NORTHWEST
ENERGY NEWS

Volume 1, No. 2 Northwest Power Planning Council *April, 1982*

Wanted: A good crystal ball

The future isn't what it was, and planners are looking for ways to handle uncertainties

In 1976, as the region's utilities weighed buying a piece of Washington Public Power Supply System Plants 4 and 5, the City of Seattle was trying to figure out its own energy needs.

As citizens, city planners, and officials from Seattle's city-owned utility, City Light, developed a comprehensive study, called Energy 1990, they focused on the major elements that go into any projection of future power demand. There was agreement on many of the factors — population growth, the types of industries, per capita income — but there was also a sticking point: the relationship of the use of electricity to the cost of electricity. Did the price of electricity matter? Did consumers use less — meaning less new power would be needed — the more power cost?

"There was a pretty hot debate over that," recalls John Gibson, then a policy analyst in the city's Office of Policy Planning and now a private consultant. "There was a lot of discussion whether that was accurate or legitimate or how people really behaved."

In fact, during a City Council hearing a City Light official

(Please turn to page 7)

Central

Northwest Power Planning Council
United Carriage Building
700 S.W. Taylor, Suite 200
Portland, Oregon 97205

Telephone: 503-222-5161
Toll Free: 1-800-547-0134
(Region-wide, except Oregon)

Executive Director:
Edward Sheets

Idaho

Northwest Power Planning Council
Statehouse Mail
Towers Building
450 West State
Boise, Idaho 83720

Telephone: 208-334-2956

Council Members:
W. Larry Mills
Robert Saxvik

Montana

Northwest Power Planning Council
Capitol Station
Helena, Montana 59620

Telephone: 406-449-3952

Council Members:
Keith Colbo
Gerald Mueller

Oregon

Northwest Power Planning Council
155 Cottage Street NE
Salem, Oregon 97310

Telephone: 503-378-5487

Council Members:
Roy Hemmingway
Alfred Hampson

Washington

Washington State Energy Office
400 East Union
Olympia, Washington 98504

Telephone: 206-754-0701

Council Members:
Charles Collins
Daniel Evans

NORTHWEST
ENERGY NEWS
is published monthly by the Northwest Power Planning Council, 700 S.W. Taylor, Suite 200, Portland, Oregon 97205.
Editor: John Arthur Wilson
Managing Editor: Annette Frahm
Contributors: Susan Skog, Torian Donohoe

Cover photo: Judith Rafferty

KING stations to air N.W. energy special April 21

A two-hour prime time special on current Northwest energy problems will be aired on April 21 by the KING Broadcasting System. "The Electrical Storm: A KING Northwest Network Energy White Paper" looks at what led up to the current WPPSS dilemma and accompanying protests over electric rate increases, and describes options for the region's future.

The special takes a brief history of the development of Columbia hydropower, and a look at the WPPSS situation, and a discussion of the Tennessee Valley Authority — an agency with problems similar to those of the Northwest that has taken steps to shut down several nuclear plants and put together an agressive conservation program. "The Electrical Storm" then turns to the Northwest Power Planning Council. The program explains the Council's role to plan the region's energy future and the elements of the planning task: a forecast, a fish and wildlife program, and a regional energy and conservation plan. The Council's resource priorities — conservation and renewable resources are most important — are looked at in detail as options for the region's energy future.

The second half of the program will be a live, connected segment between the four KING stations in Seattle, Portland, Spokane and Boise. A discussion about important regional energy decisions will take place among members of the Northwest Power Planning Council, utility heads, citizens, solar and conservation advocates, and other concerned about these decisions.

The program will be aired on April 21 at 7:30 p.m. on KING in Seattle, KGW in Portland, and KREM in Spokane, and at 8:30 p.m. on KTVB in Boise. The program will air again in Seattle on May 2 at 10:00 a.m.

CALENDAR

April 14, Oregon, Townhall Meeting, 7:30 p.m., City Council Chambers, 777 Pearl St., Eugene.

April 14, B.P.A. Workshop: Financing Conservation, Renewable Resources and Co-generation, 8:00 a.m.-4:30 p.m., Benson Hotel, Portland.

April 15, ODOE/WSEO/BPA Workshop: Financing and Marketing for Geothermal Energy, 8:00 a.m.-4:30 p.m., Benson Hotel, Portland.

April 19, Oregon, Townhall Meeting, 7:30 p.m., City Council Chambers, Portland.

April 19, B.P.A. Billing Credits Meeting, Boise, Idaho.

April 20, B.P.A. Billing Credits Meetings, Portland, Seattle, Missoula.

April 21-22, Council Meeting, 8:30 a.m., Seattle Center, Mercer Forum III and IV, Seattle.

April 22, Conservation Subcommittee Meeting, (SSAC) 6-9 p.m., Council Offices, Portland.

April 23, Resources and Conservation Subcommittees Joint Meeting (SSAC), 9:00 a.m., Council Offices, Portland.

April 27, Townhall Meeting, 7:30 p.m., Hall of Mirrors, Boise.

April 29, Washington, Townhall Meeting, 7:30 p.m., City Council Chambers, Spokane.

May 4, Washington, Townhall Meeting, 7:30 p.m., Holiday Inn, Bellingham.

May 5, Forecasting Subcommittee (SSAC), 9:00 a.m., Council Offices, Portland.

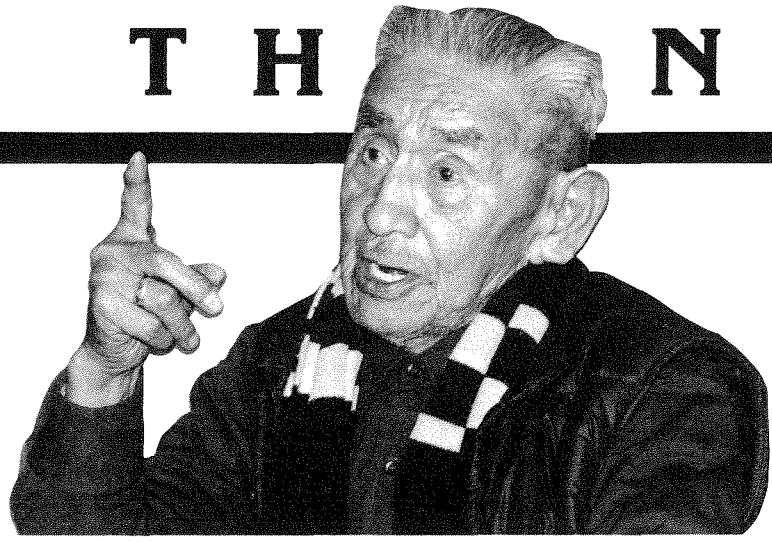
May 10, Washington, Townhall Meeting, 7:30 p.m., Foss High School, 2112 S. Taylor St., Tacoma.

May 18, Washington, Townhall Meeting, 7:30 p.m., Seattle Center, Olympic Room, Seattle.

May 20, Washington, Townhall Meeting, 7:30 p.m., Lower Columbia College, Student Center, Longview.

May 21, Conservation and Resources Subcommittees Joint Meeting, 9:00 a.m., Council Offices, Portland.

May 25, Washington, Townhall Meeting, 7:30 p.m., Yakima Valley Community College, Hopf Union Building, Yakima.



© Judith Rafferty

© Judith Rafferty

© Judith Rafferty

Coming together: James Alexander, a 92-year-old Yakima fisherman, makes a point in Council hearing that brought together fisheries interests (left) and utility officials.

'To protect, mitigate and enhance...'

Council begins long process for plan to help Columbia's fish

March marked a rare coming together of fisheries and power interests as the Northwest Power Planning Council wrapped up five days of fisheries hearings throughout the four Northwest states.

"The climate for saving the fish runs is disturbing," said former Oregon Gov. Tom McCall, "But when you see a coalescing of those factions — the Indian fishermen, the commercial fishermen, and the sports fishermen, for the first time I can remember, there seems some hope."

The Council is required under the 1980 Northwest Power Act to develop a program to "protect, mitigate and enhance" the salmon and steelhead runs along the Columbia and its tributaries along with developing a 20-year master energy plan. The fish program is aimed at making up for some of the loses caused by the dams along the river.

Recommendations were submitted to the Council last November from various state and federal fisheries agencies, Indian tribes and the Bonneville Power Administration. The recommendations, which include proposals for stream flows, downstream migration aids and research and development, will become the foundation for the Council's eventual fish and wildlife program, to be adopted by November 15.

But utility officials warned that the river's power production could be reduced.

Merrill Schultz, director of the private utilities' Intercompany Pool, said recommended minimum flow requirements could reduce the river's power production by as much as 490 megawatts, or roughly the generating capacity of a plant such as Colstrip Unit 3.

The Pacific Northwest Utilities Conference Committee suggested the Council consider "transporting" — literally loading into barges, trucks or trains — young fingerlings and shipping them downstream by man-made methods.

Some fisheries officials, however, balked, saying that transporting the fish was unproven and would throw off the salmons' and steelheads'

natural homing instinct.

Indian tribe members, however, said the Council must also weigh their historical treaty rights as they develop a fish plan.

The Council's fish plan, said Rudy Saluskin, a Yakima Tribe member, "is sort of a light in the sky that may help the fishery and the resource."

A number of tribal leaders reiterated the importance of fishing to the religious, social, and economic structures of the tribes.

The tribes' support for strong fisheries provisions was also endorsed by sometime opponents, the sports fishermen.

As the Council's hearings moved east the issues took on new colors.

"Appropriating great quantities of water for fish runs is not going to be popular within the agricultural population, even those who love fish," warned Tom Hovenden, secretary-manager of the Idaho Cattle Feeders Association, about the possible impact on irrigation.

Nevertheless, Montana Fish, Wildlife and Parks Director Jim Flynn said "this plan has provided us with an excellent opportunity to work with our sister states of Idaho, Oregon and Washington to ensure a better future for all fish and wildlife in the region."

Testimony during the hearings came from scores of people representing a wide range of viewpoints. The testimony included that of a 92-year-old Yakima Tribe member, James Alexander, who recalled for the Council his youth on the river and the plight of the fish over the years, telling the panel, "At one time we could get all kinds of fish, now the thing is just dwindling away."

Photo courtesy Oregon Historical Society

B.P.A. big debt: The federal power agency is behind $687 million in its payments for the Columbia's dams.

B.P.A. behind on debt payments

The Bonneville Power Administration has come under fire from members of a House subcommittee for falling $687 million behind on its payments to the federal Treasury. At a hearing in early March, Rep. Tom Bevill, D-Ala., complained that B.P.A. has "the lowest rates (in the country) and the biggest debts." Bevill is chairman of the House Appropriations subcommittee on energy and water development.

"What are you going to do to get your house in order?" Bevill asked B.P.A. Administrator Peter Johnson. Johnson said that B.P.A. plans to increase its rates and reduce costs as much as possible in an attempt to bring the installments on B.P.A.'s $7.3 billion federal debt up to date by fiscal 1985. B.P.A. has proposed a 73 percent rate increase effective October 1. The increase would jump B.P.A.'s wholesale rates from 11 mills to as much as 19.85 mills per kilowatt-hour, still among the lowest in the nation.

About two-thirds of the debt, Johnson said, reflects falling behind schedule on repayment for the cost of financing hydroelectric projects. The remaining third of the debt is interest and operation and maintenance costs that revenues have failed to cover.

Johnson explained that B.P.A.'s revenues are down because electric demand has dropped as a result of the region's lagging economy. He also said that B.P.A.'s contract to pay for three Washington Public Power Supply System nuclear plants is "directly impacting" on B.P.A.'s rates and budget. Escalating construction costs and higher interest rates have increased B.P.A.'s expenses for these projects.

B.P.A. announces billing credits meetings

B.P.A. is holding a series of meetings around the region on its billing credits program. Billing credits are payments to B.P.A. customers for actions — such as conservation or resource development — which reduce B.P.A.'s obligation to acquire energy resources. Following information meetings in March, B.P.A. will hold public comment forums on April 19 in Boise; and on April 20 in Portland, Seattle, and Missoula. Public comment closes on April 23. For more information, contact B.P.A. at 1-800-452-8429 (in Oregon) or 1-800-547-6048 (outside Oregon).

Council says no to regionalizing WPPSS 4 & 5

The Northwest Power Planning Council adopted an unanimous resolution March 4 not to "regionalize" the terminated Washington Public Power Supply System plants #4 and 5.

The Council, which is charged by Federal law to develop a 20 year master regional energy plan, said that it was not in a position to initiate acquisition of a specific plant prior to having its first plan done, which is due in April of 1983.

The Council was petitioned by 16 public utilities around the Pacific Northwest who are participants in WPPSS projects 4 and 5. The participants wanted the Council and the Bonneville Power Administration to immediately financially underwrite the two plants, even though they had been terminated in January when the troubled power consortium could no longer get financing for the projects, estimated to cost $12 billion.

"The Power Planning Council is mindful that many WPPSS participants are hopeful that plants 4 and 5 can be regionalized through purchase of their output by B.P.A. under the regional power act," said the Council resolution. "Though the Council appreciates the plight many of these utilities face, having to raise rates for power plants which are not yet completed and may never be finished, the Council is not able to provide the immediate relief sought by these utilities." (See box for complete text of resolution.)

Darren Wertz, a staff mem-

ber of the Clark County Public Utility District in Washington State, told the Council that his commissioners wanted the Council to authorize "regionalizing" the plants because prior Council statements had made it impossible for the plants to proceed.

"The Council had a contributory role in the current situation of projects 4 and 5 through the Council's negative statements on the need and cost-effectiveness of the plants," Wertz said in a letter he read from the three Clark County PUD commissioners. The commissioners blamed the Council for preventing the projects from going ahead. "A neutral Council position would have helped stabilize the projects' financial support and assist in alleviating the shortage of economic robustness and power generation accompanying the demise of projects 4 and 5," said the Clark County letter.

But Council members pointed out there were certain legal restrictions on the Council's acquisition authorities. "There's a dual hurdle," said Chuck Collins, a Washington State member. Collins pointed out that the Council would have to determine first that the plants were needed, and second that they were the cheapest power available.

Council chairman Dan Evans also questioned whether the Council really had a "contributory" role in the termination of WPPSS plants 4 and 5.

"As I remember, it was the vote of the Clark County Public Utility District and Tacoma City Light which sank the mothballing operations," said Evans. "So I hardly think it is an accurate statement to say that the Council was a contributory participant when it was your own PUD who probably torpedoed and Tacoma City Light provided the iceberg for the Titanic to go down."

Clark County PUD, one of the largest participants in the WPPSS 4 and 5 projects, voted in early January to deny funds for a mothballing program, which would have preserved the plants until the Council had developed its plan in April 1983. The refusal of participants, such as Clark County PUD and Tacoma City Light, to go along with the mothballing program eventually forced WPPSS to terminate the plants and abandon them. The Council resolution was adopted unanimously at the March 4 Missoula, Montana meeting.

Town Meetings begin: Montana's Mueller addresses group in Kalispell.

Council townhall meetings begin

"Do you consider decentralized energy sources?"

"I'm here to ask the Council to insure enough power so that we can have jobs."

"Are you just going to update and revise everybody else's forecasts or are you going to do something different?"

"What will you do to protect the rights of irrigators?"

These are some of the comments expressed by people attending the Northwest Power Planning Council's first townhall meeting in Kalispell, Montana, on March 23. About 100 people attended the evening meeting, where Montana Council member Gerald Mueller presented an informational slide show and then responded to questions and comments from local residents.

The Kalispell meeting is the first in a series of townhall meetings that the Council is sponsoring in Montana, Idaho, Oregon, and Washington this spring. The two Council members in each state are visiting local communities to inform people about the Council and to invite comments on Northwest energy issues and the Council's role.

The schedule of townhall meetings is included in the calendar on page 2 of this issue. For more information, contact Torian Donohoe at 1-800-547-0134 (in Oregon, call 1-222-5161).

Council resolution on WPPSS 4-5 sponsorship

The Northwest Power Planning Council commends the participants in WPPSS 4 and 5 for taking the steps necessary to bring about a controlled termination of those power plants. Many utilities have put aside short-term interests by approving the termination plan and by making the one-year loans to WPPSS. Their actions, once completed, will prevent deterioriation in WPPSS' financial conditional and will avert a WPPSS default, which would have significant and dire economic impacts on all Northwesterners.

The Northwest Power Planning Council is mindful that many WPPSS participants are hopeful that plants 4 and 5 can be regionalized through purchase of their output by B.P.A. under the Regional Power Act. Though the Council appreciates the plight many of these utilities face, having to raise rates for power plants which are not yet complete and which may never be finished, the Council is not able to provide the immediate relief sought by these utilities.

The Congress did not contemplate that the Council would initiate plant acquisition decisions before the plan is complete. The Council may act with respect to specific plants only through the mechanism provided in section 6(c) of the Regional Act. Under that provision, B.P.A. must make the initial determination whether a major resource is needed, cost-effective, and consistent with the priorities and other considerations in the Act. The Council has 60 days to respond to a recommendation by B.P.A. to acquire a resource. If the Council approves the decision or takes no action, the acquisition can go forward. If the Council finds the decision to be inconsistent with the Plan or provisions of the Act, then B.P.A. must seek approval from Congress before acquiring the resource.

The Council is currently working to develop a 20-year forecast of the region's energy needs and an energy plan to meet those needs. The Council's plan will be completed in spring 1983 and will be used pursuant to the Act to guide B.P.A.'s resource acquisition program.

Idaho Falls hydro contract signed

A small hydroelectric project on the Snake River in eastern Idaho represents the first Bonneville Power Administration renewable resource acquisition under the Regional Power Act of 1980.

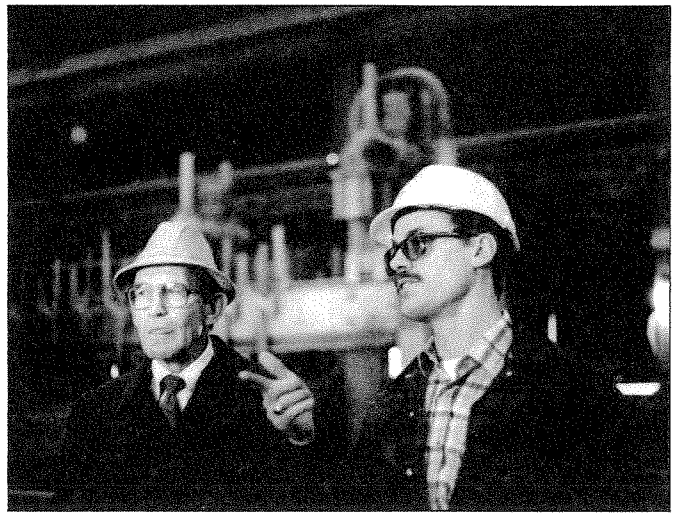
Six months of negotiation between the City of Idaho Falls and B.P.A. culminated in a six-year contract signed by Idaho Falls Mayor Tom Campbell March 22. Under the agreement, B.P.A. will buy the power generated at the three hydroelectric plants for about $5 million a year, according to Idaho Falls Electric Division Manager Steve Harrison. On the average, about 175 million kilowatt hours of electricity will be produced by the three bulb turbine plants, Harrison said.

The plants are located within seven miles of each other on the Snake River with one located in Idaho Falls, and the other two plants located outside the city.

Harrison said the agreement was "appealing" because of the financial savings to the city. B.P.A. agreed to pay about three cents per kilowatt hour for the power generated by the turbines. Idaho Falls currently buys about two-thirds of its power from B.P.A. for about 1.2 cents per kilowatt hour, which is B.P.A.'s current wholesale rate.

The first plant of the $62 million project is expected to begin generating electricity in April with the remaining two plants producing power this summer.

A critical part of the contract with B.P.A. allows the city to withdraw from the agreement after six years provided it gives three years prior notice. This would give the city the option of withdrawing from the agreement if B.P.A.'s rates become higher than the cost at which the power is sold to B.P.A.



"The magic metal:" Tom Payne of Anaconda Aluminum explains the aluminum reduction process to Art Sheldon, a member of the Northwest Power Planning Council's Montana Advisory Council, during an Advisory Council March 23 tour of Anaconda's Columbia Falls plant.

Heavy rains, low use bring NW hydro glut

Because of reduced demand and higher precipitation, the Pacific Northwest currently has a surplus of electric power. B.P.A. is selling as much cheap electricity as it can to Northwest private utilities and to California utilities. But there is still a surplus. Water is being spilled over the Columbia River hydroelectric dams because there is no market for the excess power. The reservoirs also need room for what may be the best spring runoff since 1976.

There are two main reasons for the surplus:

- Demand is 7 or 8 percent below B.P.A. forecasts, the result of the mild winter, the economic recession, and conservation programs.
- Precipitation in the Columbia River basis has been much higher than normal — 171 percent of normal in February — while the snowpack is normal or above normal.

The main source of electricity in the Northwest is still hydroelectric power. Thus the supply of power depends on the weather. In recent drought years, B.P.A. has bought power from other sources to meet demand. This year, there is more power than the region needs.

The surplus is partly the result of the region's economic recession. The aluminum industry, the major industrial user of electricity in the Northwest, is facing tough times. According to B.P.A. spokesman Bill Murlin, half of the region's 10 aluminum plants have reduced their demand for power. The timber industry, which also uses large amounts of electricity, has severely cut back the number of mills in operation.

PP&L proposes pilot conservation program

A pilot conservation project designed to save as much electricity as possible in a confined geographic area has been proposed to the Bonneville Power Administration by Pacific Power & Light Company.

"The primary goal would be to determine the ultimate level of energy conservation that could be achieved by applying state-of-the-art methods and cost-effective criteria in a concentrated area," said Glen Spicer, PP&L vice president for conservation and consumer affairs. "We want to test the energy-saving potential by saturating a single community during an initial two-year period and measuring the results."

Pacific Power said it submitted a written proposal to B.P.A. within the framework of conservation sections of the Regional Power Act. If accepted, the conservation program would involve customers of Pacific Power and the Hood River Electric Cooperative in Hood River County and could begin by late spring or early summer.

The program would be limited to electric energy applications in use by residential, commercial and industrial customers. The proposal calls for substantial financial incentives for participating customers.

Measures proposed to be available to eligible residences include:

Home energy audit; insulation of ceilings, floors, walls, water pipes, dehumidifiers and heat exchangers; storm windows; storm doors; caulking and weather-stripping; switchplate gaskets; electric water heater wraps; hot water flow regulators and advanced design shower heads.

Results of the energy audit would determine which items would be applicable in a particular household.

The proposed pilot program also would provide a variety of electricity-saving opportunities for commercial-industrial customers. Comprehensive energy audits would be offered and there would be incentives for installing and monitoring cost-effective conservation measures.

Steve Hickock, B.P.A. assistant administrator for conservation and renewable resources, said that a task group is being formed to evaluate the PP&L proposal and that he will head the group.

Hickok indicated that Bonneville would have an initial response to the proposal soon.

Forecasting . . . *(From page 1)*

off-handedly dismissed the whole price response issue as "the so-called theory of elasticity," the economist's phrase for the relationship of price to consumption.

"It wasn't a 'so-called theory'," says Gibson. "It was demonstrated fact."

The price elasticity debate — a debate which has since evaporated in the heat of rising electric prices — demonstrated something more, however: energy forecasts, no matter how good, are based on assumptions and estimates about an unknown future. Assumptions on whether price matters, and estimates on what that price will be. For regional power planners forecasting has become perhaps one of the most frustrating and troubling of their tasks. Forecasts are fundamental to any planning effort. Forecasts are also fundamentally hobbled by the uncertainties of predicting a world 20 years from now.

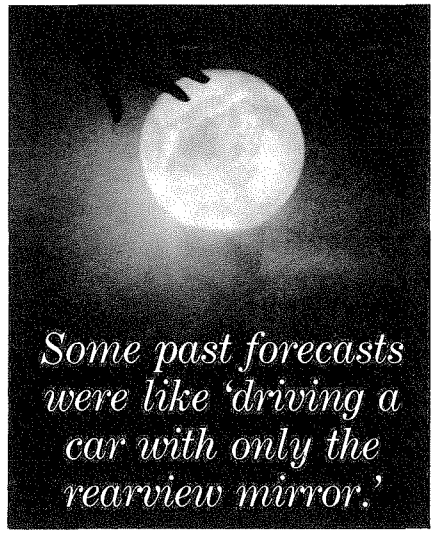
And for consumers, often far removed from the economic growth studies and the computer crystal balls, the foibles of forecasting raise a more direct question: What's the cost of being wrong?

As Northwesterners have found out, the cost of being wrong can sometimes run into the billions of dollars.

"The way you forecast depends on how much you stand to lose if you're wrong," explains Gibson. "It costs you more to develop a good econometric model than to get out a ruler and extrapolate."

For years, that's about what regional power planners did. Power was cheap (in "real dollar" terms it was actually getting cheaper) and the cost of being wrong was small. Northwest demand for electricity was growing at the brisk annual clip of seven to eight percent so any surplus was quickly sponged up by growing demand. And if growth didn't take care of it, there was always another utility somewhere willing to buy the surplus. During the economic boom times of the 1950s and 1960s, power planners found "loads could be predicted very accurately using semi-log graph paper and a ruler," says the Public Power Council in its book, "Power Planning Primer." The PPC is the planning coordinator for the region's various public power agencies.

Planners called the graph paper and ruler method "trending." To plan what would happen in the future you would look to see what had happened in the past, figuring past patterns had been reasonably stable.



"It was like driving a car by only looking in the rearview mirror," says Gerald Mueller, one of Montana's members of the Northwest Power Planning Council. Trending worked fine as long as the road was straight — but a sudden curve could send you careening down the ravine.

The curve came in 1973. The Arab oil embargo took all of the planners' trend lines and shattered them. For years the rules of the forecasting game had been consistent; now they were all changing. "The accuracy of forecasts evaporated," says the PPC's primer. "The cost of construction escalated dramatically, and the rising costs of electricity began to reduce consumption."

"In the era of the 1940s, 50s, 60s and early 70s the economies of scale were such that maintaining low rates translated into more and more power plants," says Tom Eckman, an energy analyst with Mathematical Sciences Northwest.

"That was conventional thinking, but then all of a sudden everything went the other way. It flip-flopped on them. They had been working in an era where the next unit of power cost less and all of a sudden it reversed; the next unit of power cost more.

"When (J.D.) Ross (former Seattle City Light Superintendent and first B.P.A. Administrator) built his first dam it was something like 15 cents per kilowatt," adds Eckman. "That was somewhere in the 1920s, and the real power cost had been going down ever since then. You had a generation of utility managers and planners who were brought up to think that was dogma. Everything was very calm and consistent."

"Anything before 1973 or 1974 was based on trends," says David Hoff, manager of corporate planning for Puget Sound Power and Light. "And the trend was six, seven, eight percent. After the oil embargo prices started to go crazy."

The oil embargo took the nation's economy on a roller coaster ride that was particularly unsettling for utilities. The doctrine that more and bigger power units were cheaper had been left at the bottom of the ride. And as things climbed, utility planners were finding out that the cost of being wrong could be sky high. Billions could be spent on a power plant once thought needed by your trend line but no longer needed thanks to the new energy realities.

The transition was complicated even more for Northwest utilities. After years of relying on cheap power from the Columbia's dams, the region was shifting to new thermal power facilities, either coal and nuclear plants. Inflation, management problems, and labor disputes sent the cost of the new thermal plants skyward, the cost differences being all the more dramatic because of how incredibly cheap hydro power was.

The soaring cost of new power sent demand plummeting. "We had significantly underestimated that cost," says Puget's Hoff. "In the region, with the WPPSS plants, we were sort of looking at generic things, and all of a sudden we had some plants being built that were becoming tremendously expensive."

Utilities tried to adapt to the changing world. One of the first adaptations was development of an "econometric" forecasting model for the Pacific Northwest Utilities Conference Committee, the umbrella group for public and private utilities and energy-intensive direct service industries. In 1975, PNUCC commissioned Kenneth Anderson of National Economic Research Associates to develop an econometric model. The model was to be a more precise cross-check of PNUCC's earlier forecasting methods, called the Sum of Utilities forecast. The Sum of Utilities forecast was the compilation of forecasts

— ranging widely in the degree of technical sophistication — from the individual PNUCC members. Critics said it was prone to "double counting" of loads for different utilities and risked becoming each utility's wish list.

Anderson's model became the Northwest's first consolidated, computer-generated regional electric forecast. It also provided the region's utilities with a test of the theory of price elasticity — a factor that's become increasingly important in regional power projections.

In 1977, the first time PNUCC used the econometric model, the utilities estimated 4.5 percent annual load growth, raising power demands to 24,000 megawatts by 1987, an addition during the 10 year period of another 8,000 megawatts or the equivalent of more than a dozen new nuclear power plants. In 1978, the PNUCC's forecast slipped to an estimated 4.2 percent annual growth.

In 1979, the PNUCC forecast dropped again, to 3.9 percent. In 1980, it dropped to 3.4 percent annual growth. And last year, the PNUCC forecast dropped to 3.2 percent.

Nevertheless, while the PNUCC's projections were coming steadily down, they were still running higher than actual demand. Increasingly the PNUCC's forecasts, despite thousands of dollars spent on elaborate computer models, were coming under criticism as being too high and driving utilities to construction programs for new — expensive — power plants which might not be needed.

"We started changing the models to incorporate conservation, either separately or in conjunction with the price effects so they were more end-use models," says Hoff, former chairman of the PNUCC's forecasting committee. The end-use models, pioneered by the Oak Ridge National Laboratory in Tennessee, tried to gauge what would be the specific responses — weatherizing, more efficient appliances, switching from electricity to natural gas — to given sets of conditions.

"The problem with these models is that you need a lot of data, and we just didn't have it," explains Hoff. "So we started getting surveys. Almost every one of the changes that came in resulted in lower forecasts; hardly anything would increase it."

Two recent forecasts show the dramatic drops in projected power demands. The Independent Review of WPPSS 4 and 5, commissioned by the Washington legislature, now estimates annual load growth at 1.5 percent. And a forecast released earlier this month by the Bonneville Power Administration pegs it at 1.7 percent.

"We wanted to address a simple fact in projecting our needs," says Senator Mark Hatfield, Oregon Republican, "to analyze the inventory — what were our needs?"

Forecasting was one of the major tasks Congress wanted to give to an independent regional planning body, says Hatfield, a prime sponsor of the Regional Power Act. When Congress passed the bill it directed the newly created Northwest Power Planning Council to develop a 20-year load forecast independent of the region's utilities and the Bonneville Power Administration.

"It was no longer to be done by so-called bureaucrats behind closed doors and then given as from Mt. Sinai in tablets of stone," says Hatfield. "It was to be a composite of many forces in the Northwest. Public forces, private groups, what have you."

A number of forces in the region are focusing on the benefits and drawbacks of modern forecasting techniques.

"There's just a whole lot of uncertainty in every forecast," says Charles Collins, a Washington member of the Northwest Power Planning Council. "If you're trying to base your decisions on trying to make the forecast more certain you're playing a losing game.

"You want to make the forecasts as accurate as you can, but you want to recognize how fundamentally uncertain they remain."

Key forecasting assumptions

Key Assumptions	WPPSS Independent Review[1]	PNUCC[2]	BPA[3]	NEPP[4]
Population	1.4	1.8	1.7	1.3
Per Capita Income (Real)	1.9	2.2	1.7	2.6[5]
Total Employment	2.1	?	2.1	?
Residential Oil Prices (Real)	3.9	4.4	2.3	1.2[6]
Residential Gas Prices (Real)	2.4	4.2	3.2	4.2[6]

[1]Independent Review of Washington Public Power Supply System Nuclear Projects Numbers 4 and 5, Module IA: Load Forecasting and Balancing.

[2]Pacific Northwest Utilities Conference Committee, Econometric Model: Electricity Sales Forecast, July 1981. (Values shown are the mean of the panel forecasts.)

[3]Bonneville Power Administration Forecasts of Electricity Consumption in the Pacific Northwest, Draft, April 1982.

[4]Energy Futures Northwest, Northwest Energy Policy Project: Executive Summary of the Final Report.

[5]This growth rate is for per capita gross regional product.

[6]The NEPP fuel prices are averaged across all sectors, not just for residential sector.

The fundamental uncertainties center around what goes into the computer forecasting model. What assumptions have you made about the future?

"The problem," says Jack Robertson, respected energy analyst and chairman of the Council's Scientific and Statistical Advisory Committee, "is that there are no facts to the future."

There are four general elements — assumptions — which drive any forecasting model:

- Population — This obviously affects how many consumers there will be. What's the birth rate likely to be? How many people will move in or out of the region?
- Per capita income — What will be people's income level? This will affect the types of housing built, appliances sold and the public's disposable income for electricity.
- Industrial output — What will be the economic health of the region? What kinds of industries will we have? What kind of energy will these industries need, and how energy-intensive will they be?
- Fuel prices — People buy energy similar to the way they buy meat in the market. Is chicken cheaper than steak? Is is cheaper to heat a home with oil? Natural gas? Electricity? Wood? The prices of the various fuels help guide public consumption patterns.

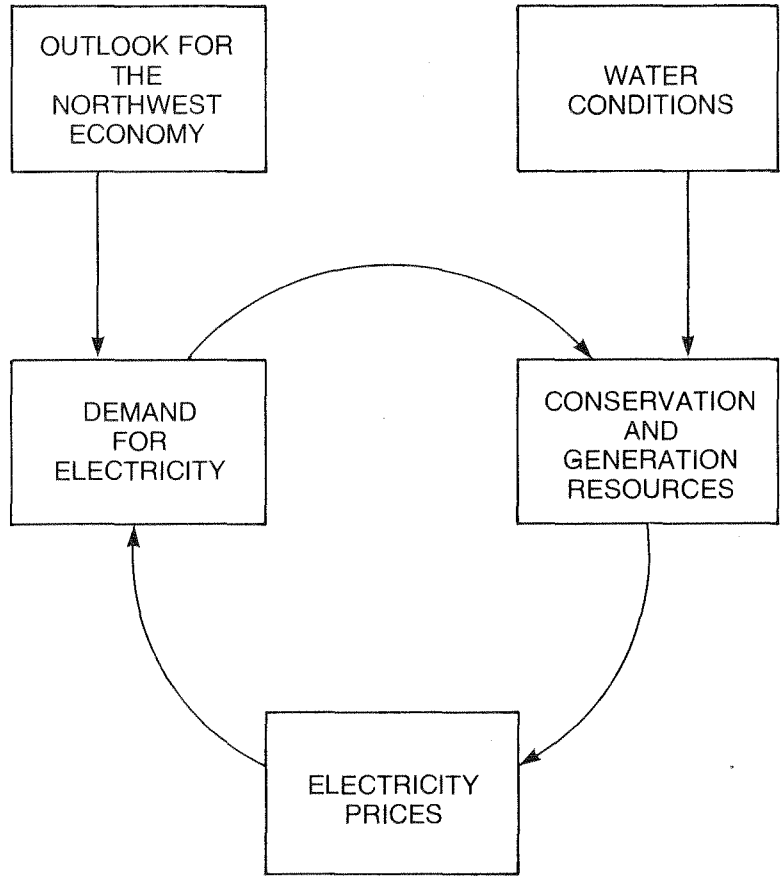
The trouble with any forecast is that these key assumptions are just that — assumptions, educated guesses, about what the future will be.

"We're supposed to predict interest rates for 20 years," comments Collins. "Paul Volcker (Chairman of the Federal Reserve) can't tell you what the money supply is going to be next month, and he's got resources at his disposal we'll never have."

Collins says the region's utilities and power planners have to look at forecasting from new directions, finally coming to grips with the inherent uncertainties of any forecast.

"The wisdom, and I think it was right for a long time, was it's always better to overbuild than underbuild," says Collins. "The newer, and better, observation is that neither one of them is very desirable.

(Continued on next page)



How a forecast works

The modern computerized energy forecast is a collection of many pieces of information designed to give the forecaster a picture of how things might be. It is, as forecasters will tell you, a guess about the future, and necessarily based on certain assumptions.

The forecaster's central job is to try to balance the demand for energy, in this case electricity, with the resources available to produce it.

So how does a forecast work?

A forecaster starts with information about the area's economic outlook, paying particular attention to the regional population and economic changes. What will be the birth rate? How many people will move into or out of the region? What will happen to the Northwest's economy? Will the timber industry rebound? Or will new industries dominate in the Northwest economy over the next 20 years, and what will be those industrial energy needs?

The population and economic information, much of it based upon projections, gives an initial estimate of electricity demand.

Then a forecaster attempts to balance demand with possible energy resources. In the Northwest, because of our dependence on hydroelectric facilities, one must also consider water conditions over the next 20 years, including fisheries impacts. A prolonged drought can dramatically cut water available to produce electricity, requiring additional resources to make up for lost power capability of the hydro system.

Once the forecast provides a picture of the resources required to meet the estimated demand, the forecast estimates the effects on retail rates. The electrical price elasticity is then fed back into the computer to adjust demand in light of the estimated price of future power.

These comparisons between the demand for electricity, the resources to meet the demand, and the price of those resources and how it affects the original demand finally gives a balanced demand picture of not only what the public's need for electrical power might be but how that need will be shaped by the cost of meeting it.

'The wisdom was it's always better to overbuild than underbuild. The newer, and better, observation is that neither one of them is very desirable.' Chuck Collins

Somehow we've got to get over that question."

Instead, Collins says, planners should start focusing on how to deal with a range, or band, of possible growth scenarios.

"We ought to start looking at smaller resources, or at ways of incrementalizing large ones." Collins advocates. "If we build a nuclear plant, we ought to have a sales option contract so if we build it and don't need it we've got a market.

"Basically, we've got to be able to move around that band on very short notice.

"One of the beguiling things about a point forecast, like 2.5 percent for the next 20 years, is that if you're right and you match your resources to it, you have the least cost proposition. The problem is, the expense of being inaccurate is extremely high. If you're short two nuclear plants, the cost to the economy is pretty expensive. If you're surplus two plants it's an expense to the economy — a $12 billion capital investment."

To counter the high-low whipsaw effect, Collins suggests developing a wide variety of resource options — some small with short development times; others larger, "banked" by going through initial siting and licensing procedures and then placed in an account until it's clear whether they would be needed. Large facilities would be over the tall, pre-construction hurdle and be able to be completed faster, says Collins.

Within this energy bank account, Collins says, the resources would be stacked according to their costs and the speed by which they could be brought on line.

As example, Collins says one option might be an accelerated, no-cost conservation program that could be immediately implemented if demand was running higher than anticipated.

A poor option, Collins says, would be an unsited nuclear plant because of the uncertainty that the plant could be ready in time. "There's just no one who can say that in 10 years if I haven't even started the siting process that I can have a nucler plant available. There are just too many pitfalls," Collins adds.

While accepting the uncertain nature of any forecast, Collins says power planners must demand greater certainty that various resource options will come on line on time and on cost.

"Certainty about your future doesn't result from the accuracy of your forecast," says Collins. "Certainty about your future results from your options and their flexibility."

Council discussion paper available

"The Path Along the Ridge: Regional Planning in the Face of Uncertainty" is the title of a discussion paper issued by the Northwest Power Planning Council. The paper outlines an approach to energy planning that focuses on flexibility and management of risk, suggesting that an uncertain energy situation can best be managed on a regional basis.

The energy demand forecast, according to the paper, should not aim at a single point, but should attempt to carefully define the high and low boundaries of forecasted demand. Resources should be planned for the entire range of demand.

The paper is intended to provoke discussion and criticism as a means to developing a practical planning approach.

Copies of the paper may be obtained by writing or calling the Northwest Power Planning Council, 700 S.W. Taylor, Suite 200, Portland, Oregon 97205. Phone: 1-800-547-0134 (regionwide, except Oregon) or (503) 222-5161.

Council's forecasters

The Northwest Power Planning Council has hired three consultants to aid in development of a long range forecast, as required under the Pacific Northwest Power Act.

The consultants will help develop various computer forecasting models, which will then be used by the Council and its staff to do the actual forecasting.

The Council's prime forecasting contractor is Charles River Associates of Boston. CRA had previously done work with the Northwest Energy Policy Project and for the Independent Review of WPPSS 4 and 5 commissioned by the Washington State Legislature. The Charles River model is a combination econometric and end-use model and focuses on the residential and industrial sectors. The Charles River contract is for $200,000.

In the commercial sector, the Council selected Jerry Jackson and Associates of Marietta, Georgia. Jackson is the designer of the original Oak Ridge National Laboratory's commercial model and has done extensive work in commercial sector forecasting. The Jackson commercial model will be incorporated with the other CRA models. The Jackson contract is for $75,000.

The Council's third forecaster is Cambridge Systematics, Inc. of Berkeley, California. Cambridge Systematics is considered a pioneering firm in residential forecasting and is developing a special model for the Council's use. The CSI model is expected to be delivered to the Council later this year and will be incorporated in subsequent forecasting efforts. The Cambridge Systematics contract is for $75,000.

In each case, the contractor's computer model will be delivered to the Council and the Council will do the actual forecasting, developing a series of inputs and running them through the particular computer models. The Council's forecast will be ready by fall 1982. The Council's forecast will become the primary forecast for planning and acquisition of resources by the Bonneville Power Administration.

Forecasts, forecasts everywhere

The Northwest has forecasting fever.

These days it seems like everyone is doing an electric energy forecast of the Northwest's power needs between now and the year 2000. To date, forecasts have come from groups including a state-commissioned independent effort in Washington, an effort by a conservation group, and the latest by the Bonneville Power Administration.

B.P.A, the federal power marketer in Washington, Oregon, Idaho, and western Montana, estimates that the annual electrical load growth will run at 1.7 percent. This would take the region's 1980 loads of 16,737 average megawatts up to 23,333 average megawatts by 2000.

While B.P.A says the 1.7 percent growth rate is the most likely to happen, it says increased demand could range anywhere from low side 0.8 percent per year to a high load growth projection of 2.5 percent. The federal agency says there is a 40 percent chance that actual load will fall between the average 1.7 figure and the 2.5 percent upper level.

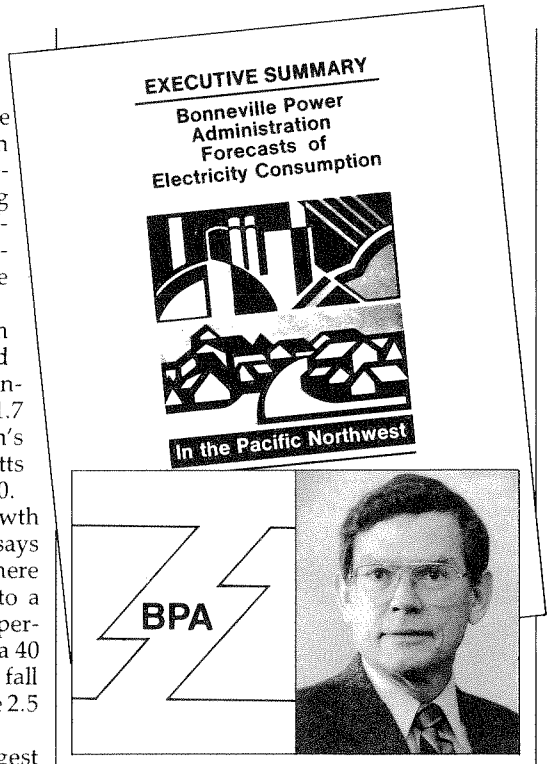
For consumers, B.P.A says the biggest jolt in electrical rate increases will be felt between now and 1984, with the real price of electricity, adjusted for inflation, going up roughly 40 percent between 1980 and 1984. From 1984 through 2000, B.P.A expects its wholesale price to be "relatively constant."

In each of B.P.A,'s load growth scenarios, the agency figures that the terminated Washington Public Power Supply System Plants No. 4 and 5 will not be completed.

For resources, the federal agency has only included conservation programs already budgeted by B.P.A. and unamed future power resources, anticipated to be built in 200 megawatt "lumps" at costs somewhere between 4 and 5 cents per kilowatt in 1980 adjusted dollars.

The B.P.A forecast notes one of the key components in figuring demand is the price of electricity paid by consumers, and "with every reliable indicator pointing toward higher costs of electricity, one can expect consumers to respond by switching fuels and improving the thermal integrity of homes or buildings, devising more efficient industrial process or altering the pattern of use."

The B.P.A forecast comes on the heels of two other recent forecasts which also show a dramatic reduction in anticipated electrical load growth in the Pacific Northwest.



New numbers: B.P.A. boss Peter Johnson says his agency's forecast indicates the region might have a "short-term" surplus.

A study commissioned last year by the Washington State Legislature and carried out by the Washington Energy Research Center estimates load growth will run at an average of 1.5 percent annually. At that demand level, given moderate conservation efforts, the equivalent power from WPPSS Plants 4 and 5 would not be needed until 1995, says the joint study by Washington State University and the University of Washington.

B.P.A. expects higher, even dramatically increasing, electricity rates to encourage conservation.

In addition to the forecast, the WPPSS Independent Review makes a number of recommendations regarding the WPPSS 4 and 5 projects and utility practices in general.

The Hinman report urges the WPPSS 4 and 5 participants to avoid actually dismantling the facilities, saying the region should consider completing the plants for possible sale to out-of-region utilities, such as in Southern California, or eventually completing them instead of starting either new nuclear or coal-fired plants.

The study also urges state and local governments and local utilities to adopt more aggressive cost-effective conservation measures, to develop small-scale hydro facilities and other arrangements, to give the region greater flexibility in low water periods. The Hinman report also urges utilities and public agencies to "adjust utility policies, plans and construction programs to the prospect of much slower growth and electrcity sales than they have been expecting."

Another forecast and proposed model plan echos many of the same conclusions of the Hinman report.

The Natural Resources Defense Council, a San Francisco-based environmental group, has prepared a model forecast and plan for the Northwest Conservation Act Coalition, which calls for the indefinite deferral of all but three of the large-scale coal or nuclear plants under construction in the Northwest.

Under the NRDC's high demand scenario, the region would only complete construction of Valmy Unit 2 in Nevada, Coal Strip Unit 3 in Montana, and WPPSS Unit 2 in Washington, combined with "vigorous" conservation, to meet load growth between now and 2000.

And a forecast for Oregon by the state's Department of Energy predicts annual load growth at 2.1 percent.

In addition to these forecasts, the long-standing sum of the utilities forecast by the Pacific Northwest Utilities Conference Committee will be published sometime this month. While the PNUCC's own forecasts have been dropping in recent years, the utility group says it questions whether the new wave of forecasts may be too low.

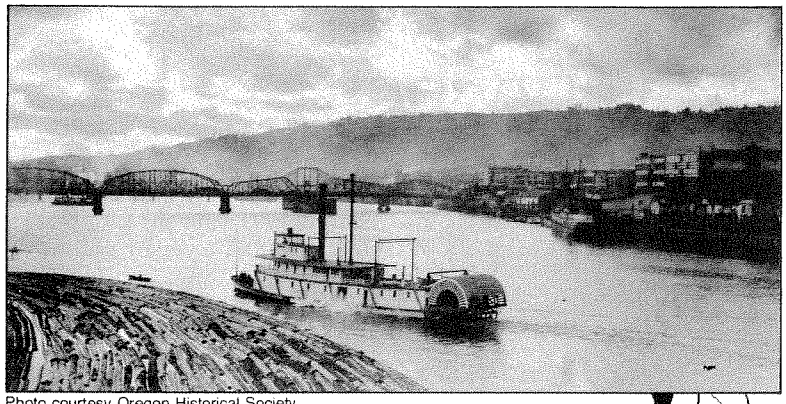


Photo courtesy Oregon Historical Society

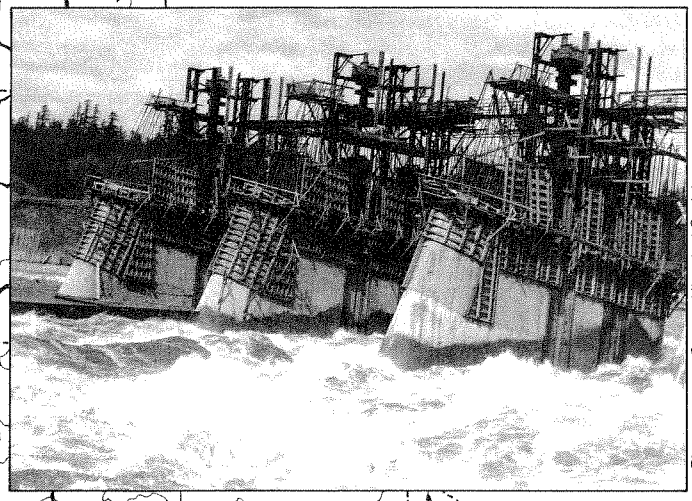


Photo courtesy Oregon Historical Society

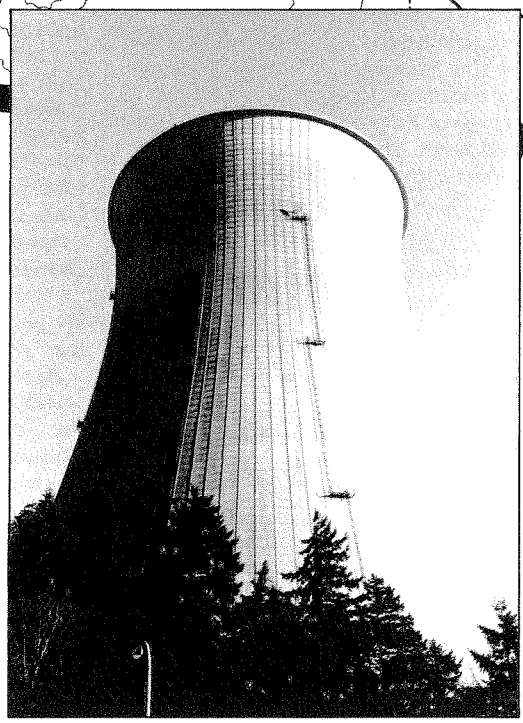


Photo courtesy Bonneville Power Administration

Roll On, Columbia

Once thought to be an inexhaustible resource, the Columbia is again at the center of regional energy controversy.

Since the turn of the century, the Pacific Northwest's history has been inextricably tied to development of the Columbia River. The river has given the region what one author called a "hydro heritage," and this heritage has colored every fiber in the social, political and economic tapestry of the Northwest.

Once again, the region's attention is focusing on the Columbia as we grapple with how to best meet our future electrical energy needs. The road to here is a fascinating history of not only this region but of this nation. And the road from here holds the promise of shaping the Northwest for the decades to come and, perhaps, providing a model for the rest of the nation to follow.

The Columbia had long been considered a resource untapped. As early as the late 1800s, talk began over developing the river, which begins in the Canadian Rockies and winds 1,200 miles through Washington and Oregon on its way to the Pacific. Boat operators sought ways of navigating the great Columbia Gorge just east of Portland in order to make the river a highway for inland commerce. Farmers, faced with nature's uncertainties and too many droughts, sought to use the river for irrigation to turn the dusty, semi-arid high plains of the Northwest into a fertile, green farmbelt.

And as these players wrangled over the river's fate, yet another group emerged.

The 1920s had become marked by numerous, sometimes bitter battles over who would control local electric companies, and perhaps nowhere else in the United States was this battle more passionately fought than in the Pacific Northwest. A group surfaced in the Northwest advocating public ownership of utilities. Branded by some as "socialist," they skirmished in local communities and state legislatures, rebuffed more times than not. Finally, in 1930, they put a measure on the state ballots in Washington and Oregon that would allow the creation of public utility districts, or people's utility districts as they came to be called in Oregon. The measure won, in part thanks to the effort of people like Homer T. Bone, a young man who would later figure prominently in the region's future.

Still, the ballot measures didn't provide the power — so public power advocates looked to the Columbia, its steady downhill course ideal for hydroelectric projects. But the dog days of the Depression and the Hoover Administration's hands-off policy for public works projects gave little chance that the public power dreams would materialize.

That all changed with the 1932 elections. Franklin D. Roosevelt swept into office, bringing with him scores of new Democrats, including a new U.S. Senator, Homer T. Bone. F.D.R. had promised to put people back to work, and two Northwest senators wasted no time in taking Roosevelt up on his word. Charles McNary of Oregon wanted a dam on the lower Columbia for upriver navigation. C. C. Dill of Washington wanted one in the north-central portion of his state for irrigation. It would cost $31 million for McNary's dam at Bonneville and $63 million for Dill's Grand Coulee Dam.

But F.D.R. saw use for the dams beyond simply navigation and irrigation. The President was keenly aware of the boom-bust economic roller coaster the region's economy rode upon. Absent any substantial industrial base, the Northwest's economy was at best seasonal and at worst highly sensitive to the slightest jarring from economic forces outside the region. From his years as New York governor, Roosevelt knew the potential for hydroelectric power, and the Columbia River seemed just the spot for such development. The dams, beyond navigation and irrigation, could bring electricty to city and farm alike, and provide the energy for industry — industry that could finally take the region off the economic roller coaster.

By the close of 1933 — a year in which Congress passed scores of sweeping New Deal initiatives — Bonneville and Grand Coulee Dams were approved.

But that created new problems. Critics said it was the height of foolishness to build such massive power plants in such a

sparsely populated, remote corner of the nation. The Northwest would never be able to use all of the power, they said.

While workers poured the first concrete, Congress debated what to do. One notion was modeled after the Tennessee Valley Authority, called the Columbia Valley Authority. Private utilities balked. Northwest lawmakers searched for a solution. Finally, in 1937, then-Senator Bone came up with a compromise. Bone proposed creating an entirely separate federal agency that would sell power from the Columbia's dams but would not actually construct and operate these facilities.

On August 20, 1937, the Bonneville Power Administration was born. B.P.A. would string thousands of miles of high-voltage transmission lines through four Northwest states (Washington, Oregon, Idaho, and Montana) and sell power to any buyer. Within the next year the power turbines at Bonneville Dam began spinning, and within another year B.P.A. signed a contract to directly provide power to an aluminum smelter being built by the Aluminum Company of America (ALCOA). The ALCOA contract became a benchmark for the region, as B.P.A. would sign several more energy-intensive industrial customers to long-term contracts. The accords were amicable enough: B.P.A., loaded with power, found willing buyers to help repay federal loans used to build the dams; the industries found a stable source of inexpensive power vital to their manufacturing, and they provided the industrial base on which the region could prosper.

But B.P.A. still had power to sell so the agency, rooted in the public power movement, hired two men to roam the Northwest and convince people in small, outlying communities to set up their own public utility district or consumer cooperative. One was a former Congregational minister; the other was a guitar picker. The latter was Woody Guthrie.

The next two decades were busy times for B.P.A. Grand Coulee had just gone into operation when the Japanese attacked Pearl Harbor. America was at war again, in need of an arsenal and aluminum to build that arsenal. The Columbia River System would make its contribution to the war effort. In this period, the Corps of Engineers and the Bureau of Reclamation, the two prime dam builders on the river, would start additional projects up and down the Columbia. B.P.A., meanwhile, laid an elaborate network of transmission power lines that laced the region together like a high-top shoe.

It was a heady time in the Pacific Northwest. The region was booming, and J. D. Ross, the first B.P.A. boss, boasted that the Columbia was "an oil well that would never run dry and a coal seam that would never thin out." Power planners would find there was even a limit to the mighty Columbia.

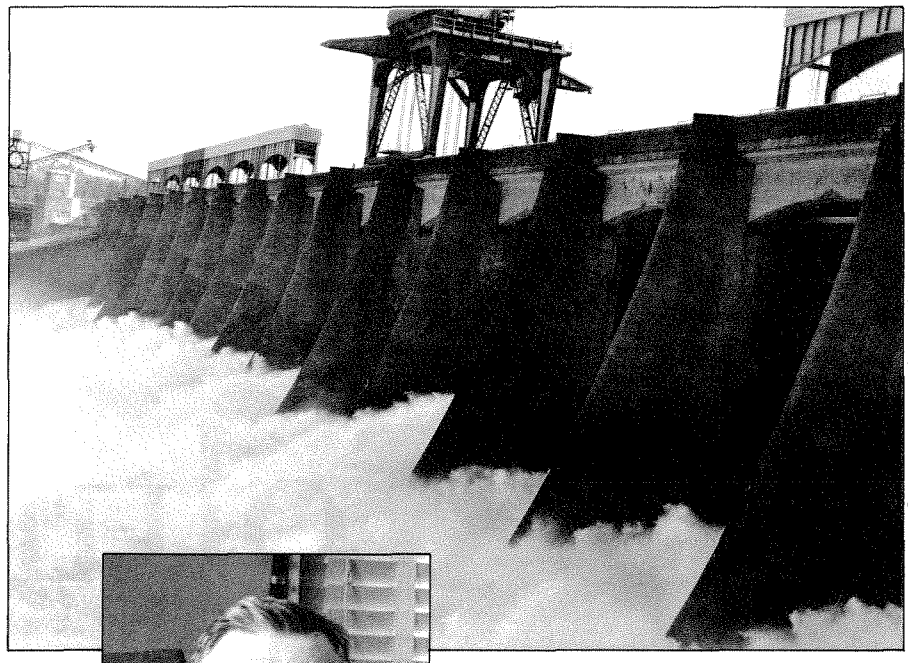


Photo courtesy Bonneville Power Administration

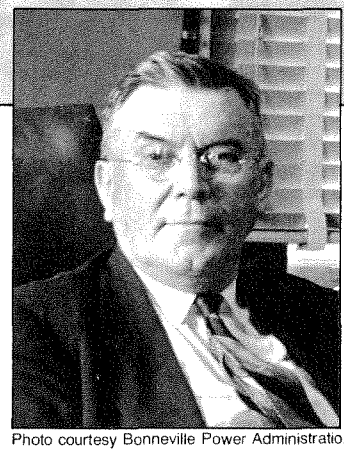


Photo courtesy Bonneville Power Administration

One man, one dam that changed the region: Bonneville Dam, east of Portland, was the first federal dam on the Columbia. J.D. Ross, first B.P.A. Administrator, described the river as "a coal seam that would never thin."

The war years saw another use for the river, a use that carried both global and regional impacts. In 1942, scientists working on the super-secret Manhattan Project discovered a way of splitting atoms to create a potential weapon of unrivaled destructive force. However, they needed an isolated spot where they could build a production reactor. They settled on a sagebrush-dotted site in south-central Washington, about where the Columbia begins to curve westward to the Pacific: the Hanford Works. By 1945, the Hanford reactors had produced enough plutonium to make the United States the first member in the world's most exclusive club.

Just as the dams had marked one turning point, the federal Hanford project would mark another. The Pacific Northwest had crossed the threshold of thermal power generation — a threshold that other regions, not blessed with a Columbia River, had already hurdled. Hydroelectric power had many advantages (it was clean, the "fuel" was free); it also had its disadvantages (the free "fuel," the snowpack in the Cascades, was undependable, and the dams played havoc with migrating fish). By the close of the 1940s, utility planners were talking about augmenting the region's hydroelectric power with other forms of generation.

In 1956, first-term Senator Henry M. Jackson, a member of the powerful Joint Committee on Atomic Energy, proposed building a ninth reactor at Hanford called the New Production Reactor, or the N-Reactor. The reactor could serve both the military and civilian sectors, Jackson said, by producing plutonium needed for weapons and steam needed for electricity. But some were fearful that Jackson, a long-time public power supporter, was trying to create an Atomic Age T.V.A. to sell federally-generated power to scores of new public utilities. Jackson's proposal stalled, but it was far from dead.

Instead, backers turned to the State of Washington. In 1957, then-Governor Albert D. Rosellini signed legislation creating the Washington Public Power Supply System. WPPSS was a consortium of about 16 public utilities, set up to overcome financing obstacles that prevented the myriad of small utilities from building centralized, expensive power plants of their own. WPPSS would be a municipal bonding corporation, pooling the utilities' financial resources to underwrite construction of new facilities. WPPSS' first

project was a small dam in Lewis County, but the consortium wasted little time getting involved in a project far larger, the N-Reactor.

To allay fears of private utilities, Jackson, a master at the art of legislative balancing, offered a compromise: public and private utilities would share the output of the N-Reactor. That cooled the old public - vs. - private power embers, and by fall 1963, President John F. Kennedy was speaking before a crowd of 40,000 gathered for the groundbreaking of the N-Reactor.

Three years later, the N-Reactor's power unit was operating and WPPSS, a mishmash of utilities ranging from large and technically sophisticated to small rural utilities that served as little more than billing addresses, was in the power business — in a very big way.

The N-Reactor changed more than simply how the Northwest generated its electricity; it set in motion forces still tugging on the region's social, political and economic fabric. By the time the first kilowatt came from the N-Reactor, all of the Columbia's economically feasible dam-sites had been developed. The region was getting 80 percent of its electricity from dams, and it was the cheapest electricity in the nation. So cheap, in fact, that Northwesterners used twice the national per capita average of electrical power. Power so cheap it cost more to conserve it than to use it. Coupled with the low price, people were flocking westward. From 1950 to 1970, the region's population grew 35 percent. The Northwest was power hungry, and well-fed thanks to its cheap diet of hydro kilowatts.

By the late 1960s, power planners began charting the roadmap to take the region into the 1990s. It was called the Hydro-Thermal Program, and it envisioned construction of an additional 21,400 megawatts by 1990, enough power for 21 new Seattles, and a doubling of power available from existing hydro facilities. To meet this enormous expansion, planners figured on building two coal plants and 20 nuclear plants in this land of hydro. Power from these facilities, utilities said, would be nearly as cheap as the hydro. Perhaps too cheap to meter.

The Hydro-Thermal Program was an extension of a variety of things already in place in the Northwest. Thanks to the Columbia's dams and B.P.A., the region already had a highly integrated electrical power system, one piece interlocked with another, publicly-generated and privately-generated power moving on the same transmission lines. Private utilities bought surplus power from B.P.A. that wasn't needed by the publics. Everyone was tied together by a common regional power grid.

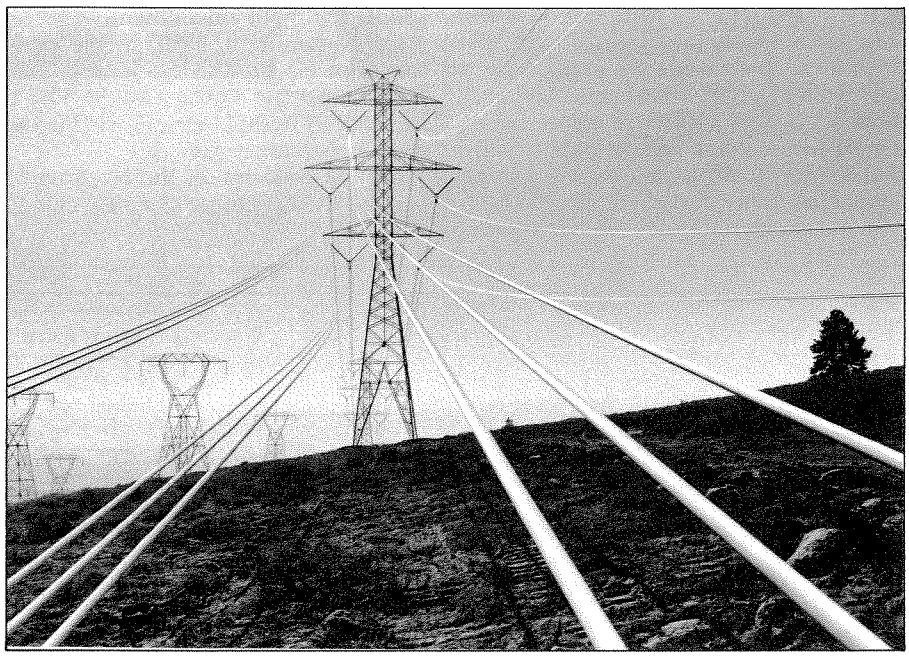
'The thing that made the region prosper – cheap hydro – threatened to pitch the region into combat.'

The Hydro-Thermal Program called for sweeping cooperation between the once-warring public and private utilities, with B.P.A., with its web of transmission lines, acting as the coordinator. The program would bring needed coordination to the next phase of power generation in the Pacific Northwest, planners said. Coordination would allow greater efficiency of scale. Large thermal plants, such as coal or nuclear, could be built and operated more efficiently if there was a broader base of participants sharing in the financing and use of the plants. "Bigger is better" was a common argument in the utility community in the late 1960s.

A group of public and private utilities in Oregon announced plans to build a nuclear plant on the Columbia, about 40 miles northwest of Portland. And before long, WPPSS announced plans for five nuclear plants, totaling $4.1 billion. The Hydro-Thermal Program — a program which would shift the region from a hydro-dominated power system to a thermal/hydro mix — was on its way.

For members of the Supply System, as WPPSS likes to be called, the Hydro-Thermal Program offered the chance to become full-fledged, full-service members of the utility community instead of just retailers for B.P.A.'s power. And underlying the decision to build five plants all at once were a number of other assumptions. The WPPSS participants figured the cost of the power from the plants would be cheap — nearly as cheap as hydro and perhaps even too cheap to meter. In addition, forecasts showed the region's thirst for electricity running at a seemingly unquenchable 7 percent per year growth rate. Further, even if all of the power could not be used immediately in the Northwest, there were always the power-hungry Californians looking for power to offset their expensive oil-fired electricity.

But the hopes of becoming the region's new mega-utility became quickly mired. Labor disputes and Nuclear Regulatory Commission-ordered design changes set back mid-70s completion dates. Years of double-digit inflation swelled costs. And as time passed and costs ballooned, a more serious problem came to the front. By the very fractured nature of the consortium, its management was precariously weak. Construction at some of the plants caused the N.R.C. to levy stiff fines and demanded sweeping documentation that what work was done was done right. And the hopes of using the same financing mechanism that underwrote the first three plants was abruptly pulled from under WPPSS when, in 1973, the Treasury Department and the Internal Revenue Service ruled that the public utilities couldn't use tax-exempt municipal bonds if B.P.A. was going to acquire more than 25 percent of the plants' power capability.



Against this backdrop of increasing costs, labor strife, and delays came a changing public mood and a rising tide of opposition to nuclear power. As utilities pushed ahead with the Hydro-Thermal Program, opposition cropped up like a bad case of crab grass. Yet, while the Hydro-Thermal Program was becoming hopelessly ensnarled in dollar-consuming

'The WPPSS participants figured the power would be cheap, and forecasts showed the region's thirst for power running at a seemingly unquenchable 7 percent per year growth rate.'

delays and regulatory changes, one thing seemed to arrive on time — the shortage. A low-water year in 1973 had underscored one of the pitfalls of a hydro system: the fuel — the water — was free; the supply of it, however, was something less than certain.

The crunch seemed clear. In 1973, B.P.A. cut off all but seasonal surplus sales to private utilities. In 1976, the federal power marketing agency issued a legal Notice of Insufficiency, telling its public utility and industrial customers that there were no promises of meeting future load growth when their contracts came up for renewal in the 1980s.

J.D. Ross' prophecy was proving painfully false. The Columbia wasn't a coal seam that never thinned. Complicating the forecasted shortage was the question of how to allocate the cheap federal hydro. The power was too cheap for any utility to turn its back on and, as the private utilities were finding out, the cost of any new power plant was financially staggering when compared to dams built in the 30s, 40s, 50s and 60s. As the private utilities, weaned from B.P.A., built new plants their rates soared, creating a growing disparity between consumers served by private utilities and public utilities. This was perhaps nowhere more graphic than between ratepayers of private Portland (Oregon) General Electric and those just across the Columbia in public power Clark County. PGE customers were paying double the rate of public utilitiy customers. Each night atop a warehouse on the north bank of the Columbia, as a not-so-gentle reminder of the price difference, glowed a red sign reading: "PUBLIC POWER." The growing disparity spurred Oregon to pass a law establishing a state-wide power authority for residential and rural consumers that would make a bid for a slice of B.P.A.'s finite pie.

The coming clash, one observer surmised, had all the makings of a regional civil war. It would create enough lawsuits to employ an army of attorneys but do little to solve the more fundamental problem of where we were to go from here. It was a Catch-22: The very thing that made the region prosper — cheap, seemingly abundant hydro power — was now threatening to pitch the region into fierce combat.

To avoid the courtroom, B.P.A., the utilities, and the energy-intensive industries headed for Congress and the anteroom of Senator Jackson, long the congressional steward over the region's energy development. After several false starts amid increasing controversy over nuclear plants, Jackson finally stitched together a compromise in summer 1979, steering it through his Senate Energy and Natural Resources Committee and through the Senate on a voice vote.

The bill attempted to deal with a number of problems swirling around regional energy. To meet projected shortages, the legislation allowed B.P.A. to financially underwrite new power resources (including conservation efforts) by public and private utilities. It addressed concerns about public participation in energy planning and the various states' concerns over Bonneville by setting up a five-member council with the Administrator as a veto packing member. It attempted to ease the private-public utility rate disparity problems by equalizing wholesale power costs between the two, with the energy-intensive industries picking up the difference. For those industries and public utilities there were provisions allowing B.P.A. to renew their long-term power supply contracts. And to meet all of Bonneville's new obligations, the bill set up a stair step priority system for deciding what kind of power the region would develop into the Year 2000 — giving highest priority to developing conservation, then renewable resources, and finally conventional power plants, whether coal or nuclear.

Still, a number of environmentalists blasted the bill, saying it did not firmly shut the door on future WPPSSs and paid only lip service to conservation. This was compounded by qualms from some public utilities who, while hoping for help with the WPPSS projects, were nevertheless fearful they might be losing some of their historical claim to cheap federal hydro.

The duty to quell the environmentalists and assuage the public utilities fell on freshman Democrat, Al Swift of Washington. Swift shepherded the bill through the House, beefing up the conservation provisions, allaying the public utilities' fears, and strengthening the council by removing the B.P.A. Administrator, making the Council independent and placing it on equal footing with the federal agency. In the closing days of the 96th Congress, the House approved the Swift version of the bill and sent it to the Senate where it was adopted without amendment.

On December 5, 1980, in the closing weeks of his presidency, Jimmy Carter, signed into law Public Law 96-501, the Pacific Northwest Electric Power Planning and Conservation Act.

For the residents of the Northwest, it marked the beginning of a new era.

Northwest Power Planning Council
700 S.W. Taylor, Suite 200
Portland, Oregon 97205

Address Correction Requested

BULK RATE
U.S. POSTAGE
PAID
PERMIT NO. 134
PORTLAND, OR