

N O R T H W E S T ENERGY NEWS

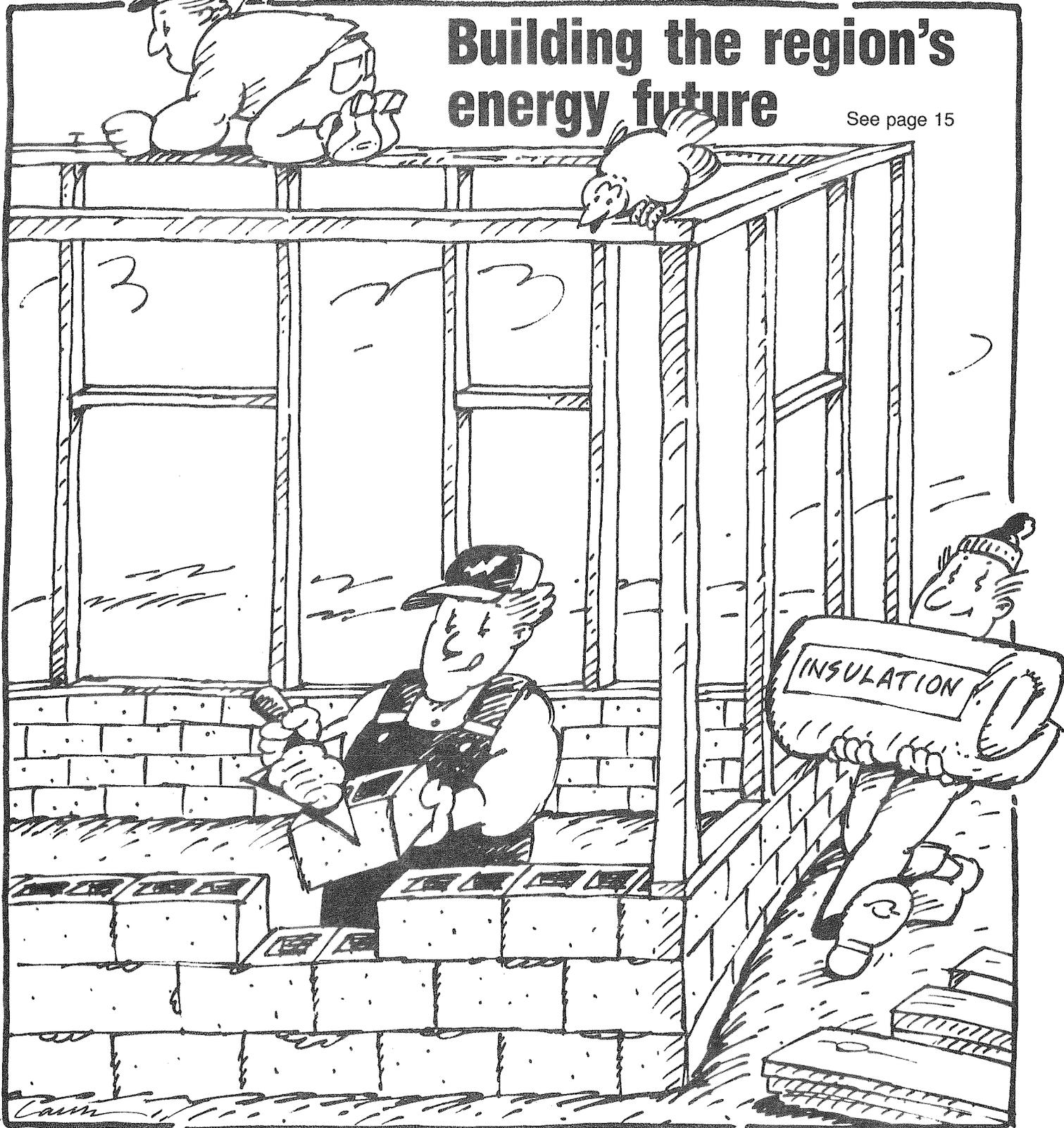
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Northwest Power Planning Council

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Building the region's energy future

See page 15



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The Northwest Power Planning Council is required to develop a program to restore the Columbia's fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources.

Cover illustration: Eric Larsen

N O T I C E S

Final power plan availability

The Northwest Conservation and Electric Power Plan will be available for distribution in early June. *If you ordered a copy of the draft plan, you will automatically receive a copy of the final plan. Do not reorder.*

If you did *not* order a copy of the draft plan, see the coupon on page 23.

Hearings to be held on NW Power Act

A House of Representatives subcommittee will hold regional hearings in June on the Bonneville Power Administration's implementation of the Northwest Power Act.

The hearings will be held June 13 in Portland and June 14 in Seattle before the Energy and Commerce Committee's subcommittee on energy conservation and power. The Portland hearing will begin at 9:30 a.m. in the council chambers in City Hall. The Seattle hearing will begin at 9:30 a.m. on the eighth floor of the Federal Courthouse.

Reps. Ron Wyden, D-Ore., and Al Swift, D-Wash., who are members of the subcommittee, told the *Oregonian* that the hearings were designed to explore BPA's conservation and renewable resources programs, review its ability to implement the Northwest Power Planning Council's regional conservation and power plan, and to discuss options for and barriers to the regional marketing of surplus power.

Reps. Jim Weaver, D-Ore., and Don Baker, D-Wash., will also participate in the hearing.

The subcommittee chairman is Rep. Richard Ottinger, D-N.Y.

Energy code workshops planned

The Washington State Energy Office will hold a series of workshops this summer on the 1980 Washington State Energy Code. Four types of workshops will be held for four different audiences: (1) *Introduction to the code*, for people who are not familiar with, or who are currently not using, the 1980 code; (2) *Commercial buildings*, for those who design and build commercial structures; (3) *Owner/builder*, for people building or interested in building their own homes; and (4) *Enforcement*, for building code officials and for designers and builders who work with these officials.

The workshops begin in July in various locations around the state of Washington. For more information or registration forms, contact Linda Steinmann at the Washington State Energy Office, 400 E. Union, Olympia, WA 98504, (206) 754-0700.

Errata

A story in the March/April 1983 *Northwest Energy News* entitled "High court to rule on BPA industrial contracts" reported that "Fourteen of BPA's 15 industrial customers joined the agency to argue that the preference status should apply only to firm power sales, not to sales of surplus power."

The statement does not accurately reflect the legal issues in the case. BPA and its industrial customers do not dispute the prior right of preference customers to surplus power. They contend that power is not "surplus" until BPA has met all of its contract obligations under the Northwest Power Act. One such obligation is the non-firm top quartile of the industrial customers' loads.



No longer in step: 88 utilities joined together to build WPPSS plants 4 and 5. With the plants cancelled and debts to be paid, the participants are battling about responsibilities and solutions.

WPPSS faces potential default

Parties scramble for solutions as deadlines approach

The enormous financial problems surrounding termination of WPPSS nuclear power plants 4 and 5 seem no closer to solution this week than before.

In fact, solutions of any kind seem less and less likely as WPPSS teeters on the brink of a huge, financial chasm called default.

When the Washington Public Power Supply System (WPPSS) first started building

the two plants in the mid-1970s, their future looked unclouded and bright. It looked so bright, in fact, that Northwest utilities elbowed each other to get shares of ownership, over-subscribing the project by 30 percent.

Today, however, \$7 billion in debt (\$2.25 billion in bonds and the rest in long-term interest) and with no money coming in to pay it, the utilities that once battled each

other to get in are struggling even harder to get out. And a once-bright future looks shattered and bleak.

Rescue efforts

With default looming, several efforts were launched to rescue WPPSS. Under one proposal, part of the debt on the two plants would be spread to power customers throughout the region via BPA's rate charges. Utilities hit

most severely by the 4 and 5 debt would receive financial assistance from all of the utilities in the region who buy power from BPA and the firms that purchase BPA surplus power.

Under the plan, utilities like Portland General Electric Co., Seattle City Light and the Eugene Water and Electric Board, who were never involved with WPPSS plants 4 and 5, would also have to pay

a portion of the debt.

The Washington PUD Association offered a plan for restructuring all of WPPSS's debts by arranging for the purchase of bonds on plants 1, 2, and 3 and using interest paid by WPPSS on that investment to pay off bonds on 4 and 5. The plan would have called for the formation of a new state refinancing authority and contributions from Oregon, Idaho and REA-financed utilities. That proposal foundered on Oregon and Idaho court rulings which ended utility participation in the WPPSS debt in those states.

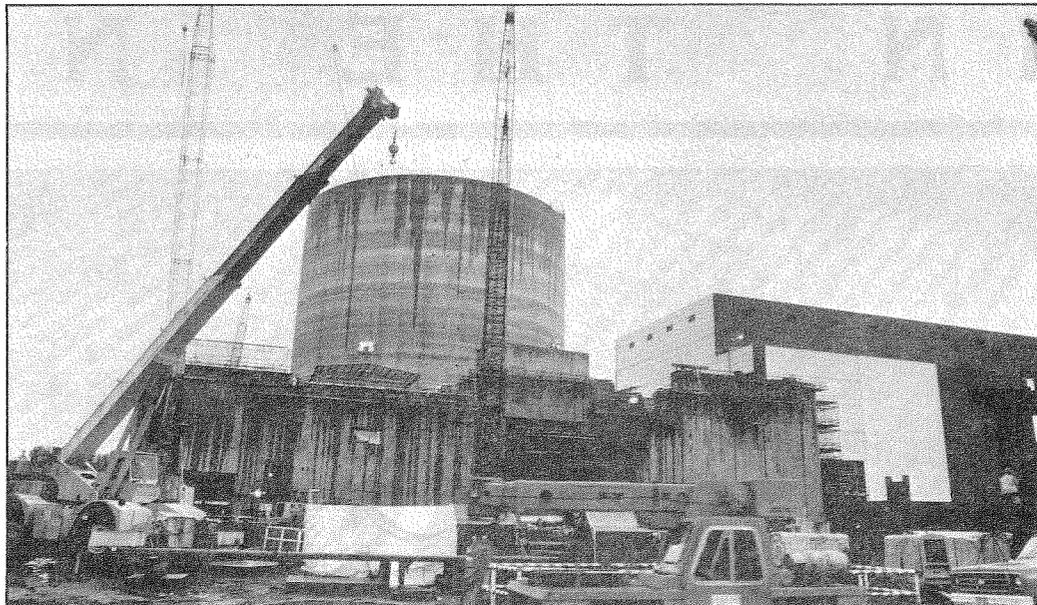
Governor Spellman tried to work out a solution with some of the parties using parts of those plans in a series of closed-door conferences in Seattle. After days of extended meetings, Spellman told the Washington legislature that hopes for a settlement died when WPPSS participants refused to pay any money to WPPSS to avoid default. Lawyers had advised them, Spellman said, not to pay unless ordered to by a court.

Lawsuits galore

The courts have proven to be the arena for most of the arguments about who is responsible for the current situation and who should pay the debt. The scramble of lawsuits in Northwest courts fairly well defines the scope of the struggling. Everybody involved — literally — appears to be suing everybody else.

WPPSS is suing participating utilities, the participating utilities, in turn, are suing WPPSS, while ratepayers, bondholders and financial houses are suing them all. None of the suits has yet been resolved.

Rulings in some cases have — at least until appeal — released ratepayers from their debt obligations. In Oregon, a lower court ruled in a ratepayer suit that participating utilities in Oregon had exceeded their authority in agreeing to assume a share of the WPPSS debt. In Wyoming, the state's public utility service commission held that utilities there could not add their WPPSS obligations to utility



Ground to a halt: It has been over a year since construction was halted at WPPSS plants 4 and 5. Meanwhile, questions grow about the plants' ultimate fate.

bills. In Idaho, a court agreed with ratepayers that two city participants in WPPSS had exceeded their legal debt limits. All of those rulings are now being appealed to higher courts.

In Washington state, Chemical Bank, responsible for paying bondholders from funds collected from WPPSS, has sued WPPSS and all of the 4 and 5 participants demanding that the participants pay for the bonds and interest. WPPSS has sided with the bank, but the participants have argued that they have no obligation to pay.

So far, in that case, a court has decided that Washington participants, unlike participants in other states, had the legal authority to enter into an agreement with WPPSS to pay off the bonds. But the court has still to determine whether the participants, who contend in part that they were misled into signing, have an obligation to pay. At the moment, some of the utilities are making payments into an escrow account which has not yet been opened to WPPSS.

Bondholders have filed several class-action suits against defendants ranging from WPPSS and the participants down through engineers, lawyers, rating agencies, underwriters, and even utility officials, contending that each in

some way misrepresented crucial aspects of the two WPPSS projects in selling the bonds.

In other suits, courts have been asked to determine whether some utilities were "seduced" into participating in the two projects with misleading information, whether construction of the two plants was properly monitored by BPA, and how much other WPPSS projects ought to pay for facilities built or designed jointly with plants 4 and 5. The shared amount has been estimated to be between \$300 and \$400 million.

In the political arena, the Washington state legislature was asked to pass laws protecting WPPSS and utility officials from personal liability in the disputes. The legislature also debated modifying state bankruptcy laws to limit the impact of any WPPSS bankruptcy to just plants 4 and 5, thus protecting plants 1, 2, and 3 from financial danger. Thus far, the legislature has taken no affirmative action on either proposal. The WPPSS board meanwhile declared it would never invoke bankruptcy and several utilities held seminars to find out what would happen if WPPSS did in fact file for bankruptcy.

Default or no default?

At the moment, then, with no solutions in sight, it ap-

pears the WPPSS 4 and 5 operation is almost certain to go broke. Governor Spellman told the legislature that WPPSS now appears on the verge of default.

When WPPSS terminated plants 4 and 5 in January, 1982, it had \$12 million left out of the \$2.25 billion it had raised over the years in bond sales. (Nearly 60 percent of the bond receipts had been turned back to bondholders in interest payments with the rest spent mostly on construction.) After termination, WPPSS borrowed another \$47 million from participants and the BPA.

At present, WPPSS has about \$30 million in its treasury and another \$97 million in an interest-payment reserve held by Chemical Bank under the bond sale agreement. The \$27 million paid by participants into court-controlled escrow accounts can't be spent by WPPSS at this time.

The next mandatory half-year interest payment of \$94 million to bondholders will be due July 1. In addition, WPPSS faces an \$8.8 million payment on its borrowings from participants, estimates that settlement of contractor claims could run as high as \$51 million by mid-year, and faces legal fees which have been running nearly \$1 million a month — all in addition to administrative costs. At pres-

ent, WPPSS has only eight employees working on the terminated 4 and 5 project.

Bond agreements spell out the steps bondholders must take to put WPPSS into default once WPPSS fails to make required payments. But the after-effects of default are not so clearly defined.

There is nothing new about default. Since 1839, there have been more than 6,200 revenue bond defaults in this country with 55 of them in the state of Washington.

In a few isolated instances, after the Civil War, government entities simply walked away and repudiated their bonded debts. Since then, however, most government entities have cured their defaults by restructuring their debts with little loss of principal or interest to bondholders.

Spellman told the legislature that any default by WPPSS would have a serious impact on all future bond sales in the state. A WPPSS default would be the largest in the nation's history.

A special survey conducted at Spellman's request by Knight/Bonniwell of Chicago indicated that state entities would have to pay a higher rate of interest on future

bonds if default took place and would find it harder to find buyers for their bonds. A default, the firm said, could also cost the region up to 20,000 jobs.

Others took a different view. Dr. Tom Tabsz, vice president of the First Interstate Bank, agreed that default would lower credit ratings for the public agencies involved. But he suggested that default would be cheaper than paying interest on the bonds.

Implementation of fish, wildlife program encouraging

For decades, salmon and steelhead have taken a back seat to power generation in the Columbia River system. The Columbia River Basin Fish and Wildlife Program, adopted by the Northwest Power Planning Council last November, sought to change that course of events.

The program gives fish and wildlife equal status with power generation in the operation of the Columbia's hydroelectric dams. It calls for a "water budget" to improve streamflows during spring migration, improvements to existing dams to aid migration, consideration of fish and wildlife in future hydroelectric development, better controls on ocean fishing, and other measures to "protect, mitigate, and enhance" fish and wildlife populations in the Columbia Basin.

In the five months since its adoption, a number of steps have been taken to implement the program. While it will take years of work to restore the fish runs, the evidence of new cooperation and new consideration of fish and wildlife is encouraging to those involved.

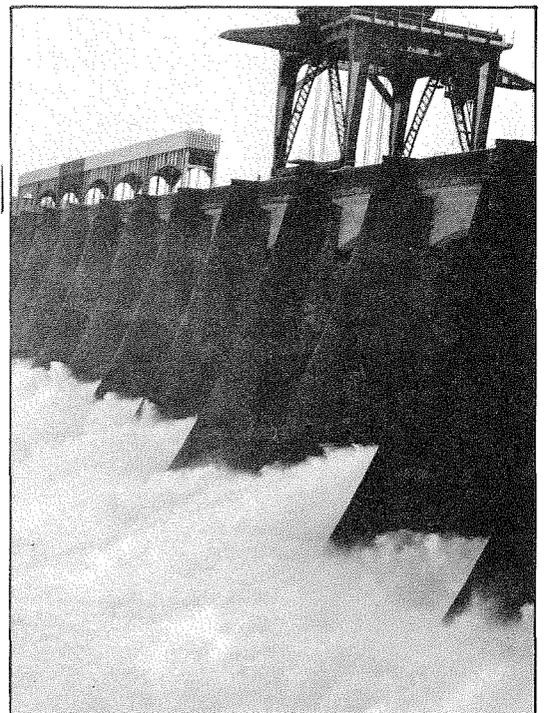
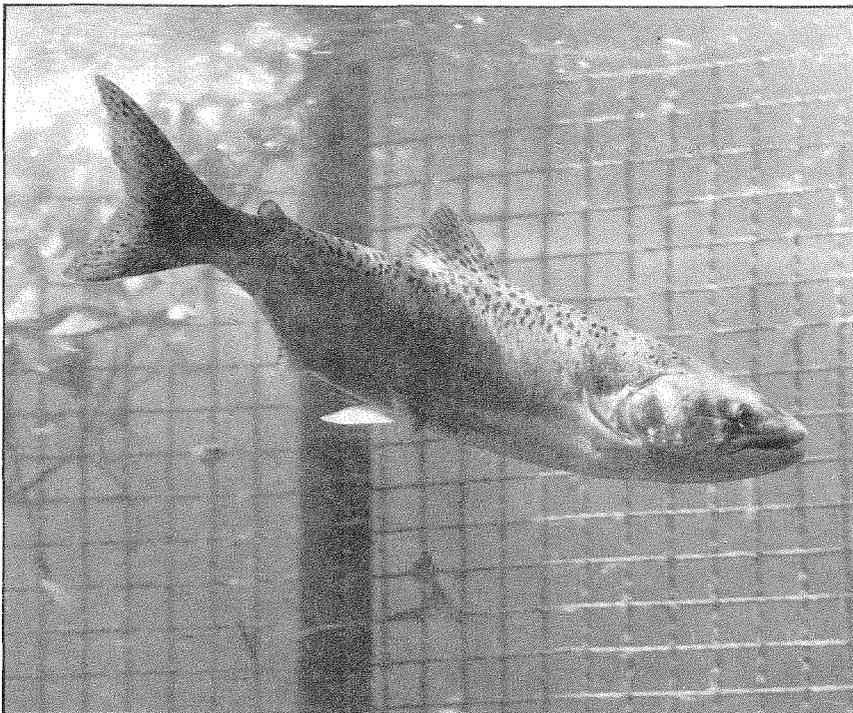
Water budget

Much of the activity has focused on implementation of the "water budget." The program sets aside a specific amount of water to be used each spring to speed the travel of juvenile fish migrating to the ocean. The program specified that the water budget, to be managed by the fish and wildlife agencies and

tribes, would be released as needed to increase streamflows during the period between April 15 and June 15.

The tribes and the fish and wildlife agencies have both appointed water budget managers. Malcolm Karr, from the Columbia River Inter-tribal Fish Commission, is the tribal water budget manager. Mark Maher, from the National Marine Fisheries Service, represents the fish and wildlife agencies. The managers, based in Portland, have established strong communication ties and a computer network with the operators of the Columbia River dams — the Corps of Engineers, the Bureau of Reclamation, and the mid-Columbia public utility districts. The network allows the managers to better coordinate the use of the water budget with smolt migration.

The U.S. Army Corps of Engineers has hosted regular meetings to lay the groundwork for implementation of the water budget. These meetings have been attended by dam operators, the water budget managers, and representatives of the Northwest Power Planning Council. Malcolm Karr said he was "up-beat" about the meetings. "All



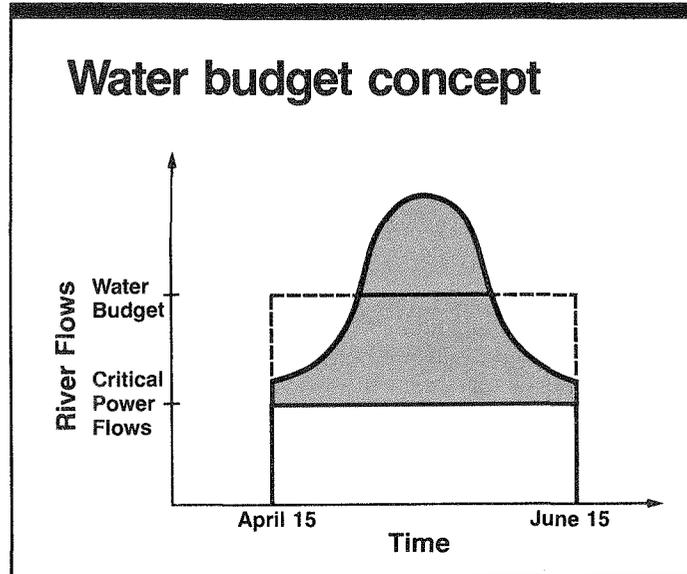
A river of fish and power: Implementation of the Columbia River Basin Fish and Wildlife Program shows a new consideration for fish and wildlife in the operation of the Columbia's dams.

parties involved are trying their best to make this (water budget) work within the capabilities of the system."

The Corps, the Bonneville Power Administration, and Idaho Power have also been meeting in an attempt to resolve one problem area: the relative contributions from Brownlee and Dworshak reservoirs to the water budget.

The Corps has issued and taken comments on a draft environmental assessment on the water budget. The Bonneville Power Administration and the Bureau of Reclamation are expected to release their draft EAs later this spring. Bonneville said it doesn't expect it will need to do an environmental impact statement on the water budget.

This has been a good water year. Expected January-July runoff volume at The Dalles is 103 percent of normal. By the beginning of May, about 50 percent of the spring chinook were past Lower Granite Dam, according to the water



Budgeting water: Work is proceeding to implement the water budget to aid migrating juvenile fish.

budget managers.

The major question the water budget managers say they still grapple with is the relationship between the streamflows, travel time, and

the survival of the smolts as they migrate to the ocean. "We are gradually learning how to use the water budget to maximize the reduction in travel time," Karr said.

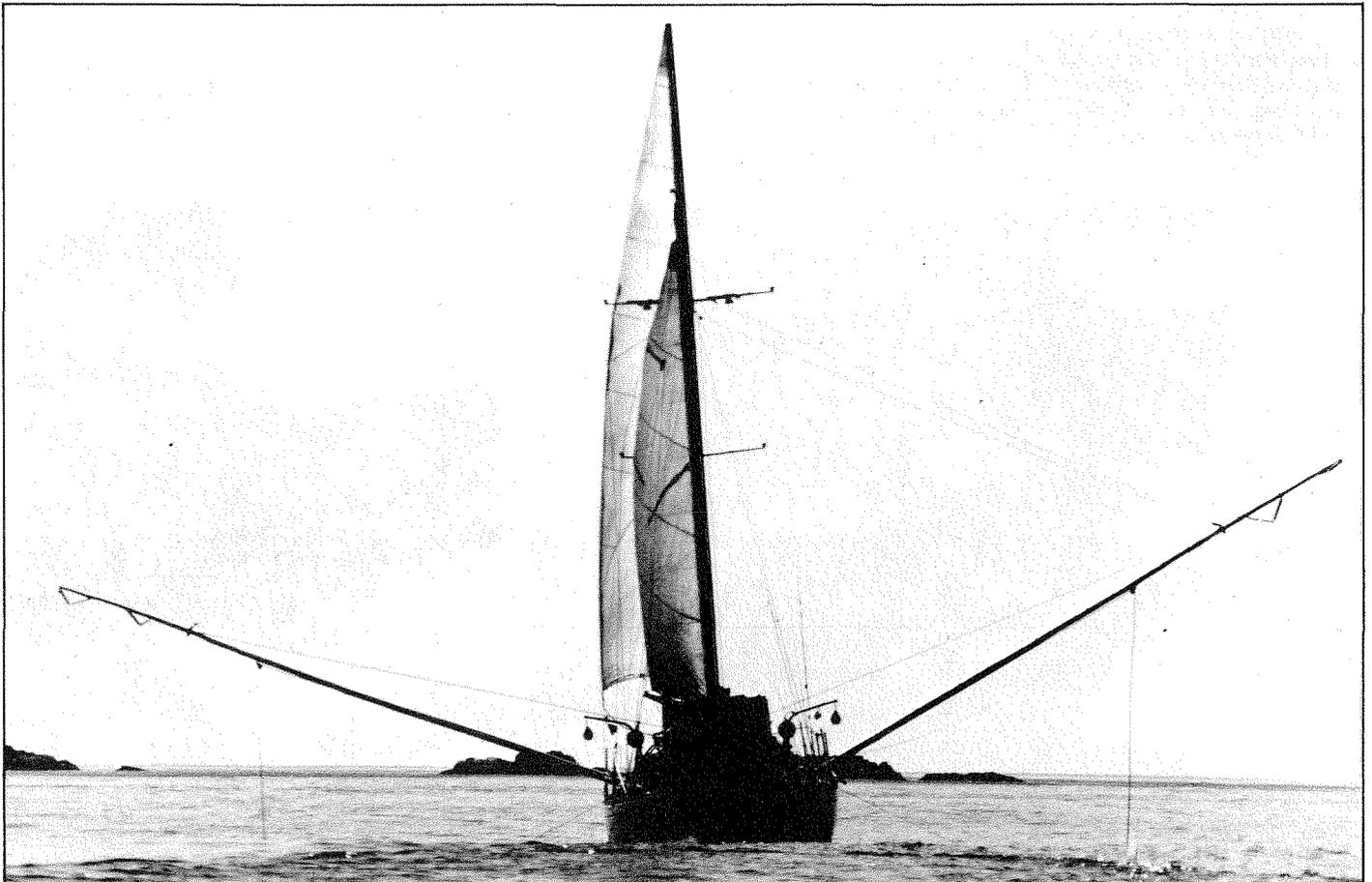
Spills at mid-Columbia dams

The mid-Columbia PUD operators are conducting studies on different spill patterns at each project and are also conducting research on bypass facilities. According to the Council's program, spills must take place at several mid-Columbia dams in order to improve fish passage until bypass facilities are installed.

Meanwhile, the Council and its staff are working to set in motion other elements of the regional fish and wildlife program, such as ensuring that all future hydroelectric development is consistent with the program.

Enloe Dam

The Council voted April 7 to appeal the Federal Energy Regulatory Commission staff decision to license Enloe Dam, which would be operated by the Okanogan Public Utility District. The dam would be a 3.2-megawatt project located on the Similkameen River in north-central Washington.



Ocean fishing controls: A proposed new U.S.-Canada fisheries treaty would help rebuild salmon and steelhead stocks by controlling ocean harvests.

Tim Thompson/Aperture photo

The Council's position is that the license, issued on March 3, includes no evidence that FERC considered the Council's fish and wildlife program before issuing the license. The Northwest Power Act requires FERC to take the program "into account at each relevant stage of decision-making processes to the fullest extent practicable."

The Council's program called for consideration of restoring passage on the Similkameen River by either removing Enloe, which has not generated power since the 1950s, or placing a fish ladder at the site. The dam may block about 100 miles of prime salmon and steelhead spawning and rearing habitat.

In an effort to begin to resolve the issue, the Council held a meeting May 9 at its Portland offices with all of the participants involved in the project. The meeting proved to be a "useful exchange of information," said Curt Marshall, the Council's fish and wildlife program manager. Discussions will continue on the issue, Marshall added.

The Council will hold a formal consultation with FERC May 18 in Boise to discuss matters related to hydropower licensing, including the process for issuing the Enloe license.

Ocean fishing

On another front, the Northwest inched closer to controlling ocean harvests of anadromous fish when negotiators reached agreement, after 13 years, on a U.S.-Canada fisheries treaty. The proposed treaty would reduce the interception of Columbia River-origin stocks off the coasts of Canada and Alaska. Similar controls would be imposed on Canada-origin stocks.

The treaty must still be ratified by the U.S. and Canadian governments. Alaska apparently has some reservations about the treaty because of the effects such curtailments would have on the Alaskan fishing industry. Council Chairman Dan Evans, in a letter to Alaska Governor Sheffield, strongly urged the Governor to support the



Consultations and cooperation: The Council has worked to draw together fish and power interests to reach agreement on implementation of fish and wildlife program measures.

proposed agreement.

"You can't overemphasize the importance of this (treaty) to the Columbia River chinook, said Monte Richards of the Idaho Fish and Game Department. Without some controls on ocean fishing, those wishing to restore fish runs on the Columbia will be "fighting a losing battle," he added. The Northwest Power Planning Council has maintained that funding for some fish mitigation measures, such as new hatcheries, hinges upon imposing adequate controls on ocean harvests.

The Pacific Fisheries Management Council adopted 1983 ocean fishing regulations in late March. The council established conservation zones, fishing areas and harvest quotas in its jurisdiction, which begins three miles off the California, Oregon and Washington coasts and extends 200 miles out. For the first time, the plan includes a ceiling on the ocean harvest of upriver chinook stocks.

Other activities

Efforts have been underway in other areas to implement the Council's fish and wildlife program. These include:

- Selection of a Fish Propagation Panel to assist the

Council in planning the most effective ways to improve production of salmon and steelhead stocks (see *Northwest Energy News*, March/April 1983). The panel held its first, organizational meeting May 5.

- Completion of an inter-governmental agreement between the Council and the Bonneville Power Administration regarding funding of contracts for fish and wildlife program measures.

- Discussion of methods for funding fish passage facilities at irrigation dams, canals and ditches in the Yakima basin in order to compensate for systemwide effects of hydropower development and operations.

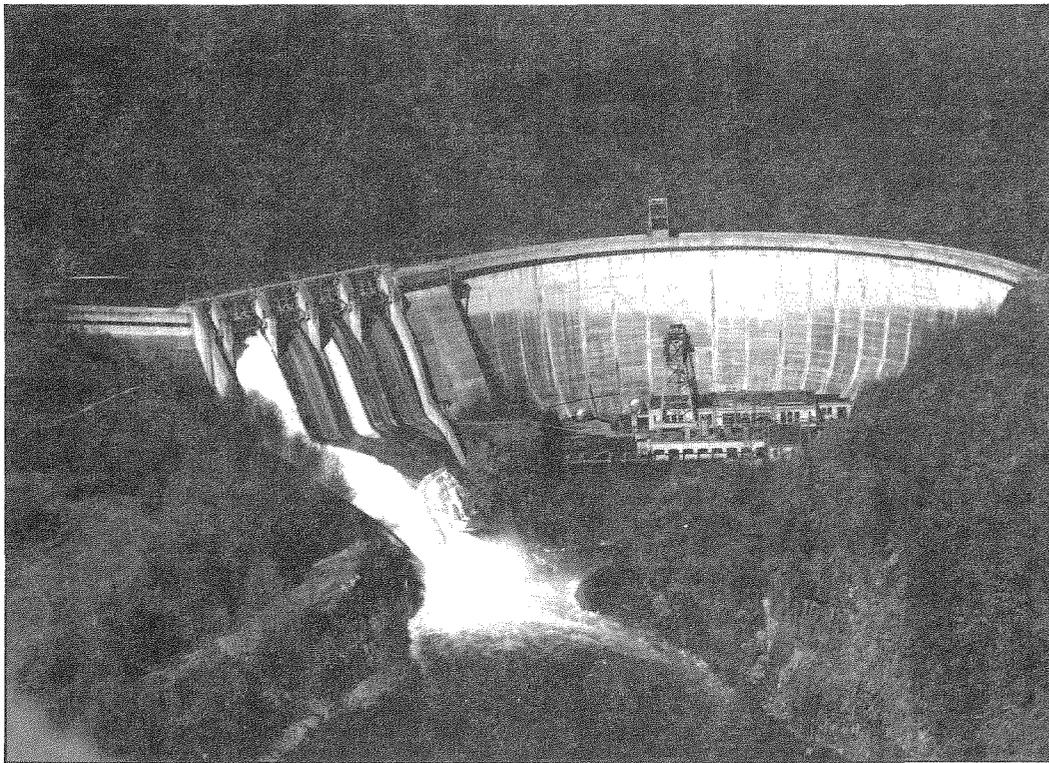
The Council's Fish and Wildlife Committee has held regular meetings since November to oversee implementation of the fish and wildlife program.

Judge rules for PUDs in Merwin Dam relicensing

A federal administrative law judge's ruling that two Washington PUDs should be allowed to take over Pacific Power & Light Company's license on Merwin Dam appears headed for the courts.

The administrative judge, Jon G. Lotis, ruled April 28 that PP&L had to give up its license on the dam to Clark and Cowlitz County PUDs under preference provisions of the 1920 Federal Power Act.

When Pacific filed for renewal of its 50-year operating license in 1979, the PUDs challenged the application, arguing that their preference status gave them first claim to the license. Judge Lotis ruled that although PP&L and the PUDs were "equally well adapted" to operate the dam, a 1980 ruling by the Federal Energy Regulatory Commission (FERC) required him to give the license to the PUDs. The 1980 ruling stated that municipal preference applies in



Public vs. private power: Public power won a round in recent Merwin Dam dispute when Clark and Cowlitz PUDs won claim to dam's operating license. PP&L intends to appeal the ruling.

relicensing cases. Pacific had argued that preference should apply only in the initial licensing.

Lotis noted that the Merwin Dam case was the first opportunity since passage of the 1920 federal power act for FERC to rule on competing applicants — one public, one private — for relicensing an expired operating license.

In creating municipal preferences, Lotis said Congress had "plainly expressed its intention to skew competition for the benefits of federally developed and federally-licensed hydropower by favoring public bodies as against private utilities."

"While one may reasonably question the wisdom of continuing a federal policy of preferences which inevitably favors customers served by public bodies over similar customers served by private utilities, that policy is not a proper subject of debate before this forum," he wrote.

PP&L officials said they would appeal Lotis's ruling to the full commission within 30 days and then to the courts in event of an adverse decision there.

FERC's 1980 ruling that preference should be granted in relicensing as well as in initial licensing is already on appeal to the U.S. Supreme Court.

The commission, presently dominated by President Reagan's appointees, shows signs of reversing the 1980 policies. FERC spokesman Bob Cecil told the *Columbian* that FERC lawyers will ask the Supreme Court to send the 1980 ruling back to the commission for reconsideration.

The federal power act provides compensation to the original licensee in a takeover. Lotis ruled that the PUDs would have to pay PP&L its investment in the plant minus depreciation. He estimated the amount of compensation at about \$9.4 million.

Pacific Power had contended that it should be paid between \$740 million and \$832 million — the cost of replacing the dam with a new coal-fired plant. Lotis ruled that the federal power act did not permit severance damages for such replacement costs.

Evidence indicated that Clark County PUD customers would save about \$30 a year

and Cowlitz customers about \$102 annually on their power bills beginning in 1985 as a result of the license change.

John Lobdell, Oregon Public Utility Commissioner, had told the federal commission earlier that rates to PP&L customers could increase from \$2 to \$9 for every \$1 saved by PUD customers, depending on how PP&L decided to replace the dam's lost power.

Lotis ruled that while public interest factors must be considered in a relicensing application, economic impacts to Pacific Power ratepayers did not fall under the federal power act's definition of public interest. Therefore, these were not factors which were "applicable, relevant and material" to the case.

Merwin Dam is one of three dams on the Lewis River, which flows between Clark and Cowlitz counties in southwestern Washington. PP&L also operates the Yale and Swift dams upstream of Merwin Dam. Licenses on those dams will expire early in the next century.

Private utility companies fear that public utilities may try to take over those and

other private dams, such as the Upper Baker, operated by Puget Sound Power & Light, and the Noxon Dam, owned by Washington Water Power Company, unless some action is taken.

Private utilities had asked the Washington state legislature to require voter approval of such ownership changes. A bill requiring such elections died in committee.

Council tabloid wins award

"What cost energy?", the Northwest Power Planning Council's newspaper insert on the draft regional power plan, has won an "Addy" award for outstanding achievements in advertising from the Northwest Advertising Federation.

The tabloid newspaper insert was produced by Mogelgaard and Associates, a Seattle advertising and marketing firm, in cooperation with the Council and staff.

"Competition in this area (newspaper inserts) is always extremely tough," said Mike Mogelgaard, the firm's president. "It is unusual to see something not in the retail area win. Obviously, retail has the advantage as they have lots of color, flashy models, new clothes, etc."

The show was judged by a panel in New York.



A major milestone: Council members (left to right) Gerald Mueller, Dan Evans, and Bob Saxvik don gifts of t-shirts from Randy Hardy of PNUCC commemorating the plan's adoption.

Council adopts power plan

The 20-year plan sets forth an energy-efficient future for the Pacific Northwest

Like builders selecting design, materials and construction methods for a new project, the Northwest Power Planning Council began two years ago to plan a more secure electric power future for the Pacific Northwest.

Charged by Congress and their respective states with new authority to develop a 20-year plan, and challenged by rapidly changing problems confronting the region's once stable electric power scene, the Council members started by asking some hard questions:

Did the changes that had taken place require a new planning philosophy?

How could they make plans for an uncertain future?

Could a plan formed today satisfy the requirements of tomorrow's economic and population growth?

The Council provided only parts of the answers to those broad questions April 27 when it unanimously adopted the first Northwest Conservation and Electric Power Plan. The document itself, while thick, seems thin compared with the hundreds of meetings by the Council members, their advisory committees, power interests and citizens groups, all of whom studied and discussed for two years the grand issues and fine points detailed in its pages. Yet despite all the work, the plan is only a beginning. It will be revised in two years.

Just as important as its form and sub-

stance is the process by which the plan was built and will be carried out. Unlike the past when power planning decisions were made mostly out of public view, the Council's work is done in public, a circumstance prompting Council Chairman Dan Evans to observe that "never has a major technical, economic and political process been done so much in public." That, Evans said to the Washington State Legislature, is one of the plan's main features. There are others.

The Northwest Power Act mandates that the plan provide for only those new power resources that are needed and obtain the cheapest resources first. The Council, in consultation with a wide range of interests around the Northwest, and in

accordance with the charge given it by Congress, came up with several innovations for the region's first power plan:

- The forecast of future demand for electricity would focus not on a single rate of growth but a range from high to low;
- A portfolio of resources and "resource options" flexible enough to minimize the risk of overbuilding or underbuilding would be assembled;
- Conservation of electricity would be the foundation for obtaining new electricity because conservation was both the least expensive and most flexible of the available resources;
- And these new resources would be developed in harmony with the Council's program to "protect, mitigate and enhance the Northwest's fish and wildlife" and other environmental constraints.

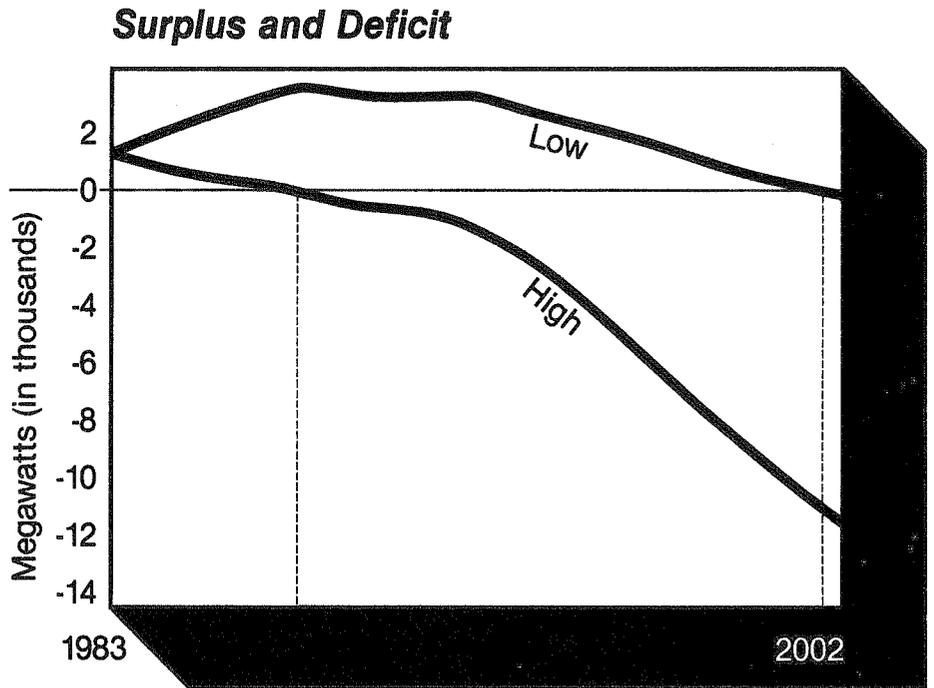
Forecast

Uncertainty about future needs for power prompted the Council to adopt a range forecast. Northwest power interests had sought Congressional help in the mid-1970s as they foresaw deficits in the regional capability to generate enough electricity to satisfy demand. But deficits changed to surpluses, now expected to last between 5 and 20 years. Thus, rather than attempting to predict any single "most likely" growth rate, the Council's forecast lays down the plausible but unlikely bounds of economic growth.

The forecast in the final plan covers the following range of annual growth in electricity demand:

High growth	2.5 percent
Medium high growth	2.1 percent
Medium low growth	1.5 percent
Low growth	0.7 percent

Responding to public comment on the Council's draft power plan, the Council changed some assumptions about the regional economy and made a number of technical improvements in demand forecasting models. The changes include: indefinite postponement of the Alumax aluminum plant; assuming slower recovery from the recession; and assuming lower economic growth in the low case. These changes and improvements re-



Under the Council's low forecast, the region would have an electric power surplus until 2002. Under the high forecast, the surplus would last until 1988. Both forecasts assume no conservation or consumer reaction to price.

sulted in a slightly lower forecast range.

The Council's electricity demand forecast is based on a range of projected regional economic growth. The high-growth forecast assumes that regional employment will grow more than twice as fast as the nation over the next 20 years — a ratio that is even greater than the Northwest's most rapid five-year growth period from 1974 to 1979. In the high-growth forecast, total employment would increase by more than 3.4 million between 1980 and 2000, compared to 1.5 million additional jobs between 1960 and 1980.

In the low-growth forecast, total employment in the region would increase by 700,000 employees between 1980 and 2000. This rate is consistent with low-range national forecasts but assumes the Pacific Northwest would grow as fast as the rest of the nation.

Energy demand in these forecasts grows slower than historical rates, even in the high forecast. This occurs even though the economy is projected to grow more rapidly. There are several reasons for

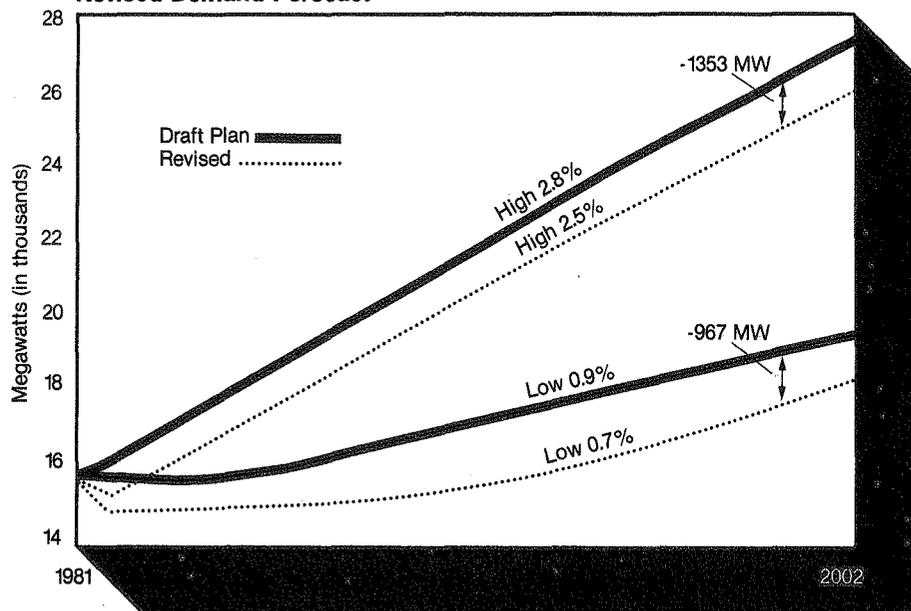
these changing patterns. Homes and buildings have become more energy efficient in response to higher electricity prices and recently adopted energy codes. Regional industrial growth is projected to occur mostly in less electricity-intensive industries such as high technology. And rising electricity prices will affect energy use and energy efficiency in the future.

In terms of energy resources, the region would add anywhere between 660 megawatts in the low forecast and 11,500 megawatts in the high forecast (excluding resources under construction) over the next 20 years. For comparison, the City of Seattle uses about 1,000 megawatts.

Resource Portfolio

Given a wide range of potential future needs for electricity, the Council assembled what it judged to be the least costly and most flexible resources available. This portfolio is sufficient to support record

Revised Demand Forecast



economic growth. Yet it also does not involve large, irrevocable commitments of money to resources which may not be needed should slower economic growth occur.

The foundation of, and first priority resource in, the Council's portfolio is conservation. Conservation simply means using electricity more efficiently.

Using power more efficiently will allow the region to stretch out the electricity from its vast existing hydropower system and, thereby, delay construction of more expensive resources. If the need for power increases slowly, conservation alone will be able to meet the growth in demand. If the rate of growth picks up, then more conservation programs can be activated to meet the increased demand. This is because the pace at which homes and businesses install weatherization measures can be adjusted, adapting to power needs. If the growth rate is even faster, other resources in the Council's portfolio will be developed.

The Council's resources portfolio "stacks" a variety of power resources according to their cost and capability to provide electricity. Under the Council's low growth forecast, conservation alone provides all of the new resources needed to meet the region's new demands for elec-

tricity through the turn of the century. The Council's resource portfolio for the high growth forecast contains over 11,000 megawatts of new resources. Although current projections indicate the high forecast is unlikely to occur because it would require sustained economic growth at an unprecedented level, the Council set targets for each resource category based upon the high forecast. The resource portfolio calls for:

- Conservation — 5,100 MW;
- New hydropower — 920 MW;
- Cogeneration — 500 MW;
- Coal plants — 3,300 MW; and,
- Combustion turbines — 1,050 MW, included as a planning reserve.

Conservation

- Residential conservation could achieve a 21 percent improvement in efficiency at under 2 cents per kilowatt-hour by the year 2002 to satisfy the high forecast. Residential conservation could save 855 MW in space heating in new homes, 520 through weatherization in existing homes and 510 MW through more efficient water heating.
- Commercial conservation could achieve a 20 percent improvement at

an average cost of about 1.7 cents per kilowatt hour by 2002 in the high forecast. The savings would come from retrofitting existing commercial structures (720 MW) and from building more efficient new buildings (615 MW).

- Industrial conservation could achieve a 6 percent improvement in efficiency at a cost of 1.5 cents per kilowatt hour. A savings of 545 MW is the target for 2002. The potential for additional savings will be studied by the Council.
- Agricultural conservation could achieve a 30 percent increase in efficiency at an average cost of 1.9 cents per kilowatt hour by 2002. The high forecast target of 385 MW would come mostly from system efficiency improvements. The Council also called for studies to increase the potential for conservation in this sector.
- Additional conservation savings were added to the Council's final plan, based upon projected increased efficiencies in operation of existing hydropower dams and transmission and distribution systems. A target of 270 MW was added for the year 2002.

Hydropower

For planning purposes, the Council chose a target of 920 MW in the high forecast, at a cost between 1 and 4 cents per kilowatt-hour. This represents about 10 percent of the region's potential. The Council chose its target figure after assessing costs, environmental and fish and wildlife constraints, and seasonal characteristics of hydropower generation. The Council lowered its figures for new hydropower from the draft plan in order to ensure that planned hydropower would be available even in low water years.

Cogeneration

Industrial cogeneration uses the same fuel to produce both electricity and heat for industrial processes. It could produce up to 500 MW in the high forecast, including 400 MW from biomass and 100 MW from gas, oil, or coal.

Coal Plants

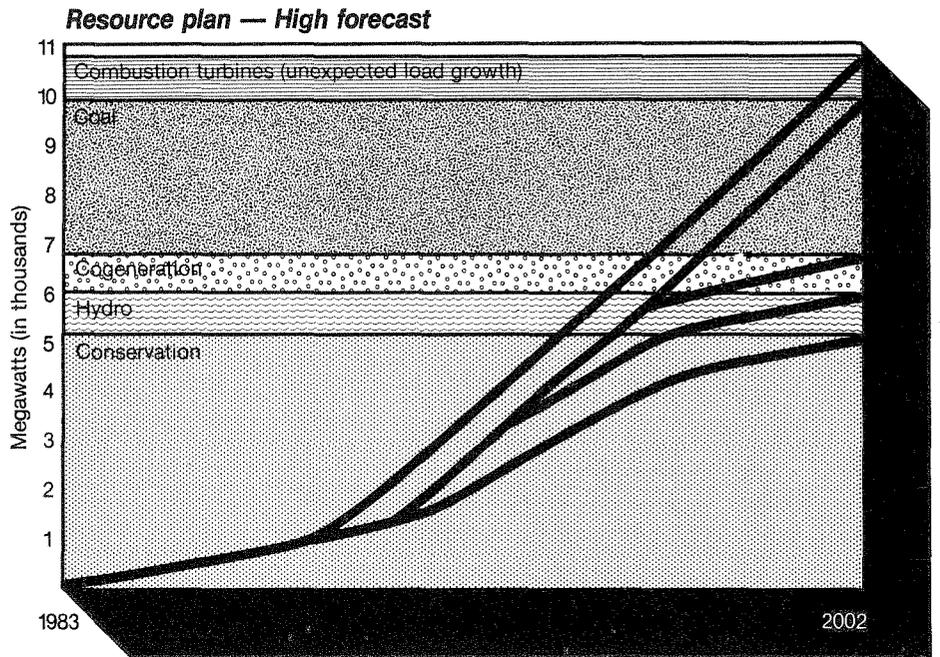
Council projections call for the addition of new coal-fired generation only if the region grows very rapidly over the next 20 years. In the high forecast, 3,300 MW of coal would be added, with the first unit beginning in 1998. New coal resources are estimated to cost between 4.0 and 4.7 cents per kilowatt-hour.

Combustion Turbines

Combustion turbines are included in the plan as a planning reserve to be used only to meet unexpected, rapid growth. Up to 1,050 MW are included in the high case. Combustion turbines burn either oil or natural gas and can be built in relatively short lead times of about 18 months.

Resource Flexibility

This resource portfolio, containing the mix of resources outlined, offers the Northwest important flexibility to meet new electricity demand, whether great or small. Risk and uncertainty can be reduced by choosing smaller resources, with shorter lead times for planning and construction. For example, some resources, like conservation, can be developed and



implemented in increments as the need for power grows.

Other resources, such as large coal and nuclear plants, require long lead times to plan, site, license and construct. This makes them financially risky investments because substantial sums of money must be spent well in advance of the time the plant may be needed. If demand does not grow as rapidly as projected, such plants may be deferred or terminated only at a very high cost. To shorten this lead time and reduce the region's financial risk, the Council devised the idea of resource options. An option would allow a resource, say a thermal plant, to be taken through the time-consuming but relatively inex-

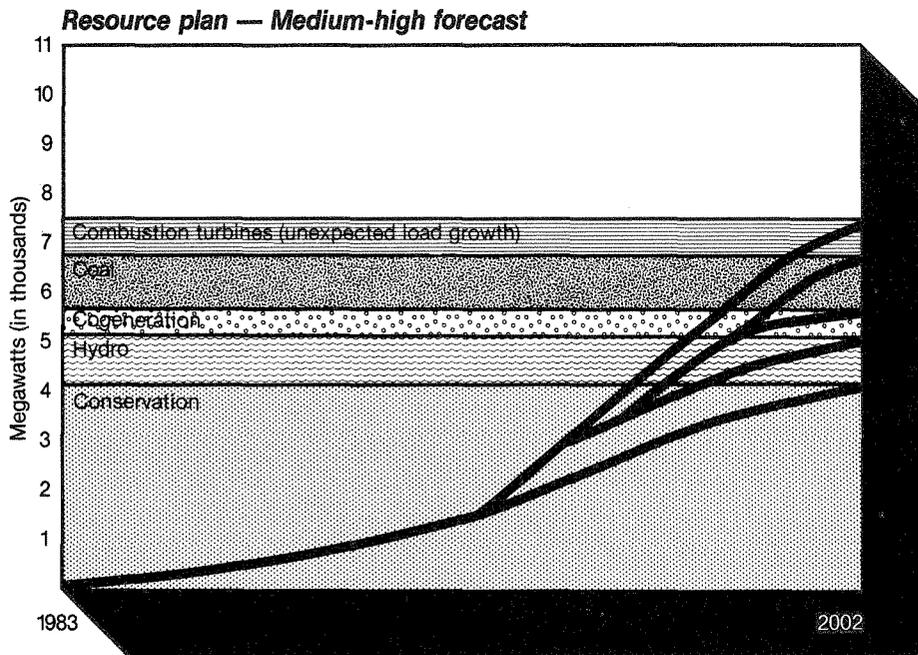
pensive initial stages — planning, siting, and licensing — and placed in a "ready" condition. In that condition, the project could be accelerated or delayed depending on the need for power.

Options would allow the region to place a variety of resources "on the shelf" for use when needed, thereby expanding the range of choices to fit actual power supply needs. "Options are absolutely essential to the plan's success," said Randy Hardy, executive director of the Pacific Northwest Utilities Conference Committee. "But we need to do the work to see whether we can make the idea work."

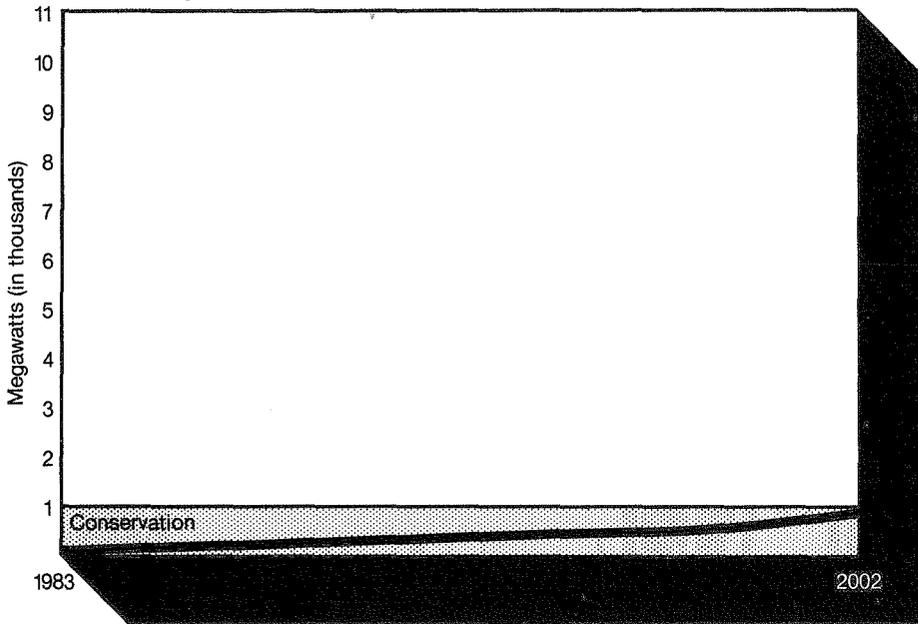
Hardy said options hold "very significant potential benefits for the region" if the major problems can be worked out. He singled out three "hurdles" that need to be overcome:

1. the Federal Energy Regulatory Commission would have to change its regulation on the "need for power test" which under the options concept would become a "maybe;"
2. options permits issued would have to grandfather the resource for a minimum of five years, making it "immune from any regulatory change" save for unexpected health or safety developments; and,
3. options would need to have a shelf-life of at least five years so the region's load growth can be measured sufficiently to determine whether the option should be exercised.

The Council's final plan called for a task force (the Council, BPA, utilities, and other parties) to identify the problems associated with options and to lay out a plan to work with the state and federal regulatory agencies to overcome them.



Resource plan — Low forecast



Major Issues

The Council faced a number of major decisions along its way to approving the first plan. Several of these issues are outlined below.

Cost of the Plan

The Council has selected the lowest-cost mix of resources to meet future energy needs and developed a planning strategy designed to minimize the risk of overbuilding or underbuilding resources. The actual cost of the plan will depend on how much electricity the region needs over the next 20 years. In the Council's high growth forecast, many new resources would be needed, including expensive new thermal plants. Retail electricity rates, adjusted for inflation, could increase by 40 percent. In the low-growth forecast, increased electricity needs could be met by developing less than a third of potential low-cost conservation. Rates, adjusted for inflation, could drop by 20 percent. In the short term, given the regional power surplus, the plan calls for slow, gradual development of conservation programs that won't add unnecessarily to the surplus. The cost of the Council's conservation programs will be about 3/100 of a cent per kilowatt-hour over the next two years.

Current Surplus of Firm Energy

The region's current electricity surplus is expected to last from 5 to 20 years, depending on electrical demand growth. The Council will work with the California Energy Commission, Bonneville, the Northwest utilities to secure an agreement for the sale of firm surplus energy to California utilities. If a sales agreement is concluded, the Council may modify its resource schedule. The Council decided to

proceed with new, more energy-efficient building codes so that long-term conservation savings are not lost. Other conservation activities follow the need for energy: programs are to be developed and tested now, and accelerated when the demand for new power grows.

Marketing Interruptible Energy in the Northwest

During the spring runoff each year, large amounts of water must be either spilled or used to generate electricity. Typically, excess power has been sold cheaply to California utilities and has been used to shut down more costly Northwest thermal

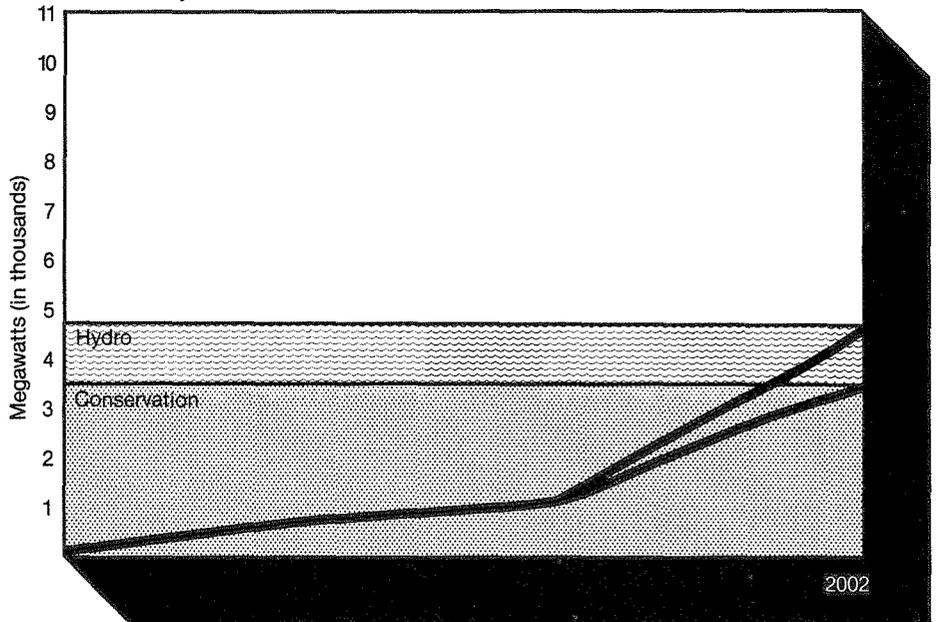
plants. The Council's plan calls for making better use of the spring runoff by seeking more customers in the region for this low-price power. For example, electric boilers could be installed in Northwest industrial plants and operated on an interruptible basis.

Quantity and Cost of Conservation

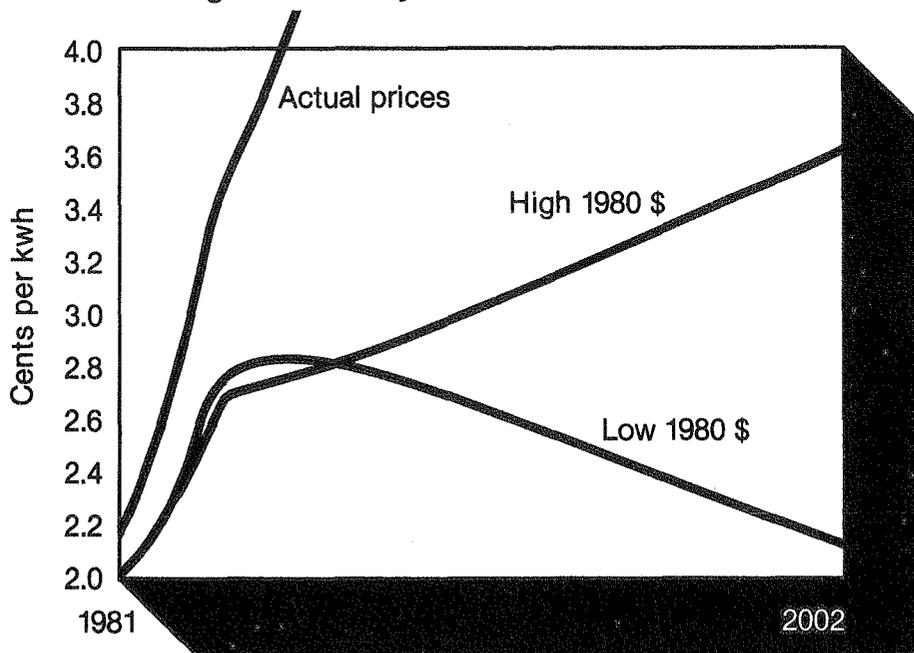
After detailed analysis, consultation, and public comment, the Council decided that 5,100 megawatts of conservation in the high forecast at an average cost of 1.8 cents per kilowatt-hour was appropriate. Because the Northwest Power Act provided that incentives, regulations, and rate designs can be used to achieve conservation, the Council has chosen very high participation rates for conservation programs. These measures, used as appropriate; should allow the region to achieve high participation rates over the next 20 years.

The Council decided, after extensive public comment, to include in its conservation programs: (1) a low-income program that pays 100 percent of the cost of residential weatherization measures, and (2) weatherization of renter-occupied and low-income households in proportion to

Resource plan — Medium-low forecast



Average Electricity Prices



Electricity price increases will depend on how many new energy resources the region needs. The high forecast adds expensive new thermal plants. The low forecast adds only low-cost conservation.

their total share of electrically-heated households.

Quantity and Cost of New Hydropower

The Council selected hydropower projects that are expected to be low-cost, that generate most of their energy in the fall and winter when needed, and that would not have adverse effects on fish and wildlife or the environment. This resulted in a target of 920 megawatts of new hydro in the high forecast. In the next two years, the plan calls for options to be acquired on six new hydro sites in order to test the options concept.

Use of Combustion Turbines

The Council selected combustion turbines as insurance against uncertain, rapid increases in the demand for electricity. Combustion turbines have short lead times and can be built at very low cost. After discussion and analysis, the Council selected 1,050 megawatts of combustion turbines in the high forecast as a planning reserve for unexpected load growth.

WPPSS 4 and 5 Compared With Coal Plants

Even in the high forecast, the region will need no new large thermal resources until 1998, and sometimes after the end of the current planning period in the low forecast. The region is very unlikely to achieve the growth rates of the high forecast. The Council has concluded that if the region needed a new thermal resource now, coal plants would be preferable to WPPSS 4 and 5. These nuclear plants would take longer to build than a coal plant — 7 versus 4 years — thus posing higher risks of overbuilding. The higher risk would be justified only if the plants were significantly cheaper. After detailed analysis, the Council found no significant cost differences between coal plants and WPPSS 4 and 5.

In the next revision of the plan, the Council will re-examine future energy needs and the performance of existing conservation programs, to see if additional resources are needed in the late 1990s. The Council will also re-evaluate

resource alternatives, including coal and nuclear plants, additional conservation and renewable resources, and new technologies.

The Council also recognizes that model conservation standards and regulatory changes to support the options concept depend on federal, state and local governments. If they fail to act, then additional energy options would be needed.

Fish and Wildlife

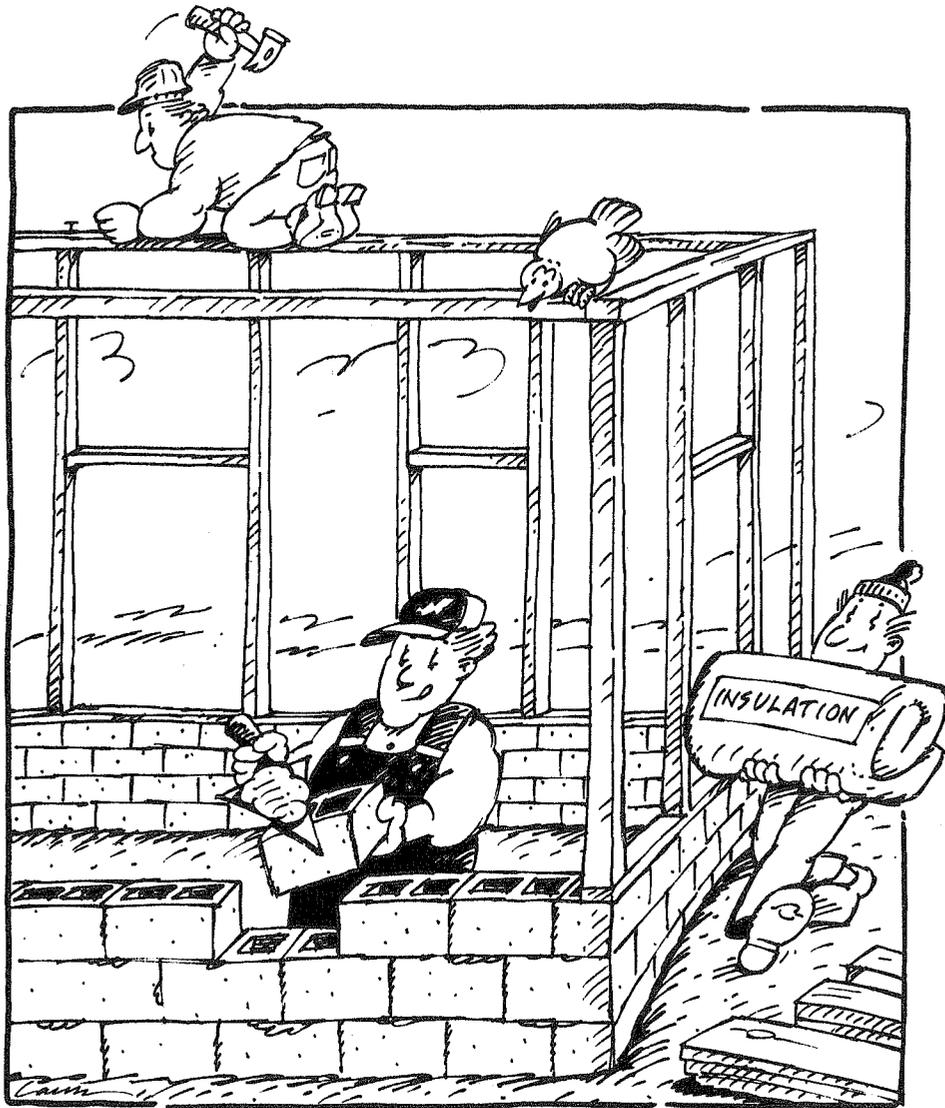
The Northwest Power Act required the Council to develop not only a regional energy plan but also a program to protect, mitigate, and enhance fish and wildlife resources. More than a half century of hydropower development throughout the Columbia River System contributed significantly to the depletion of migratory and in-river fish stocks and wildlife habitat. The fish and wildlife program won Council approval last November 15. It is now a part of the Northwest Conservation and Electric Power Plan.

Future electric power resources must be planned, developed and operated in concert with the fish and wildlife program. These environmental constraints become "hard" constraints, a new condition for Northwest power planning.

The Future

To begin the work of carrying out the plan, developing conservation, proving out options, the Council has developed a detailed two-year action plan. Many actions over the next two years call for further studies, research and demonstration projects, and additional dialogue among the region's interests in the new public process of Northwest power planning. The Council will monitor all these events. In two years, it will revise the plan. It is a working document "which will not be put on the shelf," as Evans said moments following its adoption.

"It is a plan which we strongly believe can guide the Northwest to a better electric energy future," he continued, "one in which electric energy will continue to be one of the assets of the Northwest: electric energy will be in sufficient quantity and at a reasonable price for continued economic growth and personal well being."



Building the region's energy future

The Council's two-year action plan lays the foundation for meeting future electricity needs

The Northwest Power Planning Council's two-year action plan outlines the foundation upon which the region's future electric power supply will rest. It's part of a larger blueprint, the first Northwest Conservation and Electric Power Plan, adopted by the

Council April 27. It's a compendium of near-term actions with a clear purpose: to build the region's capability to produce enough electricity when it is needed and at the lowest possible cost.

The Council's mission is primarily one of planning. The Council's plan alone

*Conservation will require everyone
to participate in building
the region's electric power future.*

cannot save or produce one kilowatt of electricity. While the plan has laid the foundation, building the region's electric power future will require actions by the Bonneville Power Administration, state and local governments, utilities, business and industry, and the general public.

"We are all part of this action now," noted Council Chairman Dan Evans as he spoke to reporters following the plan's adoption. This plan will require it . . . Conservation, in effect, will require every citizen of the region to be a participant in making this electric future come true."

The "action" Evans spoke of is different from what might have been expected just a few years ago when Northwest power interests feared there would not be enough electricity to meet the region's growing needs. They went to Congress for help. The result, in 1980, was Congressional approval of the Northwest Power Act, establishing a regional electric power planning process under the direction of a Council made up of two representatives from the states of Idaho, Montana, Oregon and Washington. The Council began work in April 1981.

A major change occurred while these events took place. The electricity deficits

expected for the mid-1980s turned into surpluses. Sharply rising electricity prices, coupled with a national and regional economic recession, depressed the demand for power. As the emergent surplus of power became better understood, it became clear it would last for at least five years, perhaps as long as 20. The future was full of uncertainty. Yet it was that future for which the Council had to plan.

The Council responded to this change of events by developing a planning strategy embodying the notion of flexibility. A variety of new resources will be planned to supply power for fast, moderate, or slow economic growth. And the cheapest resources will be acquired first. These two guiding principles — flexibility and least cost — enabled the Council to devise a two-year plan that serves both short and long term goals, that can respond to both surplus and deficit conditions of power supply. This flexible strategy should enable the region to minimize the risk of overbuilding or underbuilding new power resources. It should enable the region to avoid investing huge amounts of money too early, before it is clearly determined that the power is actually needed.

In the short term, the two-year action

plan calls for developing only a minimum of new resources, mostly conservation. For the long-term, it lays the foundation for meeting future power needs in the cheapest way possible. The action plan places most emphasis on developing and testing conservation programs so they can be available and reliable when the power is needed. It also calls for studies, research and demonstration projects, and other measures to improve the information on new, flexible resources. After two years, this work will be evaluated by the Council and appropriate changes in the action plan will be made for the next two-year period.

Perhaps the best news in the two-year action plan is its low cost to Northwest electricity consumers. The conservation programs in the two-year action plan will cost the average ratepayer only about 3/100 of a cent per kilowatt-hour over the next 24 months.

The two-year action plan focuses upon five principal areas:

- conservation;
- "options" for new generating facilities;
- renewable resources;
- power sales to the Southwest; and
- marketing interruptible power in the Northwest.



Planning a flexible future: Over the course of months of meetings and discussions, the Council developed a planning philosophy stressing flexibility and lowest cost.

Conservation

Conservation is the cornerstone in the Council's electric power foundation. Two characteristics recommend conservation. First, it is the cheapest resource available. Second, it is inherently flexible. Over the next two years, the Council calls for steps to build up the Northwest's capabilities to improve the efficiency of electricity use. To make certain that conservation is actually available when needed, Bonneville needs to develop and test programs to acquire cost-effective conservation from all economic sectors.

After months of study, the Council determined that conservation measures costing up to 4 cents per kilowatt-hour would satisfy the cost-effectiveness test required in the Northwest Power Act. The average price of conservation measures in the Council's plan will be about 1.8 cents per kilowatt-hour.

The Council recognized the significance of pursuing energy conservation at a time when the region has a surplus of power.

The Council decided that BPA should continue its existing programs, modifying them to make them more efficient and more effective. And the Council decided that the rate of conservation acquisitions must reflect the need for power. But the Council also decided that work must continue to develop and improve the region's capability to obtain conservation in all sectors (residential, commercial, industrial and agricultural) when it is needed. Recognizing the need to build energy-efficient new buildings now for long-term conservation savings, the Council adopted model conservation standards for new construction. And it approved a model conversion standard for buildings that are switched from another fuel source to electricity for heat and space conditioning.

The enactment of new building codes and conversion standards will be the job of states, local governments and utilities. BPA's basic role will be providing technical and financial assistance for the delivery of conservation measures. This will include making sure the proper administrative and quality control procedures are developed and tested so they will be ready when the time comes to acquire power from conservation. The Council envisions a decentralized method for conservation program delivery, including utilities, state and local units of government, and private contractors.

Equitable distribution of conservation benefits is a Council objective. Its action plan calls for 100 percent financing of residential conservation measures for low-income persons and for weatherization of renter-occupied and low-income households according to their proportionate share of electricity-heated residences.

The two-year action plan calls for a total of 150 megawatts from conservation:

- residential 75 MW — modified BPA weatherization programs;
- commercial 35 MW — build BPA capability to offer programs;
- governmental 10 MW — continue BPA institutional programs;
- industrial 15 MW — develop technical information to begin programs; and
- agricultural 15 MW — develop technical information to begin programs.



Wrapping up savings: The Council's weatherization plan calls for all cost-effective measures to be installed at once, getting the most conservation possible in one visit.

Residential — Existing Buildings

The two-year action plan calls for BPA to modify its current programs to include all cost-effective measures up to 4 cents per kilowatt-hour. To receive BPA financial aid, the building must first be audited then *all* structurally feasible measures cost-effective to the region must be installed. Financial assistance may be no lower than current levels and must be 100 percent for low-income households. Hot water efficiency improvements should include only new hot water heat pumps and solar water heaters. BPA's program should require inspections prior to payment for conservation measures. It should allow for private contractors to solicit conservation business directly and for contractors and local governments to market space heat savings directly to Bonneville.

Other BPA actions will include:

- a. expand Energy Extension Service programs;
- b. begin demonstration programs to test a variety of conservation service delivery systems;
- c. develop criteria by which utilities, state and local governments and private businesses may market space and water

heating conservation directly back to BPA;

- d. establish a system to certify and train auditors;

- e. carry out a program to monitor the performance and cost of solar and heat pump water heaters;

- f. set up a research program to identify ways to ensure quality control of conservation measures;

- g. assess the impacts of reduced air infiltration in weatherized homes and the effectiveness of techniques to mitigate indoor air pollution; and

- h. assist the shelter industry in implementing a uniform, region-wide energy-efficient rating system.

In keeping with its planning authority, the Council will:

- a. review programs to determine whether penetration rates among low-income and renter-occupied households meet established criteria;

- b. review financial assistance and education programs for their impact on participation in current BPA programs; and

- c. assess the effectiveness of alternative conservation delivery systems and financing approaches in terms of penetration rates, program costs, and actual savings.

Residential — New Buildings

"The reason to have an energy code in a time of surplus," said Council member Charles Collins, Washington, "is that you save twice the energy at half the cost of having to retrofit homes once they are built."

To ensure that new homes in the region are energy-efficient, the Council's plan includes model conservation standards for new single and multi-family buildings which establish a performance standard for electric space heating (see table).

By January 1, 1986, states, local governments, or authorized utilities, should adopt and enforce model conservation standards for new electrically heated residential buildings, or adopt and enforce an

Model Conservation Standards

Building Type	Climate Zone*		
	1 (kWh/ sq ft/yr)	2 (kWh/ sq ft/yr)	3 (kWh/ sq ft/yr)
Single-Family	2.0	2.6	3.2
Multi-Family	1.2	2.3	2.8

*The climate zones are based on the number of heating degree days experienced in a particular location (Zone 1, less than 6,000; Zone 2, 6,000 to 8,000; Zone 3, in excess of 8,000).

alternative plan for conserving a comparable amount of electricity.

By January 1, 1985, BPA must develop programs for reimbursement of local gov-

ernments that enforce the model standards, and for review, evaluation and certification of alternative plans to achieve conservation if the model standards are not adopted. Other BPA actions include:

a. develop an education program on the model standards for the housing industry;

b. provide incentives for meeting the model standards before January 1, 1986;

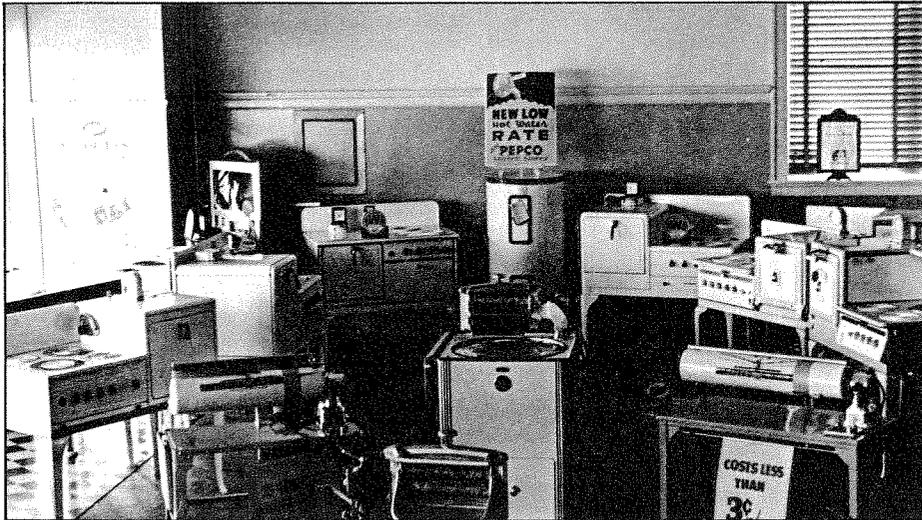
c. assist the U.S. Department of Housing and Urban Development in preparing energy-efficiency standards for manufactured housing in the Northwest; and

d. pay for the incremental cost above current code for a sample of residential buildings constructed to the model standards.



Building conservation for tomorrow: Making new homes energy-efficient from the start saves twice the electricity at half the cost of retrofitting the homes later.

*For long-term savings,
the plan includes residential and commercial
model conservation standards.*



Appliance savings: New appliances on the market today are markedly more efficient than these. Incentives may encourage consumers to purchase the most efficient appliances and save the region electricity.

Residential — Conversion Standards

To ensure the energy efficiency of buildings converted to electricity from another fuel for space heating, the Council adopted a model conversion standard setting minimum energy-efficiency requirements.

By January 1, 1986, states, local governments, or authorized utilities should adopt and enforce model conversion standards for households switching from another fuel to electricity for space heating, or adopt and enforce an alternative plan for conserving a comparable amount of power.

By January 1, 1985, BPA must develop a program to pay for the added cost of enforcing these standards and certifying that they are met. BPA is also directed to provide an education program on the conversion standards for utilities and public officials enforcing the standards and for private sectors in the building community who will work with them.

Residential — New Appliances

New appliances now on the market meet California's electricity efficiency standards. Many Northwest consumers are unaware of the attractive economic benefits of purchasing a new appliance that is slightly more expensive but markedly more efficient. To determine whether

financial incentives could produce cost-effective power savings, the plan calls for BPA to initiate a program which will:

- a. focus on refrigerators, freezers, water heaters, space and water-heating heat pumps, and solar water heaters;
- b. provide dealer/customer incentives;
- c. allow direct payments to manufacturers and distributors; and
- d. offer incentives for retirement of used, older and less-efficient refrigerators and freezers.

The Council will:

- a. assess the effect of incentive, education and marketing strategies and programs on consumer purchases; and,
- b. investigate, with other states, the desirability and practicality of setting uniform appliance efficiency standards.

Commercial — Existing Buildings

Because BPA presently has no program for existing commercial buildings, the Council included a program to reach this sector. It is to contain the following features:

- a. include all regionally cost-effective measures affecting use of electricity for space conditioning;
- b. require an audit prior to receiving BPA financial assistance;
- c. require installation of all structurally feasible and cost-effective measures in

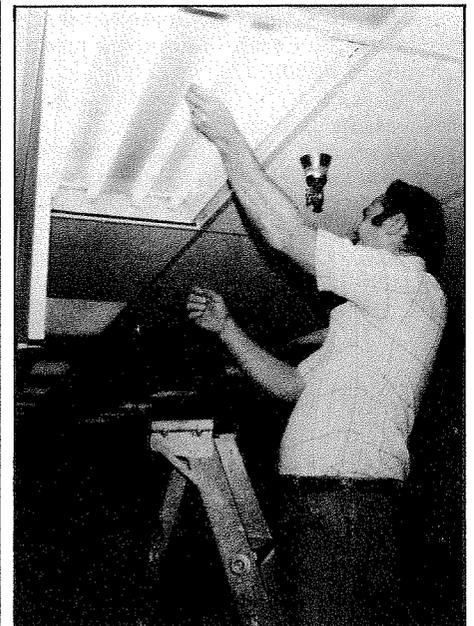
- d. provide financial assistance up to a level of 4 cents per kilowatt-hour;
- e. provide technical assistance and training to commercial building operators;
- f. provide for utility or other qualified inspection prior to payment of financial assistance; and
- g. allow other parties to receive direct payments for verifiable savings.

Commercial — New Buildings

To achieve future electricity savings, it is important to construct new commercial buildings so they will operate efficiently to save power. The Council adopted a model standard, based upon the most recent model energy code of the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) 90-80. The 90-80 lighting standards were toughened because more power in the Northwest is used for lighting than in other parts of the country, where more power is used for cooling.

By January 1, 1986, states, local governments or utilities should:

- a. adopt and enforce model conservation standards for new buildings using electricity for space conditioning; or



Tightening up lighting: The Council's commercial conservation standard includes tough standards for lighting.

b. adopt and enforce an alternative method for saving a comparable amount of electricity.

BPA is to support the review, adoption, and enforcement of the model commercial building standard by the following actions:

- a. provide financial assistance to states and local governments as they review and adopt the standard;
- b. reimburse code enforcement agencies for the extra cost of enforcing the standard;
- c. develop a consistent procedure for certifying compliance with the standard;
- d. conduct an education program for building professionals in the public and private sectors; and,
- e. provide incentives for meeting this model standard and for enforcing it.

The Council will:

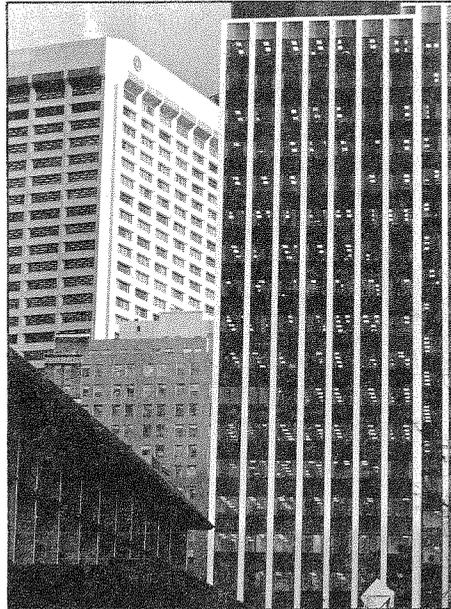
- a. investigate potential new additions to its model standard; and
- b. investigate whether to incorporate the model standard into the International Congress of Building Officials' Uniform Building Code.

Commercial — Conversion Standards

To ensure that commercial buildings converted to electric space conditioning from other fuels meet minimum efficiency standards, the Council adopted a model conversion standard.

By January 1, 1986, states, local governments or utilities should:

- a. adopt and enforce model efficiency standards for conversion to electric space conditioning; or
- b. adopt and enforce an alternative method for saving a comparable amount of power.



Testing conservation: A demonstration project will test the potential efficiency of new commercial buildings.

To support this work, BPA is directed to:

- a. reimburse states and local governments or utilities for the costs of adopting and enforcing the standard;
- b. develop a consistent procedure for certifying compliance with the standard;
- c. establish a procedure for evaluating alternative methods of achieving comparable savings; and
- d. provide an education program on the standard's provisions.

The plan also calls for BPA to develop a demonstration program to provide commercial sector savings beyond those from

the model standard. The demonstration program is to include financial incentives and secure construction of 30 buildings in at least five different categories of commercial structures.

Industrial Sector

To initiate a program for conserving energy in the industrial sector, the plan directs BPA to:

- a. solicit, either directly or through utilities, industrial conservation projects;
- b. pay for industrial conservation up to 4 cents per kilowatt-hour;
- c. verify industrial efficiency improvements independently; and
- d. provide technical assistance upon request.

The Council will:

- a. work with the industrial customers to conduct a detailed survey to identify conservation potential above the 545 MW contained in the Council's resource assessment.

Irrigation Sector

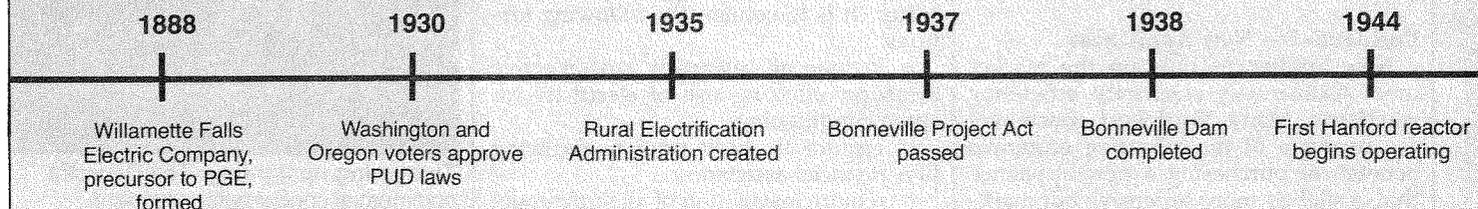
To initiate a program for conserving electricity in agricultural irrigation, BPA shall:

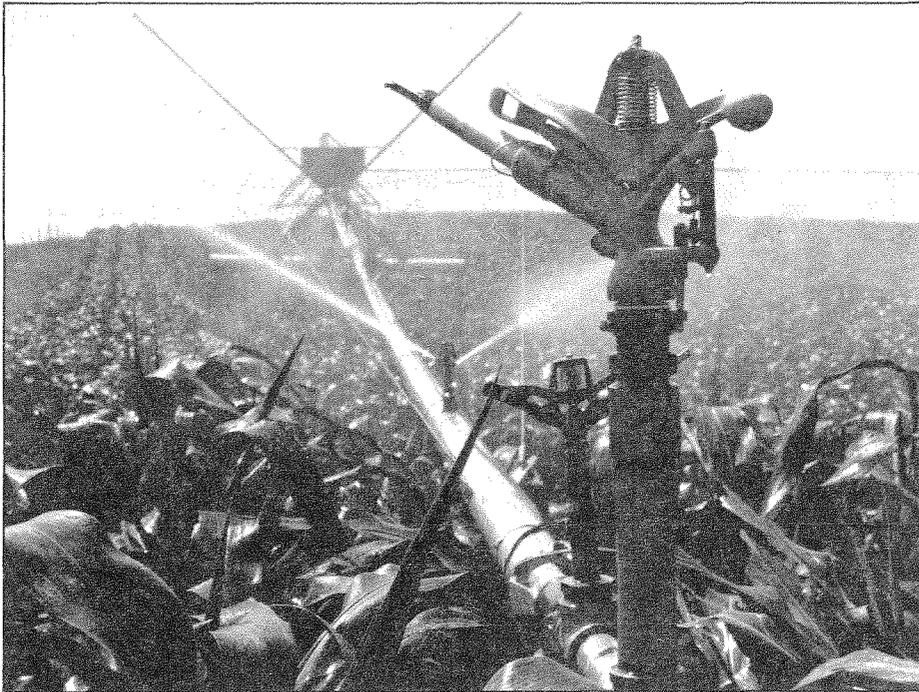
- a. solicit conservation projects;
- b. provide technical support through existing agencies, such as the Agricultural Extension Service;
- c. pay for savings up to a cost of 4 cents per kilowatt-hour; and
- d. provide financial assistance and incentives for the purchase of new energy-efficient irrigation systems or improvements to existing systems.

To determine the effectiveness of conserving electricity in agricultural irrigation, the plan directs BPA to conduct and

Seattle Times photo

Major events in Northwest electric power history





Irrigation savings: The plan directs BPA to provide financial and technical support for more efficient irrigation systems.

sponsor demonstration programs testing incentives through agricultural lending institutions; testing new systems, equipment and methods of irrigation; and testing soil monitoring and irrigation scheduling techniques. BPA also shall provide training and education programs for irrigators, and provide marketing and technical assistance to farmers and others in making sound investment decisions on electricity-saving irrigation equipment.

State and Local Government

In addition to its programs for institutional buildings, street and area lighting, technical assistance, the plan directs BPA to provide assistance to state and local governments including:

- a. expand technical and financial assistance to governments seeking to implement parts of the Council's plan;
- b. continue the institutional buildings program and make an assessment of con-

servation/resource development potential in government owned or operated facility;

c. support cooperation among government, utilities and private entities in conservation activities;

d. expand institutional programs to include savings from sewage and wastewater treatment processes;

e. allow direct payments for conservation savings; and

f. end financial assistance for street and area lighting improvements during the period of surplus.

The Council will:

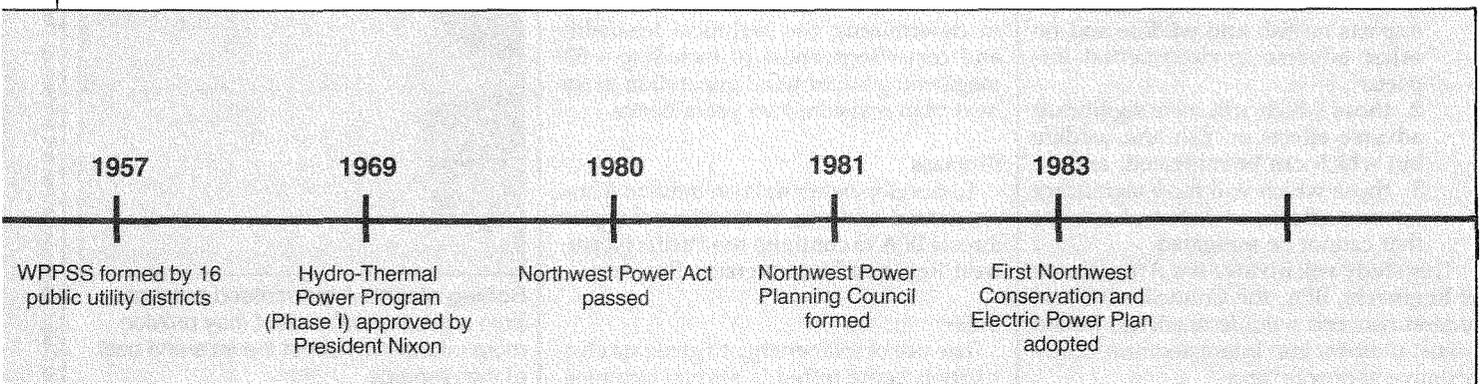
a. gather data on electric power use in public buildings and incorporate it into the Council's analytical system.

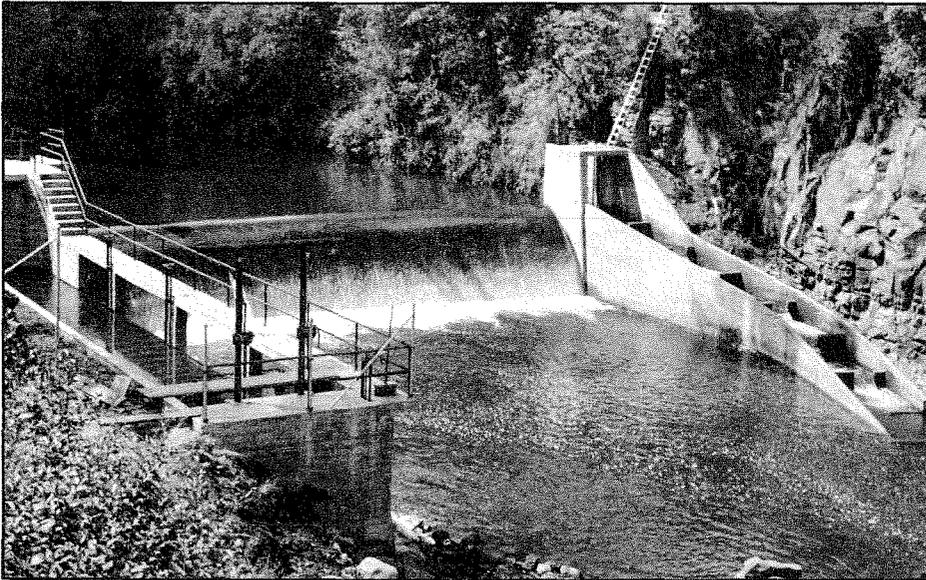
Resource Options

Perhaps the single most innovative development of the Council's plan is its "options" concept. An option would allow a resource to be taken through the time-consuming but relatively inexpensive siting and design stages and placed in a "ready" condition until needed (see page 12).

Over the next two years, the Council calls for testing the options concept by acquiring options on six hydropower sites. BPA's work will include identifying changes in the regulatory processes (both state and federal) that may be necessary if the options concept is to work.

Task forces will work to develop provisions for options in each state and to propose means for resolving regulatory uncertainties.





Future hydro: The two-year plan calls for BPA to acquire options on six new hydro sites and for a study ranking sites for their fish and wildlife impacts.

Hydropower

The plan calls for BPA to test the options concept by acquiring options on six categories of hydropower facilities:

- a. existing non-power dam more than 15 MW;
- b. existing non-power dam between 5 MW and 15 MW;
- c. new dam more than 25 MW;
- d. new dam between 10 MW and 15 MW;
- e. new dam less than 10 MW; and
- f. new dam exempted from the Federal Energy Regulatory Commission.

The Council will:

- a. design and conduct a study to rank potential hydropower sites according to:
 1. those which have insignificant impacts on fish and wildlife and no other adverse environmental impacts;
 2. those which will have significant adverse effects on fish and wildlife but which can be mitigated; and
 3. those which will have significant adverse effects on fish and wildlife that cannot be mitigated.

This study will involve the Army Corps of Engineers, BPA, the Council, state and federal fish and wildlife agencies, Indian tribes, utilities, and interested non-utility resource sponsors; and

- b. continue to refine its data base on existing and hydropower sites.

Renewable Resources

Geothermal

To develop better information on the region's geothermal resources, the plan directs BPA to select a site estimated to produce 100 megawatts over 30 years and to guarantee the purchase of the first 10 megawatts produced, with the price tied to the cost of power from a new coal plant.

Wind

The plan calls for continued study and assessment of wind generation potential. These studies should assist the Council in determining the technical feasibility and cost-effectiveness of including a 50-megawatt goal for wind generation in the next plan revision, two years hence.

Biomass

To develop better data on industrial and residential end use of biomass, the plan directs BPA to continue the Pacific Northwest Regional Bioconversion Program.

Solar

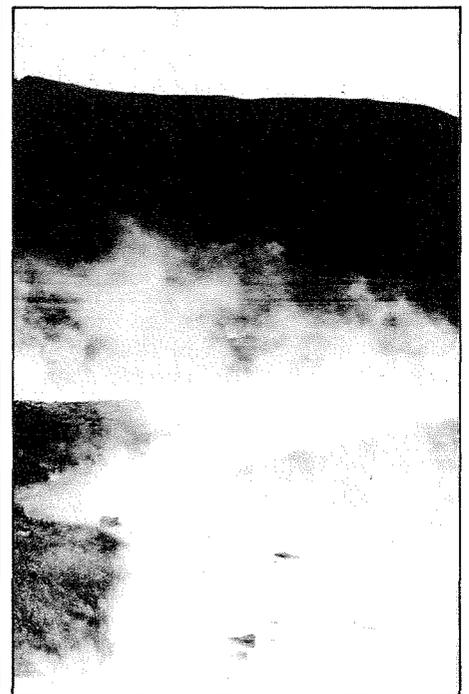
The use of solar energy to generate electricity is being tested in several locations.

The Council intends to closely monitor demonstration projects underway in California.

Interruptible Power for N.W. Markets

Each year during the spring runoff, large amounts of water either must be spilled or used to generate electricity. Typically, this excess power has been sold cheaply to California utilities. And it has been used to shut down more expensive Northwest thermal plants.

To retain more of the benefits of low-cost non-firm power in the Northwest, the Council wants BPA to seek additional in-region markets for interruptible electricity. The Council suggested an initial goal of 900 to 1,400 megawatts for the industrial sector, plus an effort to sell interruptible power to the irrigation sector. Also, the Council called for a study of whether loads that presently are firm could be switched to interruptible through voluntary contractual arrangements.



Boiling steam: A guaranteed purchase from a geothermal project may provide more information about the size and cost of the resource.

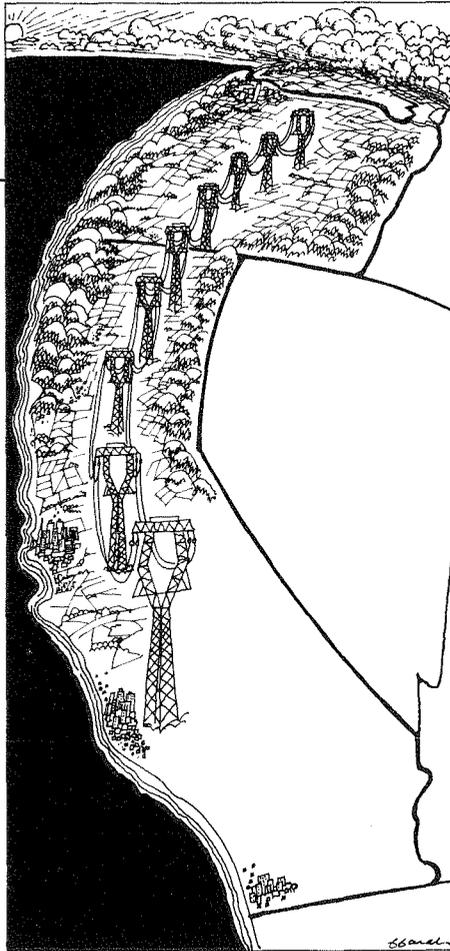
Firm Power Sales to Southwest

The Council plans to open discussions with the California Energy Commission concerning sales of firm surplus power to utilities in the Golden State. The Council said it will consult with BPA and Northwest utilities in the process. Such sales benefit both regions: California receives power cheaper than it can be generated from fossil fuels (oil and gas); and, the Northwest receives payments for power that otherwise might go to waste.

Combustion Turbines

The Council's plan calls for the use of combustion turbines as a planning reserve to meet unexpected load growth. In order to study potential obstacles to the use of combustion turbines and ways to overcome these obstacles, the Council will conduct studies of:

- a. the likelihood of obtaining exemptions from the Fuel Use Act;
- b. how regulations would apply to new combustion turbines;
- c. the potential contribution of combustion turbines;



- d. their cost-effectiveness; and
- e. the effect of BPA's impending displacement policy on the operation of combustion turbines to meet top quartile loads.

Cogeneration

In order to preserve cogeneration opportunities before they are needed in the region, the plan directs BPA to:

- a. assist potential cogenerators in obtaining access to tielines;
- b. assist them in marketing cogeneration in the region; and
- c. develop an options program for cogeneration.

Other BPA Actions

The plan also directs BPA to:

- a. study how the lead times for planning and construction schedules of large thermal plants can be shortened;
- b. prepare to carry out the Council's method for determining environmental costs and benefits; and
- c. prepare to carry out the Council's

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Volume II of the plan contains technical appendices dealing with WPPSS 4/5 vs. coal, economic and demographic assumptions, combustion turbines, model conservation standards, and conservation assessment methodology. For information on obtaining Volume II, contact Carol McAllister at the Council's central office.

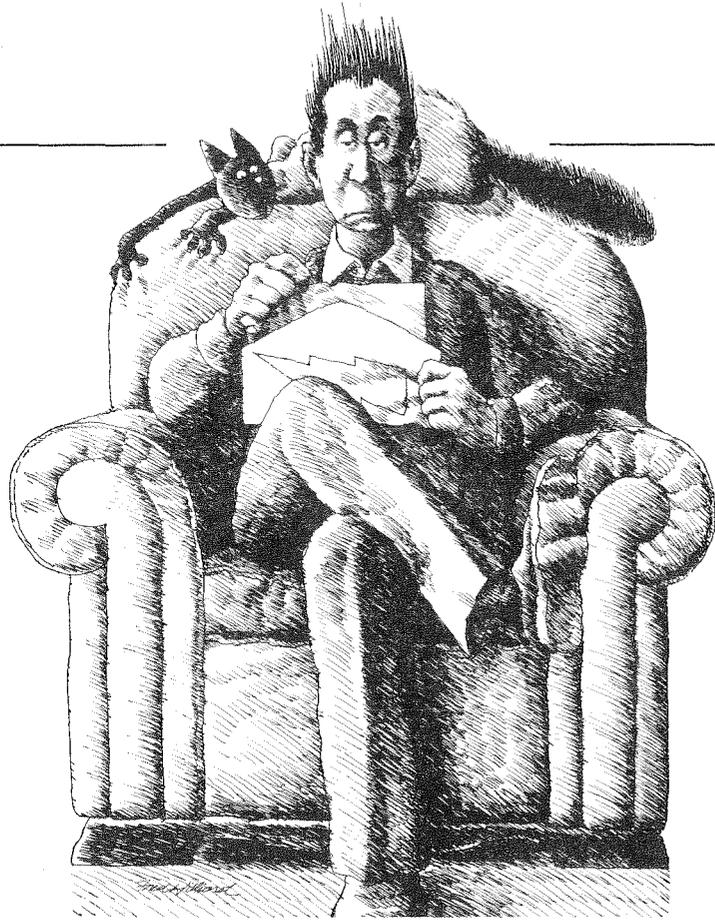
Technical exhibits, including contractor reports, staff issue papers and model documentation, may be examined at the Council's central and state offices and BPA area offices during regular business hours. For more information, contact Ruth Curtis at the Council's central office.

surcharge for failure to either adopt model conservation standards or achieve comparable savings.

Other Council Actions:

The Council will:

- a. monitor the activities called for in the two-year action plan to determine appropriate changes and improvements to it;
- b. coordinate load forecasting activities and update the data and computer models used in the Council's forecast;
- c. seek additional and better data on power resources;
- d. study conditions for acquisition of resources other than hydropower facilities;
- e. conduct several studies on:
 1. billing credits;
 2. WPPSS schedule and costs;
 3. direct service industry loads;
 4. rate designs;
 5. additional hydropower flexibility;
 6. interruptible power markets;
 7. power system reserves and reliability; and
- f. continue and expand public information and involvement activities.



What cost energy? Avoiding future rate shocks is one goal of the Council's regional power plan.

Fred Hilliard illustration

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