	11,547	26,409	74.43%
Libby	609,875	473,993	335	474,328	—	—	—	—	97,821	870	6,219	30,637	77.77%
Little Goose	246,068	203,203	1,433	204,636	—	—	—	34,763	—	—	4,065	2,604	83.16%
Lookout Point-Dexter	100,533	47,636	233	47,869	—	1,511	1,511	756	49,876	—	—	521	47.62%
Lost Creek	150,531	27,066	—	27,066	—	2,203	2,203	—	53,528	24,554	29,475	13,705	17.98%
Lower Granite	400,730	327,236	536	327,772	—	—	—	52,475	—	—	12,641	7,842	81.79%
Lower Monumental	267,924	222,993	2,207	225,200	—	—	—	39,485	—	—	2,822	417	84.05%
McNary	350,439	278,598	465	279,063	—	—	—	68,096	—	—	3,280	—	79.63%
The Dalles	355,649	292,816	11,731	304,547	—	—	—	49,004	—	—	2,076	22	85.63%
Columbia River Fish Bypass	119,670	90,689	16,301	106,990	—	—	—	12,680	—	—	—	—	89.40%
Lower Snake	236,432	234,375	—	234,375	—	—	—	2,057	—	—	—	—	99.13%
Total Corps projects	6,108,319	4,626,716	43,705	4,670,421	230	22,605	22,835	797,802	373,596	25,424	97,990	120,251	76.46%
Irrigation assistance at 12 projects having no power generation	200,852	—	—	—	157,062	43,790	200,852	—	—	—	—	—	78.20%
Total plant investment	13,258,723	9,770,713	536,072	10,306,785	767,612	403,930	1,171,542	798,802	550,443	79,426	107,915	243,810	83.53%
Repayment obligation retained by Columbia Basin project	4,639	2,836 [a]	—	2,836	1,803	—	1,803	—	—	—	—	—	100.00%
Investment in Teton project [b]	79,107	—	7,269	7,269	56,573	3,681	60,254	—	9,151	—	2,433	—	80.70%
Total	$13,342,469	$ 9,773,549	$ 543,341	$10,316,890	$ 825,988	$ 407,611	$ 1,233,599	$ 798,802	$ 559,594	$ 79,426	$ 110,348	$ 243,810	83.51%

(a) Amount represents joint costs transferred to Bureau of Sports Fisheries and Wildlife. This is included in other assets in the accompanying balance sheets.

(b) The $7,269,000 commercial power portion of the Teton project is included in other assets in the accompanying balance sheets. Teton amounts exclude interest totaling approximately $2.2 million subsequent to June 1976 which was charged to expense.

Report of Independent Accountants

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

In our opinion, the accompanying balance sheets and the related statements of revenues and expenses, changes in capitalization and long-term liabilities and of cash flows present fairly, in all material respects, the financial position of the Federal Columbia River Power System (FCRPS) at September 30, 1993 and 1992, and the results of its operations, changes in capitalization and long-term liabilities and its cash flows for each of the three years in the period ended September 30, 1993, in conformity with generally accepted accounting principles. These financial statements are the responsibility of FCRPS's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.

As discussed in Note 7 to the financial statements, pending litigation related to the allocation of certain costs among Washington Public Power Supply System nuclear projects may have a significant impact on FCRPS. The ultimate outcome of the litigation cannot presently be determined. Accordingly, the accompanying financial statements do not include any adjustments which might result from the outcome of this litigation.

Our examination was 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, 1993, (Schedule A) is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the examination 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.

Price Waterhouse

Portland, Oregon
December 15, 1993

Federal Repayment

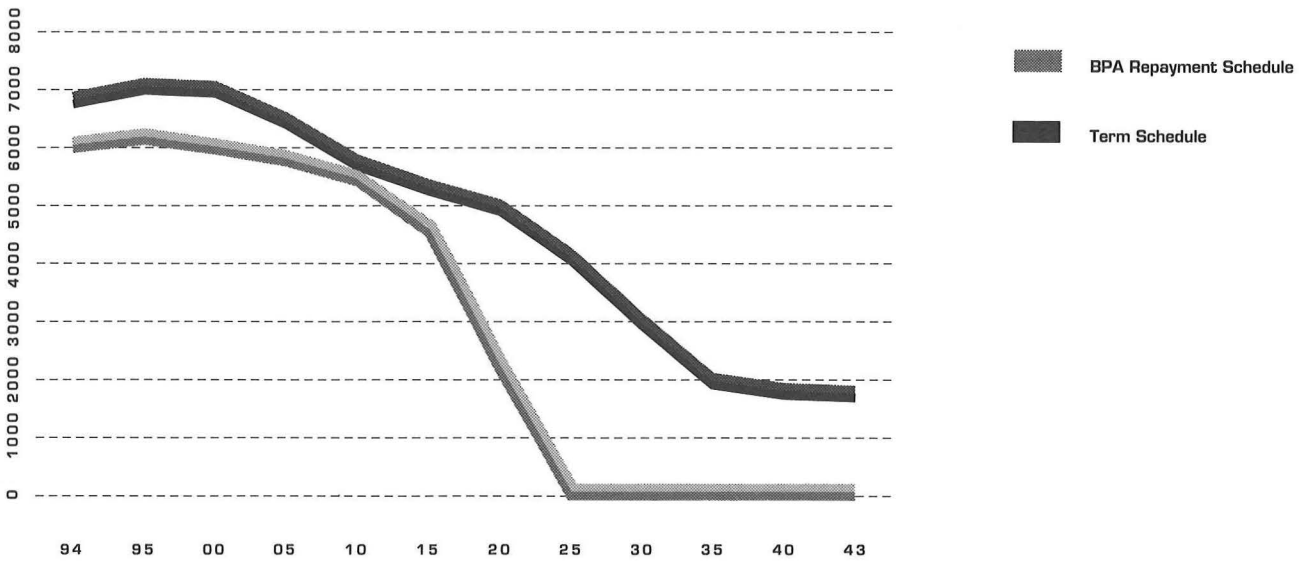
Basis for Financial Reporting

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 Price Waterhouse, independent accountants, in accordance with generally accepted auditing standards. Power rates are based on the FCRPS revenue requirement study. The financial statements show historical results, and the revenue requirement study shows projected costs to be recovered from rates. The revenue requirement study is prepared consistent with BPA's statutory obligation to set rates to recover all costs of acquiring, conserving, and transmitting electric power, including timely repayment of the federal investment in the FCRPS, and all other costs incurred by the Administrator pursuant to law. Costs include operation and maintenance; non-federal projects debt service; federal interest; and recovery of the federal investment.

Revenue Requirement Study

The revenue requirement study demonstrates repayment of federal investment and it reflects revenues and costs consistent with the 1993 Wholesale Power and Transmission Rate Filing. The Federal Energy Regulatory Commission granted interim approval for proposed rates on September 30, 1993 for fiscal years 1994 and 1995 (64 FERC 61,375).

Unrepaid Federal Generation Investment[a]
($ In Millions)



(a) Includes future replacements.

Repayment Demonstration

BPA is required by P.L. 89-448 to demonstrate that 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 22 irrigation water users to repay. These requirements are met by conducting power repayment studies to demonstrate repayment of principal within the allowable repayment period.

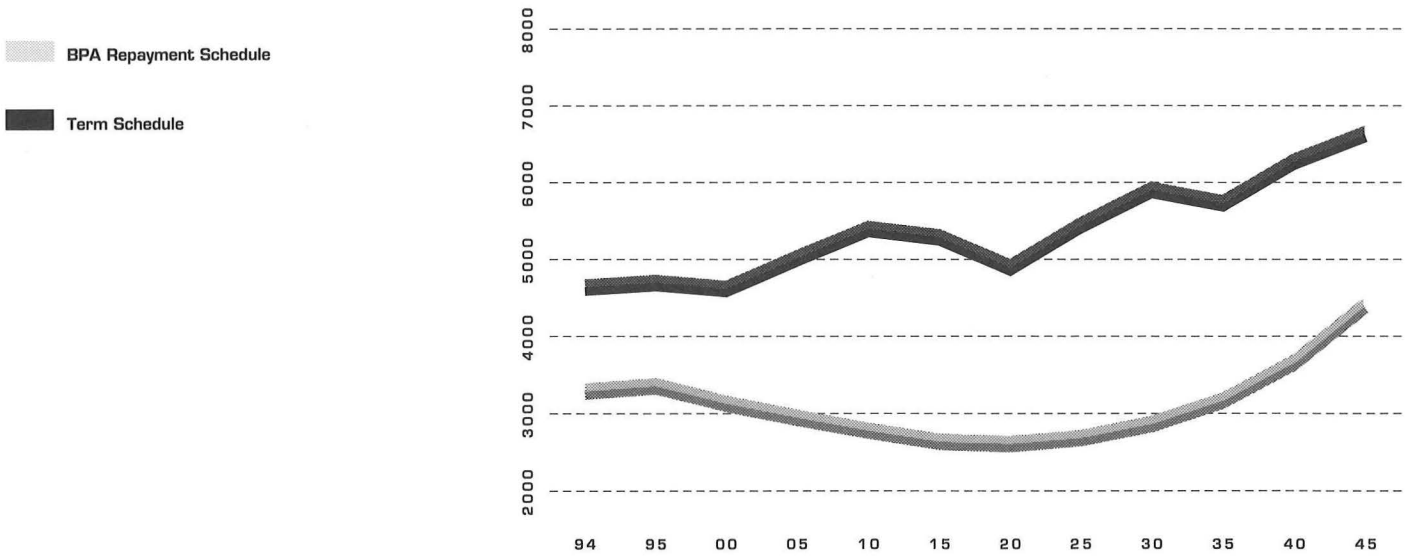
Since 1985, BPA has prepared separate repayment demonstrations for generation and transmission in accordance with an order issued by the Commission on January 27, 1984 (26 FERC 61,096).

Repayment Policy

BPA's repayment policy is reflected in its revenue requirements and rate levels. This policy requires that FCRPS revenues be sufficient to:

1. Pay the cost of obtaining power through purchase and exchange agreements (non-federal projects).
2. Pay the cost of operating and maintaining the power system.
3. Pay interest on and repay outstanding bonds issued to Treasury to finance transmission system construction, conservation, and fish and wildlife projects.
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.

Unrepaid Federal Transmission Investment[a]
($ In Millions)

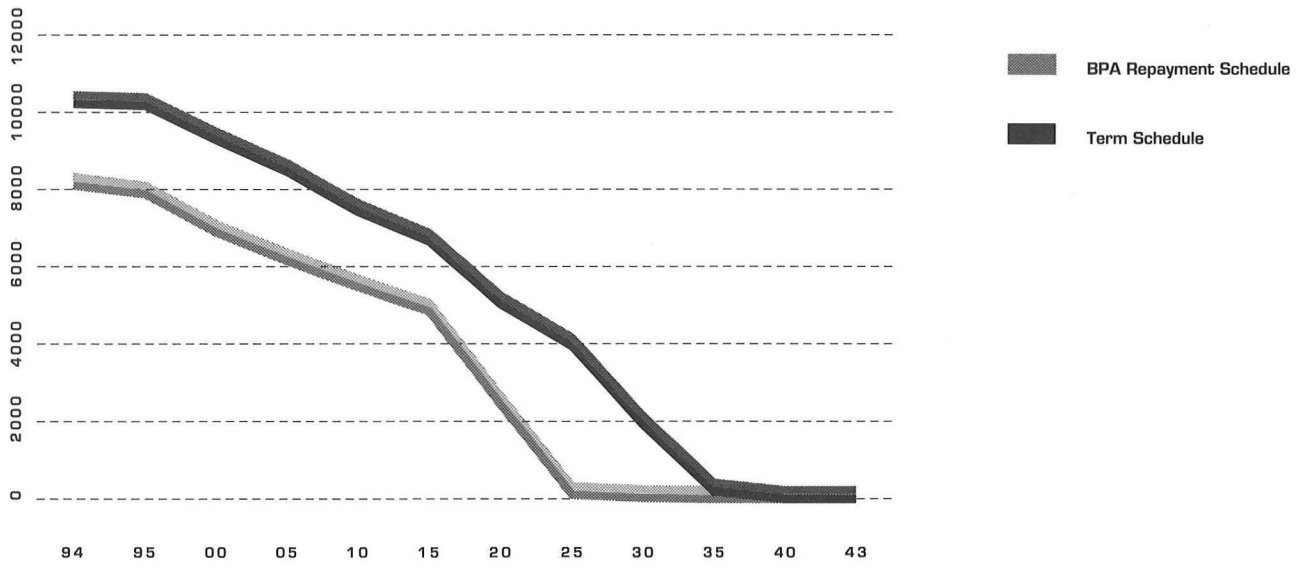


(a) Includes future replacements.

6. Repay the power investment in each federal hydroelectric project within 50 years after going 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 are assigned for payment from commercial power net revenues, within the same period available to the water users for making payments. These periods range from 40 to 66 years, with 50 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.

Unrepaid Federal Investment[a]
($ In Millions)



(a) Excludes future replacements.

Repayment Obligation

BPA's rates must be designed to collect sufficient revenues to return the reimbursable power costs of each FCRPS investment and each irrigation assistance obligation within the time prescribed by law. However, total irrigation assistance payments cannot require an increase in the BPA power rate level. 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 reduce costs, adjust its rates, or both.

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 it is demonstrated that the federal investment is repaid within the time allowed. A term schedule represents a repayment schedule whereby each investment would be repaid in total in the year it is due.

Reporting requirements of P.L. 89-448 are met so 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. While 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 on the prior pages illustrate that unrepaid investment resulting from BPA's generation and transmission repayment schedules is less than the allowable unrepaid investment. This demonstrates that BPA's rates are sufficient 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 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. Consequently some investments are repaid before their due dates, while assuring that all other investments are repaid by their due dates. These graphs include forecasts of future system 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 future system replacements. This demonstrates that the FCRPS investment expected through fiscal year 1994 is scheduled to be returned to the U.S. Treasury within the 50-year repayment period and ahead of due dates.

Generation & Sales Tables

Generation by the Principal Electric Utility Systems of the Pacific Northwest [a]

Table 1

	1993 Thousands of MWH	1993 Percent of Total
Public-owned		
Federal Columbia River Power System [b]	78,300	43.9%
Grant County PUD	3,000	1.7%
Chelan County PUD	3,000	1.7%
Seattle City Light	6,850	3.8%
Douglas County PUD	750	0.4%
Tacoma City Light	3,250	1.8%
Eugene Water & Electric Board	850	0.5%
Pend Oreille County PUD	450	0.3%
Total Public-owned	96,450	54.1%
Investor-owned		
Pacific Power & Light	21,550	12.1%
Idaho Power Co.	15,050	8.4%
Montana Power Co.	10,000	5.6%
Portland General Electric Co.	12,100	6.8%
Washington Water Power Co.	7,950	4.5%
Puget Sound Power & Light	15,100	8.5%
Total Investor-owned	81,750	45.9%
Total Generation	178,200	100.0%

(a) Generation shown is for members of the Northwest Power Pool plus Pend Oreille 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 No. 2) and Packwood hydro plant; the Okanogan PUD share of Wells; the municipality shares (Forest Grove, McMinnville, and Milton-Freewater) of Priest Rapids and Wanapum; the municipality shares of Priest Rapids; Kittitas; the Snohomish PUD share of the Centralia steam plant and the Jackson hydro plant; the Pacific NW Generating Company's share of Boardman; the Clark County PUD-Great Western Malting cogeneration 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 PP & L Mid-Fork cogeneration project; PSP&L share of The Dalles Dam North Fishway hydro project generation from N. Wasco Co. PUD; the Federal share of the Gem state hydro plant.

Sales of Electric Power (FCRPS)

Revenue in Thousands of Dollars
Table 2

1993

Customer	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Northwest Region Municipalities				
Albion, ID	8	$ 28	3,415	$ 60
Ashland, OR	370	1,329	169,198	2,921
Bandon, OR	131	473	57,249	989
Blaine, WA	126	451	64,236	1,111
Bonners Ferry, ID	122	438	46,232	831
Burley, ID	236	849	116,993	2,019
Canby, OR	280	1,005	120,999	2,095
Cascade Locks, OR	40	136	19,605	323
Centralia, WA	450	1,619	192,436	3,374
Cheney, WA	222	801	108,183	1,874
Chewelah, WA	11	38	4,843	77
Cons. Irrig. Dist., WA	3	11	1,293	22
Coulee Dam, WA	33	118	16,496	291
Declo, ID	8	29	3,448	60
Drain, OR	45	158	19,429	332
Eatonville, WA	46	164	20,248	352
Ellensburg, WA	333	1,196	166,495	2,877
Eugene, OR	2,942	10,461	1,874,353	32,271
Fircrest, WA	90	324	41,070	715
Forest Grove, OR	365	1,275	169,567	2,933
Heyburn, OR	183	657	106,134	1,826
Idaho Falls, ID	1,234	4,441	583,712	10,134
McCleary, WA	80	288	35,471	613
McMinnville, OR	1,316	4,689	590,870	10,155
Milton, WA	110	394	52,938	918
Milton-Freewater, OR	165	549	72,380	1,263
Minidoka, ID	2	8	990	17
Monmouth, OR	135	487	59,790	1,038
Port Angeles, WA	1,103	3,998	630,759	10,949
Richland, WA	1,355	4,883	626,568	10,809
Rupert, ID	177	637	82,664	1,427
Seattle, WA	756	2,452	2,158,503	39,293
Soda Springs, ID	50	176	23,817	413
Springfield, OR	1,554	5,593	811,759	13,999
Steilacoom, WA	94	336	40,974	716
Sumas, WA	31	112	16,442	281
Tacoma, WA	3,166	11,129	2,405,735	41,164
Troy, MT	33	118	15,049	262
Vera Irrig. Dist., WA	365	1,312	171,462	2,985
WPPSS, WA	88	319	45,418	788
Total Municipalities (40)	17,858	$ 63,481	11,747,223	$ 204,577

Revenue in Thousands of Dollars
Table 2 (continued)

1993

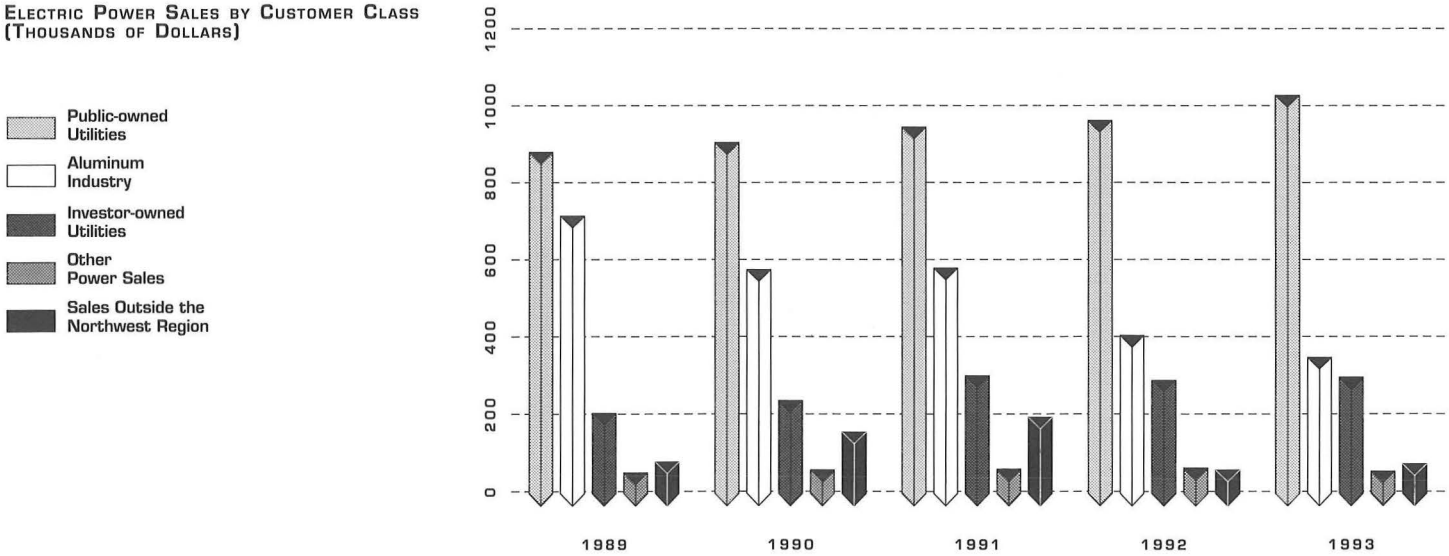
Customer	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Public Utility Districts				
Benton Co.	2,942	$ 10,590	1,383,810	$ 22,525
Central Lincoln	2,497	8,987	1,342,516	23,009
Chelan Co.	315	222	67,880	1,146
Clallam Co.	1,220	4,081	508,954	8,238
Clark Co.	6,228	22,492	3,280,755	56,988
Clatskanie	1,451	5,225	890,298	15,165
Columbia River	557	1,874	280,351	4,503
Cowlitz Co.	6,466	23,102	4,263,658	72,594
Douglas Co.	217	99	6,184	108
Emerald	893	2,978	400,433	6,296
Ferry Co.	239	793	122,502	1,965
Franklin Co.	1,312	4,722	636,780	10,338
Grant Co. #2	936	641	335,301	5,914
Grays Harbor	2,019	7,263	1,007,445	17,488
Kittitas Co.	92	292	37,654	597
Klickitat Co.	608	2,023	293,811	4,603
Lewis Co.	1,366	4,670	688,561	11,318
Mason Co. #1	132	439	56,721	918
Mason Co. #3	1,134	3,794	513,108	8,260
Northern Wasco Co.	553	1,991	258,908	4,467
Okanogan Co.	361	917	367,292	6,477
Pacific Co.#2	636	2,286	274,264	4,760
Pend Oreille Co.	447	1,611	245,669	4,400
Skamania Co.	234	786	105,376	1,700
Snohomish Co.	9,115	32,785	4,901,248	84,761
Tillamook	852	2,848	364,104	5,851
Wahkiakum Co.	81	273	35,810	576
Whatcom Co.	260	935	151,919	2,569
Total Public Utility Districts (28)	43,163	$ 148,719	22,821,312	$ 387,534
Cooperatives				
Alder Mutual Light	7	$ 21	2,919	$ 47
Benton Rural Elec. Assn.	731	2,437	342,924	5,072
Big Bend Co-op	791	2,620	369,632	4,669
Blachly-Lane Co-op	315	1,078	135,136	2,205
Central Elec. Co-op	1,010	3,377	415,565	6,468
Clearwater Power Co.	352	1,182	156,620	2,514
Columbia Basin Co-op	221	739	109,133	1,597
Columbia Power Co-op	58	194	26,519	394
Columbia Rural Elec. Assn.	415	1,363	188,255	2,346

Revenue in Thousands of Dollars
Table 2 (continued)

1993

Customer	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Investor-Owned Utilities				
Colockum Transmission Co.	330	$ 152	12,018	$ 159
Idaho Power Co.	300	1,200	207,194	2,046
Montana Power Co.	0	0	774,591	28,400
Pacific Power & Light Co.	13,757	66,782	1,588,766	34,872
Portland General Elec. Co.	1,801	4,925	1,844,218	51,253
Puget Sound P&L Co.	1,116	511	2,293,237	70,350
Washington Water Power	546	1,433	1,101,507	37,869
Total Investor-Owned Utilities (7)	17,850	$ 75,003	7,821,531	$ 224,949
Aluminum Industries				
Alcoa	2,252	$ 11,511	1,517,709	$ 17,522
Columbia Aluminum Co.	2,664	14,011	1,932,545	20,489
Columbia Falls Aluminum Co.	3,168	16,629	2,282,852	24,153
Intalco Aluminum Co.	4,366	22,962	3,202,269	33,971
Kaiser Aluminum	5,552	28,851	4,012,366	44,166
Northwest Aluminum Co.	1,636	8,603	1,189,225	12,605
Reynolds Metals Co.	5,070	26,642	3,655,721	38,786
Vanalco, Inc.	2,237	11,768	1,672,370	18,509
Total Aluminum Industries (8)	26,945	$ 140,977	19,465,057	$ 210,201

Electric Power Sales by Customer Class (Thousands of Dollars)



Revenue in Thousands of Dollars
Table 2(continued)

1993

Customer	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Other Industries				
ACPC, Inc.	12	$ 51	4,787	$ 82
ATOCHEM N. America/Pennwalt Corp.	808	3,521	568,633	9,375
Georgia Pacific Corp.	270	1,099	174,445	2,913
Gilmore Steel	3	11	1,170	20
Glenbrook Nickel Co.	692	2,994	418,563	6,788
Oregon Metallurgical	134	588	92,685	1,539
Port Townsend Paper	163	713	97,898	1,654
Stewart Elsner/Camp High Cliff	0	0	7	0
Total Other Industries (8)	2,082	$ 8,977	1,358,188	$ 22,371
Total Sales NW Region (154)	131,217	$ 516,605	74,339,200	$ 1,222,162
Outside Northwest Region				
Anaheim, CA - Public	112	$ 547	26,954	$ 336
B.C. Hydro Power - Public	0	0	79,383	1,437
B.C. Power Export - Public	0	0	956,087	12,816
Burbank, CA - Public	18	105	110,531	1,747
Cominco, LTD., B.C. - Investor	415	452	16,273	174
Glendale, CA - Public	20	116	106,717	1,478
Hetch Hetchy Water Power - Public	0	0	1,930	32
Los Angeles, CA - Public	0	0	614,969	6,387
MSR Public Power Agency - Public	600	3,162	252,440	7,169
Metropolitan Water Disr. - Public	0	0	2,263	16
Modesto Irrigation Dist - Public	0	0	46,775	602
Nevada Power Co. - Investor	0	0	750	11
No. California Power Agency-Public	0	0	3,630	39
Pacific Gas & Elec. Co. - Investor	1,600	5,760	737,287	7,652
Pasadena, CA - Public	20	117	41,470	507
Riverside, CA - Public	112	547	20,825	296
Sacramento, CA - Public	50	236	129,402	2,091
Salt River Project - Public	0	0	25,913	446
San Diego Gas & Elec. Co. - Investor	0	0	400,164	5,249
Santa Clara, CA - Public	0	0	3,693	49
Sierra Pacific Power Co.-Investor	0	0	10,985	104
So. Cal. Edison Co. - Investor	0	0	1,222,055	14,085
State of California - Public	0	0	85	1
Tucson Electric Power Co. - Investor	0	0	4,590	70
Turlock Irrigation Dist - Public	0	0	19,904	217
Vernon, CA - Public	24	72	0	0
WAPA-Mid Pacific Region - Federal	49	159	59,568	978
Total Outside NW Region (27)	3,020	$ 11,273	4,894,643	$ 63,989
Sales of Electric Power (181)	134,237	$ 527,878	79,233,843	$ 1,286,151

General Specifications of Projects

September 30, 1993

Project	State	River	Initial Date In Service
Bureau of Reclamation			
Minidoka	Idaho	Snake	May 7, 1909
Boise River Div.	Idaho	Boise	May 1912
Black Canyon	Idaho	Payette	Dec. 1925
Grand Coulee	Washington	Columbia	Sept. 28, 1941
Anderson Ranch	Idaho	S. Fork Boise	Dec. 15, 1950
Hungry Horse[a]	Montana	S. Fork Flathead	Oct. 29, 1952
Chandler	Washington	Yakima	Feb. 13. 1956
Palisades[b]	Idaho	Snake	Feb. 25, 1957
Roza	Washington	Yakima	Aug. 31, 1958
Grand Coulee PG[c]	Washington	Columbia	Dec. 30, 1974
Teton[d]	Idaho	Teton	
Total Bureau of Reclamation			
Corps of Engineers			
Bonneville	Oregon-Washington	Columbia	June 6, 1938
Detroit	Oregon	North Santiam	July 1, 1953
McNary	Oregon-Washington	Columbia	Nov. 6, 1953
Big Cliff	Oregon	North Santiam	June 12, 1954
Lookout Point	Oregon	M. Fork Willamette	Dec. 16, 1954
Albeni Falls	Idaho	Pend Oreille	Mar. 25, 1955
Dexter	Oregon	M. Fork Willamette	May 9, 1955
Chief Joseph	Washington	Columbia	Aug. 28, 1955
The Dalles	Oregon-Washington	Columbia	May 13, 1957
Ice Harbor	Washington	Snake	Dec. 18, 1961
Hills Creek	Oregon	M. Fork Willamette	May 2, 1962
Cougar	Oregon	S. Fork McKenzie	Feb. 4, 1964
Green Peter	Oregon	Middle Santiam	June 9, 1967
John Day	Oregon-Washington	Columbia	July 7, 1968
Foster	Oregon	South Santiam	Aug. 22, 1968
Lower Monumental	Washington	Snake	May 28, 1969
Little Goose	Washington	Snake	May 19, 1970
Dworshak	Idaho	N. Fork Clearwater	Sept. 18, 1974
Lower Granite	Washington	Snake	Apr. 15, 1975
Libby	Montana	Kootenai	Aug. 29, 1975
Lost Creek	Oregon	Rogue	Dec. 1, 1975
Total Corps of Engineers			
Total			

(a) The capacity for Hungry Horse reflects the 3 units that were rewound and the 4th that is currently being uprated.
(b) The capacity for Palisades reflects the 1 unit that was rewound and the 2nd that is currently being uprated.
(c) Grand Coulee Pumping Generation.
(d) Teton Dam ruptured June 5, 1976.

Existing		Authorized-Licensed		Potential		Totals	
No. of Units	Generating Capacity (MW)	No. of Units	Generating Capacity (MW)	No. of Units	Generating Capacity (MW)	No. of Units	Generating Capacity (MW)
7	16	—	—	—	—	7	16
3	2	—	—	—	—	3	2
2	10	—	—	—	—	2	10
24	6,684	—	—	6	4,200	30	10,884
2	30	—	—	1	13	3	43
4	428	—	—	—		4	428
2	13	—	—	—	—	2	13
4	164	2	23	—	—	6	187
1	13	—	—	—	—	1	13
6	314	—	—	—	—	6	314
—	—	3	30	—	—	3	30
55	7,674	5	53	7	4,213	67	11,940
18	1,147	3	23	—	—	21	1,170
2	115	—	—	—	—	2	115
14	1,127	6	768	—	—	20	1,895
1	21	—	—	—	—	1	21
3	138	—	—	—	—	3	138
3	49	—	—	—	—	3	49
1	17	—	—	—	—	1	17
27	2,614	—	—	6	525	33	3,139
22	2,074	—	—	—	—	22	2,074
6	693	—	—	—	—	6	693
2	35	—	—	—	—	2	35
2	29	1	35	—	—	3	64
2	92	—	—	—	—	2	92
16	2,484	4	540	—	—	20	3,024
2	23	—	—	—	—	2	23
6	932	—	—	—	—	6	932
6	932	—	—	—	—	6	932
3	450	3	660	—	—	6	1,110
6	932	—	—	—	—	6	932
5	600	—	—	3	315	8	915
2	56	—	—	—	—	2	56
149	14,560	17	2,026	9	840	175	17,426
204	22,234	22	2,079	16	5,053	242	29,366

Organization Chart

(As of September 30, 1993)

ADMINISTRATION
Administrator
Randall W. Hardy

Deputy Administrator
Jack Robertson

Executive Assistant Administrator
Steven G. Hickok

Senior Assistant Administrator
Edward W. Sienkiewicz, Jr.

INFORMATION RESOURCES MANAGEMENT
Information Resources Manager
Vickie R. VanZandt

WASHINGTON, DC
Assistant Administrator
Stephen J. Wright

Deputy Assistant Administrator
Roger E. Seifert

GENERAL COUNSEL
General Counsel
Harvard P. Spigal

Assistant General Counsel (Resources)
Preston D. Michie

Assistant General Counsel (Power Sales)
Sarah McNary

Assistant General Counsel (Rates)
Randy A. Roach

ENVIRONMENT
Assistant Administrator
Alexandra B. Smith

ASSISTANTS TO THE ADMINISTRATOR
Contracts & Property Management
Norman L. Linscott

Fish & Wildlife
John R. Palensky

Equal Opportunity Program
Godfrey C. Beckett

Internal Audit
Jack L. Strayer

External Affairs
(Acting) Karen A. Hunt

Quality Improvement
Steven C. Kallio

Council Liaison
Larry C. Larson

Program Mangement Officer
Evelyn M. Nicholson

Administrative Officer
Russell E. Walker

AREA EXECUTIVE OFFICER
John E. Kiley

LOWER COLUMBIA AREA
Area Manager
George E. Bell

Deputy Area Manager
Clifford C. Perigo

Ross Complex Site Manager
David E. Dunahay

Management Services Officer
Frances L. Gebhardt

ENGINEERING
Assistant Area Manager
Edward A. Peterson

OPERATIONS & MAINTENANCE
Assistant Area Manager
Robert G. Nichols

POWER SALES
Assistant Area Manager
Dennis Metcalf

ENERGY RESOURCES
Assistant Area Manager
Victoria P. English

EUGENE DISTRICT
District Manager
Robert N. Laffel

PUGET SOUND AREA
Area Manager
Terence G. Esvelt

Deputy Area Manager
L. Kirk Hall

Management Services Officer
Lynda B. Stelzer

ENGINEERING
Assistant Area Manager
Hugh B. Starkey

OPERATIONS & MAINTENANCE
Assistant Area Manager
Dennis L. Johnson

POWER MANAGEMENT
Assistant Area Manager
George T. Reich

CONVSERVATION
Assistant Area Manager
Carolyn A. Whitney

UPPER COLUMBIA AREA
Area Manager
Wayne R. Lee

Deputy Area Manager
Frederic D. Rettenmund

Management Services Officer
Randy L. Ridenhour

ENGINEERING
Assistant Area Manager
Paul E. Eichin

OPERATIONS & MAINTENANCE
Assistant Area Manager
Kenneth M. Hemmelman

POWER MANAGEMENT
Assistant Area Manager
Arthur A. Harlow

ENERGY RESOURCES
Assistant Area Manager
Tomas Hannon

MONTANA DISTRICT
District Manager
George E. Eskridge

SPOKANE DISTRICT
District Manager
Carol S. Fleischman

WENATCHEE DISTRICT
District Manager
Ronald K. Rodewald

SNAKE RIVER
Area Manager
Thomas V. Wagenhoffer

Deputy Area Manager
Parick G. McRae

Management Service Office
Allan D. Polvi

ENGINEERING
Assistant Area Manager
Robert R. Goranson

OPERATIONS & MAINTENANCE
Assistant Area Manager
Truman W. Conn

POWER MANAGEMENT
Assitant Area Manager
Robert A. Rogers

CONSERVATION
Assistant Area Manager
Edward G. Ferguson

IDAHO FALLS DISTRICT
District Manager
C. Clark Leone

BOISE DISTRICT
District Manager
James R. Normandeau

OFFICE OF FINANCIAL MANAGEMENT
Assistant Administrator
James H. Curtis

Deputy Assistant Administrator
Vacant

Program Management Officer
David A. Imholt

Administative Officer
Leanne Cesario

DIVISION OF FINANCE & BUDGET
Director
Shirley R. Melton

DIVISION OF ACCOUNTING & FINANCIAL SYSTEMS
Director
Herb C. Kuhn

OFFICE OF ENGINEERING
Assistant Administrator
Charles F. Clark

Deputy Assistant Administrator
Richard L. Perlas

Research and Development Manager
Walter E. Myers

Program Management Officer
William M. Hoberg

Resource Management Officer
Kathy Hay

Administrative Officer
Ross Crozier

DIVISION OF ELECTRICAL & ELECTRONIC ENGINEERING
Director
Milton J. Brown

DIVISION OF FACILITIES ENGINEERING
Director
Gary A. Parks

DIVISION OF LABORATORIES
Director
Ingo P. Thurein

DIVISION OF SYSTEM PLANNING
Director
Dean E. Perry

OFFICE OF OPERATIONS, MAINTENANCE & CONSTRUCTION
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James L. Jones

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Richard B. Banning

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DIVISION OF POWER SUPPLY
Vacant

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Sue F. Hickey

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OFFICE OF MANAGEMENT SERVICES
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Deputy Assistant Administrator
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DIVISION OF MANAGEMENT ANALYSIS
Manager
Thomas M. Noguchi

SAFETY
Manager
Harvey Haven

Administration Offices

BPA Headquarters
905 N.E. 11th Street
P.O. Box 12999
Portland, OR 97208
(503) 230-3000
Toll-free Public Involvement line:
(800) 622-4519

Lower Columbia Area
1500 N.E. Irving Street
Room 250
P.O. Box 3621
Portland, OR 97208
(503) 230-4558

Eugene District
86000 Franklin Boulevard
Eugene, OR 97405
(503) 465-6958

Upper Columbia Area
707 W. Main
Suite 500
Spokane, WA 99201-0608
(509) 353-2515

Wenatchee District
301 Yakima Street
Room 307
P.O. Box 741
Wenatchee, WA 98807
(509) 662-4377

Spokane District
707 W. Main
Suite 500
Spokane, WA 99201-0608
(509) 353-3279

Montana District
800 Kensington
Missoula, MT 59801
(406) 329-3060

Puget Sound Area
201 Queen Anne Avenue N.
Suite 400
P.O. Box C-19030
Seattle, WA 98109-1030
(206) 553-4130

Snake River Area
1520 Kelly Place
Walla Walla, WA 99362
(509) 527-6213

Idaho Falls District
1527 Hollipark Drive
Idaho Falls, ID 83401
(208) 523-2706

Boise District
304 N. 8th Street
Room 450
Boise, ID 83702
(208) 334-9137

Washington, D.C. Office
600 Maryland Avenue, S.W.
Room 220
Washington, DC 20585
(202) 586-5640

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