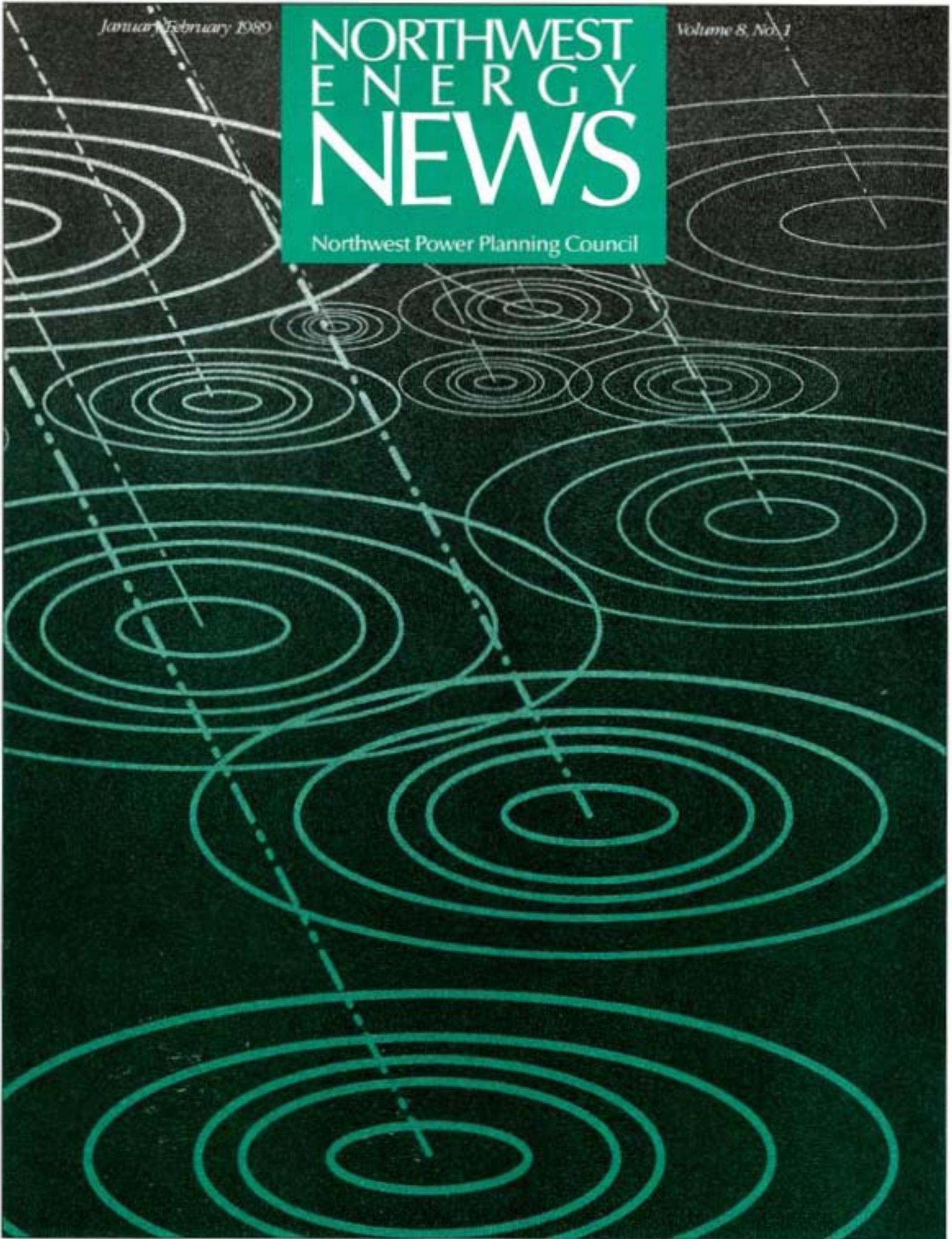


January/February 1989

# NORTHWEST ENERGY NEWS

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In the spirit of the New Year, the Council is looking at an updated regional power plan; an historic agreement on the amount and timing of water releases, called spills, to aid young salmon and steelhead passing mainstem Columbia River dams; and a Columbia basinwide wildlife agenda to balance out the fish and wildlife program. As part of the power planning process, new resources will be studied this year for possible positioning in the Council's resource portfolio. There will also be a new look at the Action Plan, which outlines steps the region needs to take to meet its energy needs over the next 20 years.

Planning for salmon and steelhead production in 31 primary subbasins of the Columbia will fill out the Council's calendar over the next year. First drafts of the first plans are in, and they look good. They need work, but that's where the public comes in. Over the next year and a half, there will be at least four opportunities to review the evolving plans and help refine them. For information on the plans and how to become a part of this enormous effort, start with the story in this issue.

In 1988, more people participated in Council activities than in any other year of our existence. We hope to top that in 1989.

This issue's computer generated cover illustration is by Stephen Sasser

# Reconstructing the River Basin Puzzle

by Carlotta Collette

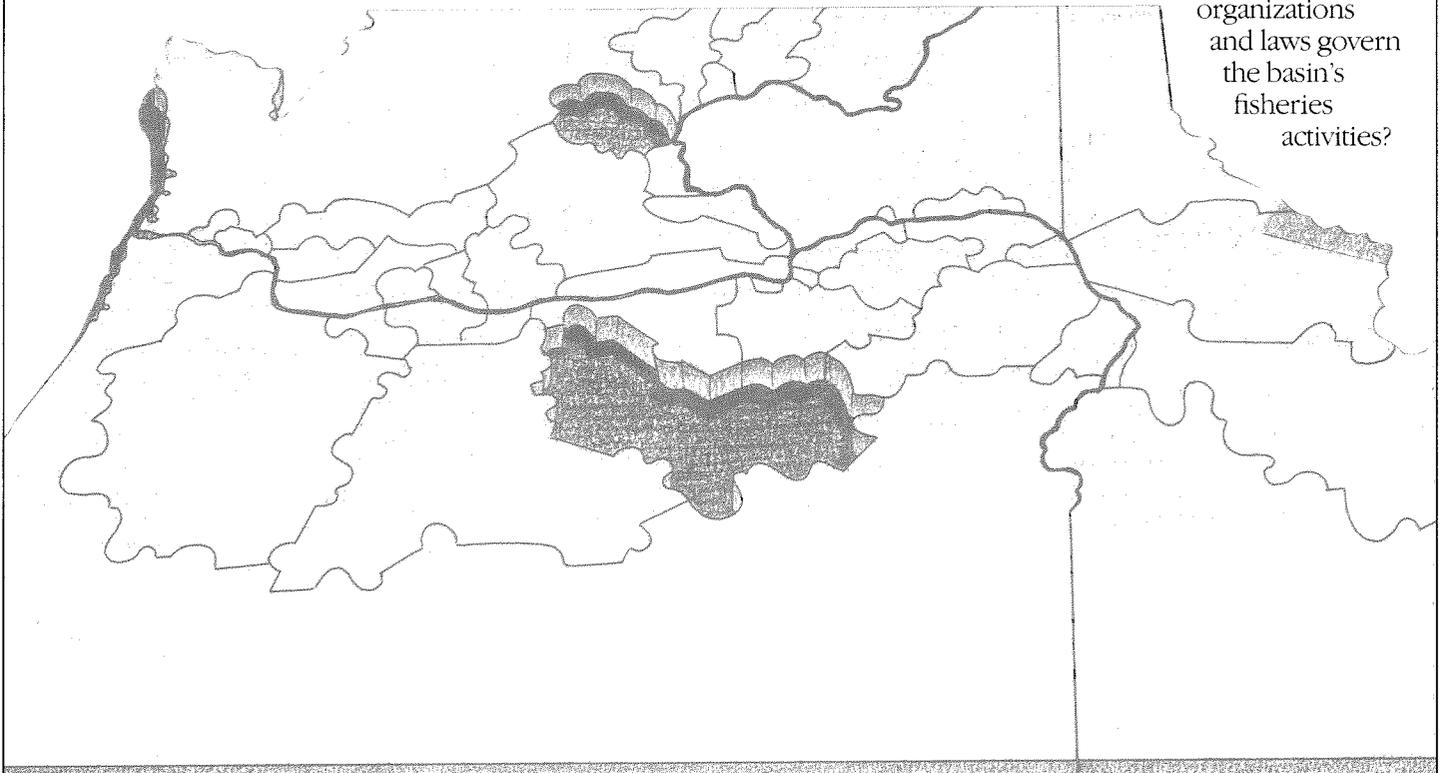
**Detailed plans for 31 subbasins piece together the future of the fisheries.**

**T**hey are destined to be Columbia Basin classics. First drafts of everything you ever wanted to know, and then some, about 22 major watersheds within the drainage of the Columbia River have been compiled, organized and presented to the Northwest Power Planning Council for preliminary public review. Each of the watersheds, called subbasins, is described in its own volume, and

combined, the books could easily fill an apple crate. As reference material, they are likely to be incomparable. They detail the landscape, climate, plant and animal communities, history and legal status of specific basins, with an emphasis on salmon and steelhead production in those basins.

Want to know the source of the mainstem John Day River? Elevation 9,000 feet in the Strawberry Mountains in east-central Oregon. How about water quality in the John Day, or any of its tributaries? Water quality is considered a problem on about 750 miles of the basin's streams. That covers virtually all of the mainstem John Day and its largest branches, the North, Middle and

South Forks. Which organizations and laws govern the basin's fisheries activities?



A host of them, all listed and described.

More important for the Council's purposes — how many fish and which species of fish have called the John Day home, and how many can be expected in the future? What, exactly, will it take to keep northeastern Oregon's largest remaining exclusively wild run of spring chinook and summer steelhead in the John Day Basin? Can other stocks be introduced and assisted in their attempt to adapt to this mostly dry land of temperature extremes? How is the basin used today, and how might this use be altered if more fish are encouraged here?

In northeastern Washington's Wenatchee River Basin, the questions are similar, but the answers are unique to that basin. Want to know who owns which portions of the Wenatchee drainage? Roughly half of the watershed (395,000 acres) is national forest land. What tribal considerations exist? Most of the basin was ceded to the United States by the Yakima Indian Nation after the treaty of 1855 and the subsequent Executive Order of July 2, 1872. The tribe reserved the right to fish and hunt wherever they had traditionally.

And in the Wenatchee, too, which fish return each year? How numerous are they? And what will it take to reach a more optimum population there?

**B**oth the Wenatchee and the John Day are basins located above Bonneville Dam. This is the area accorded priority status in the Columbia River Basin Fish and Wildlife Program, because harm to salmon and steelhead runs was more extensive there, and fewer reparations have been made there than in the lower river.

These 22 upper basin drafts are the first of 31 the Council has called for as part of its system planning effort. Preliminary plans for the lower subbasins are expected this spring. Altogether, they will describe the number of fish, by stock and subbasin, that can be produced in the Columbia River Basin. The Council has set a goal of increasing the basin's sustained salmon and

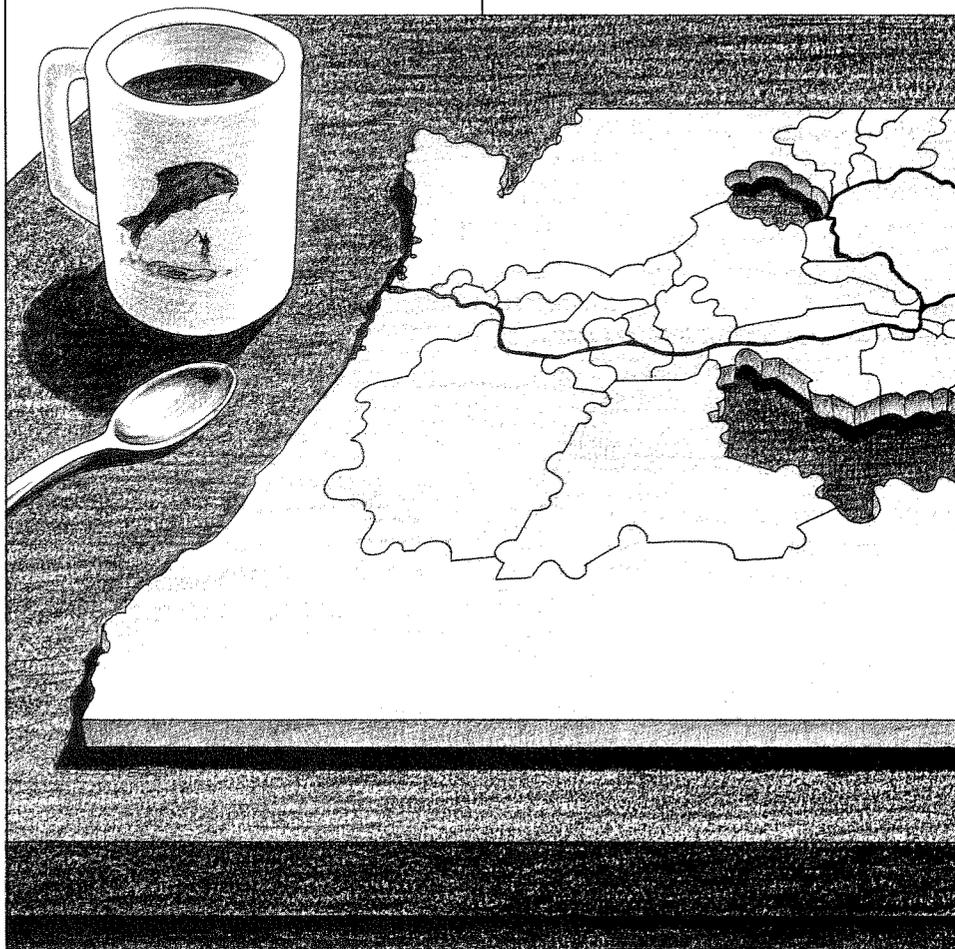
steelhead runs by 2.5 million adults. These plans will recommend ways to reach that goal.

There will be at least four additional opportunities for members of the public to study and comment on the plans before they are finalized and merged into a Columbia systemwide plan. The systemwide plan will measure the subbasin plans against each other for consistency. This larger plan will also incorporate factors such as ocean harvest and mainstem Columbia passage, which are outside the individual basins.

All the plans are being developed by teams of experts well versed in each specific subbasin. Participants work and often live in the area. They represent both the appropriate state fish and wildlife agencies and proximate Indian tribes. The U.S. Forest Service is participating. Several other federal agencies are involved. In addition, a public advisory committee aids each team. In the John Day, this committee included farm-

ers and ranchers, one county judge, a science teacher, several business representatives and a handful of anglers.

**I**n addition to reviewing the basins and determining how many, what kind and for what purpose salmon and steelhead will be produced in each basin, the plans explore several strategies for achieving those objectives. The strategies begin with the least invasive, most nearly natural alternatives, such as moving logs or boulders into creeks to create resting pools for migrant spawners. As the planning proceeds, these strategies are tested using the Council's computer model of the life cycle of the fish. If the simplest strategy does not appear to be able to supply the number of fish needed, the strategy may be modified, another strategy added, or the objective reconsidered. Thus, the analysis can serve as a reality check before money is invested.



There will be at least four additional opportunities for members of the public to study and comment on the plans before they are finalized and merged into a Columbia systemwide plan.

In the case of the John Day, the preservation of the wild spring chinook run is more important to planners than introducing other stocks. The strain of wild spring chinook that returns to the John

Day has adapted to the warmest water and some of the most severe habitat problems in the Columbia River Basin. This stock is discrete to the John Day, but someday these characteristics may be necessary in a stock elsewhere in the Columbia Basin. Biologists are compelled to protect it much like an archive.

Even the few hatchery-bred chinook that stray into the John Day can alter the genetic purity of the wild run or introduce diseases for which the wild run has no resiliency. So, as planners study ways to increase fish populations, they can use another piece of the computer model to identify possible genetic implications of any salmon recovery effort they might propose.

In the John Day draft plan, the focus turned from hatchery breeding to curing environmental problems in the habitat so more naturally spawned spring chinook fry can survive to smolt stage and make a safe outmigration to the Columbia and then the sea.

From this decision came proposals to stabilize specific stretches of shoreline; fence cattle from areas where habitat is being damaged; provide plant cover to shade streams that become overheated in the long,

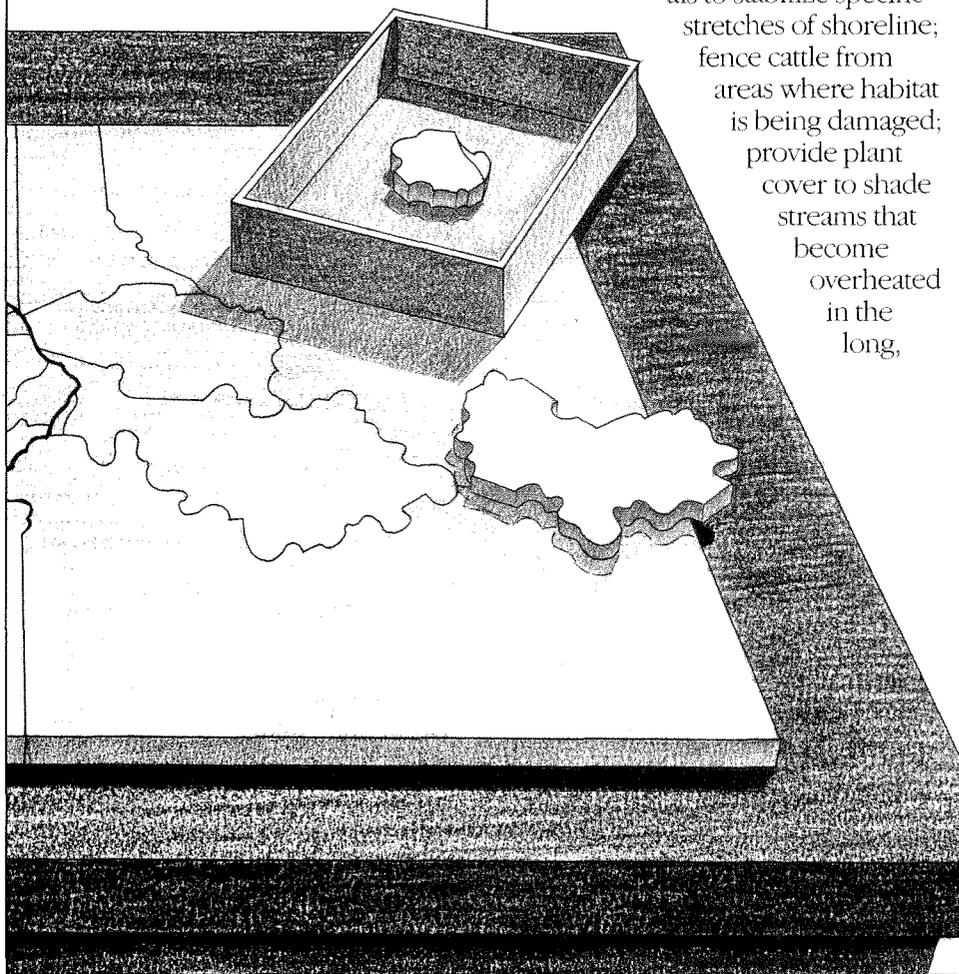
dry summers; and improve channels and pools so young fish can reside in the basin long enough to grow hearty for their spring journey down the John Day.

The Wenatchee also has a run of wild spring chinook, but biologists there doubt that the run has the genetic integrity of a run such as that in the John Day. Spring chinook from the Leavenworth National Hatchery on Icicle Creek in the basin have almost certainly interbred with the wild stock. Furthermore, the Wenatchee is above six mainstem Columbia River dams, which greatly reduce survival rates for both young and adult salmon and steelhead migrants. So, at this point in the planning process, proposals to increase the Wenatchee run can and do include hatchery-bred stock.

In some ways, both of these and the remaining 20 draft subbasin plans are encyclopedic. They cover the territory of many institutions. They are the product of the shared knowledge of these institutions. They even point out gaps in the available information, particularly gaps that can be filled by designing recovery efforts that are also scientific experiments.

Each subbasin team began by pulling together everything members knew or had on file about the watershed and its salmon and steelhead. Rick Reiber, lead author of the John Day subbasin plan, tells of finding information on the wild chinook run in boxes "in the basement of old labs in Corvallis." He also notes that many of the people he spoke with when he began pulling together his advisory committee were "sick and tired of plans." Reiber convinced his committee members that this would be the "plan of plans" for the John Day. "We told them that this would be the plan that would really bring back the fish."

Reiber's enthusiasm caught on in the basin. "We meet a lot," he says. "We're excited about preserving that wild spring chinook run. It's fun, too, to imagine people in all the



basins meeting the way we do and planning for their fish runs.”

The first bits of information gathered by the teams were used to develop the computer data bases that are used in the model to simulate the possible outcome of proposed actions. Information about water conditions, flows and habitat, for example, fed into a formula for computing the initial life-cycle (called fry-to-smolt) survival rate of salmon spawned in that particular habitat. Data about survival rates in the mainstem Columbia River and the ocean are used to model subsequent salmon life-cycle events. The model was presented to the planners in a series of workshops early on. Participants were able to test and refine the model and gradually add new information to it. This testing and refinement is an ongoing process. As more relevant data becomes available, the model is adapted.

When the planners began testing their strategies using the model, virtually all of the strategies proved inadequate to produce the desired number of fish. Some of the problem could be with the model itself, but much of the shortfall is the result of underestimating fish kills at the mainstem dams and overestimating survival rates within the subbasins.



In the John Day, the public advisory committee included farmers and ranchers, one county judge, a science teacher, several business representatives and a handful of anglers.

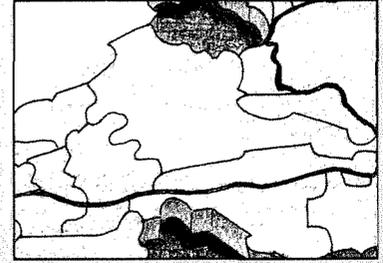
Planners returned to their basins to tinker with their plans. Should fewer fish be expected from a given basin? Should more habitat be brought into production? What's realistic? How many fish can each basin be expected to contribute? What is it going to take to reach those numbers? Reiber explains that his copy of the John Day sub-basin plan is "covered with red ink already." The plans are still dynamic documents. They are not expected to be finalized and shaped into the comprehensive systemwide plan until mid-1990. There is time now to test the notions and bring an even broader partnership into the process. ■

For more information about the subbasin/system planning effort and a schedule of public meetings in each basin, contact:

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# ONE



Of all the subbasins in the Columbia River's watershed, the Yakima River Basin in central Washington may be the most promising. The Yakima's 1,900 miles of streams once hosted more than half a million salmon and steelhead. The habitat is still there, but passage to and from it has been blocked by diversion dams that shift water from the river and its tributaries into more than 400,000 acres of irrigated farmland with \$500 million in annual crop value. As recently as the 1970s, when water levels throughout the Columbia's drainage were discouraging, returns to the Yakima dropped to fewer than 1,000 fish.

That was the nadir for the Yakima salmon and steelhead fishery. Emergency fishing restrictions were agreed to, the Bureau of Reclamation began a water enhancement project,



# BASIN'S SUCCESS STORY

and lawsuits were filed to clarify water rights and other fisheries issues. One of the court's decisions called for sufficient flows to protect salmon and steelhead nests, called redds, from drying out because of low river flows.

Then, in 1980, the Northwest Power Act was passed, and when the Columbia River Basin Fish and Wildlife Program (which was mandated by the Act) was approved two years later, the recovery of salmon runs in the Yakima River Basin gained new momentum. The program describes the Yakima as a site for "offsite enhancement." This means that the Yakima's abundant habitat will be used to replace habitat lost because of dam construction and inundated habitat elsewhere in the Columbia Basin. But first, migrating salmon and steelhead had to be assured of safe passage at the Yakima area diversion dams.

The program called for more than 70 fish passage and habitat improvement projects in the basin, a major hatchery operation, studies on water conservation and flows within the basin and the selection of alternative sites for water storage facilities. In 1982, the Yakima Indian Nation, primary landowners in the basin, began working with

the basin's irrigators, the Bonneville Power Administration, the Bureau of Reclamation, and the Washington Departments of Fisheries and Wildlife to design and install fish screens and ladders for the first 20 bypass projects. Almost all of these are completed now, with total costs approaching \$50 million. Recent tests at the dams indicate that no more fish are being killed where new screens are in place. In fact, salmon and steelhead returns in the Yakima now range between 10,000 and 12,000.

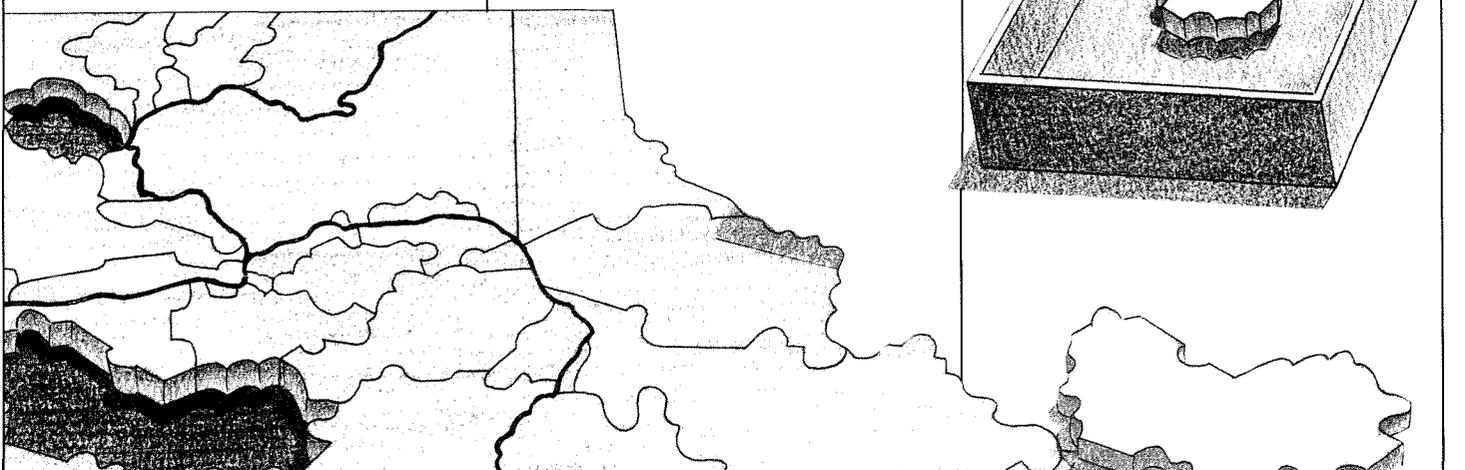
The remaining 50 passage projects were put on hold in the 1987 amendments to the fish and wildlife program until the subbasin planning effort is completed in 1990. But Yakima planners, already somewhat ahead of the rest of the basin, are anxious to keep at their work. They have submitted a proposal to amend the fish and wildlife program so they can proceed to design the rest of the projects rather than wait an additional two years. (Their proposal was being considered as this issue went to press.)

In the meantime, they have continued to forge plans for hatchery operations that will be used to restock the basin and test the feasibility and consequences of releasing hatchery-

bred fish into streams that currently support non-hatchery runs. Their initial product, the Yakima Master Plan, describes in some detail both the production itself and the experimental aspects of the production project. The experimental features were reviewed and refined in workshops held throughout the Northwest in November and December.

Studies of Yakima Basin flows are part of the master plan. And the master plan is tied into the subbasin plan.

Federal legislation aimed at providing new water storage opportunities in the Yakima Valley was introduced in 1988 by then Washington Senator Dan Evans, the first chairman of the Northwest Power Planning Council. The final draft of the bill contained provisions for new storage, water conservation, improvements to existing water delivery systems and settlement of Indian water claims. The legislation did not pass during the 100th Congress, but may be considered again in the next session. — C.C. ■



# Getting the Best Deal for the Region

## Planners stack sources for new Northwest electricity.

by Gordon Lee

**T**rying to figure out the best mix of energy resources for the Northwest is a lot like trying to determine which stocks and investments to buy on Wall Street for the best long-term return.

Both endeavors require a keen sense of timing, a good grasp of coming economic trends and a willingness to spread risk over a variety of investments. Both aim to

obtain the highest total return at the lowest cost. In investments, that means balancing risks and rewards to maximize the long-term value of a portfolio. In energy planning, it means exploring electric resource technologies that would give the most power to the region at the lowest cost.

Both also are rarely static. Just as the investment climate on Wall Street changes weekly or quarterly, so the environment for energy planners constantly

takes new shape. New technologies regularly change the picture, making some resources more promising and others, more obsolete.



At the same time, new evidence may raise doubts about the wisdom of traditional generating methods. Today, for example, fears of global warming and the greenhouse effect have caused some power planners to revise their estimates of the social and environmental costs of burning fossil fuels to make electricity.

That reconsideration coincides with big changes that have taken place on the world and regional energy scenes over the past three years. Oil and gas prices have plummeted. The region's electricity surplus has shrunk. Consumption patterns have changed.

As a result, the composition of the Northwest Power Planning Council's resource portfolio — the energy investments it suggests the region should make to get a reliable power supply for the least cost during the next 20 years — might need to be revised. The Council for the past year has taken a preliminary look at whether the resource portfolio, which it published in its 1986 Power Plan, needs to be updated. That review will intensify in 1989, as the Council intends to explore at length different aspects of the portfolio.

But what exactly will the Council look at when it reviews the resource portfolio? Here's a primer:

A resource portfolio is a list of energy investments the region's utilities could make to satisfy growing electricity demand at the lowest cost over the next two decades. The list is short if energy demand doesn't grow much, but lengthens as energy demand expands. By following it, the Bonneville Power Administration and the region's utilities — which typically make resource choices on their own — would be able to select the lowest-cost path to meet energy needs in the Northwest.

The resource portfolio recognizes the region can't accurately predict the specific path demand for electricity will take over the next 20 years. Rather, it expects the Northwest's need for electricity likely will

## The Council only includes known, proven technologies in its portfolio.

fall within a range from low to high growth. The portfolio calls for the region's utilities to acquire a specific set of resources if the economy grows slowly and to add to that resource base if the economy grows at a faster clip. Not surprisingly, it also calls for the region to buy the least-expensive resources at the start and add costlier resources to meet additional growth.

The resources in the Council's current portfolio, which was published in its 1986 Power Plan for the region, run the gamut from relatively inexpensive to moderately costly. Conservation is the portfolio's least expensive resource. The Council suggests that the region's utilities should spend money on saving energy (through programs to promote construction of energy-efficient houses and buildings; efforts to retrofit older structures; efficiency programs for businesses, industries, and agriculture; and other means) before they turn to other resources.

As its energy needs grow, the region should look to other resources in ascending order of cost, the portfolio says. That means efficiency measures that cut energy losses and squeeze more power out of existing hydroelectric dams would be next on the region's acquisition list. With further demand, those should be followed by efforts to obtain additional energy from new, environmentally sound hydropower, from strategies to use the additional hydropower available in wetter years and from cogeneration, which is the production of power as the byproduct of industrial operations.

Only after the region has exhausted resources in that order should it turn to medium-sized, coal-fired thermal electric plants to meet high load growth.

Coal is the costliest and last-resort resource in the 1986 portfolio. Power from a medium-sized, 500-megawatt capacity coal plant would cost 4.7 cents a kilowatt-hour, according to recent estimates by the Council's staff. Other potential resources, such as solar, wind, geothermal or nuclear power, carry higher costs. Since they don't meet the Council's least-cost criteria, they aren't included in the portfolio at this time. Neither are conservation measures that cost more than 4.7 cents a kilowatt-hour.

The Council only includes known, proven technologies in its portfolio. The resources have to be available today, and they have to be able to obtain all applicable state and federal licenses. This allows the Council to make more precise estimates of resource costs.

But while the region should bring new resources on line in ascending order of cost, some require more time to obtain licenses and permits and to build than others. This means that the region's utilities may have to take the first steps toward acquiring expensive resources before they begin building less costly resources that don't take as much time to bring on line.

The concept of a resource portfolio is a fundamental part of the Council's long- and short-range utility planning. "Our planning recognizes that the future is uncertain," notes Ed Sheets, the Council's executive director. "Even with the best computer models, it's impossible to know the future."

A resource portfolio helps the Council minimize the risk of planning in the face of uncertainty. It allows the Council to plan for a range of likely economic futures, rather than attempt to predict a single economic vision for the Northwest. And it gives the Council flexibility to adjust its resource mix

as expectations of the region's need for electricity change or new technologies emerge.

The Council has used this approach to economic and utility forecasting since 1983, when it published its first regional power plan. The concept of a resource portfolio lies at the heart of the Council's adaptive approach to demand forecasting. It goes hand-in-hand with the Council's attempt to get away from the straight-line forecasting that utilities attempted in the 1960s and 1970s.

Back then, utility plans involved drawing a single picture of the future. Planning meant trying to figure out how fast utilities' customer bases were expected to grow over the next 15 to 20 years, how much power those new customers would need, and where that new electricity would come from.

But the energy crisis, recession and the collapse of the Washington Public Power Supply System nuclear power plant construction program forced the Council to approach planning differently in the 1980s. The Council didn't want to repeat the mistake of trying to make a single prediction of the region's need for electricity. That's what planners had done 10 years earlier, when they predicted that the Northwest would need massive new generating capacity to meet loads in the 1980s and chose long lead time resources to meet that growth.

However, that large load growth never happened. One outcome was the failure of the Washington nuclear plant construction effort, whose collapse caused the biggest municipal bond default in history and a 500 percent jump in the region's electric rates.

The Council learned from that bitter lesson. Ever since it was created in 1981, the Council has tried to plan based on an array of possible energy futures, rather than on a single view of the future. "The Council's response is to develop a range of forecasts and come up with energy mixes that will provide low-cost energy across a range of energy futures," says Sheets. "We're trying to

avoid the situation of the 1970s, of planning on a single-point forecast."

**T**he Council's resource portfolio marries its predictions of the region's economic and energy load

growth with evaluations of the types of power resources, and their costs, that will be available in the future. The result is a mix of resources that meets the region's expected power needs at the lowest cost.

# SURPLUS POWER: A GOOD or ? BAD DEAL ?

**W**hen the region needs to begin thinking about new electricity resources depends on predictions of how long the Northwest's electricity surplus will last.

The faster the Northwest runs out of power, the sooner utilities and the Bonneville Power Administration will have to find new sources.

But those predictions have been hard to make, and that uncertainty means it's been difficult to achieve what power planners call "load-resource balance," an ideal condition in which utilities produce about the same amount of power their customers need.

That almost never has happened. Utilities rarely have hit the needs of their customers squarely. Typically, they've produced more power than their customers need. Less often, they've been unable to fully meet their customers' demands and have been forced to import power. During severe shortages, such as the dry winter of 1976-77, utilities had to interrupt service on some industries and ask for voluntary cutbacks from other customers.

Until recently, utilities didn't have a compelling economic incentive to hit load-resource balance. During most of the period before 1979, the region's electric resource costs — based on cheap hydroelectricity — were low. That meant it was relatively inexpensive to maintain a surplus. Producing power that wasn't needed locally didn't add significantly to the electric bills of most Northwesters. Usually, it could be sold at full cost to California utilities.

Consequently, utilities in the Northwest had a near-uninterrupted history of producing more power than their customers needed. Only once during the past 35 years have generating facilities in the Northwest been unable to meet the region's demand.

As the accompanying chart shows, the region had an average firm power surplus of 500 megawatts between 1952 and 1979. That's a little less power than the city of Portland consumes. Firm power is the amount of energy that the region's hydroelectric dams can produce even if there were a repeat of the driest years on record.

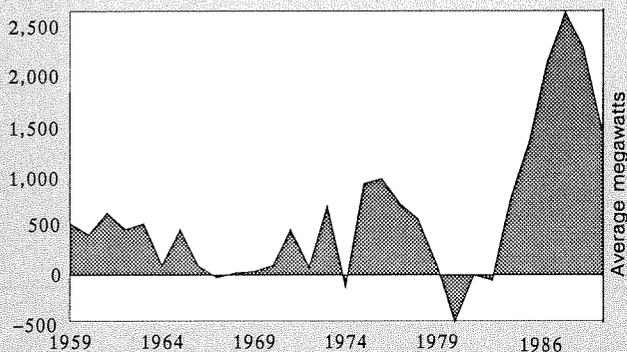
The surplus disappeared quickly at the end of the 1970s. But, within a year, it began to climb sharply, hitting 2,600 megawatts in 1986.

"We evaluate combinations of resources against hundreds of scenarios in the future," Sheets says. "We're looking for the low-cost mix in the low- or high-growth scenarios, and also in the economic

scenarios that show a lot of volatility."

The resource portfolio helps utility managers anticipate when they'll need to make decisions regarding new sources of power. "It tells us that, based on information we have

now, we know when we need resources and in what order," Sheets says. "It tells the Council, the Bonneville Power Administration and the utilities when resource decisions are needed. The portfolio tells us when we need to start committing to acquiring resources."



**HISTORY OF THE NORTHWEST POWER SURPLUS**  
(based on data from the Pacific Northwest Utilities Conference Committee)

An economic recession throughout the region and new generating capacity contributed to the steep rise in the surplus. Coal and nuclear power plants whose construction had begun in the early 1970s started to come on-line then. Customer rates, which had remained fairly steady for a decade, jumped as Bonneville and the region's utilities began to recoup those heavy capital investments.

At the same time, the recession of the early 1980s undermined the region's traditional customer base. Aluminium plants, which historically consumed massive amounts of power, shut down, squeezed out by lower-cost foreign competitors. So, too, did several of the region's mining operations, also big consumers.

To compound matters, this surplus power wasn't made up of low-cost hydroelectricity. Rather, the surplus the Northwest carried was made up of power from expensive nuclear and coal-fired thermal plants.

The Northwest's growing economic recovery has shaved the large surplus of 1986. The Council estimates that the surplus could drop to 1,000 megawatts next year and, under conditions of high economic growth, disappear altogether in the early-1990s unless new resources are developed.

In the 1990s and beyond, neither large surpluses nor large deficits in the region will be economically healthy, says Morris Brusett, chair of the Council's power planning committee. Surpluses made up of electricity from coal and nuclear plants are too costly. So are power imports, which usually fetch high prices tied to the newest generating capacity on other region's systems.

The challenge for the Council and others involved in utility operations today is to figure out a resource mix whose output will match the region's demand as closely as possible, Brusett says. "We need to plan for a minimum surplus."

Paradoxically, planning for little or no surplus means that the region soon will have to look to new sources of power. While the region is surplus today, new resources, including stepped-up conservation efforts, may be needed to keep it from going deficit in the 1990s. The region will need additional sources of power before the end of the century under most economic scenarios. Only if it experiences a sustained period of low economic growth will the Northwest not need new resources. — G.L. ■

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**The Council's resource portfolio marries its predictions of the region's economic and energy load growth with evaluations of the types of power resources, and their costs, that will be available in the future.**

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The resource portfolio also gives utility managers a good idea of the cost they should expect to pay for new power. That's because it contains resources that, in combination, provide the least expensive way to fulfill the region's energy demand. Other combinations, based on knowledge today, would be costlier.

"It's important for the credibility of the plan that we have a reliable, available set of resources," Sheets says. "Without good estimates of blocks of power and resources, you can't get good estimates of how much you need or how much it'll cost."

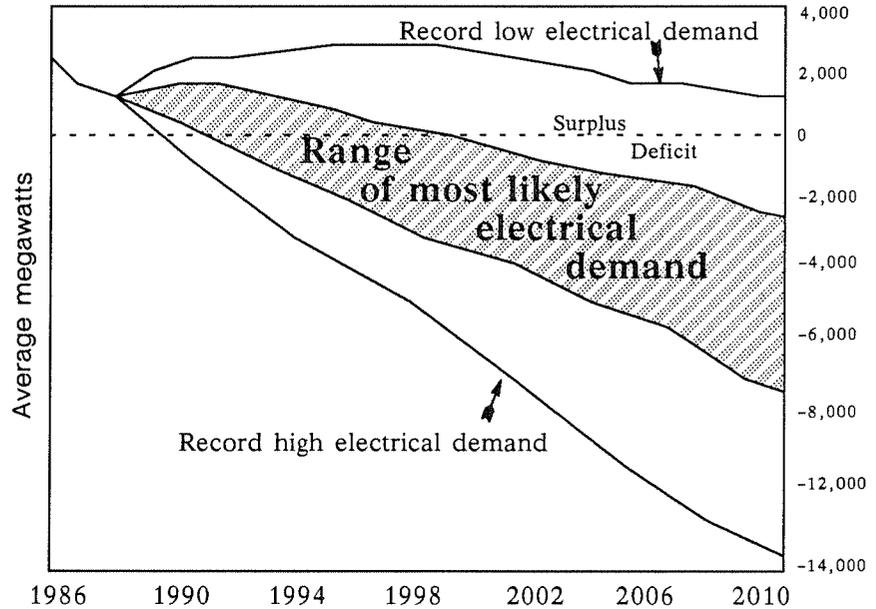
However, this doesn't mean that Bonneville or the region's utilities are tied to those resources. The

resource portfolio isn't static. While it provides an up-to-date picture of how to meet the region's energy demand, it changes as economic conditions and technology change. Resources that make up the portfolio today may change tomorrow if new cost or demand figures or new information about environmental effects come to light.

"We anticipate that other resources will compete with the resources in the plan," Sheets says. "Even the best planning effort can't identify all the resources out there."

This adaptability is perhaps the most misunderstood aspect of the resource portfolio. Some observers have concluded that by adopting a portfolio the Council has committed the region to a rigid set of new resources. But that's not the case. The Council's plan anticipates that new technologies may replace some of the resources in the portfolio before they're deemed necessary. In fact, it requires that Bonneville compare the cost of the most economically competitive resources available each time the agency contemplates adding new capacity.

The Council is in the midst of reviewing its resource portfolio, which it last published in 1986. That review has been prompted by changing energy and environmental conditions. The Northwest's electricity surplus stood at 2,600 megawatts as little as two years ago. It may fall below 1,000 megawatts by 1990, and — unless the region's utilities acquire new resources — it may disappear altogether as early as the mid 1990s.



**RANGE FORECAST OF FUTURE REGIONAL POWER NEEDS**

The Council's review of the portfolio also stems from declining oil and natural gas prices, which may make those fuels more competitive sources of electricity today than in 1986. But heightened concerns regarding the role fossil fuels play in contributing to global warming may make their environmental costs prohibitively high. All these developments could change the timing, costs and composition of resources in the portfolio.

The Council plans to release issue papers on different aspects of its resource portfolio throughout 1989. The result could be a new resource portfolio by the end of the year. ■



Dulcy Mahar Interview with

# TOM TRULOVE

**New Council Chairman describes his agenda for 1989.**

*When Tom Trulove got the call asking him if he wanted to be a member of the Northwest Power Planning Council, he had been repairing his shower with "this real sticky" glue. The "intriguing" conversation lasted at least 20 minutes, long enough for Trulove to end up stuck on the Council ... and on the phone, literally.*

*Trulove, the Council's seventh chairman, is an economist by trade and a politician by avocation. As a professor of economics at Eastern Washington University since 1969 (he's currently on leave), he found he had a stress problem. The problem was that there wasn't enough stress. ("No decisions were made unless there were at least seven years' deliberation.")*

*He thought it might add a little fillip to his urban, regional and pub-*

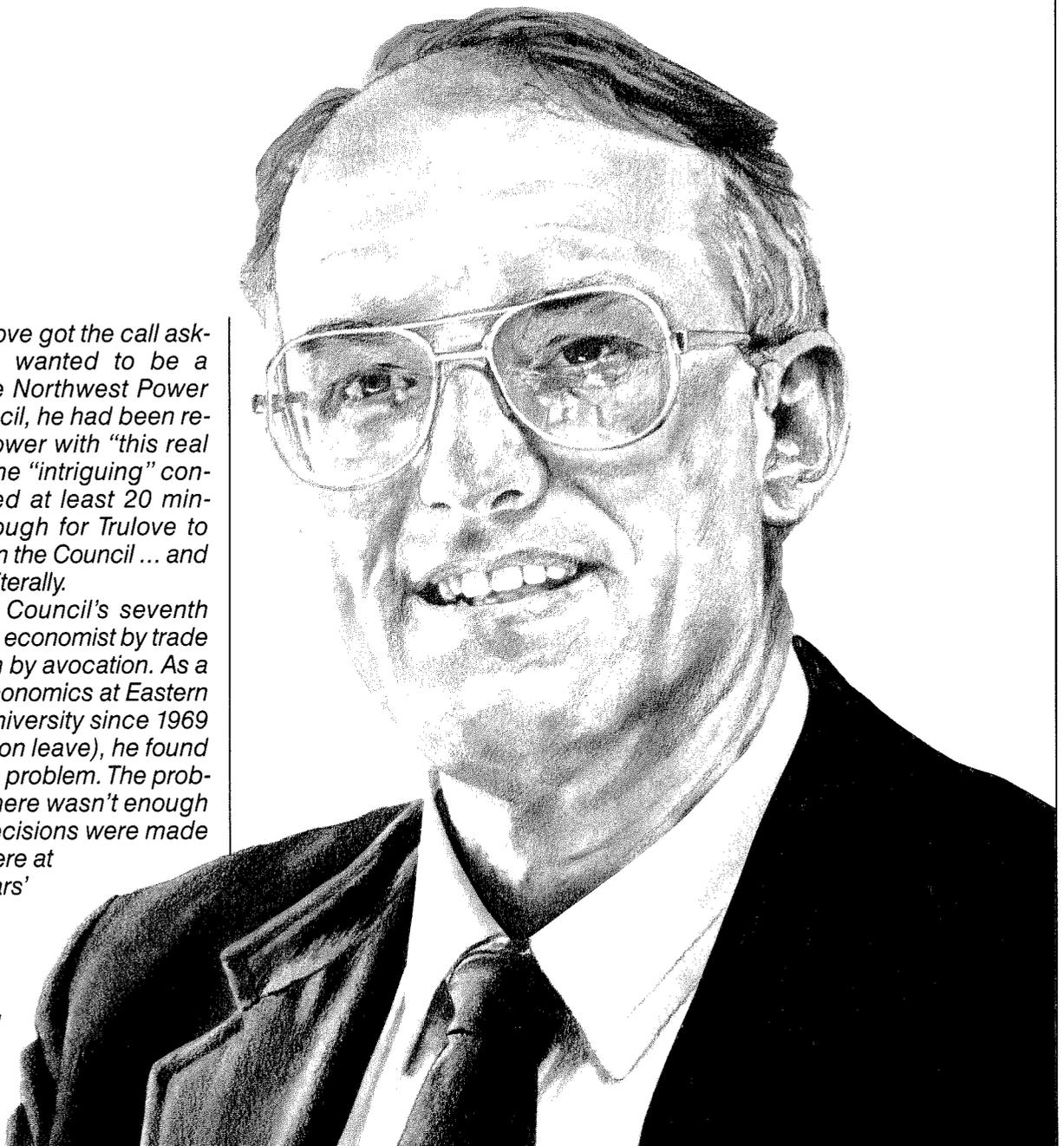


Illustration by Lynn Carson

## It is easy for utilities to mistake "least-grief" planning for least-cost planning.

lic finance classes if he ran for mayor of his town, Cheney, Washington, just outside Spokane. Perhaps he'd get a little name recognition that might win him a spot on the city council some day. The trouble with that plan was that he won the election ... and ended up loving the job! "I could actually see the results of the decisions we were making. We were able to make things better."

From there, he became active in the Association of Washington Cities, serving on a number of committees and ending up as president of the association. He also held a number of state board positions. During this period, because he had a background both in economics and political decision-making, he was invited to join the Council's demand forecasting advisory committee. After that, he followed the Council closely, sometimes admiring the Council's work and sometimes getting pretty angry ("This upstart Council isn't going to force us to adopt their model conservation standards.")

In 1984, the Washington state legislature passed a law requiring that its Council members had to represent the state's two halves — one from the west side of the state and one from the east. Up until that time, all the state's representatives had lived west of the Cascades. When a position opened in 1985, Trulove got a call from Governor Booth Gardner asking him to be the state's first eastern representative. He found a lot of confusion and fear about the Council on his water-shy side of the state, and it took, and is still taking, some work to convince his constituents that

the Northwest Power Act forbids the Council to usurp any water rights.

Trulove, who holds his degrees, including a doctorate, from the University of Oregon, fell into economics "by accident." He got to the university and discovered courses he didn't even know existed ... anthropology ... history of philosophy ... geologic history of life ... a seminar in sonata cycle. "I grazed through the university until I was running out of money, and I thought, you know, it might not be a bad idea to graduate."

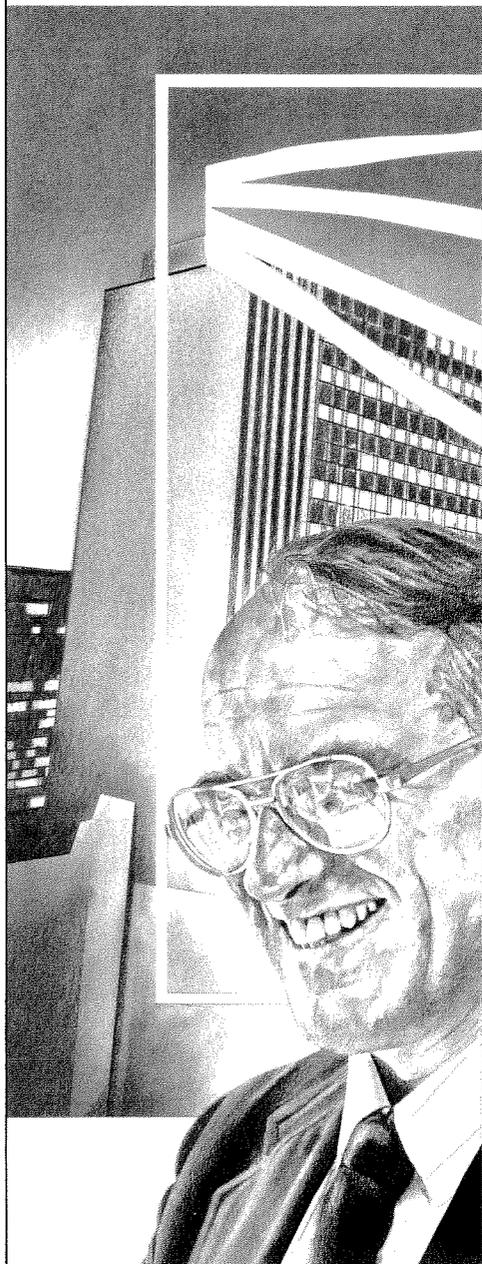
Economics was the one subject he could graduate in within a year, so he signed up for his first ever course, an upper division 400 level course without "ever having had that beginning stuff." It was, he found, the perfect subject — somewhere between those "wishy, washy" social sciences and the "cut and dried" hard sciences.

Trulove lives in Cheney with his wife and three children.

### **Q.** What do you see ahead as the key power issues for the region?

The Council is working to define those through the current process of developing a supplement to our 1986 Power Plan. Clearly, the transition from a region that has been very surplus to a region that must begin thinking about resource acquisition is going to be an area of major attention. That will require us to be more sophisticated about what a surplus is and what it means. I think there's confusion in the region about this. A diminishing surplus is a reason to be ready for action, but how much and when will be controversial.

If we are going to reduce controversy over whether actions are premature or prudent, we need to have a common view of the surplus. Then we must spend a lot more time talking about resources that are cheap, but which, nonetheless, require the expendi-



A diminishing surplus is a reason to be ready for action, but how much and when will be controversial.

ture of funds. Even with conservation resources, there must be expenditures. And utilities typically want to defer those expenditures as far into the future as they can.

I think there's going to be quite a job in developing a regional consensus about what actions are

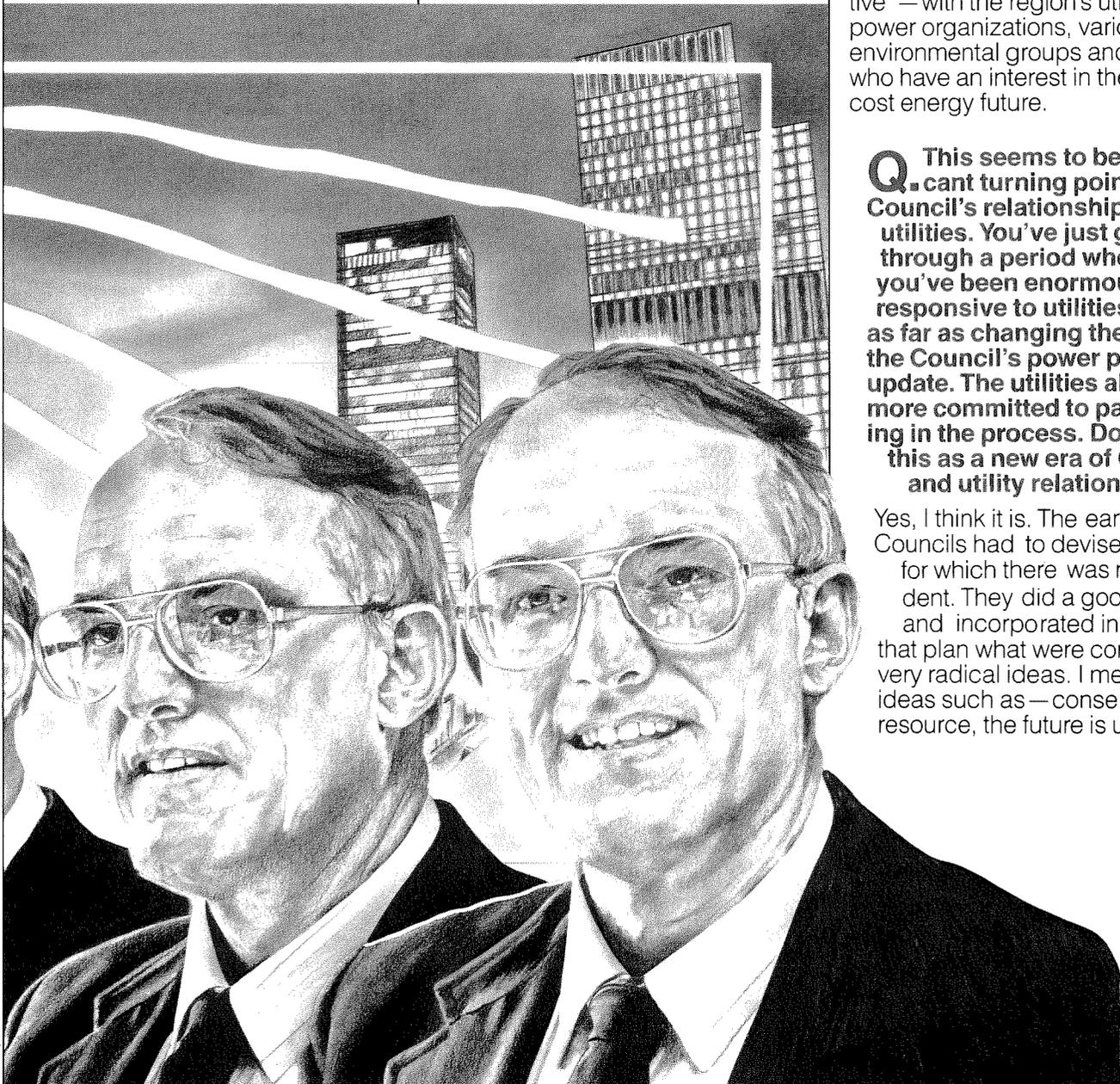
prudent, and whether they do in fact reach a least-cost solution. In this respect, it is easy for utilities to mistake "least-grief" planning for least-cost planning. We all must labor to keep our sights on the least-cost goal.

An issue that will over-arch all

our power planning efforts is one of style and process. We've got to work through a list of important questions and concerns that have no obvious right or wrong answers. We've got to work in a cooperative arrangement — and I emphasize the word "cooperative" — with the region's utilities, power organizations, various environmental groups and others who have an interest in the least-cost energy future.

**Q.** This seems to be a significant turning point in the Council's relationship with utilities. You've just gone through a period where you've been enormously responsive to utilities, going as far as changing the pace of the Council's power plan update. The utilities also seem more committed to participating in the process. Do you see this as a new era of Council and utility relationships?

Yes, I think it is. The early Councils had to devise a plan for which there was no precedent. They did a good job and incorporated in that plan what were considered very radical ideas. I mean radical ideas such as — conservation is a resource, the future is uncertain



and we must deal with it systematically. Over a period of three or four years, those became ideas that were pretty universally accepted.

Yet I think several of the specific items in the power plan were misunderstood by many. Our Action Plan is a menu of actions that should be taken by all the players in the region if we want to achieve the least-cost energy future laid out in the plan. We have done a reasonably good job with Bonneville working through some of those items. There are other parts where we've lagged. Probably that simply reflects that in a highly surplus period nobody felt compelled to go back and check the blueprint to see what we were building, because the feeling was we didn't need to build anything. Yet, it gave us time to work out a lot of interpersonal, interinstitutional relationships.

The worries about global warming and the greenhouse effect are on everyone's mind. From a power planning standpoint, we need to follow this issue, because it translates into the potential future cost of thermal resources and whether or not they can be built. That, in turn, may fundamentally affect the costs of electricity in the Northwest. It may affect the nature of the Council's resource portfolio. Right now it doesn't appear there are any non-controversial answers. So we need a systematic process of working through and testing how hard the data are and being very public and up front about the need, if it arises, to make a judgment call.

Another area that is going to be very important and very, very difficult to assess is the area of institutional changes in the electrical industry. What is the role of independent power producers? What is the role of deregulation? Is deregulation a certainty? Is there going to be bidding? As a region, we need to look at those possible institutional structures and determine, first of all, if there are any scenarios that would be potentially detrimental to the region. That

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might focus our policy efforts on trying to prevent those from happening.

More broadly, we need to look at the whole range of possibilities and decide what kind of adjustments we need to make in our thinking about the electric industry in the Northwest, and how we can take any of these potential models and use them to our benefit. It's premature to say that the utility world of the future is going to be one of free enterprise bidding by independent power producers, and a lot more competitive ... or that the old utility industry, with its obligation to serve and all the trap-pings, is a thing of the past. It would be equally foolhardy to say there's going to be no change in the current system.

So, we've got to assess what change is likely, what possible kinds of institutional arrangements and networks might result, and how they might fit in. This is going to be a groping process of the first order. It's going to be a lot more successful if we devise a way to grope toward an answer together with the region.

**Q. Couldn't the power plan complement a resource bidding system? In the East, where there is bidding on resources, they have identified a lot of resources as a result, but they don't always have a way of knowing if these resources will increase their long- or short-term costs, because they don't have a plan to measure them against.**

That's true. There are a few people in the country who are beginning to realize that pure market bidding does not necessarily result in a least-cost path for energy. It can, if you have a least-cost plan as a backdrop. You've got to have something to measure the results of your bidding by. That puts a premium on the least-cost planning we're doing. There are situations where bidding can be very beneficial in terms of holding costs down. There are other situations where it tremendously increases the risks associated with resource reliability and thereby costs. We need to be very careful before plunging into this.

There are certainly some possible benefits, for example, where bidding might help us find alternatives to resolve some potential environmental problems associated with known resources. Clearly, there is no way to generate additional electricity without having an impact on the environment. Whether the negative impact can be mitigated or not is often a question of considerable controversy.

If you're trying to meet very rapid economic and load growth, you have to include resources that are technologically feasible. That is why our plan and nearly everyone else's relies on the construction of coal-fired plants to fill the need. But, coal is a resource of last resort. Nobody wants to take the environmental risk. Coal plants are very expensive to build. They have long lead times. They have a number of characteristics that don't endear them to anyone.

One advantage of the bidding process might be to uncover some new resources that can be cost competitive with those scary dragons such as coal-fired plants. Or, bidding might reduce the cost or improve the availability of existing resources. Conservation is the

cheapest resource around. Our assumptions about how much that conservation resource costs depend on our conceptions of the current standard delivery mechanisms. It may be heresy, but I often think that the standard utility delivery mechanism may not be the least-cost way to achieve all conservation. Through a bidding process, one might find a company or organization with the expertise to design and undertake a program which could deliver conservation less expensively.

We might find ways of bundling cogeneration capacity, or commercial savings, or improvements in the use of the system, or other resources. There are things that we have not thought of that might be seen as opportunities by some imaginative person or organization. Bidding might reveal some of these.

**Q. One of the Council's big dreams has been coordinated resource development. You have just mentioned two resources that don't necessarily occur where they are needed. Cogeneration is usually where the pulp and paper mills are. Conservation may or may not occur in a deficit utility's district. Is coordinated development just a nice dream, or is there any possibility that we can realize it?**

To this point, candidly, it seems to be more of a nice dream. If we can continue to build good rapport with the utilities and with Bonneville, we may be able to begin thinking about some creative ways to approach these problems [of resource development]. For example, the problem of conservation transfers is being worked on. A number of utilities and regional power organizations are trying to figure out how this could be done.

Radically different approaches may be possible. Perhaps some of Bonneville's surplus could go into a conservation account, which could be sold to a utility that needs the power. With the proceeds of that sale, a trust fund might be established to fund conservation efforts in parts of the region where conservation opportunities are most abundant.

There may be some very interesting arrangements, financial and other, that would allow for the transfer, perhaps even some type of power broker. It's not inconceivable that under the right circumstances, a private brokerage operation or publicly owned entity could put together deals. It happens all the time in the market, for various commodities. Or, consider financial markets and the role of financial intermediaries such as savings banks. Perhaps we need power intermediaries ... a sort of power banking institution. Both buyer and seller could be far better off than they would be otherwise. We haven't begun to even explore those kinds of situations. Perhaps it is because the wolf has not been at the door.

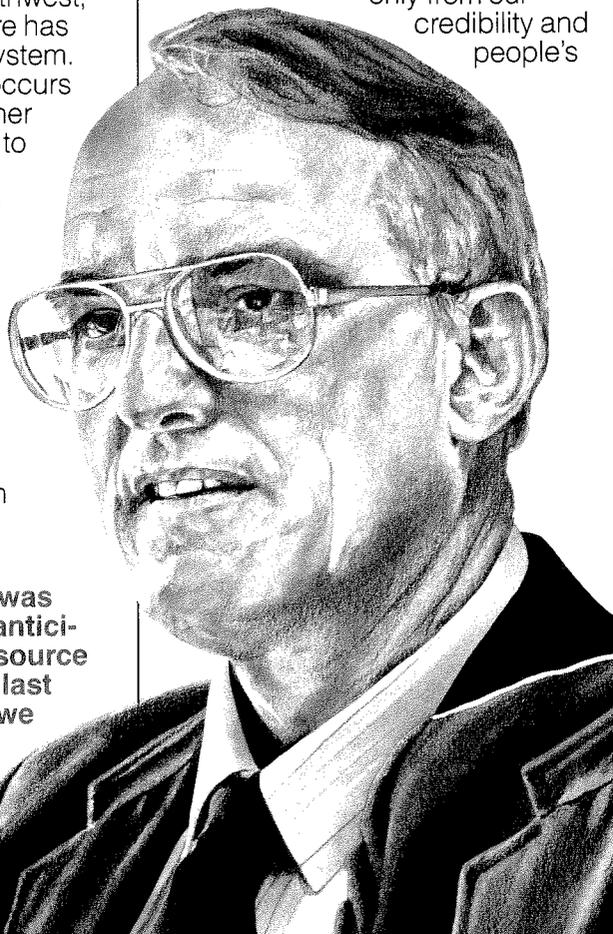
The Council has been saying, develop your resources jointly. It appears the [resource] needs are unevenly spread, and the availability is unevenly spread. And everybody looks at the situation and says, "Yeah, you're right, we don't disagree, but we don't see any reason to do anything."

Well, as far as I can tell, the markets for electricity have been surplus, not just in the Northwest, but all around us, and there has been a lot of slop in that system. But as economic growth occurs in the Northwest and in other regions, that slop is going to disappear. Things are going to get a lot tighter. And all of a sudden there may be the incentive to be creative. It seems to me the Council's role is to provide ideas for the region that make good sense in terms of least-cost power planning, to keep the issue before the region and to provide a forum for creative thought.

**Q. When the Council was conceived, it was anticipated it would guide resource acquisition. During the last eight years of surplus, we haven't needed major acquisitions. How do you see the declining surplus affecting the Council's actions?**

It probably has been a blessing that the Council didn't have to start right out of the chute in a way that had been envisioned when the Act was passed. My reading of the history is that the first year was spent establishing that the Council wasn't going to go away, that it was a credible institution and, whether you liked it or not, it was going to have a role. We've worked through the years to the point where it now appears there is pretty broad acceptance both in power planning and in fish and wildlife, that we are a worthwhile institution and do provide a useful forum for developing joint regional actions.

It is very clear that, even in regulatory roles, institutions don't have absolute power. And it is also very clear to me, from my reading of the Northwest Power Act, that no one intended us to be a regulator. On the other hand, even if the Act's language on "consistency" and "taking into account to the fullest extent practicable" is ambiguous, Section 6(c) clearly lifts us out of the merely advisory category. Be that as it may, our success and our power derive only from our credibility and people's



acceptance of what we do. That's why I think it is extremely vital in the next year or two to go to great lengths to develop a consensus, so that everyone has ownership in our power plan.

Quite frankly, I don't think our plan will change very much. I believe we've demonstrated the ability to be very careful, listening to people and trying to accommodate their needs and their interests. If we find major glitches in the [plan update] process, major changes will occur. Ideally the process will promote a solid mutual understanding and, hopefully, some sort of bonding. Then, we shall be prepared when we get into a period where acquisitions are required.

Even then, there will be disagreements over timing, the level of uncertainty, and the like, and that is probably as it should be. God knows we have enough uncertainty — 13,000 or 14,000 megawatts of uncertainty is enough to almost convince one to walk away and say, why plan? But, we all know that there is probably a band of 3,000 to 5,000 megawatts where the most likely kinds of actions and choices are going to be. So we can really focus in there, although we do need to keep an eye on the high and low ends of the range to manage the risk of more dramatic changes.

But the point is, the Council doesn't have the power to go out and build or acquire any resource. Bonneville [Power Administration] has the power to acquire the output of resources, but it's not in the business of building resources. Individual operating utilities are going to have to make decisions; they're going to have to borrow money; they're going to have to turn the shovel and construct any resources that are going to be constructed, or operate the system in a more effective way. Action is totally dependent on individual utility decisions. For our plan to be relevant, they've all got to buy into the blueprint that the Council is preparing for the region. They are the ones who convert our uncertainty into risks.

There are many difficult issues where we must listen very carefully to each other. We can no longer afford to miscommunicate or be miffed if someone isn't immediately toeing the line. All of us — individual utilities, Council members and staff, regional organizations — need to be more considerate in listening to each other.

Each of us needs to feel that we are part of a network where we have some support for what we are doing. There will be individual utility problems with finance, with timing and with boards, so it will appear from time to time that individual utility actions don't mesh perfectly with the plan, and maybe they won't. But it's like a truck going down the street. You may go to shift gears and grind the gears a little bit because they don't quite mesh, but if all the parts are basically sound and are designed to fit into one another, with another try, the machine is going to operate and do the job it was intended to do.

On the other hand, individual utilities must realize there are things in their long-run interest, and that the Council's primary job is to look out for the long-run interest of the region in least-cost planning. There are going to be actions that are painful today, but which are necessary to assure a good future for ourselves and our children. It's a two-way street. We need to try to accommodate our plan so individual utility plans fit into that blueprint. Utilities must also try to accommodate their individual plans to take into account the regional and long-term interest.

**Q. How would you characterize the Council's relationship with Bonneville now?**

Our relationship with Bonneville has grown tremendously. We started out with a very tentative kind of relationship and not much indication that Bonneville wanted to be too deeply involved with the Council. They were suspicious of this upstart group. A lot of turf issues were being sorted out. One of the first things that Jim Jura did as administrator was give very

clear direction that he thought we would have a stronger region if we worked together. He did a tremendous job of leading Bonneville into a cooperative mode. Council leadership did the same.

We still don't agree on everything, but we have methods of discussing things and working out our disagreements. Both the Council and Bonneville are more careful to listen to each other, and less quick to react in any sort of angry fashion. I'm very pleased with the relationship that the Council and Bonneville have developed. It's a positive thing for the region, yet it's independent enough that we can criticize and learn from each other.

**Q. One of the things that came up in Bonneville's Programs in Perspective (PIP) meetings was utility concern about the fish and wildlife program spending. We are entering into two major fish and wildlife ventures — wildlife mitigation and system planning. What do you see ahead there?**

I'm glad you asked. In terms of the PIP process, there were some uncomfortable, but very good things that came out. It was apparent that many utilities have not followed our process in developing a fish and wildlife program.



They've been very well represented by PNUCC [Pacific Northwest Utilities Conference Committee] and Al Wright [PNUCC executive director], but individually they haven't followed it very closely. To them, the program seems to be a bewildering array of measures suggested by fish and wildlife folks that the utilities are not used to dealing with. So, they [the utilities] are worried that we are going to be spendthrifts; we are going to try to fund everything at once; that we have no notion of pace or management.

Those of us who've been involved in developing the program have been very aware of those issues. In fact, the fish program, itself, is an excellent example of the Council being responsible and working through a management kind of forum. If you think about it, we went to great difficulty to do almost impossible research to ensure that the Council was living within the mandates of the Act — "to protect, mitigate and enhance" only where the damage was caused by hydroelectric projects.

Then, after very careful research and a lot of public comment, we settled on the goal of trying to double the runs in the Columbia River Basin. That's a goal we can strive for and against which we can measure progress.

We also started a system and subbasin planning process, where we are trying to learn about the environment in each individual watershed: what the opportunities are; what their relative costs might be; and how they could all be integrated into a whole system approach. A system approach had never happened before, and it was one of our mandates. That [system planning] process is well underway.

As soon as we have its results, we can bring in the final ingredient — how much budget should we count on each year? This question has to be worked out jointly with the Council, Bonneville, the utilities, fish and wildlife agencies, tribes and the ratepayers in the region to determine how much we can spend each year, and still keep an economical and reliable power supply.

Once we have determined the budget, we know what we are trying to achieve, we know the possible ways of getting there, then we can choose those measures that get us furthest toward the goal at the least cost. We can monitor what we're doing. If something isn't working, we get rid of it and go back to our menu of potential techniques to pick the next best thing and try that.

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The Council realizes that what we want to put together is a good, long-term fish and wildlife program — one that the region's ratepayers, utilities, fish and wildlife agencies, and Indian tribes can all be proud of.

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So it seems to me we have set up an exceptionally professional approach that is the same as any major business or any major utility would use. My impression is that many utilities just are not aware that we have gone that far and paid that much attention to management. I think they are also concerned about what might come out of our wildlife deliberations. We are out asking the region right now how we ought to proceed on wildlife. There is a potential for this to be exceptionally expensive, and I think there are some in the utility industry that are not entirely convinced the Council is going to be prudent.

That perception is unfortunate, because if the Council has demonstrated anything in its years of existence, it has been a very prudent body. Moreover, there are controls on the Council. All Council members are appointed by governors. If we get way out of tune with public opinion, we are going to be reined back in. Perhaps just because we are a different kind of institution, some people haven't figured out that we actually do have controls.

Anybody who cares about the resource wants to have a stable program that is going to benefit fish and wildlife in perpetuity. One of the quickest ways to dash that dream would be to engage in a short-term program that seemed to have no controls, made no rational choices and simply looked at the utilities as a cash register. The arrogance of that approach would inflame so many people that our ability to have a wise fish and wildlife program would be destroyed.

The Council realizes that what we want to put together is a good, long-term fish and wildlife program — one that the region's ratepayers, utilities, fish and wildlife agencies, and Indian tribes can all be proud of. It has to benefit the region to the maximum extent possible over the long run.

**Q. I want to ask you a more personal question. You always look like you're having fun on the Council. Even when you're angry, you're enjoying the debate, and you obviously have an exuberance. What are some of the issues that you particularly love?**

I love the policy-making process. I love the intellectual challenge of debate — of testing ideas in public — of learning in the process — of trying to find the keys to resolving disputes — of subjecting my ideas to the challenge of others — of wrestling with issues that have no clear answer — of dealing with big issues of major importance — and of forging, in the process, what one hopes will stand as good public policy. It doesn't hurt to genuinely enjoy people as well.

In terms of issues, I particularly am attracted to those where my training in economics applies. Even better are those issues that call on both my academic training and experience in public office. Best yet are the times spent being creative and brainstorming solutions to important problems. Also, probably as a result of my local government experience, I like the challenge of implementation.

One of my goals is to better apply economic analysis to benefit the fish and wildlife program. Too much time has been spent trying to avoid that issue. By defining the terms of appropriate analysis and doing that analysis, we can have a stronger and more successful program. Another goal is to work closely with the U.S. Army Corps of Engineers to make our programs an agreed upon part of their operation. On the power side, I am eager to achieve a shared vision of the preferred future with the power interests and to see us work collectively and systematically to achieve it.

**Q. What are the most immediate challenges?**

I think wildlife is going to be a key issue this year. It's going to be fun, but it's going to be hard. I think we can really pat ourselves on the back if we have resolved a framework and are well on the way to making choices a year after we started with the issue paper.

The issue of [fish] screens and mainstem passage on the Columbia are very, very important. We need to have those dams screened to improve salmon survival, reduce the costs of spill, and to support the rest of our program. We have regional approval from all groups except the Corps. It is exceptionally important. Not only are the biological effects important, but it's my sense that the continuing controversy and political battle distracts all of us from making progress on other aspects of the fish and wildlife program. It is time we resolve our differences and move on.

We need to have those dams screened to improve salmon survival, reduce the costs of spill, and to support the rest of our program. We have regional approval from all groups except the Corps.

In the issue of monitoring and management, there are some fascinating questions about how much monitoring is enough. Clearly, if we spend all our money monitoring, we'll have great knowledge about what has happened, but no money to change it. If we don't spend enough money and time monitoring, we'll never have enough knowledge to know if we are being successful or if we might improve by making changes. There is some potentially optimal amount of monitoring to do in order to make wise decisions. This problem is faced by every business, by every agency, every organization. How much information is enough before you take action?

**Q. How do you see the Council functioning now? What is its proper role?**

This year is going to be much heavier in terms of power planning than last year, when we spent a lot of time with protected areas. I think this year it's going to be more balanced. But, the Council is constrained. Its bottleneck is that there are only eight Council members. We can only put so many things on our plate. Some things we probably do better than others.

Of those things we do well, we can only focus our best attention on a limited number.

We had a situation a couple of years ago where we spent a good deal of time on the model conservation standards and demonstrated that we were willing to listen and make rational adjustments. We got that fixed. At that time, people were saying that the Council didn't ever pay enough attention to fish and wildlife. Then we got into protected areas and devoted much of our attention to that. And we got a good product.

We've been most successful when we've been able to concentrate and limit the number of issues we take on, not because they're the only important issues, but because they're the ones in which we can make a major contribution.

Fortunately we've had bright Council members and bright staff. I might say that I think it's the best staff in the country. I don't think you could put together a better collection of individuals who could actually do this inventive work. Our product is just ideas. You can write them down, after a fashion, but that's not necessarily communicating ideas. You've got to get people interested. You've got to be able to hold their attention. You've got to convey ideas to them in a form that they have the ability to absorb.

You're never going to be able to communicate all the different parts of this often arcane, highly complex, highly technical area. Power planning is a weighty field. There are many interrelationships. The same goes for fish and wildlife. People who think biology is an exact science have really misled themselves. It is a very difficult field, especially with a natural environment that has all kinds of variables. You're trying to accomplish some goal, and you don't even know all the parameters. There is a lot of judgment involved.

To be successful, we not only have to communicate, but in many cases, we have to have people who demonstrate a willingness to go along with us without fully understanding all of the intricacies. The only way that we can measure how well we're doing is by our credibility. If we're a credible institution, then people are going to be willing to accept some of the things we do even when they don't entirely understand them. They are going to be more willing to put out the extraordinary efforts required to understand some of the things we have to deal with.

That has important implications for the way that the institution operates ... the way the members interact with each other ... the way that we interact with the public. For example, there's so much squishy information out there in

terms of biology, that it's going to be impossible to ever unequivocally say that something should or shouldn't be done, or that alternative A is better than alternative B. Unequivocal statements are very difficult. In power planning, even though we have the most advanced models in the United States and the most sophisticated treatment of uncertainty, just given that uncertainty, unequivocal statements are very difficult to make.

If we can go through a data gathering exercise with the public, where we examine the information that is available and probe to see how strong or how weak it is, we still have to do something. The Council ultimately must make a judgment call based upon the best information available including the cautions and explanations that we've heard from the best experts around.

People might say, "Well I wouldn't have made that choice, but I sure understand how you got there, because I understand the nature of the model that you're working with." That's when you know you're a credible institution. So I think that it's always important for the Council to work with people and work in a very open public process. We need to disagree with folks when we think we should, and have them feel free to disagree with us when they think they should. We need to have that kind of dialogue where rational, reasonable people will either convince the other party or agree to amicably disagree. ■



# Praise AND PROMISE

## The model conservation standards after five years

**T**he Northwest Power Planning Council's model conservation standards (MCS) were the topic of a day-long seminar in December, hosted by the Council, the Bonneville Power Administration and the League of Women Voters of Oregon. The five-year-old standards, which set energy-efficiency levels for new electrically heated houses, received support from a wide range of the speakers at the seminar.

Here's a sample of their comments:

• **Congressman Norm Dicks, Democrat, Washington:**

*Energy has been gone from the headlines for 10 years. But it's about to become a hot public issue again. Why will it come back? The answer's simple. Energy consumption is on the rise, and we need to find new supplies to meet that growing demand.*

*We talk a lot about quality of life and other benefits of Northwest living. But the real reason Boeing, Alcoa and many other employers are here isn't broiled salmon, Crater Lake or cross-country skiing. It's low-cost kilowatts.*

*The energy challenge we face today is how to keep those rates low and competitive.*

*The first issue we need to address is that we're losing our kilowatt cushion. The electricity surplus we've had through much of the 1980s is shrinking.*

*With a smaller surplus, one that may disappear within five to 10 years, the region will have to look to new sources of power as energy demands grow. Most of the options*



Washington Congressman Norm Dicks

*If all new electrically heated houses in the region were built to those standards, we could save as much as 500 megawatts over the next 20 years. That's the output from a medium-sized coal-fired electric plant.*

*are environmentally unattractive. All would be expensive.*

*But fortunately, there's a low-cost alternative resource. Conservation. Building energy-efficient homes and commercial structures.*

*My congressional district has led the move toward energy-efficient new construction. Tacoma was the first city in the region to adopt the model conservation standards.*

*If Tacoma can succeed in implementing efficient standards for new all-electric homes, there's no reason that the rest of the Northwest can't do the same. If all new electrically heated houses in the region were built to those standards, we could save as much as 500 megawatts over the next 20 years. That's the output from a medium-sized coal-fired electric plant. The cost of electricity from the efficiency measures would be half that of kilowatts from a new thermal electric plant.*

• **Sharon Nelson, chair, Washington State Utilities and Transportation Commission:**

*Should new construction in the Northwest be built to the Power Council's model conservation standards? What's democracy been telling us? In November, in Washington, in the general election, voters overwhelmingly supported an initiative that said utilities should be able to spend money on conservation.*

*Surveys tell us one thing loud and clear: customers like conservation.*

*If an initiative were set up to ask voters if they want the state legisla-*

We have done enough studies for five years. We have proven unequivocally that those MCS homes are cost-effective. Even more importantly than that, they are socially good. Those homes are quieter, safer, more comfortable, and they're what the consumer wants.

resources free up consumer and business dollars for spending or investment on more productive, more job-creating activities. The statistics indicate that dollars expended on energy produce far fewer jobs than most other consumer expenditures.

The bottom line is that every dollar currently spent on oil, gas or electricity that we can return to the pocketbooks of consumers will be able to double or triple its job-creating power throughout the economy. In Washington state alone, we spend about \$6 billion a year on energy.

• **Dick Watson, director, Washington State Energy Office:**

The central argument raised by opponents is that model conservation standards will raise the price of homes. Energy standards are perceived as yet another government regulation that raises the price of a home.

I don't think the affordability issue should be taken lightly. I think, however, that the argument as it is typically presented is much too simplified.

Failure to implement MCS and other cost-effective energy-efficiency options will increase the probability of needing expensive new resources, and this will affect affordability for everyone, not just new home buyers. And it will increase costs to businesses as well.

Critics ignore the fact that model conservation standards reduce the cost of heating a home. This is no longer a question of models and predictions. This is a verified, measured fact in hundreds of homes across the Northwest.

For most home buyers in most utility ratepayer areas, the annual principal, interest, taxes, insurance

ture to adopt the MCS, I have no doubt they'd say yes.

It is time to embrace the standards ... statewide, in all four states. Voters and ratepayers say they want MCS. It is time to bring these standards in place.

Numbers point to a stark reality: our surplus is dwindling. Surplus is down to about 700 megawatts, with load growth in excess of 3 percent a year. We should all remember that we have a 15,000-megawatt system, and at 3-percent load growth, that equals 450 megawatts a year. I was a history major, not a math major, but that tells me one thing: the surplus we've been talking about for half a decade is history.

• **Al Wright, executive director, Pacific Northwest Utilities Conference Committee:**

The fact of the matter is that energy-efficient homes at the Council's present MCS standards are cost-effective. We have done enough studies for five years. We have proven unequivocally that those MCS homes are cost-effective. Even more importantly than that, they are socially good. Those homes are quieter, safer, more comfortable, and they're what the consumer wants.

The fact is, we can build energy-efficient homes to the Council's standards, and we will build homes to the Council's standards. The electrical utility industry supports that. The performance standards the Council wants are achievable.

We must move ahead with residential and single- and multifamily MCS, get those into codes.

• **Marc Sullivan, director, Northwest Conservation Act Coalition:**

The Washington State Economic

Development Board, after a year or a year-and-a-half-long process, [recently] issued a blueprint for an economic development strategy for the state of Washington. One of the specific recommendations that the Economic Development Board made as an economic development measure was that the state of Washington adopt model conservation standards.

[That is a] recognition by the economic development circles that energy efficiency can be a fundamental element of an effective economic development strategy.

Conservation is, for economic development reasons, our best energy strategy. Conservation creates more new jobs than any other way we have of meeting new load.

The greatest benefits come, not on the energy production side, but on the energy consumption side. Energy conservation is our least costly new resource ... simply because the cost savings of conservation compared with more expensive

and energy costs for entry-level MCS homes are equal to or less than those of a comparable house built to current energy codes.

*It is an environmentally beneficial resource, one that is impervious to problems of the greenhouse effect. An MCS house will save two tons of carbon dioxide production per year relative to coal-fired generation.*

*Finally, it is a risk-resistant resource. It's not one that requires a*

*large investment far in advance of need. It's one that follows load growth very closely and minimizes risk.*

**• Scott Nelson, director, state government affairs, Washington Natural Gas Company:**

*We're as interested as anybody in low electric rates. The natural gas industry doesn't oppose, in fact we support, the implementation of MCS for electric resistance heating throughout the region.*

*The natural gas industry also is not opposed to certain constructive conservation increments in homes heated by natural gas.*

*The natural gas industry is one of the leaders in promoting conservation technology. Natural gas homes, depending on the area they're located, are anywhere from 33 percent to 50 percent more energy-efficient than they were 10 years ago.*

---

For most home buyers in most utility ratepayer areas, the annual principal, interest, taxes, insurance and energy costs for entry-level MCS homes are equal to or less than those of a comparable house built to current energy codes.



# PENNIES FOR POWER

by Gordon Lee

## Innovative financing creates Northwest's newest utility.

**I**t's not often that someone can start an electric utility with \$7. But that's all it took for Peggi Timm to form the Northwest's newest electric utility.

The Oregon Trail Electric Consumers Cooperative, headquartered in Baker, Oregon, began supplying power to 25,000 customers in rural eastern Oregon last October after Timm convinced 700 members to join for a penny apiece.

That \$7 in start-up money helped swing a multimillion dollar loan that financed the purchase of transmission lines and other distribution and generating assets in Baker, Harney, Grant and Union counties. Those assets had been owned by CP National Corporation, an investor-owned, California-based energy and telephone company.

The purchase made Oregon Trail, with annual revenues of more than \$25 million, the largest of Oregon's 18 electric consumer cooperatives. It also was the first formed in the United States since the early 1960s.

"It's one thing to talk about a cooperative," says Timm, Oregon Trail president and treasurer of Baker County. "It's quite a different thing to start one. One day, you're

investor-owned. The next, you'd better be able to run it."

Cooperatives are private, non-profit corporations, but they are owned and governed by their memberships — the people they serve. Members elect a board of directors, which sets rates and makes policy decisions. As member-owned utilities, cooperatives distribute any excess earnings back to their members as cash payments based on how much power each member consumes.

The \$7 Timm collected was crucial. The cooperative needed to prove it had community support before lenders would provide money to buy out CP National.

**O**regon law requires that to join a cooperative members must pay a "consideration." Timm settled on a penny as the fee. "I took a two-week vacation to go around signing members," Timm says. "Sometimes it took an hour to get the penny."

Timm persevered, and the 700 members she signed up convinced the National Rural Utilities Finance Corporation of Washington, D.C., to loan it \$33 million to buy CP National's Oregon holdings. That loan, combined with a \$12.5 million

guaranteed interest-free note due in four years, allowed the buyout to take place October 5.

The purchase was a friendly buyout. CP National had for several years wanted out of the electric transmission and distribution business. Since the early 1980s, the California company had jettisoned all its electric holdings in the West except for its Oregon operations. Losses from its Oregon operations alone amounted to \$500,000 a month.

CP National thought it found a buyer in 1985, when it announced that Idaho Power Company — which serves a portion of eastern Oregon and from which CP National had bought power for 40 years — had agreed to pay \$65 million for the holdings. But that deal fell through a year later.

Support for the cooperative was strong because ratepayers feared higher bills if CP National continued to run the system or if it were sold to another investor-owned utility, Timm said. CP National's request in 1986 for a 34 percent rate increase was denied by the Oregon Public Utilities Commission, but ratepayers suspected other rate increase requests would be inevitable.

**F**eared of higher bills came from the federal law that requires utilities to buy cogenerated power produced in their service territories. Cogeneration — the simultaneous production of electricity and heat — often is associated with ways industries can produce power as a byproduct of their ordinary operations or have captured and reused heat from generating power at their own small facilities.

In the cooperative's four-county territory, cogenerated power is relatively expensive, costing some 7.3 cents a kilowatt-hour, versus 2.5 cents a kilowatt-hour for power bought from the Bonneville Power Administration.

Oregon Trail still will have to buy that cogenerated power, but beginning next October it will rely on Bonneville to supply about 80 percent of its 60 average megawatt load. Because it can obtain power at lower rates from the federal power marketing authority than investor-owned utilities can, Oregon Trail figures its rates will be below CP National's. "We're able to charge less," Timm says. "We don't have to pay state or federal income taxes."

**It's one thing to talk  
about a cooperative.**

**It's quite a different  
thing to start one.**

**One day, you're  
investor-owned. The  
next, you'd better be  
able to run it.**

That's not to say ratepayers won't see higher bills. Rates will rise about 18 percent, Timm predicts, to pay for \$15 million in improvements to the transmission system the cooperative took over. But that's a smaller increase than ratepayers might otherwise have experienced.

"If you look at our rate chart today, it's almost identical to Pacific Power and Light Company's," she says.

Timm said that she and the other organizers originally looked into forming a people's utility district, rather than a cooperative, to buy CP National's holdings. But forming utility districts in Oregon requires voters to approve the step in two separate elections. That wasn't likely in the four eastern Oregon counties, Timm says.

"The cooperative fits the lifestyle of our community. It made it a friendly takeover." ■

# POWER TRANSMISSION'S 1<sup>ST</sup> CENTURY

## The Northwest was the scene of the first power transmission in 1889.

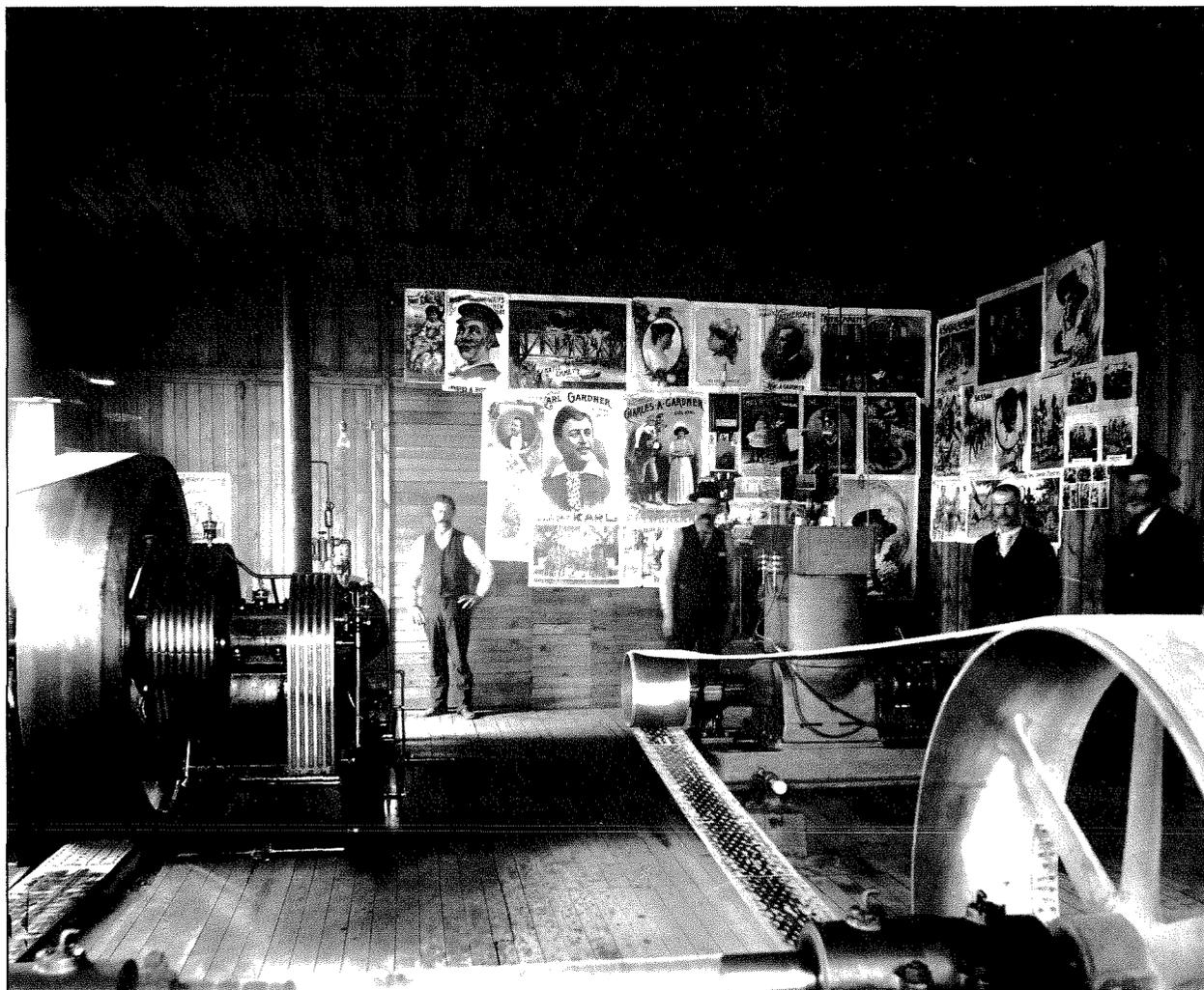
by Ruth L. Curtis

**E**xactly 100 years ago, the newly formed Willamette Falls Electric Company (the predecessor of Portland General Electric) became the first utility in the world to transmit electric power over a distance. The transmission shipped direct current power from the Willamette Falls in Oregon City through six wires to

Portland, Oregon — almost 15 miles. Direct current (DC) proved ineffective over long-distances, however, so, in 1890 the transmission was changed to alternating current (AC) — the most common current used today. Nonetheless, the Willamette Falls experiment capped a decade of electrical achievements, a

remarkable number of which occurred in the Northwest.

The late 1870s and the 1880s were momentous in the world of modern electric systems. Just prior to the electric age, gas jet lamps commonly were used to light cities, while rural areas still depended on oil lamps. That a change was coming was evi-



Photograph: Oregon Historical Society, Neg. No.: 01766010

dent the first night of Philadelphia's 1876 Centennial Exposition. With great ceremony, the conventional gas lights were dimmed, and electric arc lamps lit up the night.

The arc lamp was the first electric light developed. It employed an electric current that jumped through the air from one electrode to another, making a harsh, brilliant light. The arc lamp's most famous developer was Cleveland's Charles F. Brush, who in 1878 produced a simple, reliable lamp and dynamo (generator). The first of those lights came to the Northwest in 1879, when the ship, the S.S. California, equipped with six arc lamps, docked in Portland.

The next year, George W. Weidler erected an electric dynamo in his Portland sawmill to operate 10 electric arc lamps. He extended the wires to serve three lamps on the Ainsworth Dock and a lamp near the Clarendon Hotel. Within a few months, several merchants had ordered 10 arc light dynamos from Weidler, which were powered by the Weidler Mill steam engines. This was the first electric system in the Northwest.

But the electric industry was already undergoing another revolu-

tion, the one brought on by Thomas Edison when he invented the incandescent light bulb in 1879. In an incandescent light, the electricity flows in a filament completely enclosed in a vacuum bulb.

Edison's first commercial order for an incandescent lighting system was for the steamship, S. S. Columbia, owned by Oregonian Henry Villard. Villard became an enthusiastic supporter when he saw Edison's first public exhibition of incandescent lamps at Edison's home in Menlo Park on New Year's Eve 1879. Villard's ship was then being built in Pennsylvania for his Oregon Railway and Navigation Company, and Edison was invited to install the lighting system.

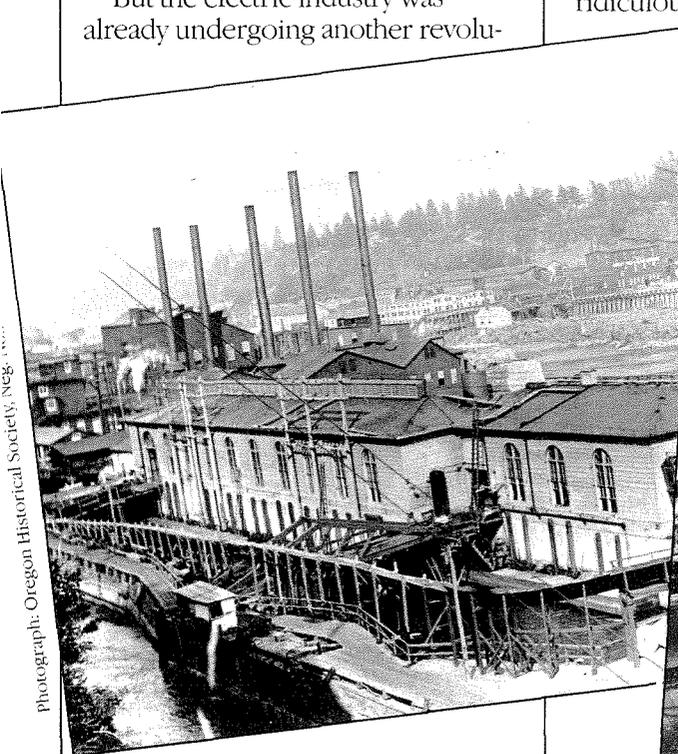
The S. S. Columbia arrived in Portland, Oregon, on July 22, 1880. A few weeks later, wires were run from the ship to the shore to light a street corner near the dock. The *Oregonian*, Portland's newspaper, later reported, "The enterprise of a Western railroad (the OR&N) in 1880 gave Edison's greatest invention, the electric light, its first practical use, while the conservative East was still trying to laugh it off as a ridiculous joke."

In 1882, Edison began operating the first central electricity system in the country at Pearl Street in New York City. Again, the Northwest was not far behind. Just three years later, the first incandescent central system west of the Rockies was begun in Seattle (completed in 1886). S.Z. Mitchell organized the Seattle Electric Lighting Company and built a generating station at Jackson Street, with a distribution system along the waterfront. The system produced enough electricity for hundreds of bulbs.

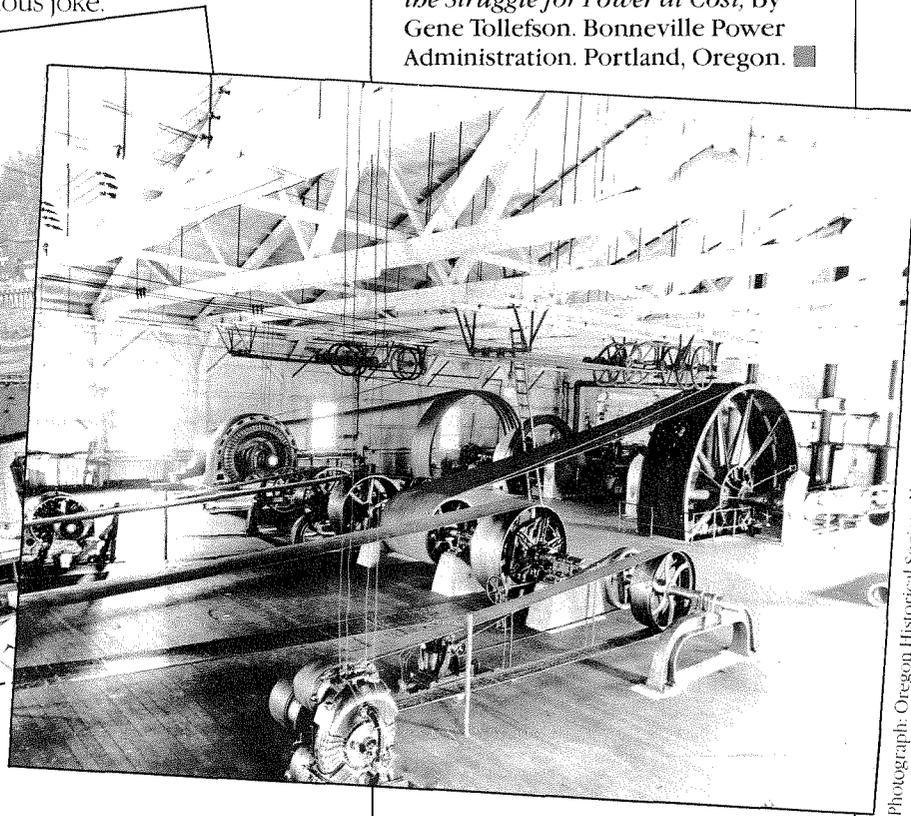
The stage was set for lighting the world. In the Northwest, private and public utilities quickly entered the field and began to build today's electric system. The French writer Emile Zola issued a prophecy in 1885, a prophecy that has become reality:

*"The day will come when electricity will be for everyone as the waters of the rivers and the winds of heaven. It should not merely be supplied, but lavished, that men may use it at their will as the air they breathe."*

For more information, see *BPA and the Struggle for Power at Cost*, by Gene Tollefson. Bonneville Power Administration. Portland, Oregon. ■



Photograph: Oregon Historical Society, Neg. No.: CN002829



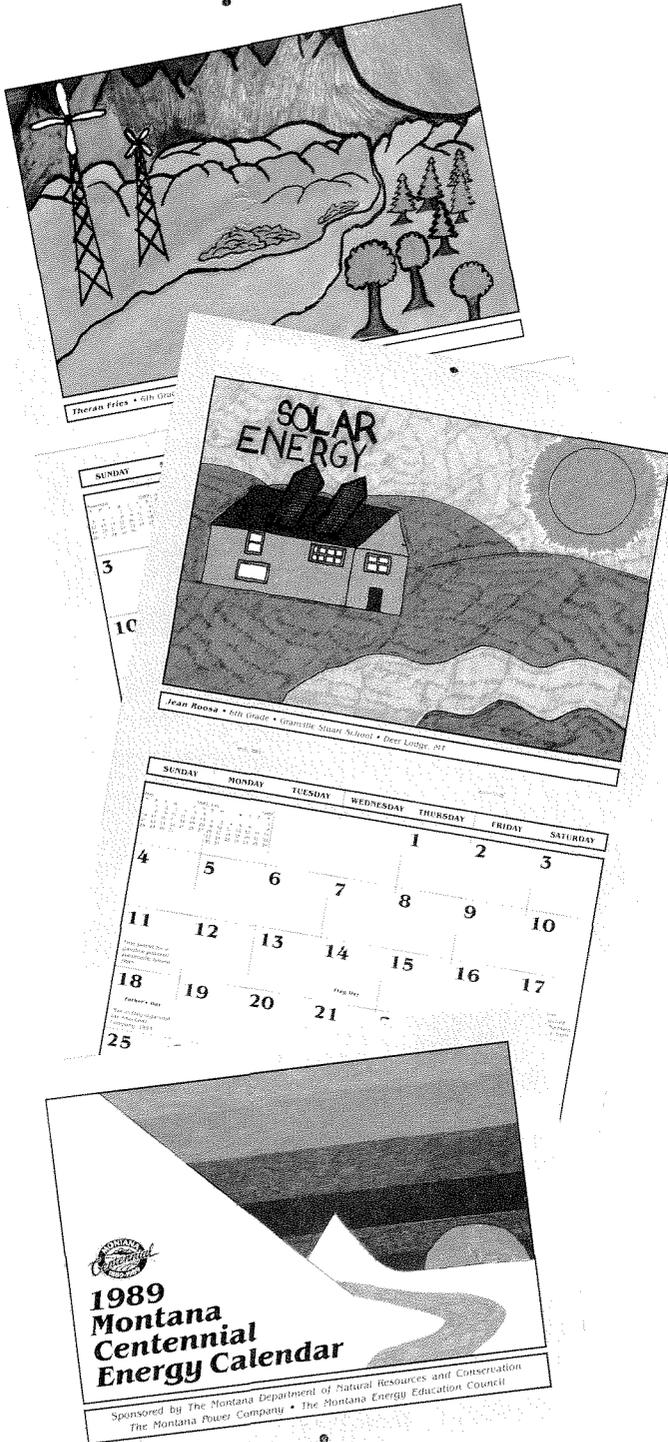
Photograph: Oregon Historical Society, Neg. No.: CN002829

# SHORTS

Columbia River Indian tribes have been granted up to 360 acres of fishing sites in a law signed by President Reagan in November. The sites replace traditional fishing grounds reserved by the tribes when they negotiated treaties in 1855, surrendering much of what is now Oregon, Montana, Idaho and Washington. When the federal dams were built on the Columbia, many of the tribes' reserved fishing sites were flooded out. They were offered 400 acres in new sites, but only 40 acres were turned over to the tribes. The new acreage is primarily U.S. Army Corps of Engineers' land, and it will be maintained by the Corps.

Montana celebrates its centennial this year with an energy awareness calendar featuring the art of fourth, fifth and sixth graders. The calendar project was co-sponsored by the state's Department of Natural Resources and Conservation, the Montana Power Company and the Montana Energy Education Council. Other participants in the energy education effort included the Bonneville Power Administration, the Northwest Power Planning Council, the National Center for Appropriate Technology and the Alternative Energy Resources Organization. Copies of the calendar were distributed to Montana teachers, and 63 of the original art pieces are making the rounds of the state as part of a traveling centennial exhibit. (For more information: Peggy Nelson, Department of Natural Resources and Conservation, 1520 East Sixth Avenue, Helena, Montana 59620, 406-444-6697.)

While Japan's gross national product rose by 63 percent from 1973 to 1986, the country's energy use rose only 6.4 percent during the same period, thanks to energy conservation. Most of this conservation comes from the industrial sector, which is governed by a national industrial energy conservation policy. The government funds research into new technologies and equipment development, plus it provides low-cost loans and in-factory awards for companies switching to more efficient facilities and operations. In addition, there is a national trend toward new, energy-lean electronics and manufacturing plants and away from more energy-consuming iron and steel companies. (Source: *Financial Times*, Business Information, Ltd., Greystroke Place, Fetter Lane, London, England, EC4A 1ND.)



# SHORTS

The Hanford Reach stretch of the Columbia River is one step closer to permanent protection with the signing of legislation proposed by Washington Senators Dan Evans and Brock Adams and Congressman Sid Morrison. The legislation authorizes a study to determine whether the reach, the last free-flowing segment of the Columbia in the United States, should be included in the Wild and Scenic Rivers System of federally protected waterways. Plans developed by the U.S. Army Corps of Engineers to dredge a transportation channel through the reach will be put on hold by the legislation for at least eight years.

Idahoans use more water per person than any other Americans, and the state as a whole ranks second nationally in water used for irrigation and third in overall water use. In low water years such as the past few, Idaho farmers have had to cut back to as little as half their normal use. The result — harvests were down, but only slightly. The state is now looking at whether new dams or more conservation technologies are needed to help the state face dry years. (Source: *The Spokane Chronicle*, Spokane, Washington.)



NPPC file photo

# CALENDAR

**January 11-12** — Northwest Power Planning Council meeting at the Owyhee Plaza Hotel in Boise, Idaho.

**January 14-19** — 1989 Annual Meeting of the American Association for the Advancement of Science, in San Francisco, California. For more information: American Association for the Advancement of Science, 1333 H. Street NW, Washington, D.C. 20005, 202-326-6440.

**February 7-8** — Training session on stream rehabilitation, at the Inn of the Seventh Mountain in Bend, Oregon. Sponsored by the Oregon Chapter of the American Fisheries Society. For more information: Jeff Dose, Umpqua National Forest, P.O. Box 1008, Roseburg, Oregon 97470, 503-672-6601.

**February 8-9** — Northwest Power Planning Council meeting at the Tye Hotel, 500 Tye Drive, Tumwater, Washington.

**February 8-10** — 1989 Annual Meeting of the American Fisheries Society, Oregon Chapter, at the Inn of the Seventh Mountain in Bend, Oregon. For more information: Walt Webber, 61374 Parrell Road, Bend, Oregon 97702, 503-388-6363.

# CALENDAR

**February 9** — Global Warming Seminar sponsored by the Northwest Power Planning Council, at the Tye Hotel, 500 Tye Drive, Tumwater, Washington.

**February 9-10** — "Lighting Design: Economy, Efficiency, Aesthetics," in Boulder, Colorado. Sponsored by the Joint Center for Energy Management. For more information: Joint Center for Energy Management, Campus Box 428, University of Colorado, Boulder, Colorado 80309-0428, 303-492-6551 or 492-3015.

**March 2-3** — Second Annual Northwest Energy Code Conference, in Spokane, Washington. For more information: Association of Washington Cities, 1076 S. Franklin Street, Olympia, Washington 98501, 206-753-4137.

**March 8-9** — Northwest Power Planning Council meeting in Montana.

**April 5-6** — "The 1989 HVAC and Building Systems Congress" of the Association of Energy Engineers, in Santa Clara, California. Cosponsored by the Western Area Power Administration, the National Energy Management Institute, and Pacific Gas and Electric. For more information: Association of Energy Engineers, 4015 Pleasantdale Road, Suite 420, Atlanta, Georgia 30340, 404-447-5083.

**April 12-13** — Northwest Power Planning Council meeting in Oregon.

**July 5** — Symposium on Indian Fisheries, at the Sheraton Towers in Seattle, Washington. Sponsored by the American Fisheries Society-Western Division and the Native American Fisheries Committee. For more information: Frank Halfmoon, Symposium on Indian Fisheries, P.O. Box 14929, Portland, Oregon 97214, 503-231-6749.

A more detailed calendar of Council committee meetings and consultations is carried each month in Update! See order form on back cover.

*Compiled by Ruth L. Clarris*

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## NORTHWEST ENERGY NEWS

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## COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council. (Note: not all publications are available immediately, but they will be sent to you as soon as possible.)

### Publications

- 1987 Columbia River Basin Fish and Wildlife Program
- 1986 Northwest Power Plan
- (88-21) Draft 1988 Supplement to the 1986 Northwest Power Plan
- (88-21 A) Appendices to Draft 1988 Supplement to the 1986 Northwest Power Plan
- (88-26) Salmon and Steelhead Round Table: Summary of Proceedings
- (88-28) Notice of Proposed Amendment to the Columbia River Basin Fish and Wildlife Program — Yakima Project Phase II Screens

### Mailing Lists

Please add my name to the mailing lists for the following newsletters. (Note: do not check if you already are receiving them.)

- Northwest Energy News* (this bimonthly magazine)
- Update!* (monthly public involvement newsletter that contains the Council meeting agenda and a more detailed publications list)

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