Bonneville Power Administration
Annual Report 1990

Our children will judge tomorrow the wisdom of
the decisions we make today.

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Bonneville Power Administration
Robin Cody

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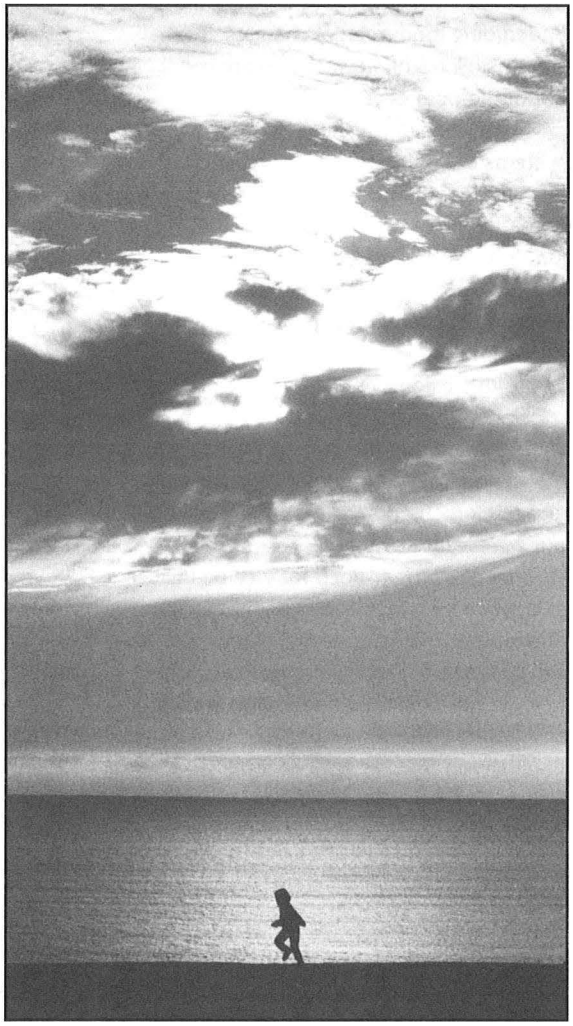


Letter to the Secretary

1990 was a year of significant achievement and improvement for BPA. Total 1990 revenues slightly exceeded those of 1989. But net earnings improved significantly, due to a very successful debt restructuring of BPA's non-Federal generating projects and improved efficiency within the organization. This performance is a direct result of BPA's commitment to strengthen its financial position for the 1990s — a decade that promises major challenges for Bonneville and the entire Pacific Northwest.

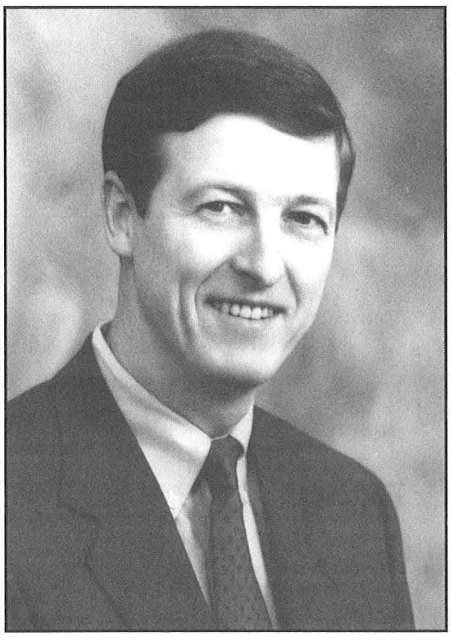
BPA has been a steward of the Federal Columbia River Power System for more than 50 years. It has had an enormous positive influence on the economic and environmental well-being of the Pacific Northwest. Our region is now undergoing fundamental changes. The responsibilities of stewardship are more important than ever.

Both the Northwest and BPA power systems are in load-resource balance. New resources are needed to meet the demands of an expanding economy. Many promising resources must be captured soon or may be lost forever, including conservation and better coordination with other utility systems.

BPA's extensive high-voltage transmission system will continue to be one of its greatest strengths. But, during the 90s, our system will need major replacements and reinforcements if we are to maintain our significant advantage.

We see a clear need for electric utilities to operate with increased concern for the environment. Environmental challenges will continue to change the way we operate our business. Our region is now addressing several petitions under the Endangered Species Act concerning Columbia River salmon. Bonneville has proposed a comprehensive region-wide solution called the Columbia Basin Accord to strengthen all salmon runs in the Columbia and Snake river systems.

If BPA is to retain and strengthen its stewardship role in the Pacific Northwest



and fulfill its responsibilities to its customers, it must adapt to this changing environment, and position itself to meet leadership challenges as they arise.

Strengthening the Foundation

During 1990, BPA's long-term approach to strengthening its financial position significantly advanced. We completed refinancing high-interest Washington Public Power Supply System debt. This will reduce BPA debt service by an average of $85 million per year for 20 years. In addition, BPA's net revenues improved for the third straight year, and for the seventh year in a row we paid over $600 million to the U.S. Treasury.

Building on this improved footing, BPA has challenged itself and the region to finance its capital program in the 1990s without commensurate increases in long-term debt. In the next year we plan to develop, with our customers and other regional interests, a long-term financial strategy that will address this objective and reduce our dependence on the U.S. Treasury.

Looking to the Future

BPA bought new resources in 1990 to meet our customers' needs. We accelerated conservation — our resource of first choice. We also started buying a mix of hydro efficiency improvements, co-generation, and small new generation resources. We moved ahead on shared storage and joint transmission projects with our neighbors in Canada and California.

And we launched, with the U.S. Army Corps of Engineers and the Bureau of Reclamation, a comprehensive review of the management of our major existing resource, the Columbia River. As demands on river water increase, we must determine how to balance all of the river's uses.

Protecting the Environment

Environmental responsibility, always a high priority at BPA, took center stage on Earth Day, 1990. The Natural Resources Defense Council honored BPA as "the North American leader" in energy efficiency, environmentally sensitive resource planning, and public involvement. BPA responded with an endorsement of the "Valdez Principles," which articulate our concern for the global environment and reaffirm our aim to be the most competitive and socially responsible power system in the nation.

In 1990 we took the long view. Bonneville set a course to assure that our children, and theirs, will benefit from clean and reliable power at low, stable rates. This report reviews the year's major achievements in the light of what they will mean for us in coming years and for future generations.

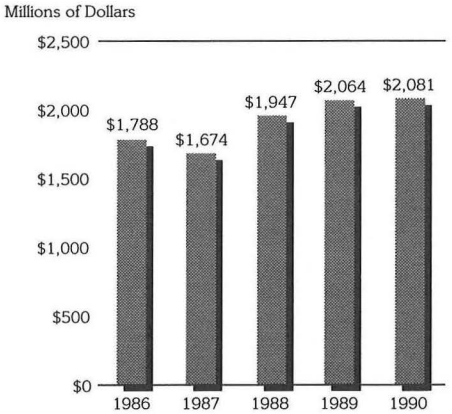
James J. Jura
Administrator

Financial Highlights

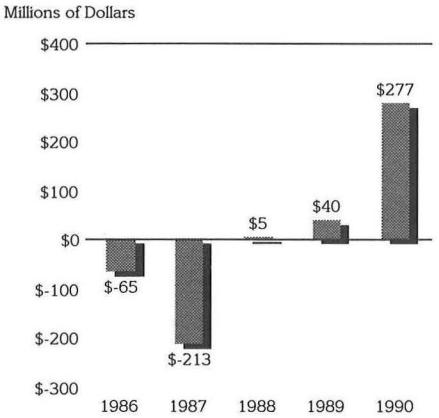
For the Years Ended September 30, 1990 and 1989

Operating Results:	FY 1990	FY 1989
	(Thousands of Dollars)	
Operating Revenues:		
Sales of electric power –		
Sales within the Northwest region	$ 1,787,228	$ 1,862,268
Sales outside the Northwest region	158,244	80,979
Wheeling and other sales	135,290	120,619
Total operating revenues	2,080,762	2,063,866
Total operating expenses	1,453,153	1,670,475
Net operating revenues	627,609	393,391
Net interest expense	350,902	353,490
Net Revenues	$ 276,707	$ 39,901
End of Year:		
Total Assets (Net of Accumulated Depreciation)	$15,051,014	$14,260,965
Total Capitalization and Liabilities:		
Accumulated net expenses	$ (264,150)	$ (540,857)
Federal appropriations	6,697,535	6,643,275
Treasury borrowings	1,694,499	1,794,499
Non-Federal projects debt	6,708,549	6,158,193
Other	214,581	205,855
	$15,051,014	$14,260,965
Employees (Staff Years)	3,280	3,312

Total Operating Revenues



Net Revenues (Expenses)



Building a Firm Financial Base

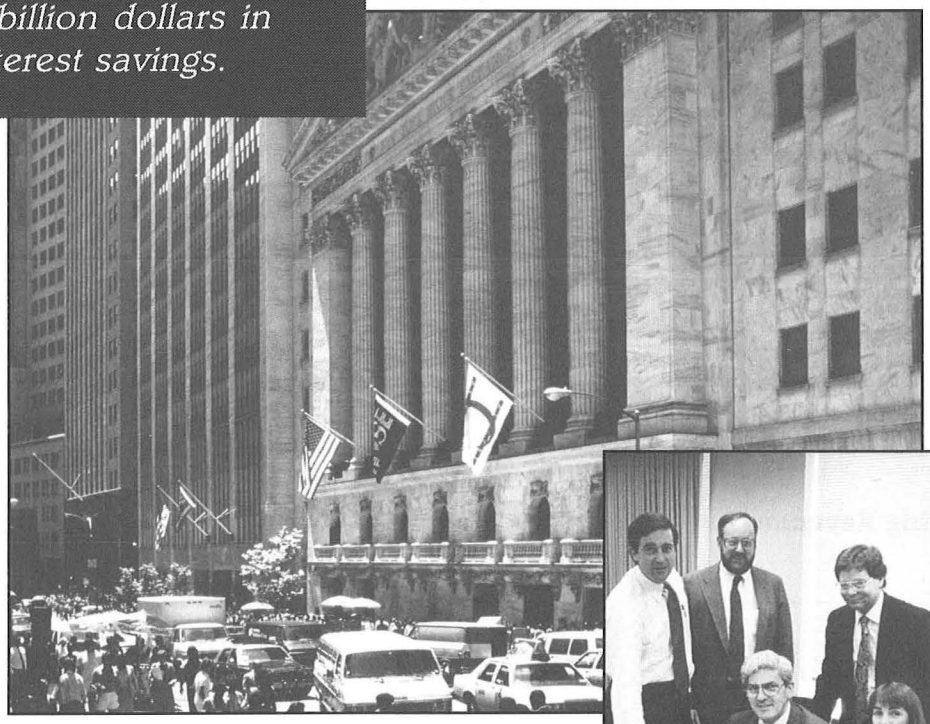
Future Northwest ratepayers will look back on 1990 as a year in which BPA turned an important corner on the road to financial stability.

In November 1990, the Washington Public Power Supply System completed a series of six bond sales to refinance its nuclear projects. The proceeds — a total of roughly $3.9 billion — paid off higher-interest bonds issued years ago. Because BPA pays the Supply System's share of costs of WNP-1, WNP-2, and WNP-3, these bond sales reduce BPA's high fixed costs. Refinancing saves money now, and it will keep saving BPA an average of $85 million per year for 20 years.

Water conditions in 1990 looked bad at first but came out almost average — a welcome improvement after three very dry years.

Because reservoirs weren't full to start the year, BPA agreed to loan energy to aluminum companies for the top quarter of their loads through Jan. 10. In return, BPA could have restricted their loads in the spring. When water flow improved, that option wasn't necessary. In fact BPA sold some nonfirm power over and above that associated with releasing water for fish. BPA passed up other spot-market sales in favor of boosting water storage for next year.

On Wall Street, the BPA refinancing team helped deliver nearly a billion dollars in interest savings.



Net Revenues Up

Bonneville finished the year $277 million in the black. This was a healthy improvement over 1989 net revenues of $40 million. Most of the increase was due to the successful refinancing of Supply System bonds.

Revenues from power sales to Northwest utilities were up slightly from 1989. Nonfirm revenues nearly doubled. Revenues from aluminum power sales, on the other hand, came in lower. Although BPA sold more power to aluminum companies, the variable rate tied to a falling aluminum market brought BPA

less money. Overall, revenues rose $17 million, or about 1 percent, over 1989.

Expenses were down. Because of refinancing, BPA spent $215 million less in 1990 than in 1989 to service Supply System debt. Overall, expenses dropped $220 million, or 11 percent, as BPA kept a firm grip on costs.

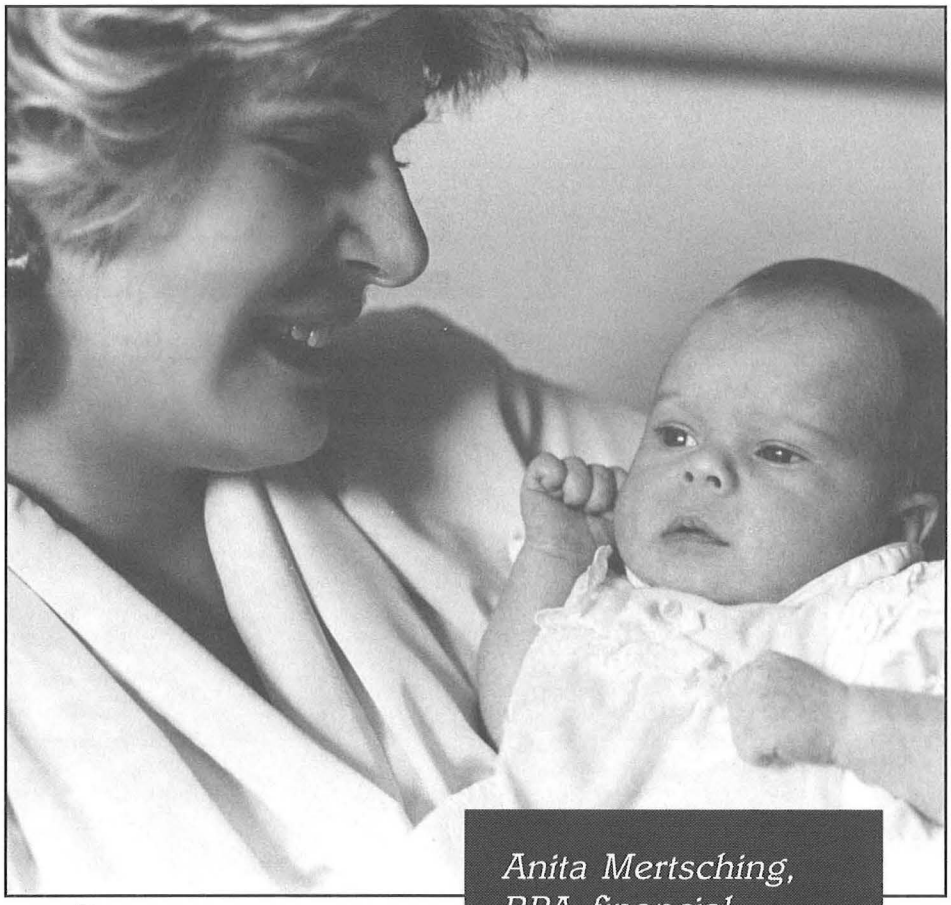
Bonneville paid the U.S. Treasury $618 million on Federal investment in the Columbia River power system. Treasury payments topped $600 million for the seventh year in a row.

Holding the Line on Debt

Cost control, good current revenues, and benefits from refinancing set the stage for holding the line on Federal debt. Traditionally, BPA has financed all of its capital additions by borrowing from the U.S. Treasury. This practice must be critically reviewed in the light of Federal budget pressures and the magnitude of BPA's debt. At the end of 1990, Bonneville owed the U.S. Treasury and other bond holders about $15.3 billion. Its assets total about $15 billion.

On Sept. 25, BPA unveiled a proposal to fund a portion of its new capital investments over the next 10 years from current revenues. The proposal would move BPA away from its fully leveraged (100 percent debt-financed) position.

In meetings with its customers, BPA discussed the challenge of keeping a rein on its debt in the 1990s in the face of expanding program needs. The agency agreed to work with its customers and the public in the next year to develop a long-term financial plan.

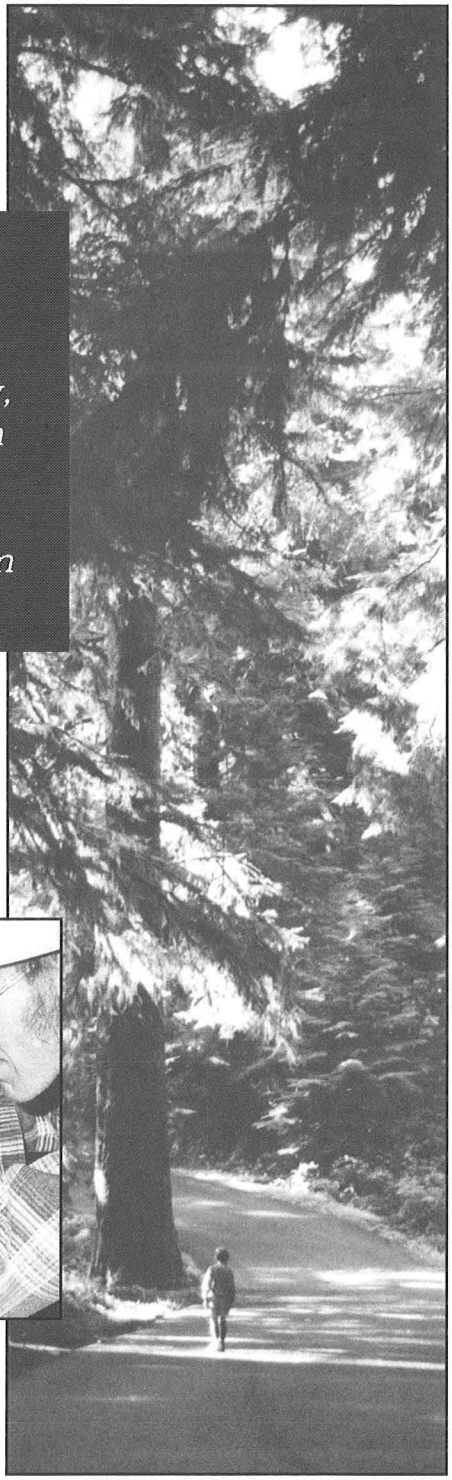


Anita Mertsching, BPA financial analyst, with her daughter Emily. "There was a real sense of excitement about refinancing," says Mertsching. "We could accomplish something big for Emily and her generation, as well as for our own."

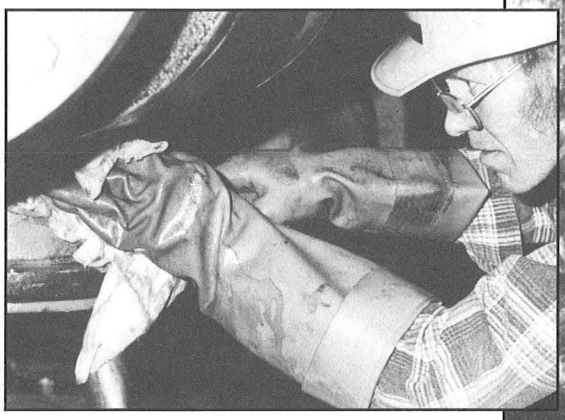
For now, BPA has adopted an interim policy to hold the line on debt during the next rate period. It intends to establish rates for 1992-93 that will be consistent with a goal of no net increase in Federal debt through the year 2001.

A disciplined financial approach will make BPA both stronger and more flexible. By borrowing less in 1992-93 than the limits Congress has approved, BPA will begin to build up a credit line to cover sudden swings in revenues and costs. This will help assure that, over the long term, Bonneville will be able to absorb sizeable financial shocks without cutting back on maintenance, fish and wildlife, restoration, power plant and conservation development, and other programs vital to the future prosperity of the Pacific Northwest.

Restoring Fish and Cleaning Up



A clean system and safe materials help maintain a healthy environment. Below, electrician Sam Brin scrubs a 230-kV transformer with a degreaser made from citrus peels.



Our children have every right to expect that fish and wildlife will thrive in and around Northwest rivers, and that the earth, air, and water will be free of energy-related pollution. Hydroelectric power doesn't contribute to the greenhouse effect or global warming, but dams have harmed fish. And BPA, like other utilities, has used equipment containing toxic chemicals on its transmission system.

BPA's environmental efforts in 1990 focused on restoring fish runs and cleaning up the power grid.

A Strong Commitment to Fish

To rebuild salmon and steelhead runs, Bonneville has spent nearly $1 billion over the past 10 years.

BPA follows a comprehensive fish and wildlife program of the Northwest Power Planning Council, working closely with Indian tribes and fish and wildlife agencies. BPA-funded hatcheries and fish projects aim for the Council's goal of adding 2.5 million adult salmon and steelhead to Columbia River Basin annual runs. BPA also foregoes power revenues to make water available for downstream migration of young salmon and steelhead.

The Council's program has seen some positive results. The Umatilla River, barren of fish runs for 50 years, hosted spring chinook runs of 13 fish in 1988, 164 in 1989, and over 2,000 in 1990. Elsewhere in the Columbia

Basin, BPA-funded fish projects have enhanced salmon streams.

The fish program is not an unqualified success, however. Overall, Columbia salmon runs in 1990 were much lower than predicted. Some stocks of wild salmon, with their greater genetic diversity than hatchery-bred fish, are not doing well at all. Now under consideration are proposals to list five wild stocks of Columbia and Snake River salmon under the Federal Endangered Species Act.

As a participant in the Salmon Summit — a regional effort initiated by Senator Mark Hatfield to address declining salmon runs — BPA proposed "The Columbia Basin Accord."

The Accord would be based on a comprehensive long-term agreement among key parties in the Pacific Northwest to reverse the decline and enhance the production of fish in the Columbia Basin, with particular attention to wild salmon and steelhead. BPA expects to invest at least $1.5 billion over the next 10 years in Columbia Basin Accord projects.

Cleaning Up the Power System

In addition to its fish and wildlife concerns, Bonneville wants our children to inherit a clean transmission system. Like any other utility, BPA in the past used electrical equipment containing polychlorinated biphenyls, or PCBs. Chlorinated solvents were tools of the trade. But that was before research showed these substances could be harmful to human health.

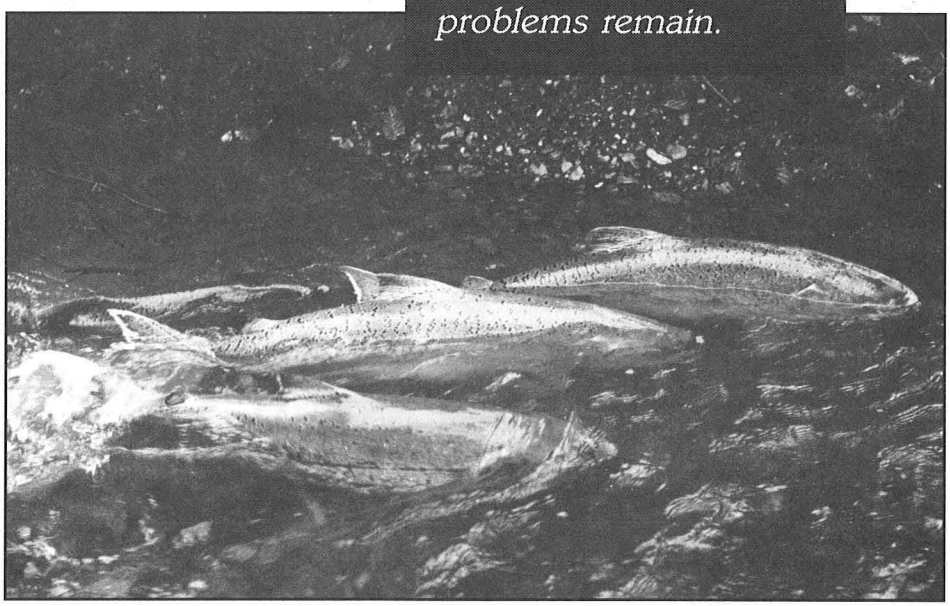
A major clean-up is under way. BPA will replace over 25 percent of the PCB capacitors on the system by 1992, and will replace all of its PCB capacitors within 16 years. BPA has hired a contractor to study the clean-up of its Ross Complex in Vancouver, Washington. The complex was listed by the Environmental Protection Agency as a "Superfund" site in 1989. BPA has started to clean up and replace all four of its capacitor substations on the Pacific Northwest-Pacific Southwest Intertie.

No longer does BPA apply pentachlorophenol to preserve wood poles. Wherever possible, crews use biodegradable degreasers instead of chlorinated solvents to clean electrical equipment. Such degreasers are now used to remove oil from transformers in BPA's Lower Columbia Area.

Scientific studies have raised questions about whether or not electric and magnetic fields, or E/MF, affect human health. Bonneville supports E/MF research. BPA and five other utilities are studying the possible effects of high-voltage transmission lines on sheep. It may take years to learn whether E/MF are a hazard to humans. In the meantime, BPA brochures cover the latest E/MF studies and emerging information.

Bonneville's environmental responsibility extends beyond clean hydro and a safe transmission system. Hydro alone will not meet all future needs. The new resources we choose — as discussed in the next section — will have a big impact on Northwest quality of life for years to come.

BPA's efforts have helped some Columbia River Basin fish runs, but serious problems remain.

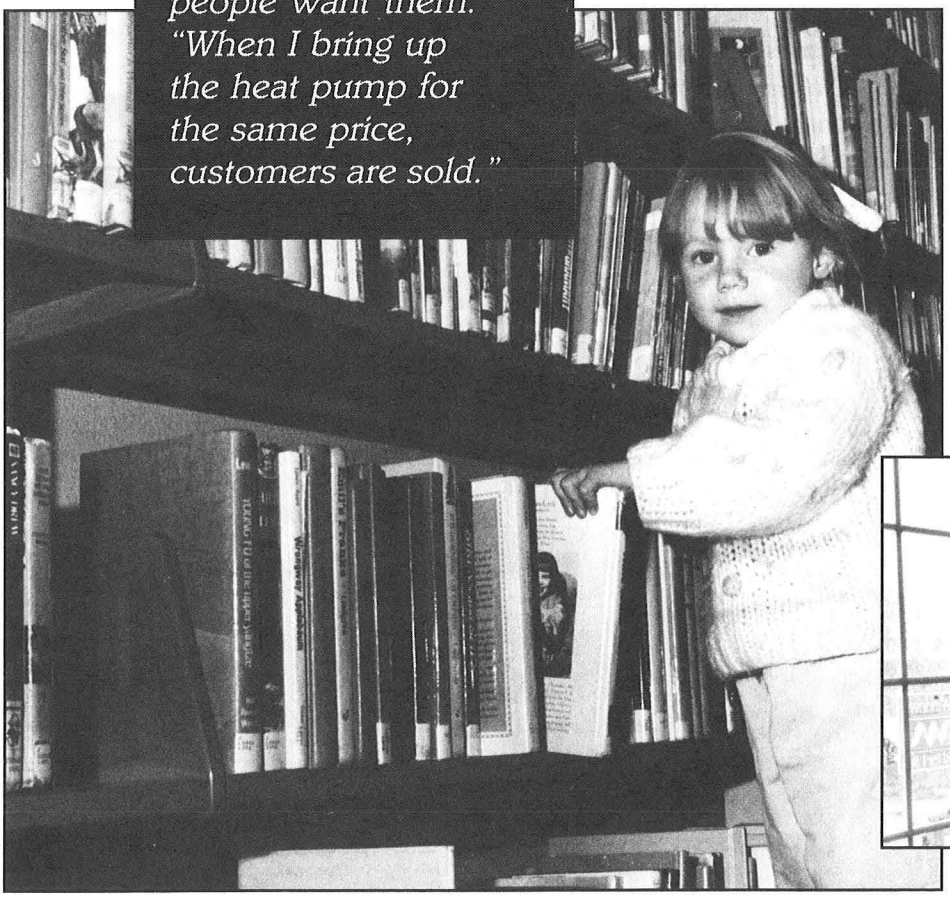


Making Wise Energy Choices

In 1990, it became clear that the Northwest and BPA need to acquire new energy sources. The Northwest economy has slowed, but it's still growing. BPA completed the Resource Program it began in 1989, and started putting planning into action. Bonneville is buying the output of new resources, using existing resources more efficiently, and making broader West Coast agreements for real energy gains.

The 1990 Resource Program describes how much and what kinds of new resources BPA needs, and how it should buy them. Through the Resource Program, BPA does its part to meet the regional energy goals set out by the Northwest Power Planning Council. The Council is preparing its own regional 1991 Power Plan, which will guide BPA in developing future resources.

Conservation saves energy and brings side benefits. New lighting and insulation make the Snohomish, Wash., children's library less costly to run. Contractor Phil Borg builds Super Good Cents homes because people want them. "When I bring up the heat pump for the same price, customers are sold."



A Mix of New Resources

Conservation is BPA's resource of first choice. An aggressive, steadily increasing conservation program, by itself, will meet much of the likely range of load growth BPA faces. Under the 1990 Resource Program, BPA will acquire 30 to 35 average megawatts a year of cost-effective conservation in homes, businesses, factories, and farms. The goal is to capture at least 200 average megawatts of conservation by 1997.

But conservation can't do it all. To meet the rest of the likely range of power needs, BPA is buying a diverse

mix of generation resources. For example, the Resource Program aims for over 100 average megawatts in efficiency gains at Federal dams.

To buy new resources, BPA is using new approaches. Billing credits will reward BPA customers who come up with new resources on their own and cut their need for BPA power. In July, Bonneville called for proposals for 50 average megawatts to test the billing credits mechanism. BPA received proposals for a total of 130 average megawatts.

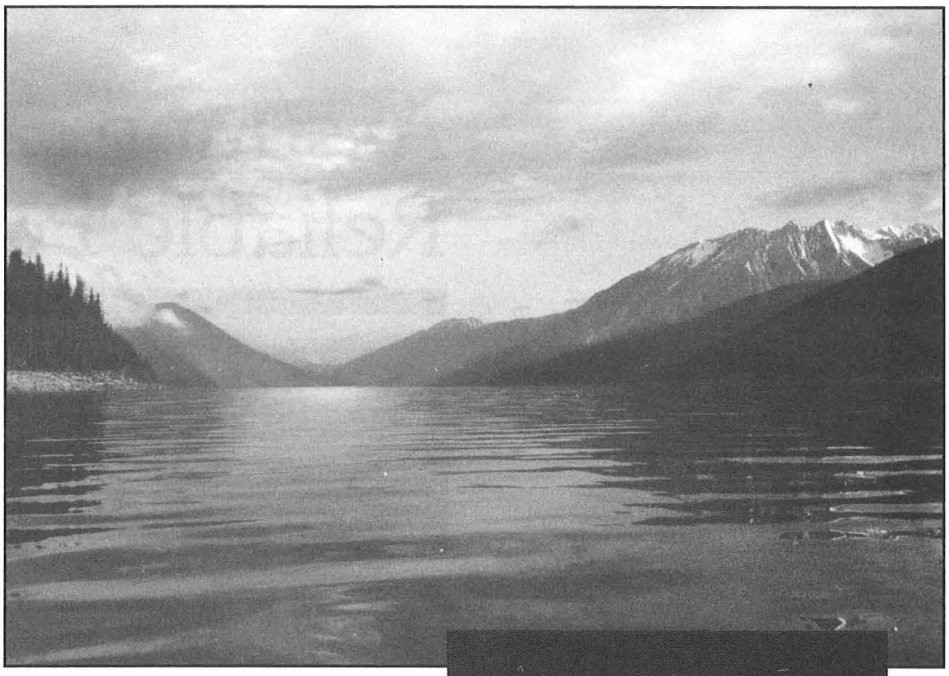
Another 100 average megawatts should come through an "all sources" competitive bidding process.

In the 1990 Resource Program, a contingency plan prepares BPA in case load growth exceeds the likely range. BPA is weighing various options, such as natural gas turbines, to supplement the Northwest energy supply.

While marking out the least-cost path for energy development, BPA carefully weighs environmental effects. This year BPA started an Environmental Impact Statement to consider the cumulative effect of different mixes of energy choices for the 1992 Resource Program and beyond.

Working With Our Neighbors

In the future, wise Northwest energy choices will depend more and more on cooperation with our neighbors in Canada and California. Energy exchanges, better transmission ties, and coordinated reservoir storage can help more than one region. BPA Administrator James Jura, B.C. Hydro Chairman Larry Bell, and the heads of other large power agencies north and south met this year to craft a West Coast Energy Vision. The Vision calls for collaborative energy planning among utilities to create the most cost-effective, environmentally sound power system possible.



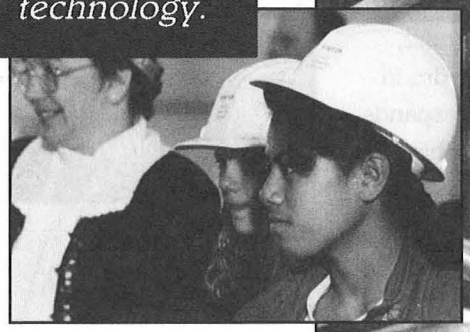
Coordinating more water storage behind Mica Dam has added to the firm power of Canada and the United States, without new construction.

An example of the Vision's underlying good sense is a 10-year extension and expansion of the Non-Treaty Storage Agreement, signed by BPA and B.C. Hydro in July. The new agreement expands non-treaty water storage behind British Columbia's Mica Dam from the current 2 million acre-feet to 4.5 million acre-feet. Now the two agencies have an additional 300 average megawatts of firm energy to share. Nobody built anything. All it took was negotiation to use the Columbia River cooperatively and more efficiently.

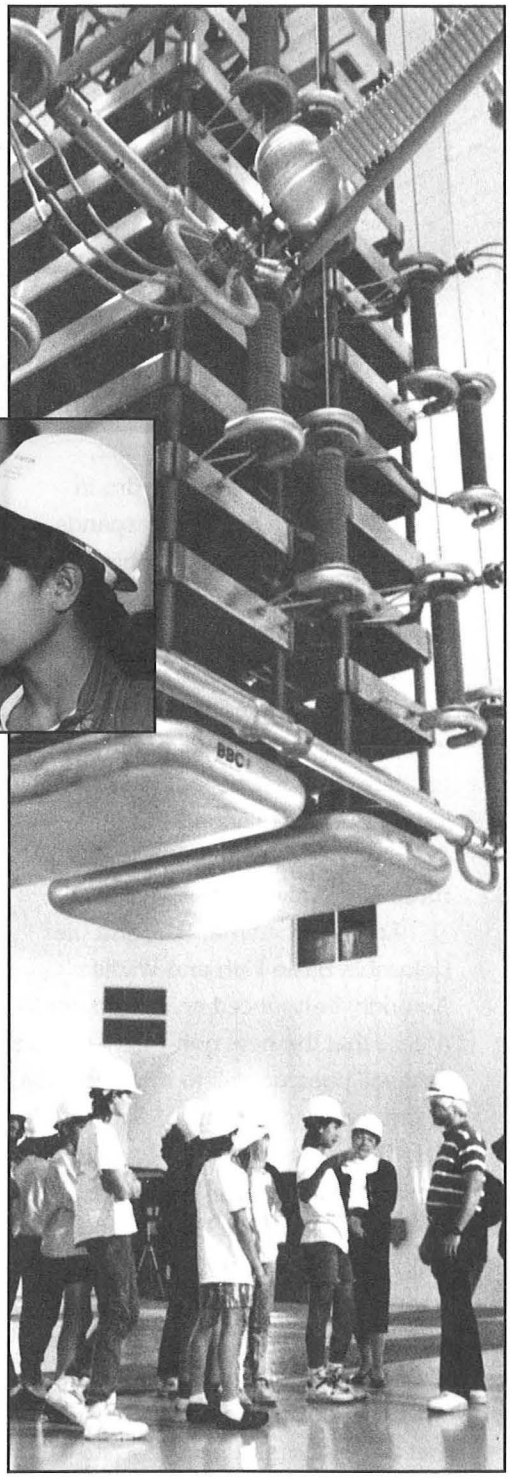
At the same time, BPA and the Columbia Basin Fish and Wildlife Authority announced an agreement to assure that the new non-treaty storage pact will pose no risk to migrating fish. In fact, water gained from Canada may help BPA compensate for low flows on the Snake River.

The Vision, like BPA's Resource Program, recognizes that the environmental and economic consequences of energy development must be clearly identified and balanced. Our children will benefit from today's energy choices that are economically sound and socially responsible.

Assuring Reliable Power



Students on tour at the Celilo Converter Station and BPA labs learn about the latest electrical technology.



A prime Bonneville responsibility, now and for the future, is to provide reliable electric power service for the region. The BPA transmission system delivers power to more than 150 utilities and direct service industries in the Northwest. BPA has over 14,700 circuit miles of high-voltage transmissions lines and 387 substations. If the Northwest had to build this system today, it would cost an estimated $10 billion.

Fortunately, the transmission system is already in place. But it's aging. The need for replacement parts is becoming critical. In addition, increasing power demands have strained the system to the point that it needs to be strengthened and expanded.

Maintaining a Top-Notch System

To catch up and keep up, Bonneville in 1990 adopted a 10-year operations, maintenance, and replacement plan and started putting it to work. The plan maps a strategy for eliminating a backlog of preventive maintenance. It provides a blueprint for replacing aging equipment. The plan cites specific projects and budget priorities for operating, maintaining, and replacing the power system through the end of the century.

The 10-year plan fits BPA's overall commitment to social and environmental responsibility. New

laws regulate the use and disposal of hazardous substances and wastes. BPA not only complies with these laws but also takes active steps such as testing new, non-toxic solvents and conducting research on possible environmental hazards.

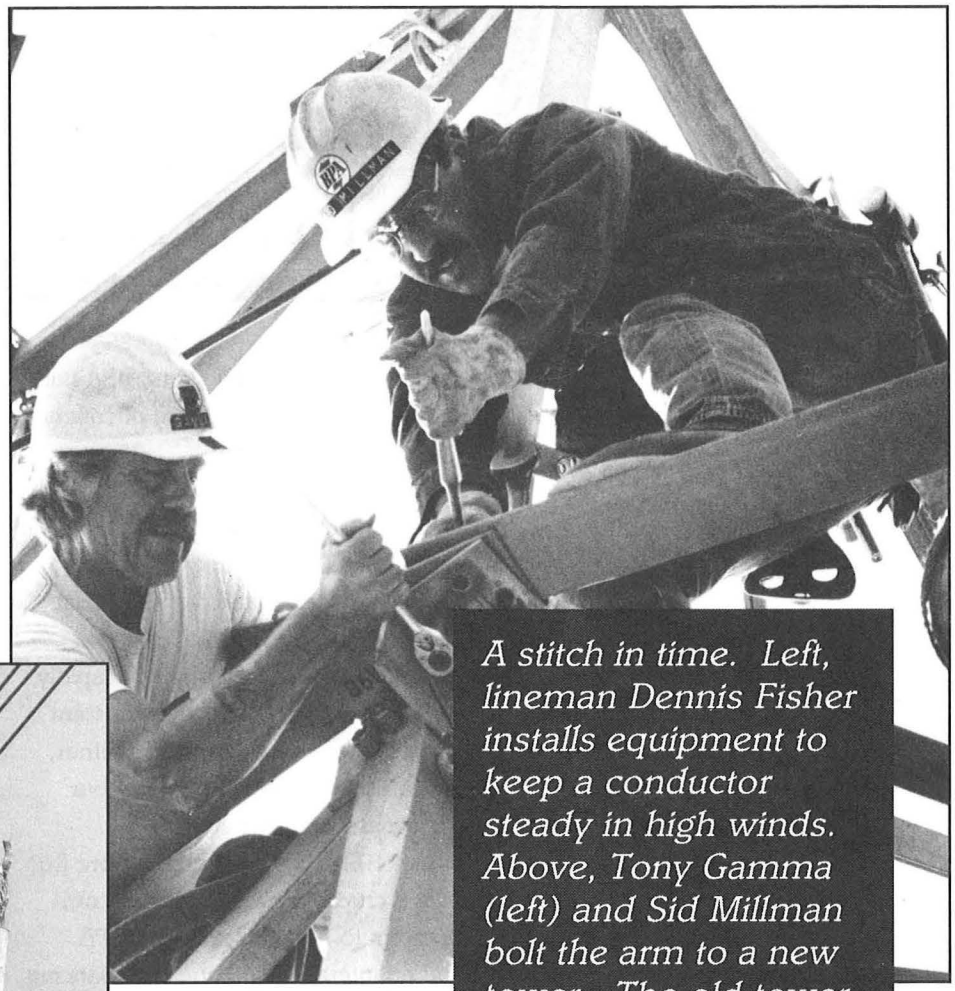
New Challenges to Meet Growth

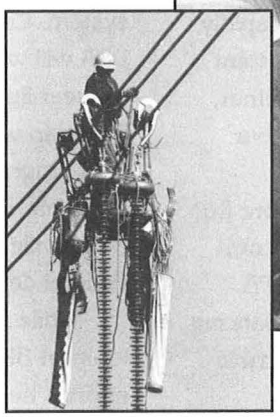
Looking to the future, Bonneville is expanding the transmission system to serve existing loads and to meet the needs of a growing Northwest economy. Through the 1980s, the BPA transmission system had more than adequate capacity to serve the region. Now, in some areas, excess capacity during peak loads is a thing of the past.

Power loads around Puget Sound are growing especially fast. A cold snap in February 1989 tested the Puget Sound transmission system to its limits. If only one of five cross-Cascades 500-kV lines had gone out, a widespread blackout could have occurred. BPA met with Puget Sound utilities and aluminum producers in 1990 to draw up plans to minimize the danger of blackouts in the near future. At the same time, BPA and the utilities are working to find a long-term solution. Possibilities include more conservation, shifting some loads to off-peak hours, building a new cross-Cascade transmission line, and/or building new power plants in the Puget Sound area.

BPA, The Washington Water Power Co., Idaho Power Co., and PacifiCorp are cooperating to solve a transmission bottleneck in the area around Lewiston, Idaho.

Efforts continue to boost intertie links with Canada and California.





A stitch in time. Left, lineman Dennis Fisher installs equipment to keep a conductor steady in high winds. Above, Tony Gamma (left) and Sid Millman bolt the arm to a new tower. The old tower had started to slide down its unstable hillside. "It could have blacked out the whole Willamette Valley," says Gamma. "Think of it – kids in school, hospitals, old people at home. It gives you a real sense of doing something."

Work on the Third Alternating Current Intertie moved ahead in 1990. The three co-owners of the Northwest portion of the intertie — BPA, PacifiCorp, and Portland General Electric Co. — came closer to agreement with their California counterparts on how costs and access are to be shared. The project will increase intertie capability by 1,600 megawatts.

Expanding the transmission system — along with the 10-year plan to better maintain it — will contribute to prosperity in the Northwest for years to come. The system works. BPA wants it to work even better, and for a long time. The next generation will inherit a transmission system that is reliable, economic, nonpolluting, and able to do the job.

Working With the Region to Frame Our Future

In the last several years, BPA has developed a unique culture of collaboration and consultation.

Open and candid exchanges among customers and partners encourage a shared energy strategy. Through informal and formal public involvement, BPA works with the region to make decisions. In a rapidly changing environment, this constant contact keeps us evolving. Together, we can control costs and meet our customers' energy needs.

In 1990, this partnership bore fruit in two crucial areas: a regional commitment to fiscal discipline at BPA, and an interagency focus on balancing the competing uses of the Columbia River System.

Public discussions help refine BPA's program and financial proposals – before decisions are made.

Sharing the Long-Term View

This year in a regular public process, Programs in Perspective, Bonneville opened its books for customers and the public to review proposed 1992-93 program levels and long-term financial strategy.

The region discussed increasing investments in conservation and other energy resources, in fish and wildlife, and in refurbishing the transmission system. Customers called for, and BPA will work with them to prepare, a 10-year financial plan for the agency. The plan will consider how to support BPA programs and stabilize power rates into the next century. Meanwhile, Bonneville will hold the line on its Federal debt in 1992-93.

While Programs in Perspective looks at BPA decisions, an interagency effort is necessary to address multiple uses of the Columbia River system.

In 1990, Bonneville joined with the U.S. Army Corps of Engineers and Bureau of Reclamation — the owners and operators of Federal dams — for a public review of how the Columbia

River system is managed.

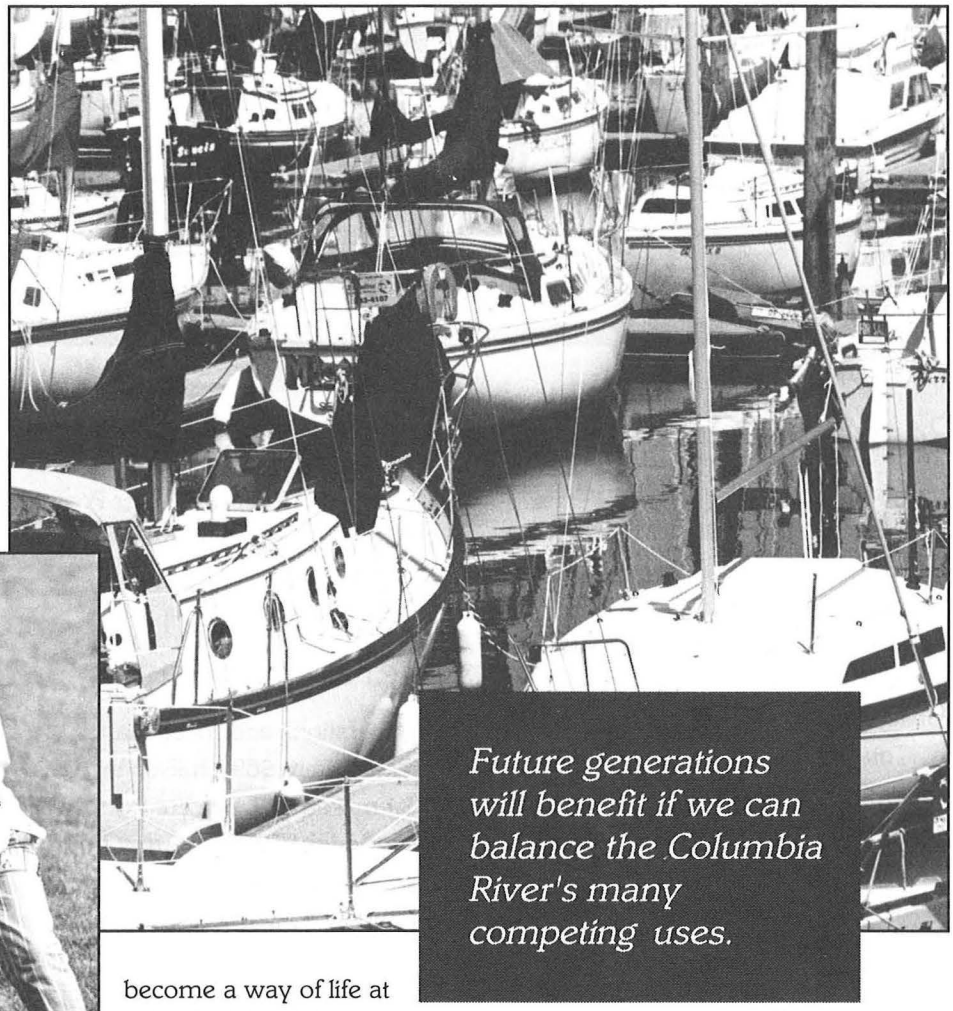
The region has been asking more and more of the Columbia River and its Federal dams. The dams provide river transport, prevent flooding, water crops, produce power, and support recreation. A healthy river nurtures fish and wildlife.

There simply is not enough water flowing in the system today to meet all the demands. The System Operation Review will address competition among all of the river's uses. The process is evolving quickly to meet new regional challenges. If some stocks of salmon are listed under the Endangered Species Act, for example, other uses of the river may be severely cut back to allow more water for fish. The new public forum will address costs, benefits, and tradeoffs among all the competing demands.

The System Operation Review will support other big decisions on the energy horizon, including return of downstream power to Canada required under the Columbia River Treaty, renewal of the Pacific Northwest Coordination Agreement, and replacement of BPA's long-term contracts with customers before they expire. These decisions are crucial to the continued stability of the region's power system. They all depend on cooperative use of the Columbia River.

Cooperation is the Key

Programs in Perspective and the Columbia River System Operation Review are examples of how BPA conducts business openly with its constituents. Public involvement has become a way of life at BPA. On Earth Day, 1990, the Natural Resources Defense Council recognized BPA by saying: "Your public involvement program has become simply the best in the public sector. Anywhere. Period." Shortly thereafter, the Northwest Conservation Act Coalition gave BPA's external affairs manager its annual Eagle Award for public service in defense of the environment.



Future generations will benefit if we can balance the Columbia River's many competing uses.

While working with others in the region doesn't always lead to consensus, it almost always leads to a better understanding among those who will be affected by BPA policy. It often leads to better decisions. And public scrutiny helps keep a lid on costs. As a result, BPA is better prepared to provide the low and stable electricity rates that are so important to the region's economic future.

Management's Discussion and Analysis

Results of Operations

Bonneville's revenues exceeded expenses by $277 million in 1990. This is a large increase over last year's net revenues of $40 million. The increase is due primarily to the successful refinancing of Washington Public Power Supply System bonds.

Total operating revenues increased $17 million from 1989, up 1 percent. Water conditions improved, ending in a near-average water year. For the first time in 4 years, BPA was able to make significant discretionary power sales during the spring runoff.

Total expenses decreased $220 million from 1989, down 11 percent. Most of this decrease is due to savings from refinancing Supply System bonds.

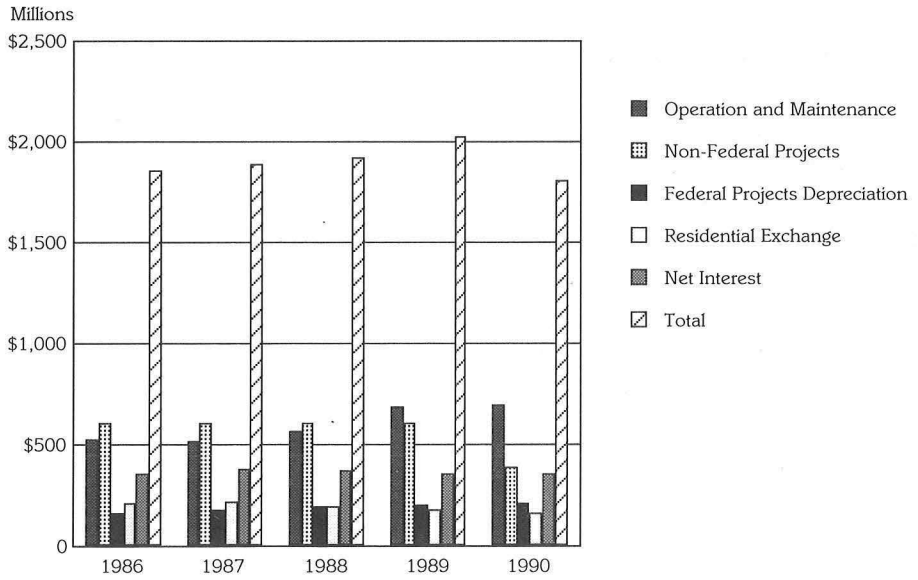
Because BPA is a not-for-profit Federal power marketing agency, net revenue over time is committed to repayment of the Federal investment in the Federal Columbia River Power System.

Operating and Interest Expenses

Operations and maintenance expenses were $692 million in 1990, up $4 million or 1 percent from 1989. This includes BPA, U.S. Army Corps of Engineers, Bureau of Reclamation, and Supply System operating expenses. Savings from refinancing Supply System bonds reduced non-Federal projects' expense from $606 million in 1989 to $391 million in 1990. Depreciation on Federal projects was an expense of $210 million, up 6 percent from 1989. The residential energy exchange cost BPA $160 million in 1990, 11 percent less than the previous year. 1989 expenses were higher due to the buyout of Clark and Snohomish County PUDs' Residential Exchange Program contracts.

Interest on long-term Federal debt decreased by $21 million in 1990. This reflects BPA's continuing effort to replace high-interest bonds with lower-interest bonds, reduced call-premium expenses, and increased interest earnings due to higher cash balances.

Expense Trends



Financing

1990 net revenues allowed BPA to restrain its borrowing from the Treasury. In its 1989 rate filing, BPA had planned to borrow $242 million from the Treasury in 1990. It actually borrowed only $50 million. At year's end, BPA announced a plan to continue to hold the line on new Federal debt. In fiscal 1992-93, BPA plans to generate revenues that will allow it to finance portions of new FCRPS capital additions from revenues. The agency plans to develop a 10-year financial strategy to improve the stability and predictability of its rates, and the strength and flexibility of its program support.

Revenues and Sales

The Northwest economy continued to grow in 1990. BPA's Northwest utility load grew nearly 5 percent during the year.

BPA sells wholesale power to Northwest public and investor-owned utilities, direct-service industries, Federal agencies, and utilities outside the region. Total megawatthours sold increased 10 percent over 1989.

In addition to continued economic growth, these sales figures reflect improved water conditions. 1990 finished in a near-average water year, ending a three-year drought. BPA had discretionary power supplies to sell as nonfirm energy during the spring runoff. Northwest utilities purchased 2,265,420 MWh of nonfirm energy. Utilities outside the region bought 8,573,559 MWh of nonfirm energy after Northwest markets were met, coordinated reservoirs were refilled, and additional storage had also been filled.

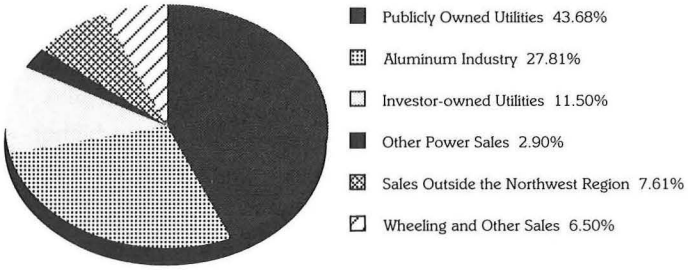
Trends in revenues vary by customer class and type of power purchased. Total operating revenues increased by $17 million, or about 1 percent. This is the third consecutive year of increased sales and revenues.

Northwest Publicly Owned Utilities

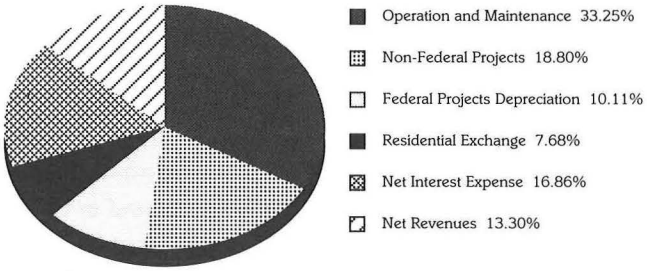
Sales to publicly owned utilities increased $25 million, up 3 percent. This category includes 39 municipalities, 28 public utility districts, and 56 cooperatives. Together they are Bonneville's largest customer group. Revenues were $909 million in 1990.

Because publicly owned utilities serve residential, commercial, and industrial loads, their consumption of BPA power is fairly stable. After

1990 Sources of Revenue



1990 Disposition of Revenue and Net Revenues

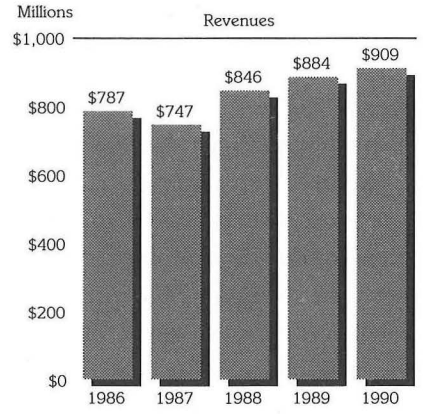


Selected Quarterly Information (Unaudited)[1]

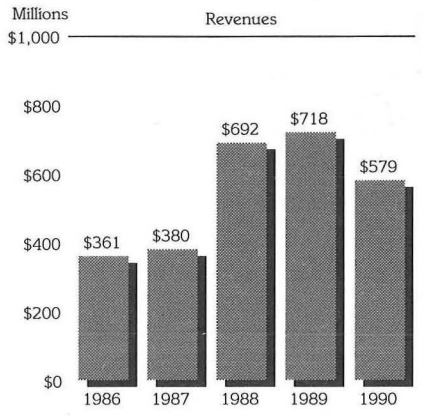
3 Months Ended	December 31	March 31	June 30	September 30
	(Thousands of Dollars)			
1990				
Operating Revenues	$530,327	$602,328	$481,733	$466,374
Operating Expenses	382,980	344,155	327,620	398,398
Net Interest Expenses	88,180	87,152	92,488	83,082
Net Revenues	$ 59,167	$171,021	$ 61,625	$(15,106)
1989				
Operating Revenues	$556,958	$554,999	$499,421	$452,488
Operating Expenses	369,865	445,288	406,711	448,611
Net Interest Expenses	96,912	86,968	86,196	83,414
Net Revenues	$ 90,181	$ 22,743	$6,514	$(79,537)

[1] 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.

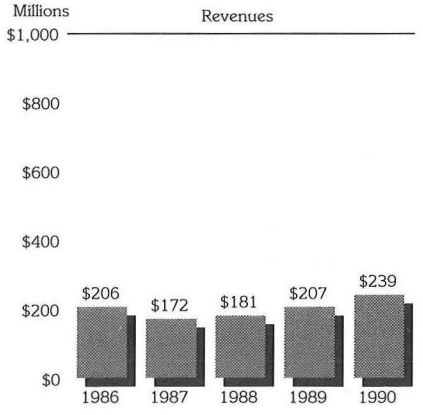
Publicly Owned Utilities



Aluminum Industry



Investor-owned Utilities



2 years of declining energy sales in 1986 and 1987, sales increased in 1988, 1989, and 1990.

Aluminum Industry

This group includes eight of BPA's direct-service customers. Aluminum companies' energy use can change quickly with the world price of aluminum. In 1987, BPA established the variable industrial rate to smooth the cyclical nature of the industry. When the aluminum market is soft and prices are low, these customers are able to stay in business because their cost for electric power is low. When strong world-wide demand for aluminum pushes prices higher, the aluminum companies pay BPA higher rates for electricity.

After 2 years of high demand, aluminum prices fell to 66.4 cents per pound in February 1990. The variable industrial rate fell from 26 mills per kilowatthour at the beginning of the fiscal year, to its minimum level of 16.2 mills per kWh in May 1990, and ended the fiscal year at 23 mills per kWh. All the region's smelters remained in full production. Megawatthour sales to the aluminum industry increased by 1 percent. Revenues from this customer class were $579 million in 1990, down 19 percent from 1989, reflecting the lower variable rate.

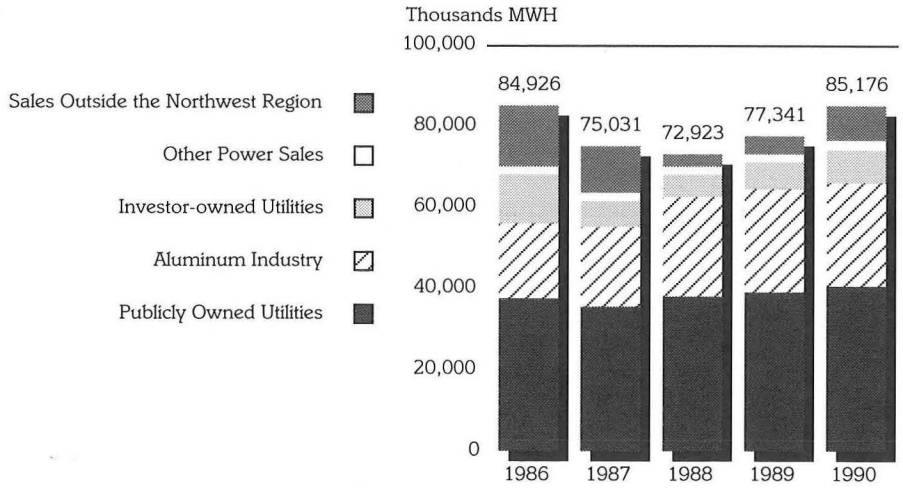
The 1990 dip in aluminum prices and revenues is not as severe as that experienced in 1986-87.

Northwest Investor-owned Utilities

Revenues from Northwest investor-owned utilities were $239 million in 1990, up 16 percent from 1989.

This group is made up of eight utilities which buy power from BPA primarily to replace their own higher-cost resources. Sales to this class increased in 1990 due to greater availability of low-cost nonfirm energy. Future sales to this class of customers will continue to vary with the weather.

Megawatthours Used by Customer Class



Other Northwest Power Sales

Included in this group are six Federal agencies and eight direct-service, non-aluminum industrial customers. 1990 revenues were $60 million, up 13 percent from 1989.

Sales Outside the Northwest

BPA's customers outside the region include 12 publicly owned utilities, seven investor-owned utilities, and one Federal agency. Revenues were $158 million in 1990, almost double revenues from this class in 1989. This, too, reflects the improved water year.

Sales of electric power to this group fluctuate with the availability of nonfirm energy. Factors affecting availability include reservoir levels and demand for power in the Northwest. Megawatthour sales to this group in 1990 were the highest since 1987, and more than double those of 1989. The price per kilowatthour for nonfirm energy tends to decline when supplies are good, so that megawatthour sales increase more than revenues.

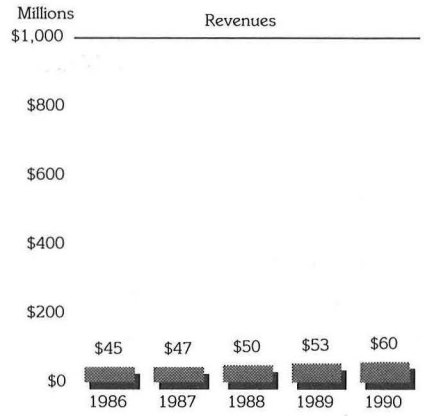
Revenues from these sales are also affected by the price of gas and oil, which fuel alternative generation in California. The price of gas and oil dropped in 1986 and 1987. The prices were higher again in 1989 and 1990, but nonfirm energy availability remained low in 1989, and moderate in 1990.

Wheeling and Other Sales

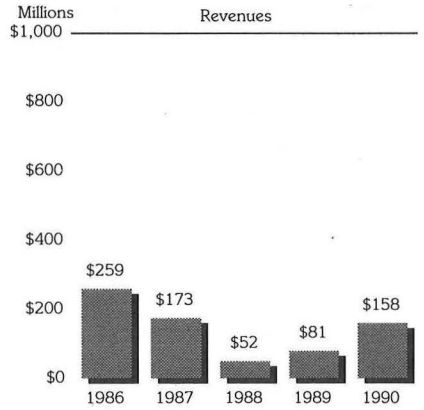
1990 revenues were $135 million, up 12 percent from 1989.

These revenues change with the amount of power available for utilities to export outside the Northwest. This year's increase is due to improved water conditions allowing other utilities to wheel more power over BPA's transmission system.

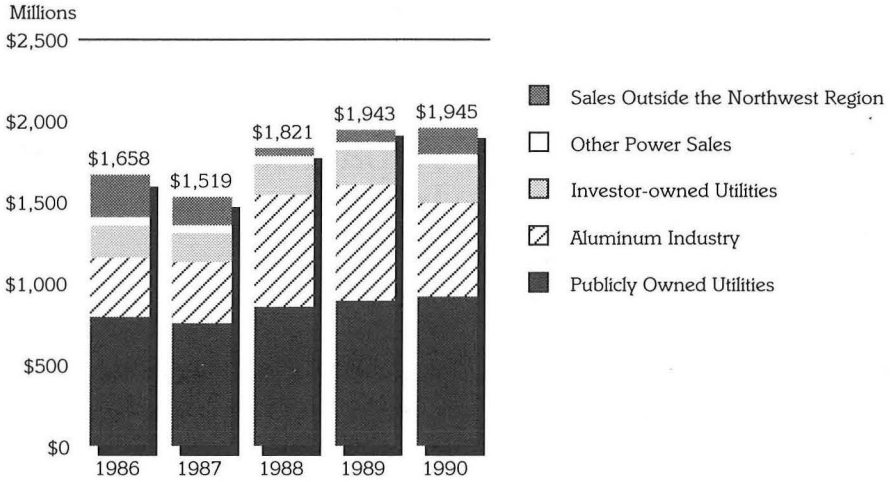
Other Northwest Power Sales



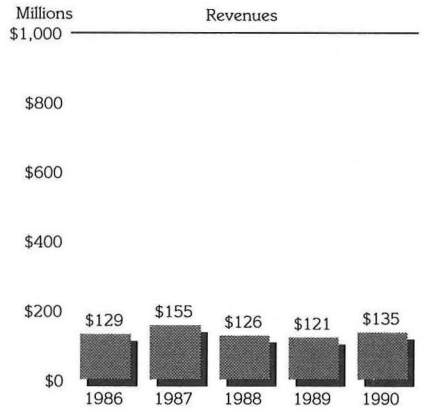
Sales Outside the Northwest



Electric Power Sales by Customer Class



Wheeling and Other Sales



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. While the financial statements show historical results, the revenue requirement study shows projected costs to be recovered from rates. The revenue requirement study considers BPA's obligation to recover costs and sets a revenue level sufficient to meet those obligations. Costs include operation and maintenance; non-Federal projects debt service; interest; and recovery of the FCRPS investment in power generation, conservation, fish and wildlife, and transmission facilities. The two sets of financial reports measure different things: historical results in the financial statements and projected obligations in the revenue requirement study.

Revenue Requirement Study

The revenue requirement study, which demonstrates repayment of Federal investment, reflects revenues and costs from the 1989 Wholesale Power and Transmission Rate Proceedings. On September 29, 1989, the Federal Energy Regulatory Commission approved the proposed rates on an interim basis for the test period fiscal years 1990 and 1991.

Repayment Demonstration

BPA is required by P.L. 89-448 to demonstrate that the reimbursable costs of the FCRPS are scheduled to be returned to the U.S. Treasury from BPA net revenues within the period prescribed by law. BPA is required to make a similar demonstration for the costs of irrigation projects which are beyond the ability of the 22 irrigation water users to repay. These requirements are met by conducting power repayment studies which 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 Obligation

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

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

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

Repayment of FCRPS Investment

The graphs for Unrepaid Federal Generation and Transmission Investment illustrate that the unrepaid investment resulting from BPA's generation and transmission repayment

schedules is always less than the allowable unrepaid investment. This demonstrates that BPA's rates are sufficient to recover all reimbursable costs of FCRPS investments on or before their due dates.

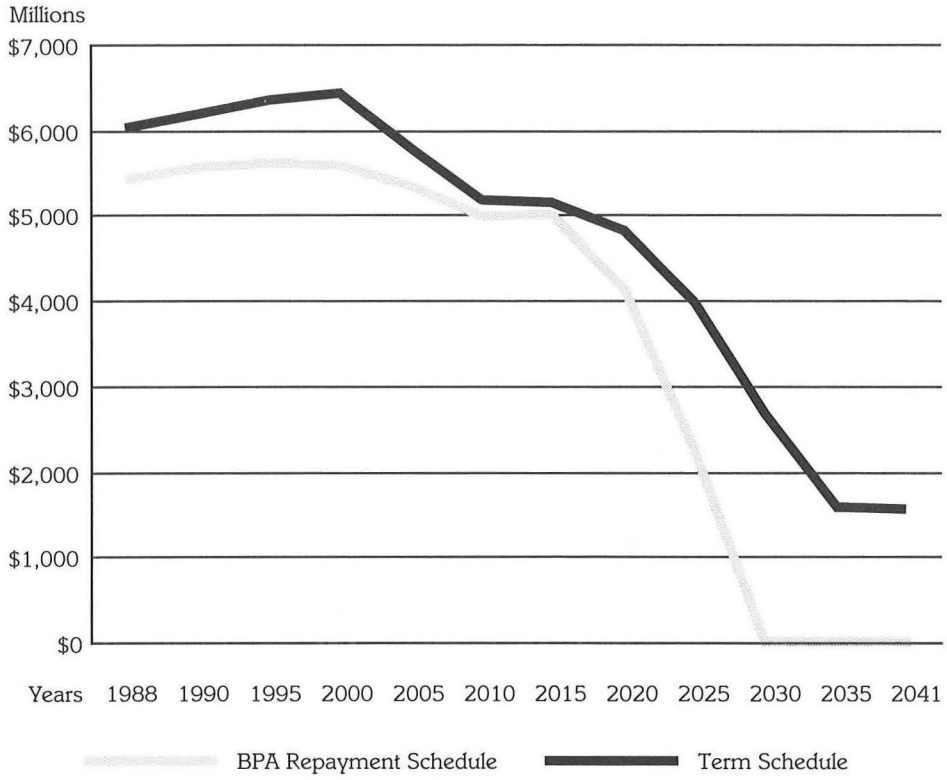
The term schedule lines in the graphs show how much of the investment can remain unpaid in accordance with the repayment period for the generation and transmission components of the FCRPS. The BPA repayment schedule lines show how much of the investment remains to be repaid according to BPA's repayment 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. This will result in some investments being repaid before their due dates, while assuring that all other investments will be repaid by their due dates.

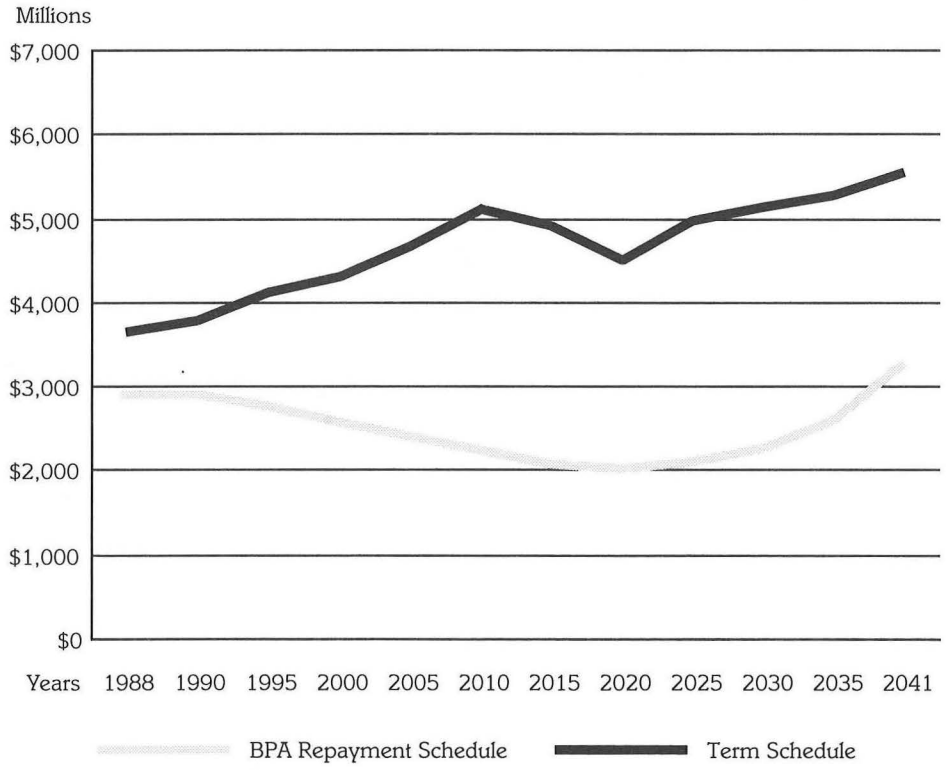
These graphs include the costs of replacements necessary to maintain the existing FCRPS generation and transmission facilities.

The Unrepaid Federal Investment graph displays the total planned unrepaid FCRPS investment compared to allowable total unrepaid FCRPS investment omitting replacements. This shows that the FCRPS investment expected through fiscal year 1991 is scheduled to be returned to the U.S. Treasury within the 50-year repayment period and ahead of due dates.

Unrepaid Federal Generation Investment[1]



Unrepaid Federal Transmission Investment[1]



[1] Includes future replacements.

Repayment of Irrigation Assistance

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

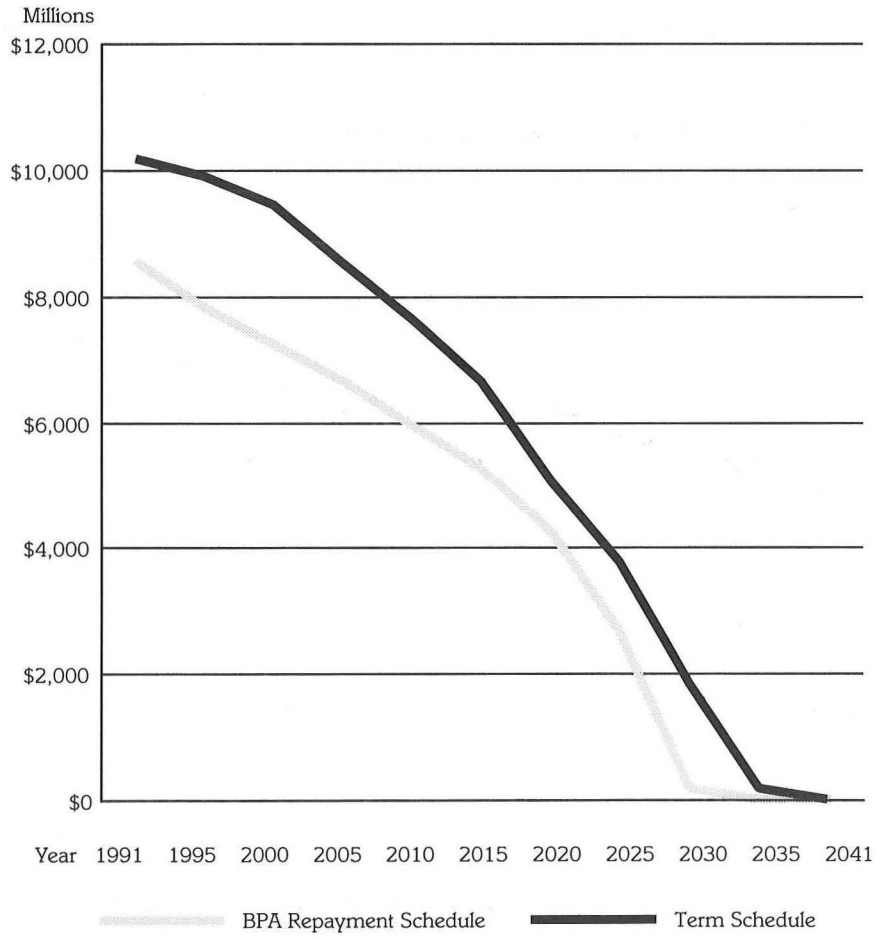
Repayment Policy

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

1. Pay the cost of obtaining power through purchase and exchange agreements (non-Federal projects).
2. Pay the cost of operating and maintaining the power system.
3. Pay interest on and repay the outstanding revenue bonds sold to the Treasury to finance transmission system construction, conservation, and fish and wildlife 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.
6. Repay the power investment in each Federal hydroelectric project within 50 years after it goes into service (except for the Chandler Project, which has a legislated repayment period of 66 years).
7. Repay each increment of the investment in the BPA transmission system financed with appropriated funds within the average service life of the transmission facilities (45 years).
8. Repay the investment in each replacement at a Federal hydroelectric project within its service life.
9. Repay construction costs at Federal reclamation projects which are beyond the ability of the irrigators to pay, and which are assigned for payment from commercial power revenues, within the same period available to the water users for making payments. These periods range from 40 to 66 years with 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[1]



[1] Includes generation and transmission through fiscal year 1991. Excludes future replacements.

Statements of Revenues and Expenses

For the Years Ended September 30, 1990 and 1989

	1990	1989
	(Thousands of Dollars)	
Operating Revenues:		
Sales of electric power –		
Sales within the Northwest region –		
Publicly owned utilities	$ 909,024	$ 884,080
Aluminum industry	578,591	718,288
Investor-owned utilities	239,364	206,793
Other power sales	60,249	53,107
Sales outside the Northwest region	158,244	80,979
	1,945,472	1,943,247
Wheeling and other sales	135,290	120,619
Total operating revenues	2,080,762	2,063,866
Operating Expenses:		
Operations and maintenance	691,847	687,434
Non-Federal projects (Note 4)	391,216	605,597
Federal projects depreciation	210,249	197,832
Residential exchange (Note 5)	159,841	179,612
Total operating expenses	1,453,153	1,670,475
Net operating revenues	627,609	393,391
Interest Expense:		
Interest on Federal investment		
Appropriated funds	228,398	223,753
Long-term debt	138,002	159,045
Allowance for funds used during construction (AFUDC)	(15,498)	(29,308)
Net interest expense	350,902	353,490
Net Revenues	$ 276,707	$ 39,901

The accompanying notes are an integral part of these statements.

Balance Sheets

September 30, 1990 and 1989

Assets	1990	1989
	(Thousands of Dollars)	
Utility Plant (Notes 1 and 3):		
Completed plant	$ 9,029,179	$ 8,922,125
Accumulated depreciation	(2,221,254)	(2,089,395)
	6,807,925	6,832,730
Construction work in progress	272,403	226,575
Net utility plant	7,080,328	7,059,305
Non-Federal Projects (Notes 1 and 4):		
Hanford	12,220	17,105
WNP No. 1	2,318,400	2,176,195
WNP No. 2	2,309,415	2,178,620
WNP No. 3	1,897,159	1,610,433
Trojan	119,125	122,600
Conservation	13,635	14,145
Idaho Falls	38,595	39,095
Total non-Federal projects	6,708,549	6,158,193
Conservation, net of accumulated amortization of $201,568 in 1990 and $160,542 in 1989 (Notes 1 and 2)	533,253	534,472
Fish and Wildlife, net of accumulated amortization of $6,656 in 1990 and $4,278 in 1989 (Notes 1 and 2)	40,148	26,334
Current Assets:		
Cash	323,014	210,666
Accounts receivable	12,378	9,454
Accrued unbilled revenues	91,572	85,837
Materials and supplies, at average cost	42,012	38,819
Prepaid expenses	182,250	96,350
Total current assets	651,226	441,126
Other Assets	37,510	41,535
	$15,051,014	$14,260,965

Capitalization and Liabilities	1990	1989
	(Thousands of Dollars)	
Accumulated Net Expenses (Note 1)	$ (264,150)	$ (540,857)
Federal Appropriations (Note 3)	6,697,535	6,643,275
Long-Term Debt (Note 2)	1,644,499	1,744,499
Non-Federal Projects Debt, net of current portion (Notes 1 and 4)	6,622,599	6,080,643
Total capitalization and long-term liabilities	14,700,483	13,927,560
Commitments and Contingencies (Notes 6 and 7)		
Current Liabilities:		
Current portion of long-term debt	50,000	50,000
Current portion of non-Federal projects debt (Notes 1 and 4)	85,950	77,550
Accounts payable	136,972	125,180
Employees' accrued leave	14,283	12,905
Total current liabilities	287,205	265,635
Deferred Credits	63,326	67,770
	$15,051,014	$14,260,965

The accompanying notes are an integral part of these statements.

Statements of Changes in Capitalization

For the Years Ended September 30, 1990 and 1989

	Accumulated Net Expenses	Federal Appropriations	Long-Term Debt	Non-Federal Projects Debt	Total Capitalization
	(Thousands of Dollars)				
Balance at September 30, 1988	$(580,758)	$6,590,253	$1,792,499	$6,048,245	$13,850,239
Increase in Federal appropriations:					
Operations and maintenance	–	97,768	–	–	97,768
Construction	–	55,219	–	–	55,219
Repayment of Federal appropriations:					
Operations and maintenance	–	(97,768)	–	–	(97,768)
Construction	–	(2,197)	–	–	(2,197)
Increase in long-term debt	–	–	272,000	–	272,000
Reduction of long-term debt:					
Repayment	–	–	(150,000)	–	(150,000)
Refinance	–	–	(120,000)	–	(120,000)
Net increase in non-Federal projects debt	–	–	–	176,528	176,528
Payment of non-Federal projects debt	–	–	–	(66,580)	(66,580)
Net revenues	39,901	–	–	–	39,901
Balance at September 30, 1989	(540,857)	6,643,275	1,794,499	6,158,193	14,055,110
Increase in Federal appropriations:					
Operations and maintenance	–	104,953	–	–	104,953
Construction	–	67,056	–	–	67,056
Repayment of Federal appropriations:					
Operations and maintenance	–	(104,953)	–	–	(104,953)
Construction	–	(12,796)	–	–	(12,796)
Increase in long-term debt	–	–	50,000	–	50,000
Reduction of long-term debt:					
Repayment	–	–	(150,000)	–	(150,000)
Refinance	–	–	–	–	–
Net Increase in non-Federal projects debt	–	–	–	621,979	621,979
Payment of non-Federal projects debt	–	–	–	(71,623)	(71,623)
Net revenues	276,707	–	–	–	276,707
Balance at September 30, 1990	$(264,150)	$6,697,535	$1,694,499	$6,708,549	$14,836,433

The accompanying notes are an integral part of these statements.

Statements of Cash Flows

For the Years Ended September 30, 1990 and 1989

	1990	1989
	(Thousands of Dollars)	
Cash from Operating Activities:		
Net revenues	$ 276,707	$ 39,901
Expenses not requiring cash:		
Depreciation	166,845	158,402
Amortization	43,404	39,430
Amortization of non-Federal projects	71,623	66,580
AFUDC	(15,498)	(29,308)
(Increase) decrease in:		
Receivables and unbilled revenues	(8,659)	6,519
Materials and supplies	(3,193)	(3,121)
Prepaid expenses	(85,900)	(8,027)
Increase (decrease) in:		
Accounts payable	11,792	11,638
Employees' accrued leave	1,378	1,048
Litigation settlement	–	(20,000)
Other	(419)	9,999
Cash provided by operating activities	458,080	273,061
Cash Used for Investment Activities:		
Investment in:		
Utility plant	(172,370)	(159,569)
Conservation	(39,807)	(41,819)
Fish and wildlife	(16,192)	(8,268)
Non-Federal projects	(621,979)	(176,528)
Cash used for investment activities	(850,348)	(386,184)
Cash from Borrowing and Appropriations:		
Increase in Federal appropriations:		
Operations and maintenance	104,953	97,768
Construction	67,056	55,219
Repayment of Federal appropriations:		
Operations and maintenance	(104,953)	(97,768)
Construction	(12,796)	(2,197)
Increase in long-term debt	50,000	272,000
Repayment of long-term debt	(150,000)	(150,000)
Refinance of long-term debt	–	(120,000)
Net increase in non-Federal projects debt	621,979	176,528
Payment of non-Federal projects debt	(71,623)	(66,580)
Cash from borrowing and appropriations	504,616	164,970
Increase in cash	112,348	51,847
Beginning Cash Balance	210,666	158,819
Ending Cash Balance	$ 323,014	$210,666

The accompanying notes are an integral part of these statements.

Notes to Financial Statements

September 30, 1990 and 1989

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 services under such statutory standards that include a requirement that these rates be sufficient to assure repayment of the Federal investment in the Federal System 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 wihin 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 twelve month period.

The Commission has approved on an interim basis Bonneville's rates for fiscal years 1990 and 1991.

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

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% to 9.1% in 1990 and 2.5% to 9.8% in 1989). Capitalization rates for other construction approximate the cost of borrowings from the U.S. Treasury (8.9% in 1990 and 9.3% in 1989).

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 one hydro project. 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% of eligible employee compensation and under FERS is variable based upon options chosen by the participant but does not exceed 24.2% of eligible employee compensaion. 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 $351 million in 1990 and $356 million in 1989.

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, 1990, $487 million of this reserved amount and $1,207 million of other borrowings were outstanding. The following table reflects the terms and amounts of long-term debt.

3. Federal Appropriations

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

Interest rates on the appropriated funds range from 2.5% to 8.9% (the weighted average rate was 3.4% in 1990 and 1989). The rates have been set by law, administrative order pursuant to law, or administrative policies.

Federal appropriations relating to generating projects and the transmission system are to be repaid to the U.S. Treasury within 50 and 45 years, respectively, from the time each facility is placed in service. The cumulative amount of Federal appropriations repaid through September 30, 1990 exceeded the amount required to be repaid.

Long-term Debt[1]

Issue Date	FirstCall Date	Maturity Date	Interest Rate	Construction & Fish & Wildlife	Conservation	Cumulative Total
				(Thousands of Dollars)		
Bonds:						
Mar. 1986	none	1991	7.80%	$ –	$ 50,000	$ 50,000
June 1987	none	1992	8.35%	100,000	–	150,000
June 1987	none	1992	8.35%	–	50,000	200,000
Sept. 1989	none	1995	8.60%	–	66,000	266,000
Mar. 1986	none	1996	8.15%	100,000	–	366,000
Mar. 1986	none	1996	8.15%	–	50,000	416,000
May 1989	none	1999	8.95%	25,000	–	441,000
May 1989	none	1999	8.95%	75,000	–	516,000
Sept. 1989	none	2002	8.65%	–	66,000	582,000
Apr. 1987	1992	2007	9.30%	–	75,000	657,000
Apr. 1988	1993	2008	9.90%	–	90,000	747,000
July 1989	none	2009	8.55%	–	40,000	787,000
Sept. 1978	1983	2013	8.95%	50,000	–	837,000
June 1979	1984	2014	9.45%	28,799	–	865,799
July 1987	1992	2017	9.55%	95,000	–	960,799
Feb. 1988	1993	2018	9.50%	43,700	–	1,004,499
Jan. 1990	2000	2030	9.25%	50,000	–	1,054,499
June 1986	1991	2031	8.95%	300,000	–	1,354,499
Apr. 1987	1992	2032	9.30%	100,000	–	1,454,499
July 1987	1992	2032	9.55%	50,000	–	1,504,499
Feb. 1988	1993	2033	9.50%	150,000	–	1,654,499
June 1988	1993	2033	9.90%	40,000	–	1,694,499
				$1,207,499	$487,000	$1,694,499
Less current portion						(50,000)
						$1,644,499

[1] The weighted average interest rate was 9.0% and 9.2% on outstanding long-term debt as of September 30, 1990 and 1989, respectively. All the construction, conservation, and fish and wildlife bonds are term bonds.

Federal Appropriations

	Term Repayments (a) (Thousands of Dollars)
1991	$ –
1992	1,408
1993	17,785
1994	11,061
1995	–
After 1995	6,667,281
	$6,697,535

(a) Excludes planned payments on future replacements.

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

The table above shows the term repayments of the remaining Federal appropriations as of September 30, 1990.

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

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 (Hanford Generating Project, WNP No.'s 1-3), Eugene Water and Electric Board (Trojan, EWEB Conservation), and City of Idaho Falls (Idaho 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 1990, four

Non-Federal Projects Debt Service

Project and Percent Capability Acquired		Actual		Forecasted Non-Federal Debt Service (a)						Total
		1989	1990	1991	1992	1993	1994	1995	1996 +	
		(Thousands of Dollars)								
Hanford Nuclear 72%	Principal	$ 3,230	$ 4,885	$ 5,585	$ 5,835	$ 800	$ –	$ –	$ –	$ 12,220
	Interest (b)	527	(305)	(524)	(1,977)	(712)	(362)	(297)	–	(3,872)
		3,757	4,580	5,061	3,858	88	(362)	(297)	–	8,348
WNP No. 1 100%	Principal	18,970	23,552	24,455	26,905	28,910	30,560	32,365	2,175,205	2,318,400
	Interest	185,524	139,748	149,220	152,705	150,173	148,021	136,930	1,773,430	2,510,479
		204,494	163,300	173,675	179,610	179,083	178,581	169,295	3,948,635	4,828,879
WNP No. 2 100%	Principal	28,510	23,476	32,800	32,345	34,780	37,445	40,375	2,131,670	2,309,415
	Interest	194,024	152,473	154,586	178,846	173,038	170,328	167,346	1,546,066	2,390,210
		222,534	175,949	187,386	211,191	207,818	207,773	207,721	3,677,736	4,699,625
WNP No. 3 70%	Principal	11,315	14,905	17,995	25,715	30,745	32,720	34,875	1,755,109	1,897,159
	Interest	148,623	17,615	102,502	107,697	105,247	102,937	100,797	1,581,932	2,101,112
		159,938	32,520	120,497	133,412	135,992	135,657	135,672	3,337,041	3,998,271
Trojan Nuclear 30%	Principal	3,305	3,475	3,660	3,840	4,055	4,275	4,500	98,795	119,125
	Interest	6,187	6,230	5,382	5,197	4,987	4,771	4,539	27,741	52,617
		9,492	9,705	9,042	9,037	9,042	9,046	9,039	126,536	171,742
EWEB Conservation	Principal	780	830	915	1,090	1,155	1,230	1,305	7,940	13,635
	Interest	1,118	818	1,013	816	751	682	607	1,680	5,549
		1,898	1,648	1,928	1,906	1,906	1,912	1,912	9,620	19,184
Idaho Falls Hydro 100%	Principal	470	500	540	575	635	685	755	35,405	38,595
	Interest	3,014	3,014	3,333	3,288	3,238	3,182	3,119	32,952	49,112
		3,484	3,514	3,873	3,863	3,873	3,867	3,874	68,357	87,707
		$605,597	$391,216	$501,462	$542,877	$537,802	$536,474	$527,216	$11,167,925	$13,813,756

(a) Estimates in these columns are consistent with BPA's proposed 1991 Rate Filing adjusted for savings from the bond refundings through series 1990B.
(b) When negative amount is shown, interest income on project funds exceeds interest expense.

advance refunding sales were completed. The final refunding was completed in November 1990, refunding $451 million of previously outstanding bonds with $608 million of new bonds.

In total $3.9 billion of refunding bonds were issued to refinance $2.9 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 $146.7 million in fiscal 1990 and $105.4 million in 1991 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 1990 and 1991. In 1990 this resulted in $68.5 million of lower project budgets for WNP Nos. 1 and 3. The 1991 project budgets for WNP Nos. 1 and 2 are also reduced by $107.1 million due to the use of cash reserves.

In summary, non-Federal project expense included in the Statement of Revenues and Expenses was reduced by $215.2 million relating to these non-recurring factors. Future principal and interest payments required for non-Federal projects total $13.8 billion, of which $7.1 billion represents interest.

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

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 rates. Purchases and sales of electric power by BPA during fiscal years 1990 and 1989 under these contracts were as follows:

Residential Exchange

	1990	1989
	(Thousands of Dollars)	
Expense	$820,969	$811,456
Revenue	(661,128)	(631,844)
Net Residential Exchange Expense	$159,841	$179,612

Residential Exchange expense includes approximately $3.4 million and $26 million, for fiscal years 1990 and 1989, respectively, for terminating Clark and Snohomish County PUD's Residential Exchange Program contracts.

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 $811 million. Although such costs are expected to 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 when 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 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 property and decontamination coverage, BPA could be subject to a maximum assessment of $7.3 million in the event of a loss to any NEIL-insured nuclear plant.

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 $63 and $18.9 million, limited to an annual maximum of $10 and $3 million for WNP No. 2 and Trojan, respectively.

Decommissioning Costs

Decommissioning costs are charged to operations over the operating life of each project. Sinking funds for these 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 funds are expected to provide for decommissioning at the end of each project's operating life in accordance with NRC requirements. Sinking fund requirements for WNP No. 2 and Trojan are based upon periodically updated estimates of decommissioning costs.

The estimated decommissioning costs for WNP No. 2 are $403 million (in 1987 dollars). Total payments to the sinking fund for the years ended September 30, 1990 and 1989 were $2,598,000 and $1,421,000, respectively.

The estimated decommissioning costs for Trojan are $117 million (in 1986 dollars), 30% of which are BPA's responsibility. Total payments to the sinking fund for the years ended September 30, 1990 and 1989 were $1,808,000 and $715,000, respectively.

Decommissioning costs are included in Operations and maintenance expense in the Statement of Revenues and Expenses.

7. Litigation

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

On January 22, 1982, the Supply System stopped construction of two nuclear projects: WNP No. 4 at Hanford and WNP No. 5 at Satsop. 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 equitably. 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 equitable cost allocation required the application of principles akin to those espoused by Chemical Bank. The court stated that because such principles were not applied, WNP Nos. 4 and 5 apparently have more than their fair and equitable share of construction costs. The court set a hearing in February, 1991 to reopen discovery and to set a trial date on cost sharing issues.

If Chemical Bank is successful, this could result in these two projects assuming additional costs of up to $1 billion, including interest through September 30, 1990. 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.

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

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

Involving Rates

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

Other Matters

Certain other claims, suits and complaints have been filed or are pending against entities of FCRPS. In the opinion of 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.

Schedule of Amount and Allocation of Plant Investment

September 30, 1990

Schedule A

	Total	Commercial Power: Completed Plant	Commercial Power: Construction Work in Progress	Commercial Power: Total Commercial Power	Irrigation: Returnable from Commercial Power Revenues	Irrigation: Returnable from Other Sources	Irrigation: Total Irrigation	Nonreimbursable: Navigation	Nonreimbursable: Flood Control	Nonreimbursable: Fish and Wildlife	Nonreimbursable: Recreation	Nonreimbursable: Other	Percent of Total Returnable from Commercial Power Revenues
	(Thousands of Dollars)							(Thousands of Dollars)					
Bonneville Power Administration-													
Transmission facilities	$ 3,634,052	$3,465,240	$168,812	$3,634,052	$ –	$ –	$ –	$ –	$ –	$ –	$ –	$ –	100.0%
Bureau of Reclamation-													
Boise	87,904	10,666	304	10,970	19,481	40,625	60,106	–	16,828	–	–	–	34.6%
Columbia Basin	1,781,639	1,059,289	15,006	1,074,295	556,576	88,725	645,301	1,000	55,513	4,850	154	526	91.5%
Hungry Horse	109,363	77,092	7,467	84,559	–	–	–	–	24,804	–	–	–	77.3%
Minidoka-Palisades	283,046	14,338	3,771	18,109	10,352	61,522	71,874	–	64,523	1,640	7,170	119,730	10.1%
Yakima	179,089	6,391	107	6,498	11,498	120,997	132,495	–	1,017	38,828	251	–	10.0%
Total Bureau projects	2,441,041	1,167,776	26,655	1,194,431	597,907	311,869	909,776	1,000	162,685	45,318	7,575	120,256	73.4%
Corps of Engineers-													
Albeni Falls	37,495	34,707	488	35,195	–	–	–	159	200	–	1,941	–	93.9%
Bonneville	851,138	794,225	4,930	799,155	–	–	–	48,632	–	–	1,289	2,062	93.9%
Chief Joseph	556,039	546,339	529	546,868	230	–	230	–	–	–	3,977	4,964	98.4%
Cougar	62,388	18,791	1,443	20,234	–	3,077	3,077	547	38,322	–	–	208	32.4%
Detroit-Big Cliff	68,009	41,374	30	41,404	–	5,140	5,140	231	21,234	–	–	–	60.9%
Dworshak	361,652	302,555	1,740	304,295	–	–	–	9,521	34,403	–	13,433	–	84,1%
Green Peter-Foster	90,822	50,144	27	50,171	–	5,864	5,864	368	30,508	–	1,856	2,055	55.2%
Hills Creek	49,176	17,554	20	17,574	–	4,332	4,332	628	26,370	–	–	272	35.7%
Ice Harbor	184,617	134,044	1,302	135,346	–	–	–	46,429	–	–	2,842	–	73.3%
John Day	601,753	426,686	25,566	452,252	–	–	–	90,211	21,330	–	11,551	26,409	75.2%
Libby	609,221	473,204	585	473,789	–	–	–	–	97,754	870	6,171	30,637	77.8%
Little Goose	254,017	210,521	1,515	212,036	–	–	–	35,326	–	–	4,051	2,604	83.5%
Lookout Point-Dexter	99,393	47,299	96	47,395	–	1,492	1,492	746	49,239	–	521	–	47.7%
Lost Creek	150,443	27,033	28	27,061	–	2,204	2,204	–	53,484	24,535	29,461	13,698	18.0%
Lower Granite	404,137	330,141	1,044	331,185	–	–	–	52,479	–	–	12,631	7,842	81.9%
Lower Monumental	261,769	217,500	1,700	219,200	–	–	–	39,330	–	–	2,822	417	83.7%
Lower Snake	186,961	156,660	29,122	185,782	–	–	–	1,179	–	–	–	–	99.4%
McNary	352,619	280,753	150	280,903	–	–	–	68,564	–	–	3,152	–	79.7%
The Dalles	341,017	286,633	6,621	293,254	–	–	–	45,641	–	–	2,100	22	86.0%
Total Corps projects	5,522,666	4,396,163	76,936	4,473,099	230	22,109	22,339	439,991	372,844	25,405	97,798	91,190	81.0%
Irrigation assistance at 12 projects having no power generation	198,765	–	–	–	154,901	43,864	198,765	–	–	–	–	–	77.9%
Total plant investment	11,796,524	9,029,179	272,403	9,301,582	753,038	377,842	1,130,880	440,991	535,529	70,723	105,373	211,446	85.2%
Repayment obligation retained by Columbia Basin project	4,639	2,836 (a)	–	2,836	1,803	–	1,803	–	–	–	–	–	100.0%
Investment in Teton project (b)	79,107	–	7,269	7,269	56,573	3,681	60,254	–	9,151	–	2,433	–	80.7%
Total	$11,880,270	$9,032,015	$279,672	$9,311,687	$811,414	$381,523	$1,192,937	$440,991	$544,680	$70,723	$107,806	$211,446	85.2%

(a) Amount represents joint facilities transferred to Bureau of Sports Fisheries and Wildlife. This is included in other assets in the accompanying balance sheets.
(b) The $7,269,000 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

Price Waterhouse

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 cash flows present fairly, in all material respects, the financial position of the Federal Columbia River Power System (FCRPS) at September 30, 1990 and 1989, and the results of its operations, changes in capitalization and its cash flows for the years then ended 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 audit. We conducted our audit 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, 1990, (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 14, 1990

Generation and Sales Tables

Generation by the Principal Electric Utility Systems of the Pacific Northwest (a)

Table 1 — 1990

	Thousands of MWH	Percent of Total
Publicly Owned		
Federal Columbia River Power System(b)	92,600	49.9
Grant County PUD	3,700	2.0
Chelan County PUD	3,500	1.9
Seattle City Light	9,000	4.9
Douglas County PUD	950	.5
Tacoma City Light	4,100	2.2
Eugene Water & Electric Board	700	.4
Pend Oreille County PUD	500	.3
Total Publicly Owned	115,050	62.1
Investor-owned		
Pacific Power & Light	21,600	11.7
Idaho Power Co.	7,500	4.0
Montana Power Co.	4,050	2.2
Portland General Electric Co.	13,500	7.3
Washington Water Power Co.	8,800	4.7
Puget Sound Power & Light	14,900	8.0
Total Investor-owned	70,350	37.9
Total Generation	185,400	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-2) and Packwood hydro plant; the Okanogan PUD share of Wells; the municipality shares (Forest Grove, McMinnville, and Milton-Freewater) of Priest Rapids; the Snohomish PUD share of the Centralia stream plant and the Jackson hydro plant; the Federal share of the Trojan nuclear plant; the Pacific NW Generating Company's share of Boardman; the PGE-Kinzua cogeneration project; 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 and Whiskey Run projects.

Sales of Electric Power (FCRPS)
Revenue in Thousands of Dollars

Table 2 — 1990

Northwest Region-Municipalities	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Albion, ID	7	$ 26	3,158	$ 53
Ashland,OR	339	1,173	155,264	2,632
Bandon, OR	126	439	55,483	939
Blaine, WA	105	367	52,761	899
Bonners Ferry, ID	94	326	32,930	562
Burley, ID	212	731	102,425	1,733
Canby, OR	267	923	113,247	1,927
Cascade Locks, OR	38	126	18,192	300
Centralia, WA	349	1,210	128,067	2,213
Cheney, WA	212	732	100,143	1,699
Cons. Irrig. Dist., WA	4	14	1,251	21
Coulee Dam, WA	29	102	14,477	249
Declo, ID	7	24	3,114	52
Drain,OR	60	207	29,294	494
Eatonville,WA	44	151	18,622	317
Ellensburg, WA	308	1,066	155,399	2,626
Eugene, OR	2,773	9,423	1,717,651	29,221
Fircrest, WA	92	321	42,235	721
Forest Grove, OR	313	1,024	148,442	2,525
Heyburn, OR	169	586	91,354	1,542
Idaho Falls,ID	1,049	3,632	484,067	8,207
McCleary, WA	79	273	35,433	598
McMinnville, OR	807	2,738	402,943	6,821
Milton, WA	101	352	46,797	798
Milton-Freewater, OR	157	487	70,879	1,213
Minidoka, ID	2	6	793	13
Monmouth, OR	124	427	55,369	945
Port Angeles, WA	1,060	3,696	659,229	11,142
Richland, WA	1,197	4,142	541,554	9,138
Rupert, ID	157	540	72,659	1,236
Seattle, WA	72	(90)	1,877,918	31,835
Soda Springs, ID	47	161	22,745	386
Springfield, OR	1,451	5,022	741,180	12,475
Steilacoom, WA	90	310	39,417	676
Sumas, WA	25	89	12,912	217
Tacoma, WA	2,991	10,013	2,528,961	42,528
Troy, MT	31	104	14,436	243
Vera Irrig. Dist., WA	336	1,162	152,782	2,600
WPPSS, WA	83	288	42,552	722
Total Municipalities (39)	15,407	$52,323	10,786,135	$182,518

Sales of Electric Power (FCRPS)
Revenue in Thousands of Dollars

Table 2 continued — 1990

Public Utility Districts	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Benton Co.	2,811	$ 9,726	1,361,704	$ 21,341
Central Lincoln	2,448	8,466	1,366,679	22,994
Chelan Co.	361	165	16,654	305
Clallam Co.	1,065	3,427	449,547	7,120
Clark Co.	5,711	19,821	2,947,658	50,265
Clatskanie	1,431	4,952	888,107	14,893
Columbia River	519	1,679	266,970	4,190
Cowlitz Co.	5,406	18,479	3,684,207	61,709
Douglas Co.	454	209	–	–
Emerald	847	2,727	379,289	5,917
Ferry Co.	194	626	100,297	1,550
Franklin Co.	1,168	4,037	580,101	9,113
Grant Co. #2	1,171	658	28,180	487
Grays Harbor	2,103	7,278	1,118,907	18,938
Kittitas Co.	64	193	27,446	413
Klickitat Co.	528	1,698	255,201	3,895
Lewis Co.	1,121	3,670	663,533	10,673
Mason Co. # 1	118	379	50,603	799
Mason Co. # 3	990	2,793	452,537	6,798
Northern Wasco Co.	442	1,530	203,495	3,431
Okanogan Co.	8	26	130,436	2,194
Pacific Co. #2	558	1,927	250,216	4,246
Pend Oreille Co.	265	917	104,555	1,777
Skamania Co.	233	751	109,079	1,715
Snohomish Co.	8,739	30,235	4,571,957	77,030
Tillamook	710	2,247	313,588	4,849
Wahkiakum Co.	73	235	33,289	526
Whatcom Co.	262	902	163,490	2,729
Total Public Utility Districts (28)	39,800	$129,753	20,517,725	$339,897

Sales of Electric Power (FCRPS)
Revenue in Thousands of Dollars

Table 2 continued — 1990

	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Cooperatives				
Alder Mutual Light	5	$ 17	2,394	$ 38
Benton Rural Elec. Assn.	620	2,033	290,205	4,265
Big Bend Coop.	770	2,419	383,180	3,706
Blachly-Lane Coop.	301	990	132,187	2,119
Central Elec. Coop.	805	2,585	342,711	5,150
Clearwater Power Co.	322	1,041	140,719	2,205

Table 2 continued

	1990			
Columbia Basin Coop.	220	709	111,395	1,564
Columbia Power Coop.	56	177	26,197	383
Columbia Rural Elec. Assn.	429	1,352	207,648	2,460
Consumers Power	755	2,430	322,212	5,041
Coos-Curry Elec. Coop.	561	1,805	256,324	4,022
Douglas Elec. Coop.	277	893	123,289	1,931
East End Mutual Elec.	37	122	17,115	246
Elmhurst Mutual P&L	511	1,766	227,791	3,896
Fall River Elec. Coop.	325	1,044	143,506	2,023
Farmers Elec. Co.	8	29	3,649	61
Flathead Elec. Coop.	318	1,021	147,454	2,293
Glacier Elec. Coop.	294	942	156,094	2,432
Harney Elec. Coop.	362	1,153	207,316	2,659
Hood River Elec. Coop.	190	653	90,613	1,544
Idaho Co. L&P Coop.	70	223	32,518	511
Inland P&L	1,016	3,271	463,031	7,294
Kootenai Elec. Coop.	411	1,318	190,819	2,974
Lakeview L&P	510	1,767	255,952	4,343
Lane Elec. Coop.	510	1,678	225,348	3,645
Lincoln Elec. Coop.-MT	174	572	81,623	1,305
Lincoln Elec. Coop.-WA	225	726	113,342	1,382
Lost River Elec. Coop.	129	414	62,306	740
Lower Vally P&L	892	2,868	398,125	6,262
Midstate Elec. Coop.	564	1,810	242,310	3,579
Missoula Elec. Coop.	264	852	124,741	1,925
Nespelem Valley Elec. Coop.	78	256	36,008	534
Northern Lights	445	1,442	233,795	3,654
Ohop Mutual Light Co.	96	313	41,975	680
Okanogan County Coop.	60	198	28,947	458
Orcas P&L	293	941	132,379	2,094
Oregon Trail Elec.	1,131	3,680	494,261	7,650
Pacific NW Generating Co.	15	52	2,857	50
Parkland Light & Water	199	688	98,010	1,673
Peninsula Light Co.	864	2,987	372,374	6,362
Prairie Power Coop.	25	79	10,317	136
Raft River Elec. Coop.	385	1,215	204,844	2,248
Ravalli Elec. Coop.	188	602	80,986	1,239
Riverside Elec. Co.	30	100	13,008	196
Rural Elec. Co.	169	571	80,731	1,227
Salem Elec.	653	2,256	319,337	5,402
Salmon River Coop.	406	1,332	242,495	3,798
South Side Elec. Lines	84	273	38,173	489
Surprise Valley Elec.	230	738	113,107	1,447
Tanner Elec.	80	255	35,353	560
Umatilla Elec. Coop.	1,055	3,453	575,330	7,646
Unity P&L	146	489	67,922	998
Vigilante Elec. Coop.	239	769	111,028	1,498
Wasco Elec. Coop.	199	644	86,342	1,305
Wells Rural	604	1,945	371,199	5,733
West Oregon Coop.	147	474	64,222	1,012
Total Cooperatives (56)	19,752	$64,432	9,377,114	$140,087

Sales of Electric Power (FCRPS)
Revenue in Thousands of Dollars

Table 2 continued — 1990

Aluminum Industry	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Alcoa	2,950	$ 13,702	1,736,050	$ 27,055
Columbia Aluminum Co.	3,334	17,771	2,427,264	36,980
Columbia Falls Aluminum Co.	4,080	21,752	2,960,121	45,075
Intalco Aluminum Co.	5,416	28,866	3,953,994	60,842
Kaiser Aluminum Co.	7,267	37,951	5,236,953	80,871
Northwest Aluminum Co.	1,951	10,399	1,414,347	21,555
Reynolds Metals Co.	8,056	42,895	5,841,542	88,891
Vanalco, Inc.	2,698	14,374	1,955,192	29,612
Total Aluminum Industry (8)	35,752	$187,710	25,525,463	$390,881

Sales of Electric Power (FCRPS)
Revenue in Thousands of Dollars

Table 2 continued — 1990

Other Industries	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
ACPC, Inc.	20	$ 78	6,995	$ 121
ATOCHEM North America/Pennwalt Corp.	820	3,430	578,766	9,969
Georgia Pacific Corp.	320	1,274	191,909	3,496
Gilmore Steel	3	12	1,310	23
Glenbrook Nickel Co.	989	4,000	526,346	8,849
Oregon Metallurgical	143	592	89,109	1,546
Port Townsend Paper	160	666	94,962	1,630
Stewart Elsner/Camp High Cliff	–	–	8	–
Total Other Industries (8)	2,455	$10,052	1,489,405	$25,634

Sales of Electric Power (FCRPS)
Revenue in Thousands of Dollars

Table 2 continued — 1990

Investor-owned Utilities	Capacity Sales MW	Capacity Sales Revenue	Energy Sales MWH	Energy Sales Revenue
Colockum Transmission Co.	397	$ 182	949	$ 10
Idaho Power Co.	–	–	227,117	2,257
Montana Power Co.	720	2,491	716,308	15,507
Pacific Power & Light Co.	14,937	50,865	1,617,407	24,000
Portland General Elec. Co.	4,691	13,699	1,612,404	37,762
Portland General Exchange	80	302	124,327	4,014
Puget Sound P&L Co.	2,210	3,175	2,394,876	58,688
Washington Water Power	1,040	2,637	1,040,842	23,671
Investor-owned Utilities (8)	24,075	$73,351	7,734,230	$165,909

Sales of Electric Power (FCRPS)
Revenue in Thousands of Dollars

Table 2 continued

	1990			
	Capacity Sales		Energy Sales	
Federal Agencies	MW	Revenue	MWH	Revenue
U.S. Department of Energy	654	$ 2,263	399,111	$ 6,715
U.S. Bureau of Mines	14	49	5,321	92
U.S. Air Force	94	323	46,481	782
U.S. Bureau of Reclamation	–	–	133,214	484
U.S. Bureau of Indian Affairs	440	1,523	183,039	2,971
U.S. Navy	748	2,589	402,004	6,772
Total Federal Agencies (6)	1,950	$ 6,747	1,169,170	$ 17,816
Sales Within the NW Region (153)	139,191	$524,368	76,599,242	$1,262,742

Sales of Electric Power (FCRPS)
Revenue in Thousands of Dollars

Table 2 continued

	1990			
	Capacity Sales		Energy Sales	
Sales Outside the Northwest Region	MW	Revenue	MWH	Revenue
Anaheim, CA-Public	–	$ –	375	$ 8
B.C. Hydro-Public	–	–	27,525	193
Bountiful, UT-Public	–	–	1,385	12
Burbank, CA-Public	–	–	81,942	1,351
Cominco, LTD-Investor	70	74	580	13
Glendale, CA-Public	–	–	99,974	1,811
Los Angles, CA-Public	–	–	1,472,132	26,367
Nevada Power Co.-Investor	–	–	86,529	1,767
No. California Power Agency-Public	–	–	8,705	138
PG & E-Investor	–	–	2,894,121	53,093
Pasadena, CA-Public	–	–	80,682	1,387
Riverside, CA-Public	–	–	333	7
Sacramento, CA-Public	–	–	336,318	6,515
San Diego Gas & Elec.-Investor	–	–	382,531	7,517
Sierra Pacific Power Co.-Investor	–	–	280	4
So. Cal. Edison Co.-Investor	403	494	2,215,872	40,782
State of California-Public	–	–	541,888	10,005
Transalta Utilities Corp.-Investor	–	–	5,850	59
Turlock Irrig. Dist.-Public	–	–	8,916	141
WAPA-Federal	–	–	330,985	6,506
Sales Outside the NW Region (20)	473	$ 568	8,576,923	$ 157,676
Sales of Electric Power (173)	139,664	$524,936	85,176,165	$1,420,418

General Specifications of Projects

September 30, 1990

Project	State	River	Initial Date In Service	Existing No. of Units	Existing Generating Capacity (MW)	Authorized-Licensed No. of Units	Authorized-Licensed Generating Capacity (MW)	Potential No. of Units	Potential Generating Capacity (MW)	Project Totals No. of Units	Project Totals Generating Capacity (MW)
Minidoka	Idaho	Snake	May 7, 1909	7	16	–	–	–	–	7	16
Boise River Div.	Idaho	Boise	May 1912	3	2	–	–	–	–	3	2
Black Canyon	Idaho	Payette	Dec. 1925	2	10	–	–	–	–	2	10
Grand Coulee	Washington	Columbia	Sept. 28, 1941	24	6,684	–	–	6	4,200	30	10,884
Anderson Ranch	Idaho	S. Fork Boise	Dec. 15, 1950	2	40	–	–	1	13	3	53
Hungry Horse	Montana	S. Fork Flathead	Oct. 29, 1952	4	328	–	–	4	150	8	478
Chandler	Washington	Yakima	Feb. 13, 1956	2	13	–	–	–	–	2	13
Palisades	Idaho	Snake	Feb. 25, 1957	4	131	–	–	2	135	6	266
Roza	Washington	Yakima	Aug. 31, 1958	1	13	–	–	–	–	1	13
Grand Coulee PG (a)	Washington	Columbia	Dec. 30, 1974	6	300	–	–	–	–	6	300
Teton (b)	Idaho	Teton	–	–		3	30	–	–	3	30
Total Bureau of Reclamation				55	7,537	3	30	13	4,498	71	12,065
Bonneville	OR-WA	Columbia	June 6, 1938	18	1,147	3	8	–	–	21	1,155
Detroit	Oregon	North Santiam	July 1, 1953	2	115	–	–	–	–	2	115
McNary	OR-WA	Columbia	Nov. 6, 1953	14	1,127	6	768	–	–	20	1,895
Big Cliff	Oregon	North Santiam	June 12, 1954	1	21	–	–	–	–	1	21
Lookout Point	Oregon	M. Fork Willamette	Dec. 16, 1954	3	138	–	–	–	–	3	138
Albeni Falls	Idaho	Pend Oreille	Mar. 25, 1955	3	49	–	–	–	–	3	49
Dexter	Oregon	M. Fork Willamette	May 9, 1955	1	17	–	–	–	–	1	17
Chief Joseph	Washington	Columbia	Aug. 28, 1955	27	2,614	–	–	6	525	33	3,139
The Dalles	OR-WA	Columbia	May 13, 1957	22	2,074	–	–	–	–	22	2,074
Ice Harbor	Washington	Snake	Dec. 18, 1961	6	693	–	–	–	–	6	693
Hills Creek	Oregon	M. Fork Willamette	May 2, 1962	2	35	–	–	–	–	2	35
Cougar	Oregon	S. Fork McKenzie	Feb. 4, 1964	2	29	1	35	–	–	3	64
Green Peter	Oregon	Middle Santiam	June 9, 1967	2	92	–	–	–	–	2	92
John Day	OR-WA	Columbia	July 7, 1968	16	2,484	4	540	–	–	20	3,024
Foster	Oregon	South Santiam	Aug. 22, 1968	2	23	–	–	–	–	2	23
Lower Monumental	Washington	Snake	May 28, 1969	6	930	–	–	–	–	6	930
Little Goose	Washington	Snake	May 19, 1970	6	930	–	–	–	–	6	930
Dworshak	Idaho	N. Fork Clearwater	Sept. 18, 1974	3	460	3	660	–	–	6	1,120
Lower Granite	Washington	Snake	Apr. 15, 1975	6	930	–	–	–	–	6	930
Libby	Montana	Kootenai	Aug. 29, 1975	5	604	–	–	3	315	8	919
Lost Creek	Oregon	Rogue	Dec. 1, 1975	2	56	–	–	–	–	2	56
Total Corps of Engineers				149	14,568	17	2,011	9	840	175	17,419
				204	22,105	20	2,041	22	5,338	246	29,484

(a) Grand Coulee Pumping Generation (b) Teton Dam ruptured June 5, 1976

Organization Chart

ADMINISTRATOR (A)
James J. Jura
DEPUTY ADMINISTRATOR
Jack Robertson
EXECUTIVE ASSISTANT ADMINISTRATOR
Steven G. Hickok
SENIOR ASSISTANT ADMINISTRATOR
Edward W. Sienkiewicz, Jr.

INFORMATION RESOURCES MANAGEMENT(AI)
Mgr., Paul O. Crabtree
Deputy Mgr., Wallace E. Helm
Info. Svcs. Mgr., Gary L. Ragsdale

WASHINGTON, DC (AC)
Assistant Adminstrator
Stephen J. Wright
Deputy Assistant Administrator
Roger E. Seifert

OFFICE OF FINANCIAL MANAGEMENT (D)
Assistant Administrator
Stephen A. Ailshie
Administrative Officer (DA)
Terri L. Bull

DIVISION OF FINANCE AND BUDGET (DR)
Dir., Shirley R. Melton
DIVISION OF ACCOUNTING AND FINANCIAL SYSTEMS (DS)
Dir., Herb C. Kuhn

OFFICE OF ENGINEERING (E)
Assistant Administrator
Charles F. Clark
Deputy Assistant Administrator
Clifford C. Perigo
Program Management Officer (EB)
William M. Hoberg
Asministrative Officer (EBA)
Rita Owen
Reasearch and Development (E)
Mgr., Walter E. Myers

DIVISION OF ELECTRICAL & ELECTRONIC ENGINEERING (EE)
Dir., Milton J. Brown
DIVISION OF FACILITIES ENGINEERING (EF)
Dir., Gary A. Parks
DIVISION OF LABORATORIES (EL)
Dir., Ingo P. Thurein
DIVISION OF SYSTEM PLANNING (EO)
Dir., Dean E. Perry

OFFICE OF OPERATIONS, MAINT. & CONSTRUCTION (M)
Assistant Administrator
James L. Jones
Deputy Assistant Administrator
Michael L. Holm
Program Management Officer (MB)
Dwight M. Raikoglo
Administrative Officer (MA)
Donna E. Peterson

DIVISION OF CONSTRUCTION (MK)
Dir., Lyndon E. Bradshaw
DIVISION OF SYSTEM MAINTENANCE (MM)
Dir., Frederick M. Johnson
DIVISION OF SYSTEM OPERATIONS (MO)
Dir., Darrel G. VanCoevering

AREA EXECUTIVE OFFICER (YH)
John E. Kiley

LOWER COLUMBIA AREA (L)
Area Manager
George E. Gwinnutt
Deputy Area Manager
Thomas M. Noguchi

POWER MANAGEMENT (LC)
Asst. Area Mgr., Philip A. Livesley
OPERATIONS & MAINTENANCE (LD)
Asst. Area Mgr., Robert G. Nichols
ENGINEERING (LE)
Asst. Area Mgr., Edward A. Peterson
MANAGEMENT SERVICES (LA)
Asst. Area Mgr., Frances L. Gebhardt
EUGENE DISTRICT (LG)
Dist. Mgr., Robert N. Laffel

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

POWER MANAGEMENT (TC)
Asst. Area Mgr., George T. Reich
OPERATIONS & MAINTENANCE (TD)
Asst. Area Mgr., Donald W. Spragg
ENGINEERING (TE)
Asst. Area Mgr., Hugh B. Starkey
CONSERVATION
Asst. Area Mgr., Frank E. Brown
MANAGEMENT SERVICES (TA)
Asst. Area Mgr., Lynda M. Boetcher

GENERAL COUNSEL (AP)
Harvard P. Spigal
ASSISTANT GENERAL COUNSEL (RESOURCES)
Preston D. Michie
ASSISTANT GENERAL COUNCIL (POWER SALES)
James O. Luce
ASSISTANT GENERAL COUNSEL (RATES)
Randy A. Roach

ASSISTANTS TO THE ADMINISTRATOR
CONTRACTS AND PROBERTY MANAGEMENT (AE)
Norman L. Linscott
EQUAL OPPORTUNITY PROGRAMS (AH)
Curtis B. Kirkpatrick
ENVIRONMENT (AJ)
Anthony R. Morrell
INTERNAL AUDIT (AK)
Jack L. Strayer
EXTERNAL AFFAIRS (AL)
Lee F. Johnson
COUNCIL LIAISON (AR)
Larry C. Larson
Administrative Officer (AB)
Russell E. Walker

OFFICE OF POWER SALES (P)
Assistant Administrator
Walter E. Pollock, III
Deputy Assistant Administrator
James H. Curtis
Program Management Officer (PA)
Evelyn M. Nicholson
Administrative Officer (PA)
Ruth Hiraki

DIVISION OF FISH AND WILDLIFE (PJ)
Dir., John R. Palensky
DIVISION OF CONTRACTS AND RATES (PM)
Dir., Sydney D. Berwager
DIVISION OF POWER SUPPLY (PS)
Dir., Robert D. Griffin
COORDINATION & REVIEW OFFICER (PG)
Roy B. Fox
CALIFORNIA MARKETING REPRESENTATIVE (PC)
(Vacant)

OFFICE OF ENERGY RESOURCES (R)
Assistant Administrator
Sue F. Hickey
Deputy Assistant Administrator
Gary L. Fuqua
Program Management Officer (RA)
Barry W. Hirsch
Administrative Officer (RA)
Roberta J. Pitts

DIVISION OF RESOURCE MANAGEMENT (RM)
Dir., John L. Elizalde
DIVISION OF NUCLEAR PROJECTS (RN)
Dir., James R. Lewis
DIVISION OF RESOURCE PLANNING (RP)
Dir., Charles E. Meyer

OFFICE OF MANAGEMENT SERVICES (S)
Assistant Administrator
George E. Bell
Deputy Assistant Administrator
David E. Dunahay
Program Management Officer (SA)
Russell C. Johnson
Administrative Officer (SA)
Young S. Edgerly

DIVISION OF PERSONNEL MANAGEMENT (SP)
Dir., Roy P. Smithey
DIVISION OF MATERIALS AND PROCUREMENT (SR)
Dir., Howard F. Perry
DIVISION OF ADMINISTRATIVE SERVICES (SS)
Dir., Steven C. Kallio
MANAGEMENT ANALYSIS (SM)
Mgr., Richard L. Perlas
SAFETY (SI)
Mgr., A. A. Stanford

UPPER COLUMBIA AREA (U)
Area Manager
Wayne R. Lee
Deputy Area Manager
Frederic D. Rettenmund

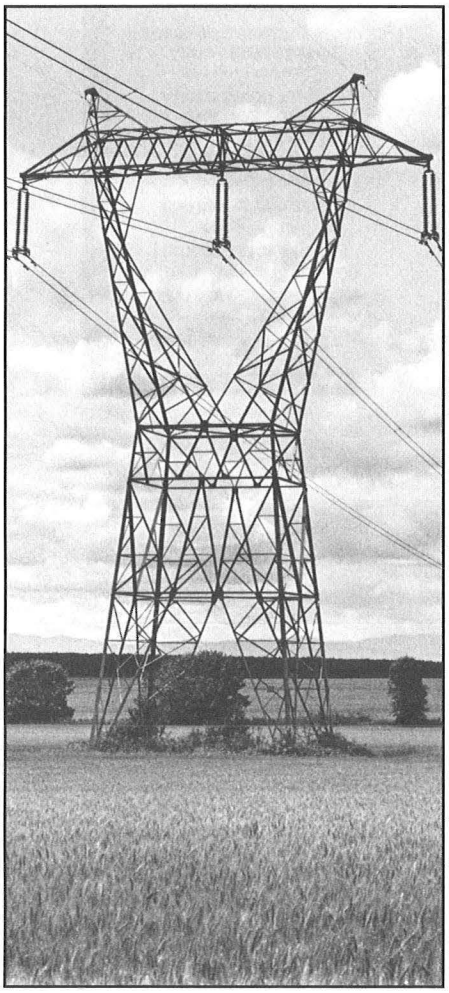
POWER MANAGEMENT (UC)
Asst. Area Mgr., Arthur A. Harlow
OPERATIONS & MAINTENANCE (UD)
Asst. Area Mgr., Earl C. Schoer
ENGINEERING (UE)
Asst. Area Mgr., Paul E. Eichin
MANAGEMENT SERVICES (UA)
Asst. Area Mgr., Randy L. Ridenhour
MONTANA DISTRICT (UM)
Dist. Mgr., George E. Eskridge
WENATCHEE DISTRICT (UW)
Dist. Mgr., Ronald K. Rodewald

SNAKE RIVER AREA (W)
Area Manager
Thomas V. Wagenhoffer
Deputy Area Manager
Patrick G. McRae

POWER MANAGEMENT (WC)
Asst. Area Mgr., Robert A. Rogers
OPERATIONS & MAINTENENCE (WD)
Asst. Area Mgr., Truman W. Conn
ENGINEERING (WE)
Asst. Area Mgr., Robert R. Goranson
MANAGEMENT SERVICES (WA)
Asst. Area Mgr., Allan D. Polvi
IDAHO FALLS DISTRICT (WI)
Dist. Mgr., Richard J. Itami
BOISE DISTRICT (WL)
Dist. Mgr., Thomas H. Blankenship

Bonneville Power Administration
September 17, 1990

Administration Offices



BPA Headquarters
Public Involvement Office
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(503) 230-3478
Toll-free lines:
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Other Western States (800) 547-6048

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P.O. Box 3621
Portland, OR 97208
(503) 230-4552

Eugene District Office
U.S. Federal Building, Room 206
211 E. 7th Avenue
Eugene, OR 97401
(503) 465-6952

Upper Columbia Area
U.S. Courthouse, Room 561
W. 920 Riverside Avenue
Spokane, WA 99201
(509) 353-2518

Wenatchee District
301 Yakima Street, Room 307
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Montana District
800 Kensington
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Puget Sound Area
201 Queen Anne Avenue North,
Suite 400
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Seattle, WA 98109-1030
(206) 553-4130

Snake River Area
101 W. Poplar
Walla Walla, WA 99362
(509) 522-6225

Idaho Falls District
1527 Hollipark Drive
Idaho Falls, ID 83401
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Boise District
304 N. 8th Street, Room 450
Boise, ID 83702
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Washington, D.C. Office
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1000 Independence Avenue, S.W.
Washington, D.C. 20585
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California Office
1330 Broadway, Suite 415
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Profile and Mission Statement

Profile

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

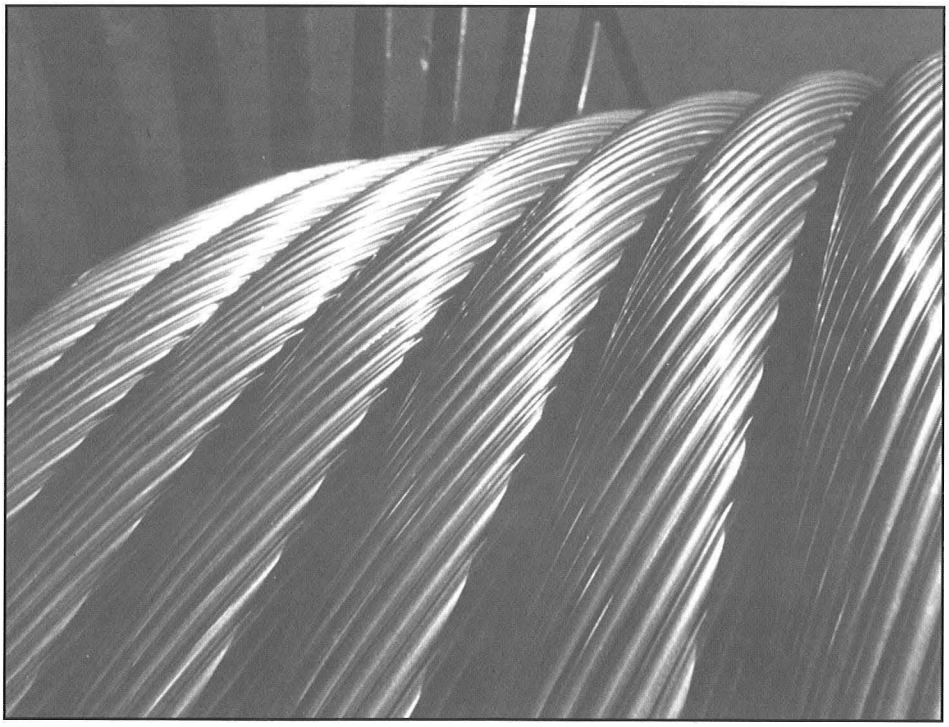
The dams and the electrical system are known as the Federal Columbia River Power System.

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

BPA uses revenues from the sale of power and transmission services to recover its own expenses, to repay the Federal investment in the power system, and to pay for the resources it has acquired. BPA pays for operation and maintenance expenses at the Federal dams and at non-Federal power plants. It also pays for irrigation benefits of Federal projects allocated to power to repay, and for fish and wildlife projects which offset damage to these resources by the Federal hydropower system.

Mission Statement

BPA will work in a regional partnership to define and achieve the electric power, conservation, and fish and wildlife objectives of the Pacific Northwest. We will provide our customers a low-cost, reliable, and environmentally sound power supply and transmission system. We will do so in an open and businesslike way, responsive to citizens' concerns and to our obligations as a Federal agency. We will provide creative leadership and fulfill our responsibilities with professional excellence.



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