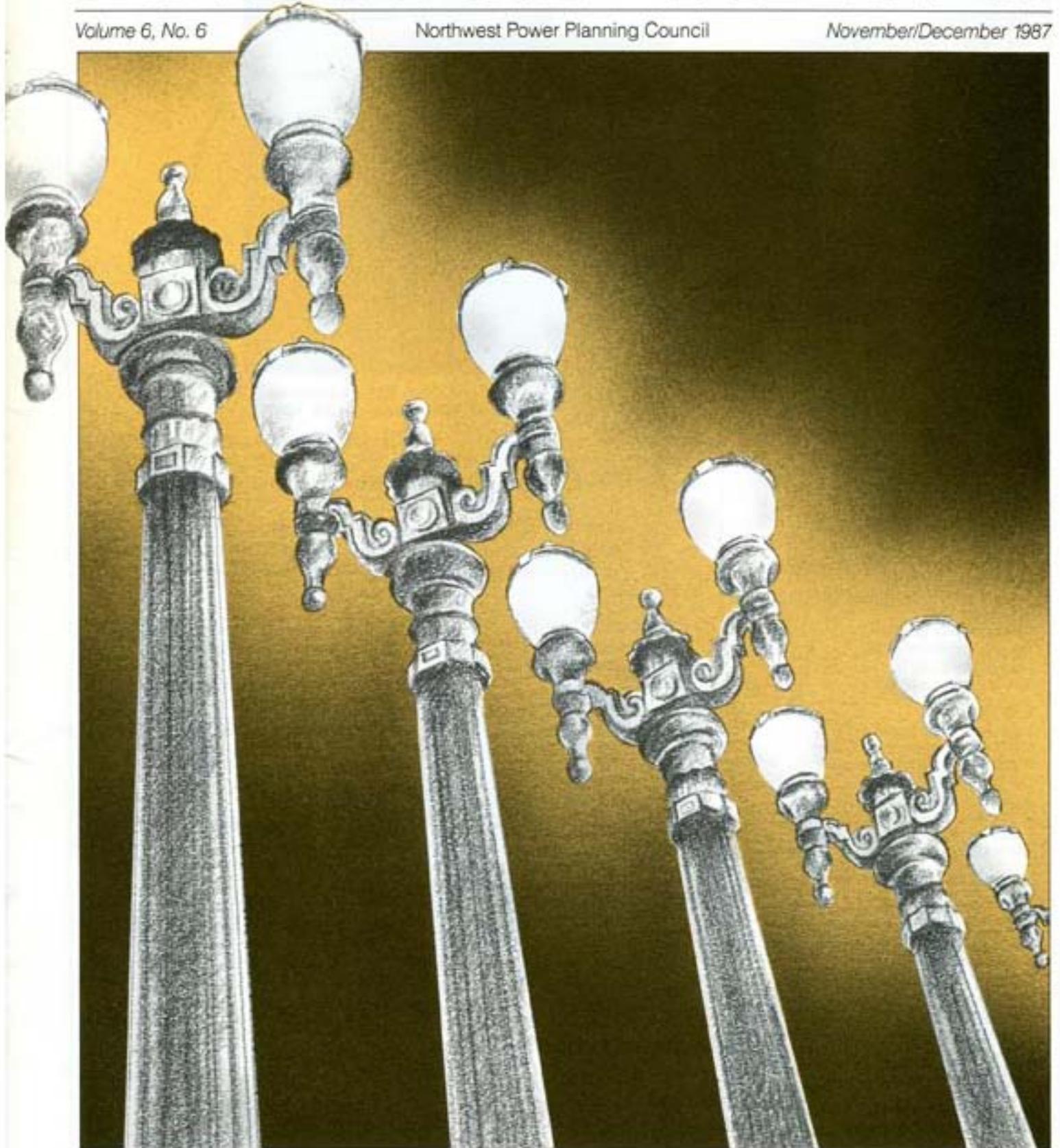


N O R T H W E S T
ENERGY NEWS

Volume 6, No. 6

Northwest Power Planning Council

November/December 1987



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N O R T H W E S T ENERGY NEWS

is published bi-monthly by the Northwest Power Planning Council, 850 S.W. Broadway, Suite 1100, Portland, Oregon 97205. Reprinting is encouraged. Please credit Northwest Energy News.

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

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Editor's Notes



**Marjorie (Jody) Sims Lawrence
July 24, 1949 — August 23, 1987**

This summer, the Council suffered the death of one of our staff. Jody Lawrence, who worked in both our fish and wildlife division and served as Washington Council Member Kai Lee's assistant, died on August 23, after a long battle with cancer.

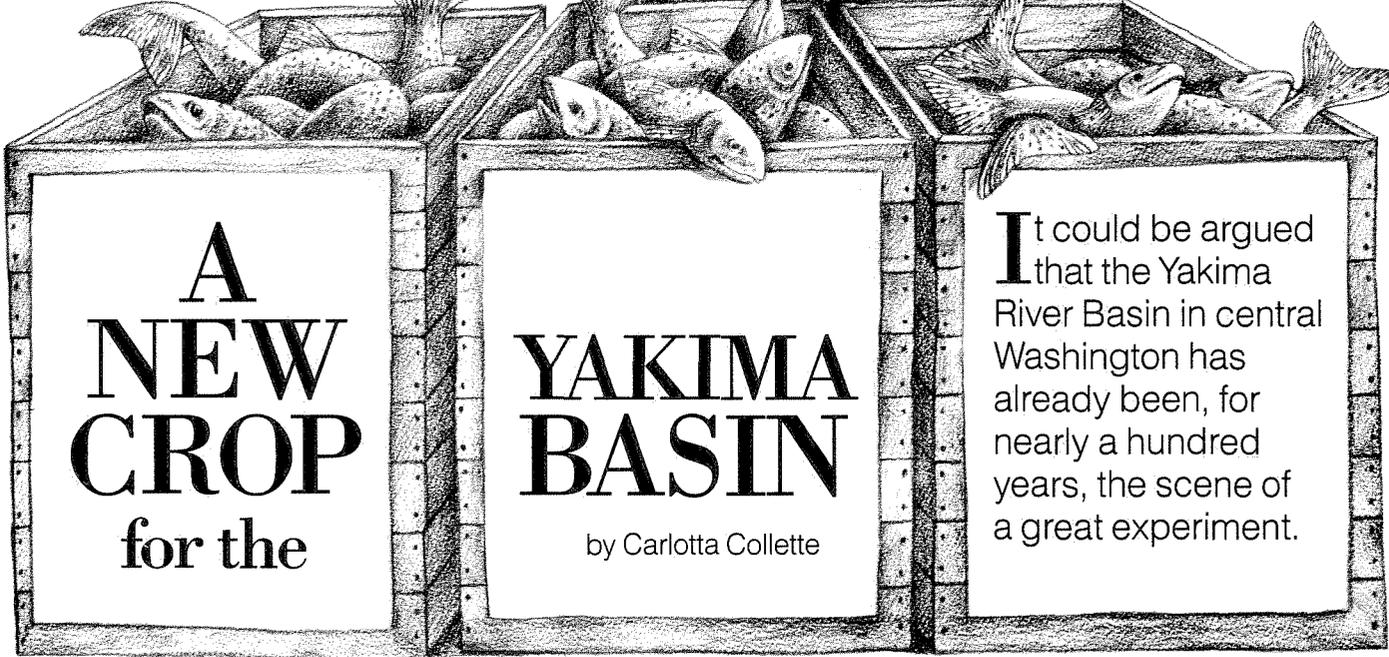
A complete list of Jody's contributions to the Columbia River Basin Fish and Wildlife Program would be a long one, and it would not convey her warmth and creativity. Those of us who worked closely with Jody deeply miss her gently persistent vision.

Because of the October mailing of the Northwest Power Planning Council's 1987 Annual Report, this issue of Energy News covers November and December, rather than October and November.

COVER: This illustration of Portland's historic street lights is by Lynn Carson.

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**A
NEW
CROP**
for the

**YAKIMA
BASIN**

by Carlotta Collette

It could be argued that the Yakima River Basin in central Washington has already been, for nearly a hundred years, the scene of a great experiment.

Illustration by Joan Barbour

Before a matrix of irrigation ditches was carved from the crust of the valley, it was bone-dry. Spring brought the only moisture, when the wash of many streams carried the snow-melt from the eastern incline of the North Cascades into the Yakima River.

In those days, the runoff could be counted on to carry millions of young spring chinook and steelhead from their spawning gravels in the upper reaches to the Columbia River and on to the sea. Each year, as many as a half million survivors, fattened in the North Pacific, pushed back up the Columbia and turned in at the Yakima.

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To transform the Yakima River Basin from arid rangeland into lush farmland required the rerouting of water from natural courses into man-made canals and out onto flat acreage. It took millions of dollars, the concerted efforts of the U.S. Bureau of Reclamation and landowners with the will to irrigate to carry out the huge project. If yields are any indication, the experiment was a success. The new Yakima Valley is one of the most productive agricultural areas in the country.

But the salmon and steelhead runs, cut off by dams and confronted with seasonally drained riverbeds, have been greatly depleted. By the 1970s, salmon and steelhead returning to the Yakima Basin numbered fewer than 1,000.



Nonetheless, above the irrigation diversions, there remains some of the finest salmon and steelhead spawning and rearing habitat in the whole Northwest. If the fish can get to it, this habitat could make up for nesting areas lost in other parts of the Columbia River Basin because of the development of the region's elaborate hydropower system. This assumption is the basis for what is one of the most complex elements of the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program—the long-range plan to rebuild harvestable salmon and steelhead populations in the Yakima Valley.

Work in the Yakima includes more than 20 fish passage projects at diversion dams; study of the feasibility of creating additional water storage to extend the season when water is available; and a

proposed package of water conservation projects to make the most efficient use of existing water.

Integral to all this activity is the Yakima/Klickitat production project master plan. (The Klickitat River Basin was included in the master plan proposal because the first plans for the Yakima contained a hatchery to be built on Outlet Creek in the Klickitat drainage. Adjacent to the Yakima Basin, about half of the Klickitat Basin is on Yakima Indian Reservation land.)

The master plan combines fish production in state-of-the-art hatcheries and experimentation about how fish produced in these hatcheries can be used to rebuild natural runs. With the master plan, the Council is attempting to maximize the number of salmon and steelhead that can be produced naturally in the basin, while minimizing and adapting to the forces that could jeopardize new and existing fish populations. A portion of the wild returning adult spawners will be collected and bred in hatcheries for eventual release back into the wild environment of upper basin streams.

The project is experimental because, while hatcheries can improve the chances of survival at various life stages of salmon and steelhead, they may also introduce new threats to naturally spawning stocks. Since preserving these native populations with their genetic strengths is a priority in the fish and wildlife program, it is essential to find ways to introduce large numbers of new fish without harming the natural runs.

In the past, genetic diversity in fish runs has been threatened by the selective breeding in hatcheries. Some hatcheries have also had persistent outbreaks of deadly fish diseases that could spread to wild populations if extreme care is not taken. Large

numbers of hatchery-released fish could also overwhelm native salmon and steelhead, competing for spawning mates, nesting sites (redds) and rearing habitat. In adult stages, the larger numbers of hatchery fish encourage expanded harvests in which native stocks are caught along with the more numerous hatchery fish. This could result in overfishing of the naturally spawned fish if precautions are not taken in advance.

By building into the proposal a framework for quickly identifying these and other problems and managing them, the Yakima plan will likely become a model for similar undertakings in the Council's efforts to double salmon and steelhead runs throughout the Columbia Basin.

It is a great experiment, a test stretched out to possibly 50 years. When fully developed, it will include scientific hypotheses to be tested in a laboratory that covers nearly 7,500 square miles. In capital costs alone, the various production facilities, including three primary hatcheries and three smaller facilities for acclimating young fish prior to their release, are expected to run about \$20 million. Another \$2 million to \$3 million will be needed annually to operate the facilities and monitor and evaluate the experiments carried out in them.

In terms of pounds of fish produced, too, this is likely to be one of the biggest projects in the region. When the hatchery operations are in full swing, a total of 10 million young salmon and steelhead smolts (7 million in the Yakima and 3 million in the Klickitat drainages) are expected to be produced each year. Of these, 76,000 to 175,000 could be returning annually as adults.

For the Yakima Indian Nation, which occupies 1.4 million acres split between the two river basins,

as well as for non-tribal fishers, the production project will provide spring, summer and fall chinook, plus coho and steelhead for harvest. The tribe developed a profile of which stocks could be raised in the subbasins, based on recent and historical run sizes, current harvest and spawning levels, available habitat, biological survival factors and the particular requirements of various experiments.

The master plan integrates this production profile with a report evaluating various proposed hatchery and smaller facility sites; a conceptual facility design; a survey of fish runs and stocking patterns since 1980; a proposed monitoring program; and management policies and procedures.

The full master plan proposal is more than 1,000 pages long. It was released in February for review by state, tribal and federal fishery biologists. In late summer, the Council distributed a summary and discussion paper about the master plan to gain a wider review of the enormous proposal.

After consulting with interested parties and reviewing public comment, the Council voted in October to approve the plan with minor changes. Preliminary design work is expected to be completed in April 1990. The Council will review the final design before construction can begin.

To transform the Yakima River Basin from arid rangeland into lush farmland required the rerouting of water from natural courses into man-made canals and out onto flat acreage.

ALL THE GOALS OF THE YAKIMA MASTER PLAN

There are really two sets of goals in the Yakima master plan. There are production goals: increase natural spawning of certain stocks in the basin; increase the number of fish that can be harvested without depleting the runs over time; and maintain the genetic characteristics inherent in the basin.

There are also research goals: determine the best way to supplement natural runs; identify the associated genetic risks to locally adapted populations; and analyze other species interactions that occur.

Success in the Yakima will hinge on how well these goals are balanced, how precisely research and production complement each other in the overall design of the project. But even the best designs are subject to the realities of nature and the many social, political and biological interactions that affect salmon and steelhead in the Pacific Northwest.

Salmon from the Yakima must still migrate through four mainstem Columbia River dams. (An advantage of the Klickitat subbasin over the Yakima is the fact that only one mainstem Columbia River dam, Bonneville, crosses the Klickitat migratory route.) The fish must still mature in the semi-hostile environment of the ocean. They are still subject to commercial and sport fisheries all along their route. And they must still return to a basin where the basic stuff of their existence, water, is in short supply.

No amount of planning can guarantee success against such unmanageable circumstances. But the Council has adopted an approach called "adaptive management" to increase the probability of success. The adaptive manager assumes that neither inaction in the face of difficult odds nor diving in blindly will produce the best results. The adaptive manager moves with caution like an explorer in a strange land, reading the landscape and being alert to changes that influence the path to be taken.

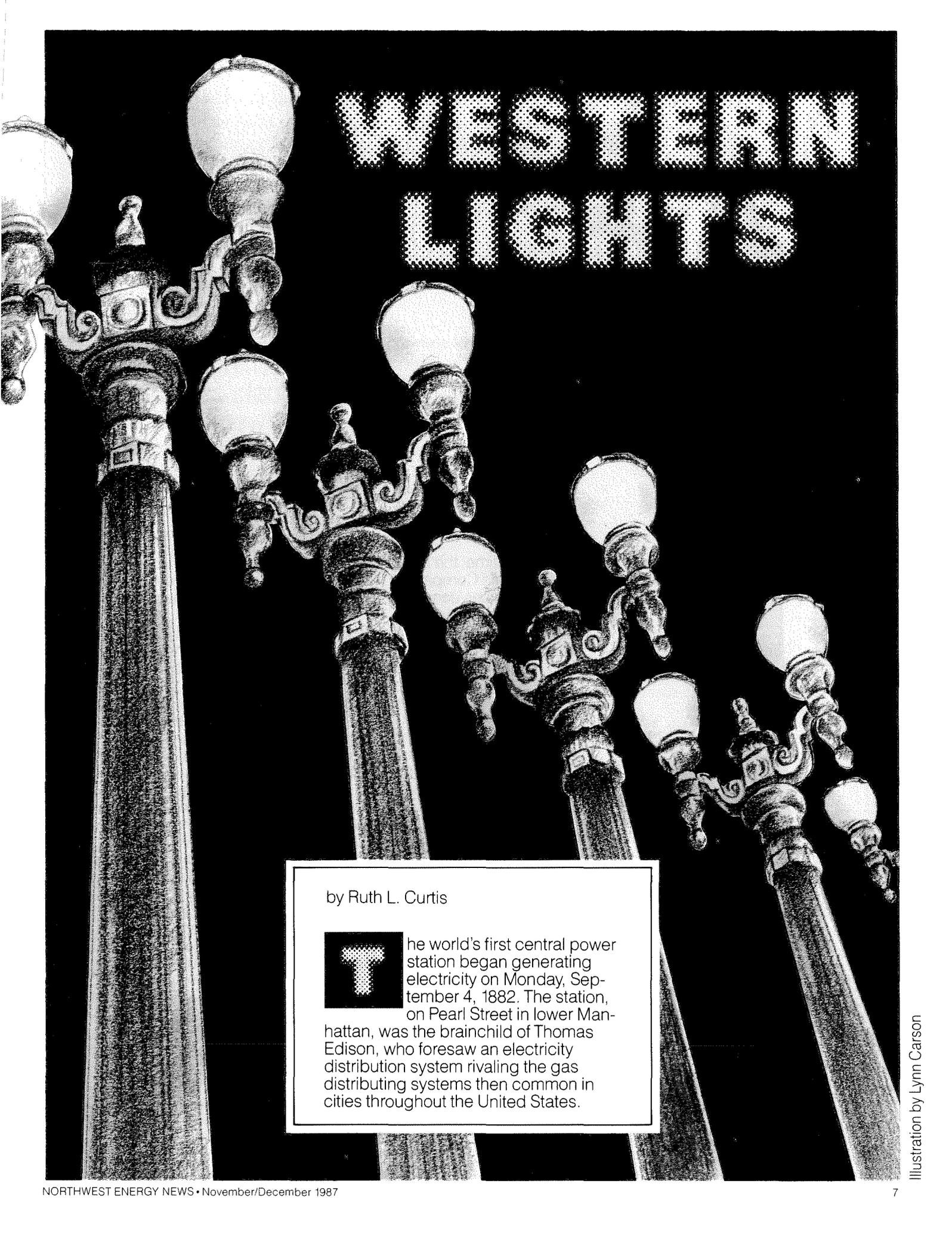
Like the explorer, the adaptive manager sets specific goals and identifies as many potential obstacles and uncertainties as possible before setting off. The explorer sets out assuming a particular route. In adaptive management, the path of the explorer is the hypothesis or assumption to be tested. The explorer tests the route and scouts the path ahead carefully. The Yakima researcher will do likewise, managing salmon and steelhead production while attending to each evolving effect of the process. Impossible barriers may turn the explorer back, in which case, new goals are set and new routes mapped. The same is true for the adaptive manager. But the journey of the Yakima researcher, reliant as it is on the five-year or more life cycle of salmon and steelhead to prove any results, will likely be a long one.

If, for example, all of the first year's young salmon and steelhead are marked and monitored, researchers in the basin must wait the length of at least one life cycle (five years) to gauge the abundance of their returns. It will be another five years before researchers learn whether returning first-year offspring re-established themselves in the streams where they were "seeded." It could be several generations before any genetic variations appear, and even longer before the numbers of native and hatchery-introduced fish balance out and become stable.

But the first products of the Yakima master plan are already in evidence. Work to bring back the salmon has required unprecedented cooperation among ranchers, irrigating farmers and tribal fishers. "This has been a kind of adaptive management at the political level," says Roy Sampsel, who is coordinating the Yakima project for the Columbia River Basin Inter-Tribal Fish Commission.

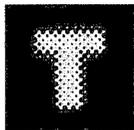
"The question we must ask is, can we mold public policy that is truly responsive to all of the constituencies? The answer has got to be 'yes,' because public monies cannot long be spent unless there is a public consensus. We need to have tough, honest discussions now about specific problems. We have to find the ways to bring back the fish without putting ranchers and farmers out of business. If the farmers and ranchers get everything they want, we'll still have fish, and they'll still have cattle and apples and grapes. No public policy can deny us if we join together."



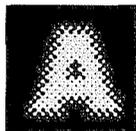
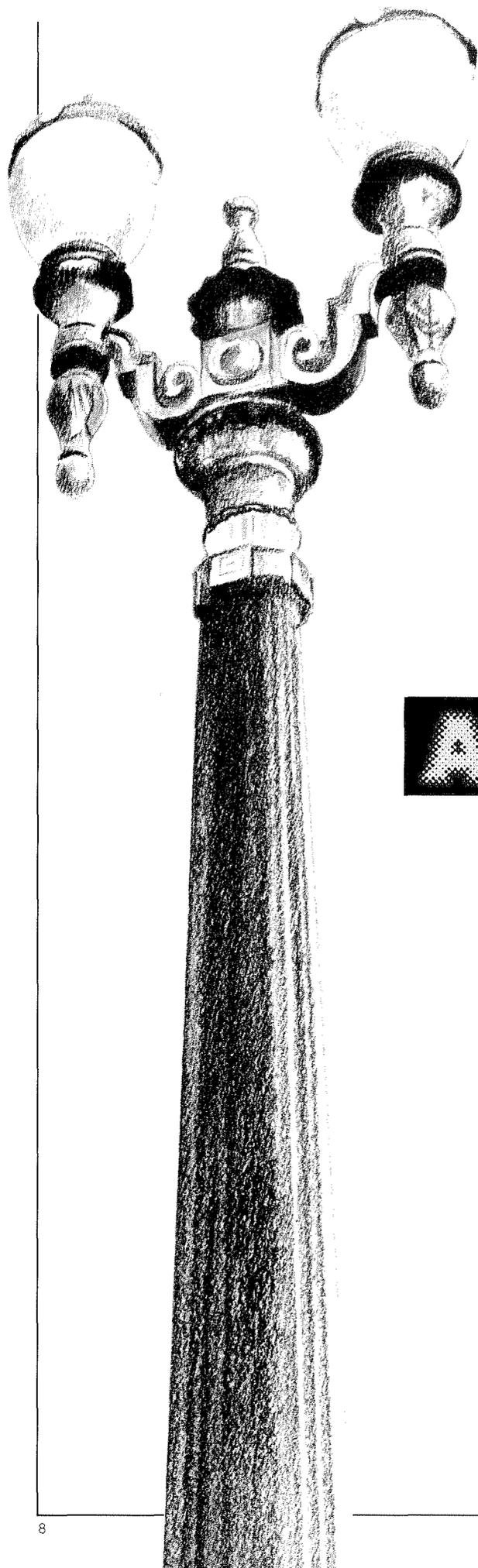


WESTERN LIGHTS

by Ruth L. Curtis



he world's first central power station began generating electricity on Monday, September 4, 1882. The station, on Pearl Street in lower Manhattan, was the brainchild of Thomas Edison, who foresaw an electricity distribution system rivaling the gas distributing systems then common in cities throughout the United States.



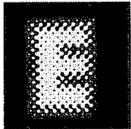
At that time, the Edison Electric Company's resources consisted of six "jumbo" dynamos (generators — named after P.T. Barnum's famous elephant) driven by steam engines, each producing 200 horsepower and capable of lighting 1,200 incandescent lamps. The station served only 85 customers with a combined load of 400 lamps when it opened its doors.

Within a few years, the first Edison central power distribution system came to the Pacific Northwest — specifically to Seattle, Washington, in 1885. Like a string of street lights coming on at dusk, similar central systems rapidly spread their glow across the country. The electric utilities that light the nation today emerged from these early central systems.

The Edison Electric Company's resources consisted of six "jumbo" dynamos (generators — named after P.T. Barnum's famous elephant) driven by steam engines, each producing 200 horsepower and capable of lighting 1,200 incandescent lamps. The station served only 85 customers with a combined load of 400 lamps when it opened its doors.

In the western United States and Canada, utilities were set up as independent units concerned only with their service territories. Now, 100 years later they are part of a western electric network, autonomous from the rest of the continent, in which the transmission lines and power generators are synchronized to meet the West's electrical needs.

The West's vast system extends over almost 2 million square miles and embraces British Columbia and Alberta in Canada, plus the states of Washington, Idaho, Montana, Oregon, Colorado, California, Nevada, Utah, Wyoming, Arizona, New Mexico and bits of west Texas and northern Mexico. It has grown to include power resources capable of generating 139,631 megawatts of power and over a million circuit miles of transmission lines.



Early utilities depended mainly on steam (using whatever fuel was available) and hydropower to produce their electricity. These two technologies are still important to the West, but other resources have now joined them in the electrical system. The resource mixture has evolved along with the nation and the world.

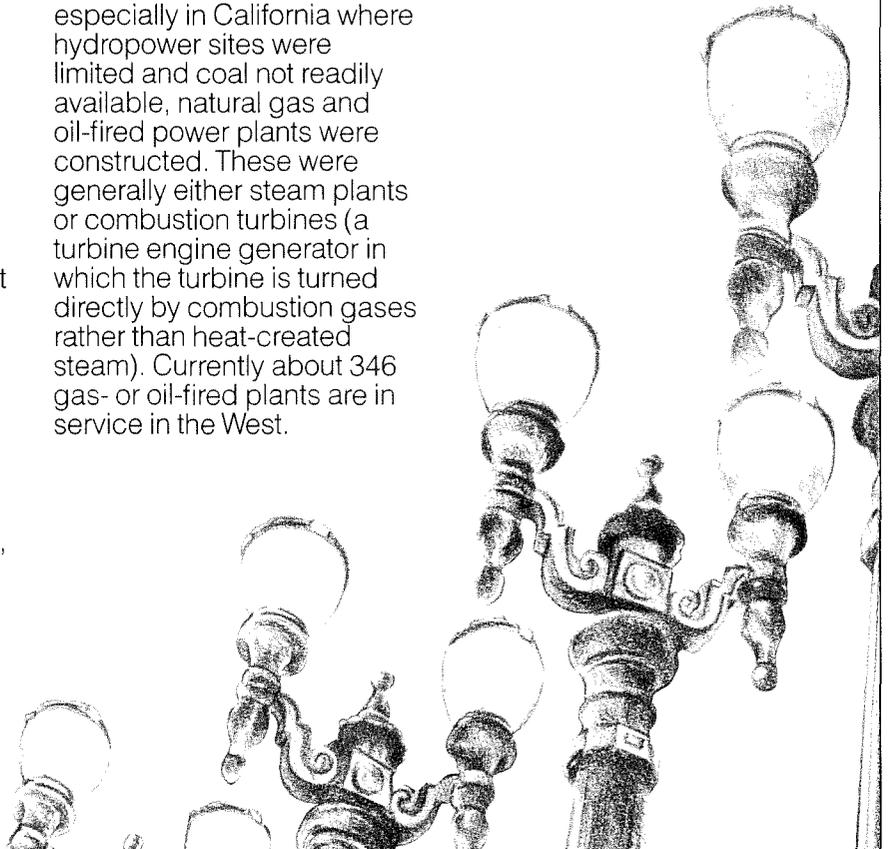
The same year the Seattle central system started operation, the first hydroelectric dam in the Pacific Northwest was built at Spokane Falls, Washington. Like most hydropower projects built in the late 19th and early 20th centuries, the dam was small, located near where the power would be used and designed solely to produce electricity. It was capable of operating 12 arc lights that brightened street corners close to the river.

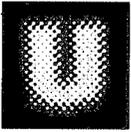
During the Great Depression of the 1930s, laborers in President Franklin Delano Roosevelt's public works programs began to construct large dams designed for many purposes — flood control, navigation and irrigation, as well as power production. From the mid-1930s through the mid-1960s, Roosevelt's western programs and their successors capitalized on the potential of the Columbia, Colorado and Missouri river systems. The era of huge public works projects quietly tapered off as sites for large-scale dams were, for the most part, exhausted.

Nearly 56,900 megawatts of hydroelectric capacity are now installed in the West — enough for about 60 cities the size of Seattle. Hydropower projects range in size from tiny home-built turbines churning out fewer than 100 kilowatts to Grand Coulee Dam with nearly 6,700 megawatts of capacity. Hydropower is still a major part of the West's resource mix. In fact, it is so abundant in British Columbia that the province has been able to rely upon hydropower almost exclusively.

After the Second World War, the West experienced a period of rapid economic growth. More electricity was needed. To meet the need, especially in California where hydropower sites were limited and coal not readily available, natural gas and oil-fired power plants were constructed. These were generally either steam plants or combustion turbines (a turbine engine generator in which the turbine is turned directly by combustion gases rather than heat-created steam). Currently about 346 gas- or oil-fired plants are in service in the West.

In the 1960s and early 1970s, economists and utility planners predicted that the West's rapid growth in electricity demand would continue. Numerous coal and nuclear power plants were proposed to meet this anticipated need. At the same time, the energy crisis kicked off by the Arab oil embargo in 1973 drove up petroleum and natural gas prices, diminishing their value as fuels for large generating plants. The West began to shift from a resource mix of hydropower and natural gas-fueled generation to more reliance on coal and, to a lesser extent, nuclear power to back up the hydroelectric system.





Unlike in the East, coal was not widely used to produce electricity in the West prior to the 1960s. Only in the vicinity of coal fields, such as in the Rocky Mountain region, have utilities historically relied on this fuel. But since the construction boom of the 1970s and early 1980s, coal has become an important element of the resource mix of all the western regions except British Columbia. It dominates the electric systems in Alberta, the Rocky Mountains and the desert Southwest.

Prior to this accession of coal, natural gas was the major resource in Alberta, Canada, and the Desert Southwest. Natural gas is now used in those areas primarily for meeting peak power demands. The current low gas prices have made this change seem less economical than it originally appeared, but the future price of natural gas is uncertain, while the abundance of coal resources should protect these regions from major coal price increases.

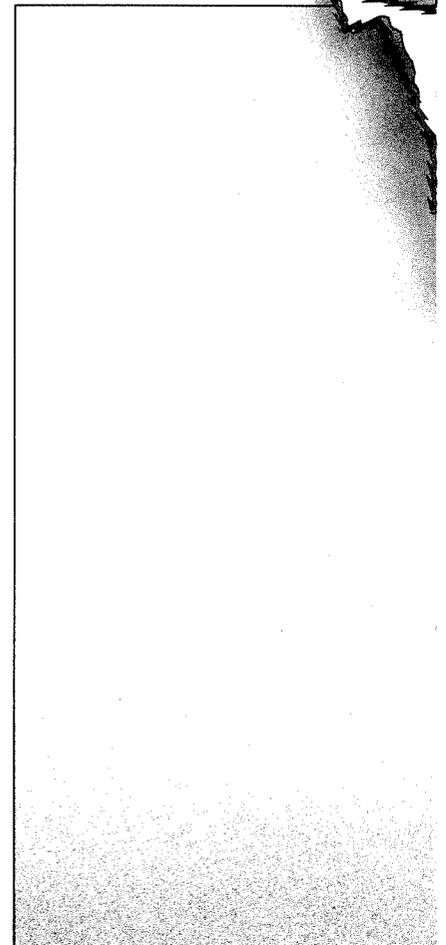
While coal and nuclear generation have not replaced hydropower as the principal electrical resource in the Pacific Northwest, their high costs (compared to the low hydropower system costs) have dramatically increased the electric bills Northwest citizens pay. As a consequence, many people have cut back on the amount of electricity they use. This has contributed to the fact that electricity demand hasn't

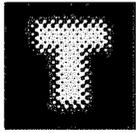
grown at the rate forecast, and an electricity surplus persists in the region.

British Columbia is the other region in the West that historically has a hydro-power-based rather than thermal-based electricity system. In the 1970s and 1980s, the province responded to the West's economic growth by increasing its hydropower capacity, and it is now in a surplus situation.

The Pacific Southwest has experienced the most significant transformation in the make-up of its generating resources. Formerly a natural gas-based system with a fair amount of hydropower capacity, the Pacific Southwest's system has evolved into a diverse mix of hydropower, coal, nuclear, natural gas, cogeneration, non-hydropower renewables and purchases from outside the region. Some California utilities are beginning to have a surplus of electricity because of recently completed coal and nuclear plants and a growing inventory of "must-run" contracts with independent power producers.

The Western
electric system is
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Edison envisioned



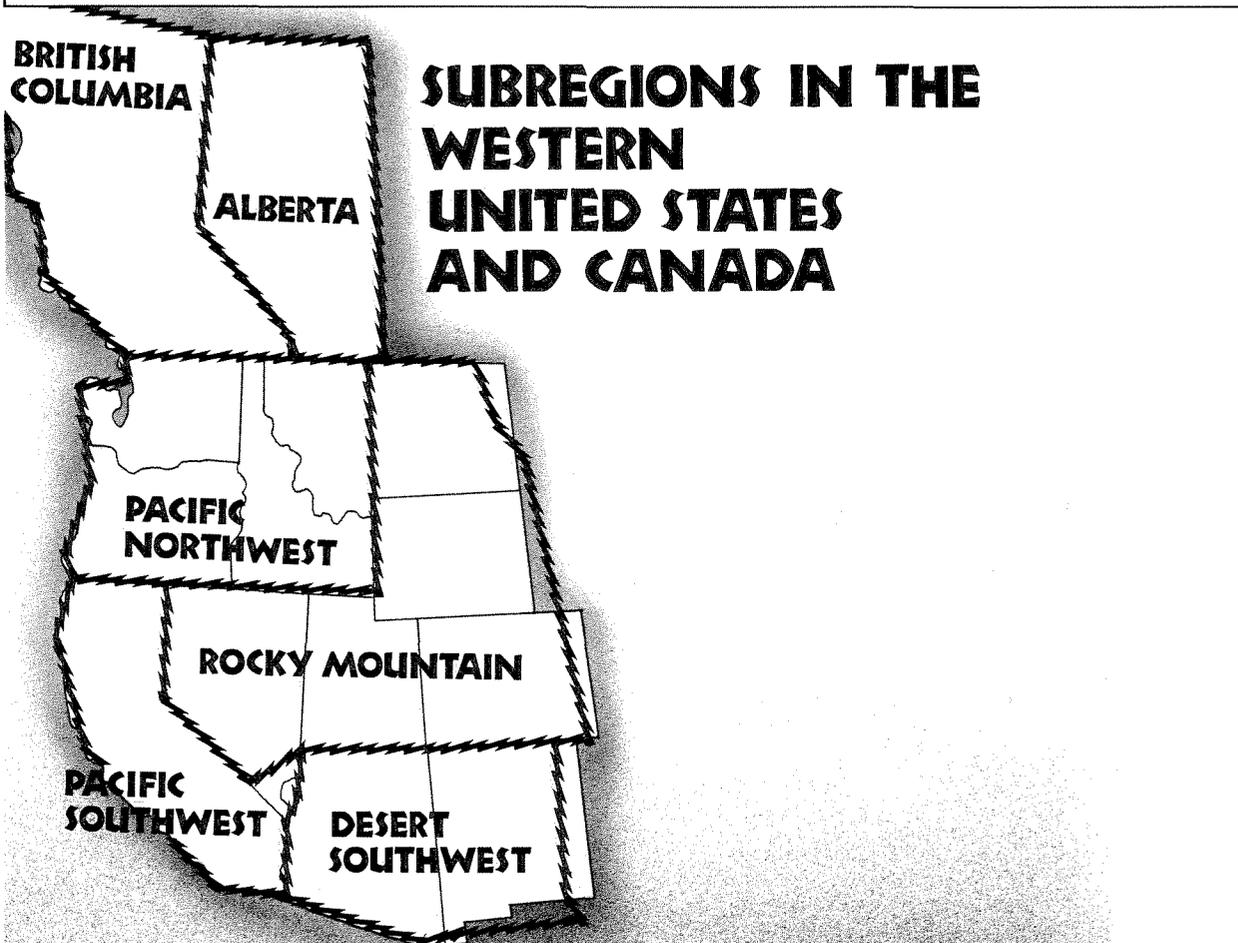


Throughout the West, the diminished growth in electricity demand and the continuing presence of surplus power have brought a near halt to the construction of utility-owned projects. Several coal-fired plants and one nuclear plant are approaching completion, but few new large utility projects are on the agenda. Several coal and nuclear projects, such as the Washington Public Power Supply System nuclear projects 1 and 3, have been put on hold until there is a need for their power.

The western electric system is more complex than any system Edison envisioned. It is a conglomerate of power plants, transmission lines and organizations. And it works — providing electricity to millions of people.

The Northwest Power Planning Council is studying the western system's composition and interrelations so that it can better plan to meet the Pacific Northwest's electricity needs. The goal of this study is to improve the Council's and the region's understanding of the opportunities presented by power transac-

tions with other parts of the West. A series of briefing papers is being developed on various aspects of the system. These are being distributed for public review. To receive the papers, please contact the Council's central office in Portland, Oregon.



Conservation— Still the Region's Best Buy

After five years' experience with programs to help the Pacific Northwest make the most efficient use of electricity, the Northwest Power Planning Council has concluded that conservation can be acquired as a resource when the region needs it, and that it is likely to be more cost-effective than alternatives such as new coal plants.

The Council's analysis, which was mandated under Section 4(k) of the Northwest Power Act of 1980, also found that the benefits of conservation programs can be distributed equitably among the power system's customers. The analysis concludes that conservation programs do not impair the Bonneville Power Administration from meeting its obligations and providing for the region's energy needs at the lowest possible cost.

The Northwest Power Act considers conservation to be a power resource on a par with generating resources such as oil, gas or coal-fired power plants. But the Act goes beyond this by prioritizing conservation above other sources of electricity and giving it a 10-percent cost advantage when it is compared with the costs of other resources. To determine the comparative value of conservation and other resources and to ensure that electricity consumers evenly share the benefits of efficiency, the Act required the Council to conduct an analysis of the costs and benefits of its conservation programs.

A report on this analysis was submitted on October 1, 1987, to the Administrator of the Bonneville Power Administration, which carries out programs recommended by the Council. The report was first released for public comment and revised in response to comments received. (For copies of the full report, see the order form on the back cover.)

In its analysis of conservation measures and programs, the Council compared the costs of saving energy to the costs of resources that would have to be developed in lieu of the conservation efforts. The average cost of these new resources was calculated to be 3.5 cents per kilowatt-hour. Adding the 10-percent advantage given conservation in the Act and another 10 percent figured in to account for losses of electricity from transmitting power long distances (since conservation is not transferred, there are no transmission losses), brings the limit for conservation measures to 4.2 cents per kilowatt-hour.

All but one Bonneville program acquired conservation at or well below that limit. Programs designed to promote new construction that meets the Council's model conservation standards cost the region about 2.8 cents per kilowatt-hour (including costs to administer the programs). Programs that garnered energy savings in existing commercial and industrial facilities cost the region between 1.5 cents and 2.7 cents per kilowatt-hour. Least costly of all were the energy savings delivered by a program to increase the energy efficiency of irrigation pumping and distribution systems. While savings in irrigation are considered discretionary and therefore can be deferred until the power is needed, they were acquired in this demonstration program for about a half cent per kilowatt-hour.

Only one of the many programs offered by Bonneville topped the limit set by the cost of new resources—the Hood River Conservation Project. That project was not intended to test the cost-effectiveness of conservation, but rather it was meant to demonstrate the degree of participation that could be expected from a major push to weatherize an entire community.

There has been far less conservation activity in the Northwest than was anticipated in the Northwest Power Act. Forecast regional electricity deficits have turned into a regionwide electricity surplus. As a consequence, only two kinds of conservation programs are being operated in the region. Programs that help the region develop and test delivery systems for conservation savings (called capability building programs) are useful because they prepare the Northwest to meet eventual needs effectively. Programs that enable the region to acquire resources that must be captured now or be lost (as in new construction that will outlast the surplus and continue to waste electricity if not made efficient when built) are also being implemented.

The Northwest has gained worldwide attention for its innovative conservation programs.

Even given the surplus-driven restriction on acquiring energy savings, the Northwest has gained worldwide attention for its innovative conservation programs. The conservation-related research and development efforts in the Northwest are more extensive than any in the rest of the nation. Through such programs, the region is learning how to acquire and deliver energy savings while securing cost-effective conservation that would be lost if not developed now.

—CC

Al Wright is no stranger to controversy. He's spent most of his career working for boards and commissions and working on controversial public processes of one type or another where "tempers can run pretty high." At least in the utility business, he says with a grin, he's never actually had anyone threaten his life. He leaves the implication hanging.

Wright joined the Pacific Northwest Utilities Conference Committee (PNUCC) staff as executive director in January 1986. PNUCC, an association of customers of the Bonneville Power Administration, serves public utilities, investor-owned utilities and direct service industries.* It is an association with a history of changing roles. Prior to development of the Northwest Power Act in 1980, PNUCC's primary function was assessing the adequacy of the regional power supply and supporting federal funding for regional power projects.

During Wright's tenure, PNUCC has undergone a major reorganization, including substantial staff layoffs. He assumed the PNUCC leadership role at a time when there were threats of massive member pullouts, questions about PNUCC's relevance and rumors of PNUCC's imminent demise. Those rumors are pretty much dead now. Wright did not take over the job like a guy on the way out. His style doesn't run to the shy, defensive or apologetic. No one would call him mealy-mouthed either. He's direct, articulate and known to make a point with biting wit.

Wright came to PNUCC from the mid-Columbia Public Utility Districts (PUDs), where he worked in the fish and wildlife and environmental area. During that time, he also had a close relationship with PNUCC. Wright chaired PNUCC's fish and wildlife committee and, in many respects, was "on loan" to PNUCC from the PUDs.

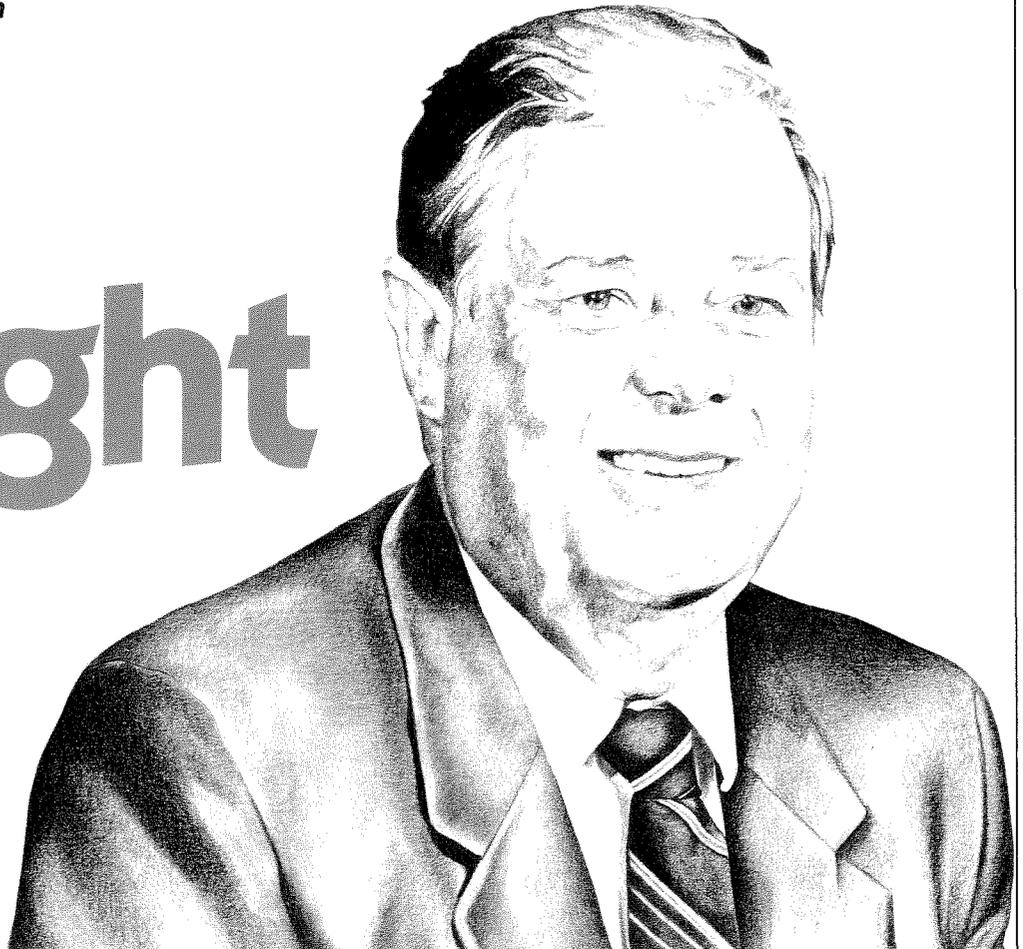
Wright holds a bachelor's degree in civil engineering with a specialty in hydrology from the University of California at Berkeley. He also did graduate work in watershed management at the university's Arcadia branch. From there, he went to the Los Angeles Department of Water and Power, starting as a hydrologist and ending up working on the DC intertie* as a construction inspector. After five years, he arrived in Oregon and began work as a hydrologist with the Oregon Water Resources Board, now part of the Oregon Water Resources Department. He also did stints with the Environmental Protection Agency in Eugene, managing a water quality project, then working with the Pacific Northwest River Basins Commission.

It's tough to get Wright to share any personal insights about himself. But he was willing to offer this assessment: "I think I'm probably the most reasonable, easygoing person in the regional utility business ... considering I spend most of my free time handgun shooting."

*Note: Asterisks refer to glossary accompanying this story.

Dulcy Mahar interview with

Al Wright



You've been at the helm of PNUCC during a time of major transition. How has the role of PNUCC changed and what role does it play in the region now?

Prior to the passing of the regional Act,* PNUCC had a very technical role in forecasting and other energy planning activities. It also had a very small staff of about three or four people. Then came the passage of the Act and the Council's involvement in trying to develop an energy plan. The utility industry basically needed some entity to help it speak with a common voice.

So the utilities selected this organization, and it grew dramatically. In the first years after the Act, PNUCC's major job was working with the Council and Bonneville on the development of the energy plan and the amend-

ments — both for fish and wildlife programs and the energy plan. That was a tremendous undertaking from 1980 to about 1985. By that time, PNUCC had gotten up to about 26 people, with a budget in excess of \$2.5 million.

As the energy plans became more developed and with the adoption of the 1986 plan, a number of things happened in the region. One, the role of PNUCC was being questioned as to what its direction should be now that there truly was an energy plan. Two, the utility business in general was not doing as well as far as revenues and increasing rates. All of the utilities across the board were looking at cutbacks. The utility industry was about two years ahead of

Bonneville in its belt tightening.

It was decided that PNUCC ought to be doing the same thing, because its role, while important, had diminished as far as working on the implementation of the plan, as opposed to developing the plan. The third element, of course, was the [regional electricity] surplus. A number of people were starting to say, "Ah well, why are we doing any planning if we've got all this surplus to deal with?" So there was a questioning of the real role of the organization going

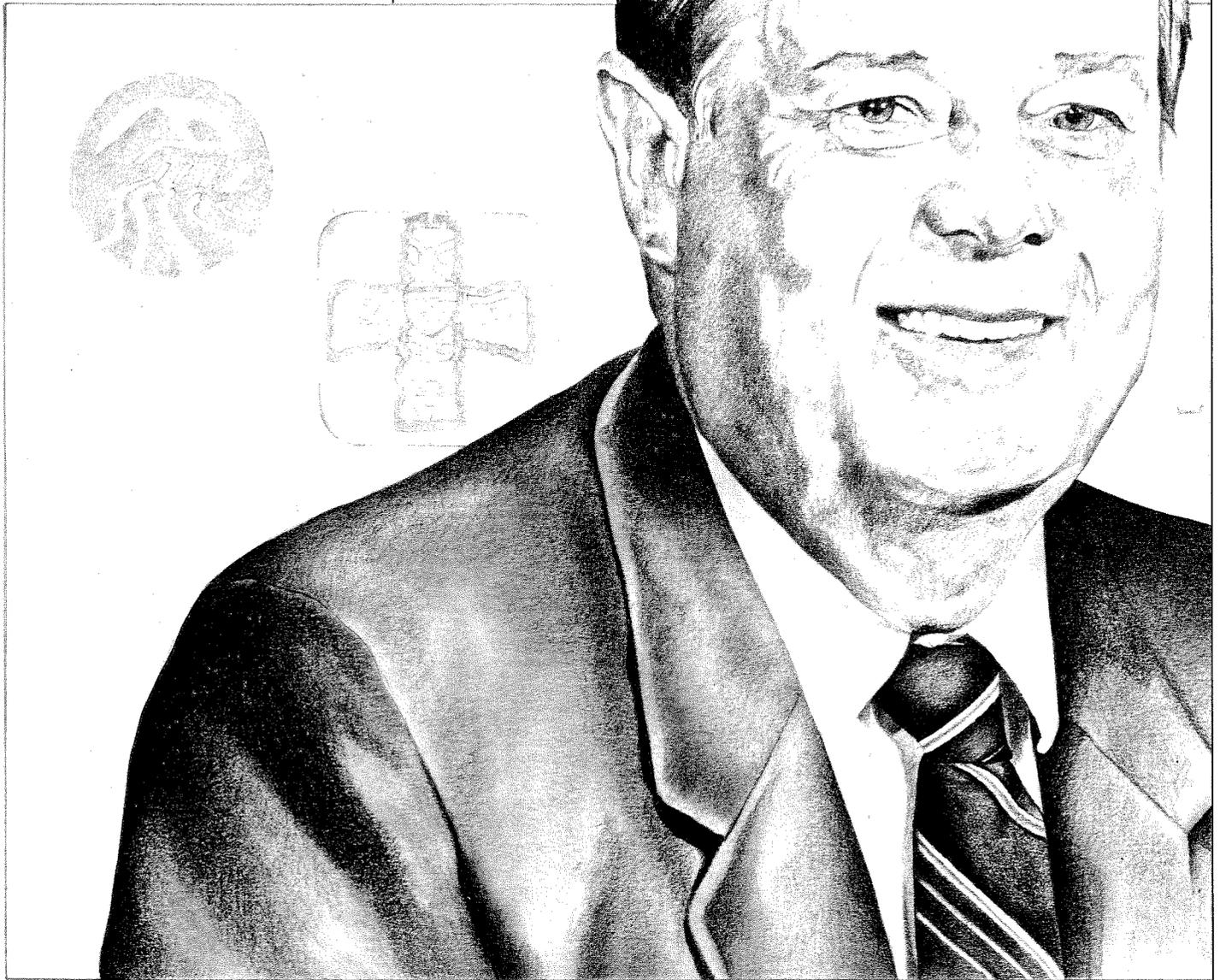


Illustration by Lynn Carson

on. And right in the midst of all that, PNUCC changed executive directors.

Early in the year that I came in, we had a number of utilities drop out. By March 1986, it was clear to me we were not going to get anywhere near the budget that had been approved the November before. So it was an opportunity really to sit down and take a hard look at what PNUCC should be and where it was going. Clearly we were going to go through some tough times for a year, and we wanted to try to bring some stability. The board of directors sat down, and we took the time to try to plot out a strategy that would last about three to maybe five years. And we did that. We ended up reducing the staff down to 16 people and the budget down to less than \$1.5 million.

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We tried to focus the organization into three major jobs. One was a very, very select number of technical jobs that the staff performs that are not performed elsewhere in the region. NRF [Northwest Regional Forecast] and the load monitor* are good examples. The fact that we run the system analysis model* for our members is another. Those are the kind of very direct, very specific things that we do.

The second role is the one that we have been most visible in in the last five years. Whenever we

can get a joint policy position among our three customer groups, we advocate that position to the Council and to Bonneville. In this role we truly are advocates for our joint positions.

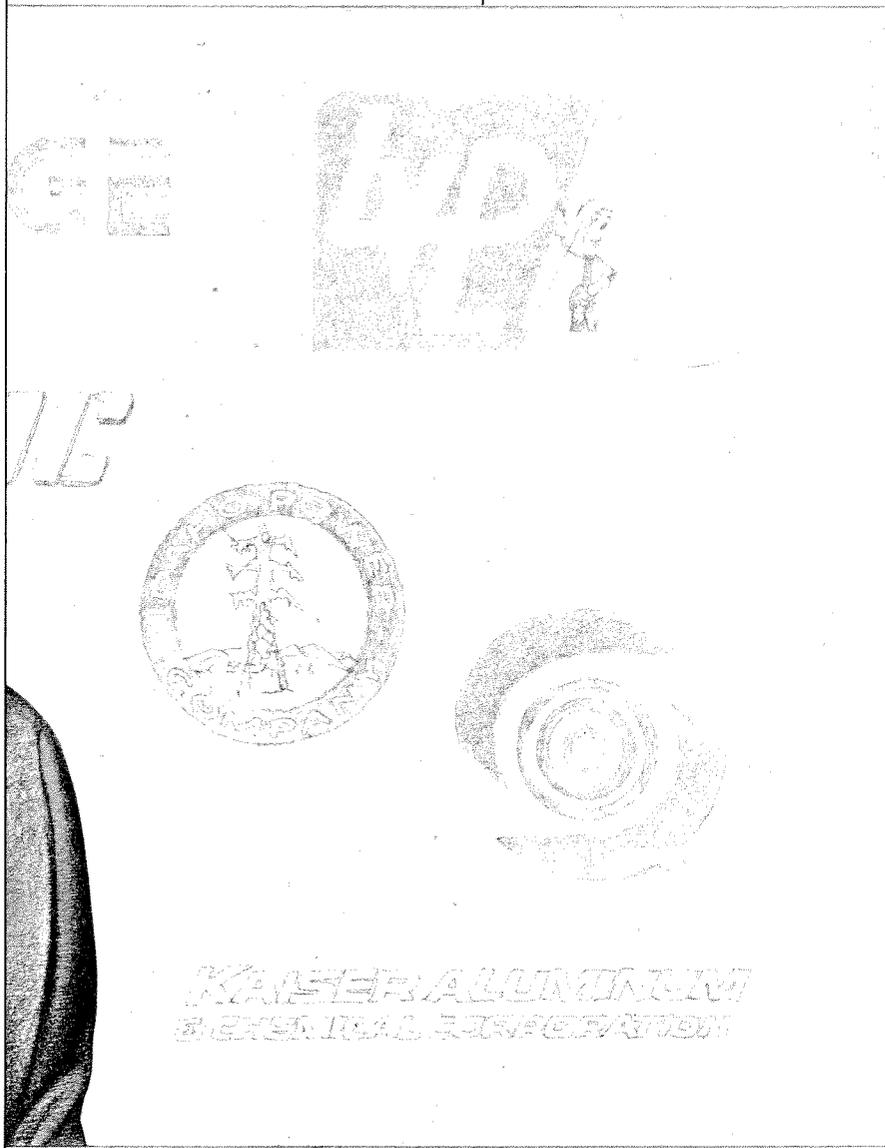
The third role is one that we haven't been very obvious in, but I think we will become a lot more active in. That's the role of dispute resolution among our membership. We provide a forum and hopefully the facilitation of open and frank discussions among our members in the early stages of an emerging dispute to try to, if not resolve the dispute, at least get a common understanding of what the issues are. In July 1986, we ventured forth with our new or better articulated role and a somewhat new commitment to what our job is.

Q. Are you having a more difficult time now reaching consensus with diverse customer groups?

Sure. It's a sign of the time. Because of the surplus situation, it is not as easy to get people together on a common goal. Everybody's looking at how to protect their particular interest or market their particular part of the surplus. And that's a competitive environment. As opposed to when everybody needs energy, that's a very cooperative environment because there's common interest to be served.

Q. I take it your interest in consensus is providing the customer groups with more clout.

That's the position that we take, the more we get unanimity, not necessarily speak with one voice, the better. I've learned that what you want is to convince the utility industry that if we have a common position, we need to have them all speaking. One of the things that happens at PNUCC is there's a tendency to say — and fish and wildlife issues are a good example — "Well, PNUCC's handling that, and Pam Barrow [PNUCC fish and wildlife manager] or Al Wright said it to the Council or Bonneville, so that's good enough." While everybody's in agreement, the Council, quite frankly, gets bored hearing from



the same person all the time. Sometimes they wonder if we really are supported by everybody or not.

Q If you could change something about the Northwest Power Act, what would you change?

I have all kinds of answers; I'm just debating whether I want to be held responsible for them or not. The easy one for me, of course, because I've got total utility support, concerns Section 4(h) [calling for a program to protect, mitigate and enhance Columbia Basin fish and wildlife affected by hydropower].

Given five years of experience, it's too bad we didn't have more specific direction on Section 4(h). I doubt anybody who worked on the Act and particularly on Section 4(h) would admit, if they were honest, that they ever saw a program of the scope and magnitude that has resulted. And because of that, there's not a lot of direction in the Act that might have helped to resolve some of the problems. They're getting resolved. I don't want to sound too negative. But it's taken five years of, in some cases, agonizing work.

Q I expected you to say you would have thrown out that section.

No. Well, I've got lots of people who would have. I'm one of the few people who was around during the development of the Act that *did not* write Section 4(h). Everybody in the world takes credit for having worked on it. All I did was watch. And I know the politics of the situation that generated that section in the Act, and it was unavoidable. You could not have passed a power act without that in there. I'm convinced of that. And I think it has produced some good things. But we've spent a lot of time agonizing over parts of it that would have been a lot easier had the Act been more explicit.

As for other parts of the Act, of course, clearly everybody with hindsight would say you have to write a power act for a surplus [power] situation. We wrote it for a deficit situation, when we thought we were going to be scrambling to get resources. Instead, we're lounging around here.

...the irony is that, if today we set out to change that situation and rewrite the Act, it would take us just long enough so that we would be about at the right time with a new power act to deal with a deficit situation. A lot of provisions of the Act have just never been tested in the light they were intended to be tested in. I think the [Section] 6(c) process* and the new resource process will work. When we get to the point where we're actually talking about acquiring new resources, people really will have a cooperative regional spirit.

Q What about Bonneville's future? What are your prognostications?

I think Bonneville is doing some good things right now in reassessing its role. It was timely that it do that. As I said, it was probably two years behind what the utility industry had already been doing. And I hope Bonneville doesn't say now, "Well, we got past a 7-percent rate increase, and we've reorganized and we've laid off 240 people, so we're done." I think Bonneville is just on the threshold of assessing its role and changing into what it's going to be in the '90s. I hope Bonneville spends a lot of time working on its role as a regional partner.

I think 1980 was, in some respects, a bad time for Bonneville. With the passage of the regional Act and with the development of the regional Council, Bonneville (and I speak of it as an institutional entity, not reflective of any administrator) was threatened, to some extent, as to what its role was. It responded by trying to truly become *the* regional utility. I don't think it consciously did that; nonetheless, it happened, and it was destined to fail.

I see Bonneville now coming back and saying, "We have to be a partner in the region." I think if Bonneville stresses regional cooperation and the regional partnership and downgrades its role as a regional regulator of utilities, it's going to make a lot more progress and play a major role in the region's utility system. As I said back on 6(c) and resource acquisition, we will never make that work as long as Bonneville is viewed by the utilities as an unreliable partner.

Q Is the move by some Washington utilities to look for electricity resources outside of Bonneville a serious threat?

I look at that again as a symptom of the problem, that Bonneville is not trusted to be a good energy wholesaler. If you're running a retail business, and you're suspicious of your wholesaler, and you only have one, you're going to look around and see what else the market has, in case you have to go to a different wholesaler. It's a market response. It's the same whether you're selling shoes or anything else. It's a symptom of bad marketing on the wholesale side. People aren't comfortable with trusting all of their eggs in Bonneville's basket.

But all of the facts of the matter tell us we should be comfortable. We've gotten past the WPPSS [Washington Public Power Supply System] fiasco, which we can't blame on Bonneville. That was a regional mistake; everybody played a part in it. The rate impact resulting from that is pretty much behind us. Bonneville is doing a better job than it's ever done in paying off its debt. Everything we see Bonneville saying and doing should be leading to rates going down or at least stabilizing. Clearly the dollars may go up, but the relative present worth rates ought to be stable or go down.

Do you think that the talk of selling Bonneville will get any serious momentum?

No. It may get a lot of conversation. There may be a lot of feather ruffling, wing flapping and squawking around, but the fact of the matter is that if you start taking Bonneville apart and looking at the entire, what we call the integrated system, which goes beyond even the coordination agreement, it would be almost impossible to try to sell Bonneville to somebody. The maximum thing I could ever see happening is somehow you might take control of Bonneville away from the federal government and give it to the region that pays the rates. It would not change Bonneville very much, in my opinion.

Should this happen?

I wouldn't advocate it, at least not now. But that would be the maximum thing I could see ever happening. Basically we borrow money and we pay it back. It really doesn't matter whether we borrow it from the federal government or not.

The intertie* seems to be generating considerable conversation in the region lately.

There's clearly a controversy in the region. The problem is that we're taking a very short-term view of interties, and everybody is very concerned about two things. One, how are we going to market the surplus? Are we going to market it for too long? Are we going to make bad deals somewhere that will end up costing us money? And, two, if we have enough intertie capacity, are we going to build a whole bunch of new resources that this region won't get to use? We're not building them for need; we're building them to market for the entire life of the resource.

Those are the fears that I see. And they're real short-term, or at least one of them is, and that's just how much surplus do you have, and does it make any difference whether you sign a 10-year contract or you just spot market your energy? Is the value you get out of those two marketing ideas any different? The answer is, probably not much.

Second, the economics and physics of the matter tell you we are not going to build large amounts of resources in this region and market them for their life over an intertie to Southern California, Arizona or New Mexico. Unless we dramatically improve such things as line losses and all the complexities of running an intertie, it's not in the cards.

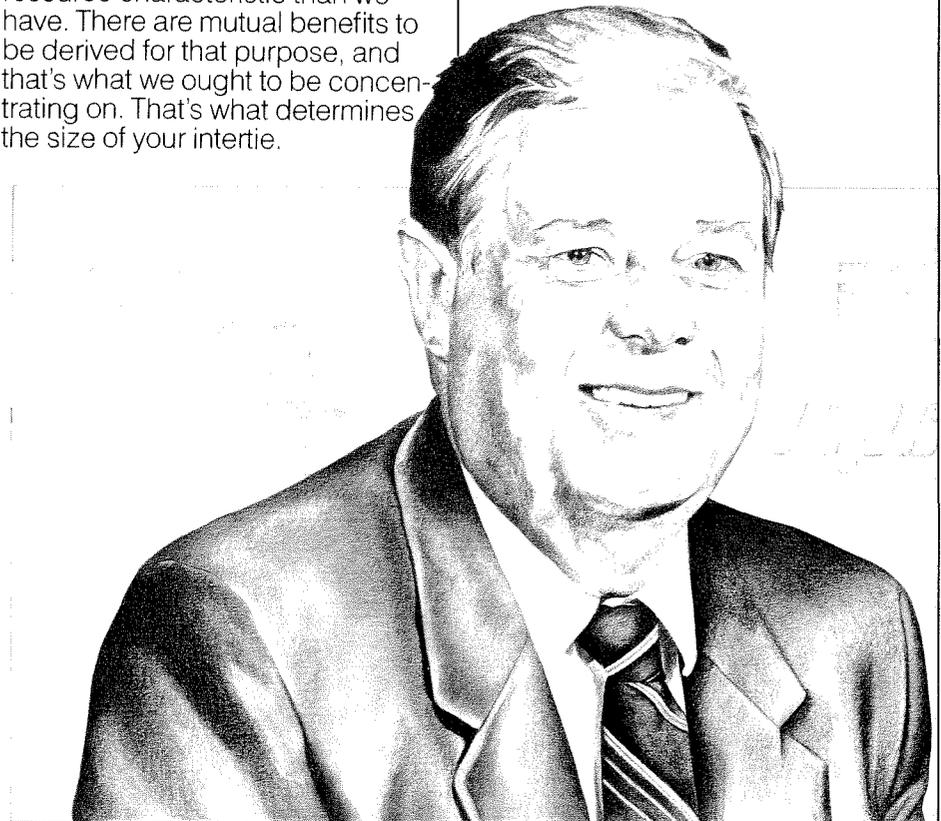
There are a lot of people talking about it. But in the long term, when you get to plunking down the billions of dollars in massive resources that we're talking about, I don't think you're going to see anybody do it. Not realistically. So, we need to look at the real long-term value of an intertie — seasonal exchanges,* smart use of secondary energy,* and all of the energy management advantages that an intertie brings you with another region that has a different load resource characteristic than we have. There are mutual benefits to be derived for that purpose, and that's what we ought to be concentrating on. That's what determines the size of your intertie.

Do you think we need more transmission?

Without having a lot of facts and figures in front of me, I think the third AC* is probably worth completing. It's relatively inexpensive. And the DC upgrade,* again, is another one of those that's relatively inexpensive and we ought to get on line. And then we probably ought to look at where we are.

The inland intertie,* to some extent, is a product of concern with Bonneville as a partner in the region. Also, of course, the inland intertie was exploring possibilities of a different market. The Arizona/New Mexico marketplace has different load characteristics than Southern California does.

I guess I wouldn't fear either the DC upgrade or the third AC as overbuilding to the point that we're going to entice somebody to build new resources. There's going to be isolated cases where somebody wants to build a hydro plant. Without naming names, we know some of the ones that are saying, "Well we can build it today, and then we're going to use it tomorrow." The economics of getting intertie access aren't going to be the only considerations driving the decisions on those resources.



What role do you think fish and wildlife should play in the intertie?

Absolutely none! The impacts on fish and wildlife result from river operations and generation as well as all the other numerous activities that we've all talked about for years. You make a determination on the river and its generation plants as to what level of fishery impacts you're willing to live with, what level of fishery impacts you want mitigated and how to do it. That's called the Corps' [U.S. Army Corps of Engineers] responsibility under the Fish and Wildlife Coordination Act; it's called the Council's fish and wildlife program; it's called FERC [Federal Energy Regulatory Commission] license mitigation; it's called a lot of things.

Once you have made the determination of how to operate the river based on what impacts are acceptable and what impacts are mitigated or what impacts are just unacceptable, you limit operations. The water budget's a good example. Then you let the energy management people manage the energy that they're allowed to generate under those conditions. Fish and wildlife provisions have *no business* in the operation of the intertie. They are not going to save one single fish, but they will potentially impact, in a harassment form, Bonneville's ability to produce revenues, part of which fund the fish and wildlife program.

Will PNUCC have an active role in the Council's protected areas study? This is the study that the four Northwest states may use to recommend which streams and habitat should be protected from hydropower development.

I imagine we will. We're toying with how much of a role we want to play. We were active for three years, and nobody listened to us. We're not sure we want to waste our time. But we will end up being involved because our membership wants us to be.

Here's another one where I think the Council is dead wrong in what it's trying to do. I have no problem at all with the Council in its energy planning role determining where the best hydro sites in the region are in priority order to build for a

wise energy plan. I have no problem with the Council carrying that analysis into what are the worst hydro plants to build to meet its responsibilities under renewable resources — and fish and wildlife being a major reason for determining some of the worst sites.

But, to take the next quantum leap and say, now the Council's going to get into the wild and scenic river business or the wilderness area business, with all the other people who are running around designating single-purpose uses of land and water resources, is clearly outside what anybody envisioned the Council should be doing when they put the Act together.

I think the Council would be far better off if it talked about 2,000 megawatts of the best hydro plants in the region, and if the Council said where those would be and where people should concentrate their planning efforts. My guess is, you wouldn't find 200 megawatts acceptable in today's world.

What about the model conservation standards [MCS]?* Do you think the Council and Bonneville have been responsive to the utilities?

I think this last round of MCS discussions, the Council's reaction and Bonneville's involvement was probably some of the most positive stuff that's been done in this arena. The jury's still out a bit; we'll see what Bonneville does when it gets all of the proposals for alternative plans [for achieving MCS savings]. But an awful lot of the contentious nature of the MCS is behind us.

If we keep moving the way we're moving, we have a potential here for getting residential building codes and residential energy savings, and the Council ought to

People aren't comfortable with trusting all of their eggs in Bonneville's basket.

take a lot of credit for that. I think we also ought to learn a lot from this before we venture too far into the whole commercial arena and other arenas. We let a lot of emotion dictate our conversations for three years, as opposed to trying to get past the emotional stage and discussing what is really practical to get done in the region. I think the Council and a lot of people began the energy plan with great expectations and were disappointed when all they realized were good expectations. We ought to learn there's need for temperance.

What regional issues do you see coming up?

Unfortunately we have this preference* question on the horizon for the Northwest. This is not a public power problem or a private power problem; it will become a regional problem. It's a problem we have to address and get behind us because I think fighting about it is really going to be counter-productive for this region.

You could approach the preference issue two ways. You could approach it as the haves and have-nots getting into a fight, or you could approach it as an opportunity to make the wisest use that we can of the surplus. I obviously advocate the latter.

I think this is an opportunity for private and public power to get together cooperatively and make the best use of all of our resources; to maintain low-cost public preference power to the public entities; and to maintain a concept of regional preference. By that I mean if there are cost savings and low-cost power to be available to the rest of the region's ratepayers, then we should provide that. If there are resources left over, then our cousins to the south, or any other market for that matter, can have access to that energy at a reasonable rate. We're not price gouging anybody, but the first order of priority for cost savings ought to be in this region.

If we approach that kind of a tiered system in a spirit of cooperation, we can have a really wise plan for the time we are surplus in this region, which from a regional point of view is about seven or eight years. This also would foster

the kind of regional cooperation necessary to take us back into the resource planning and resource acquisition business that we're going to need to be looking at in the '90s.

Q. You seem to be taking a conservative view of how long the surplus will last.

I probably have the most conservative view in the region on how long the surplus is going to last. People are saying that by the mid-1990s the region will be in resource balance, but it will be distributed disproportionately because of all of our regional players. There clearly will be people in the serious stages of resource planning by then, and probably even bringing some resources on line.

Q. How do you assess the Council? How has it been doing? Do you see value in its work?

I think the passage of the Act and the development of the regional Council has had a great many positive effects in the region. It's provided a focal point for discussion of a number of issues that might have gotten resolved but would not have gotten the level of exposure and discussion they get now. I have a tendency to agree that we get a better product because of that. I think the Council has been instrumental in getting

some regional cooperation, again because it has elevated the discussion to a point of visibility so that a lot of people have participated.

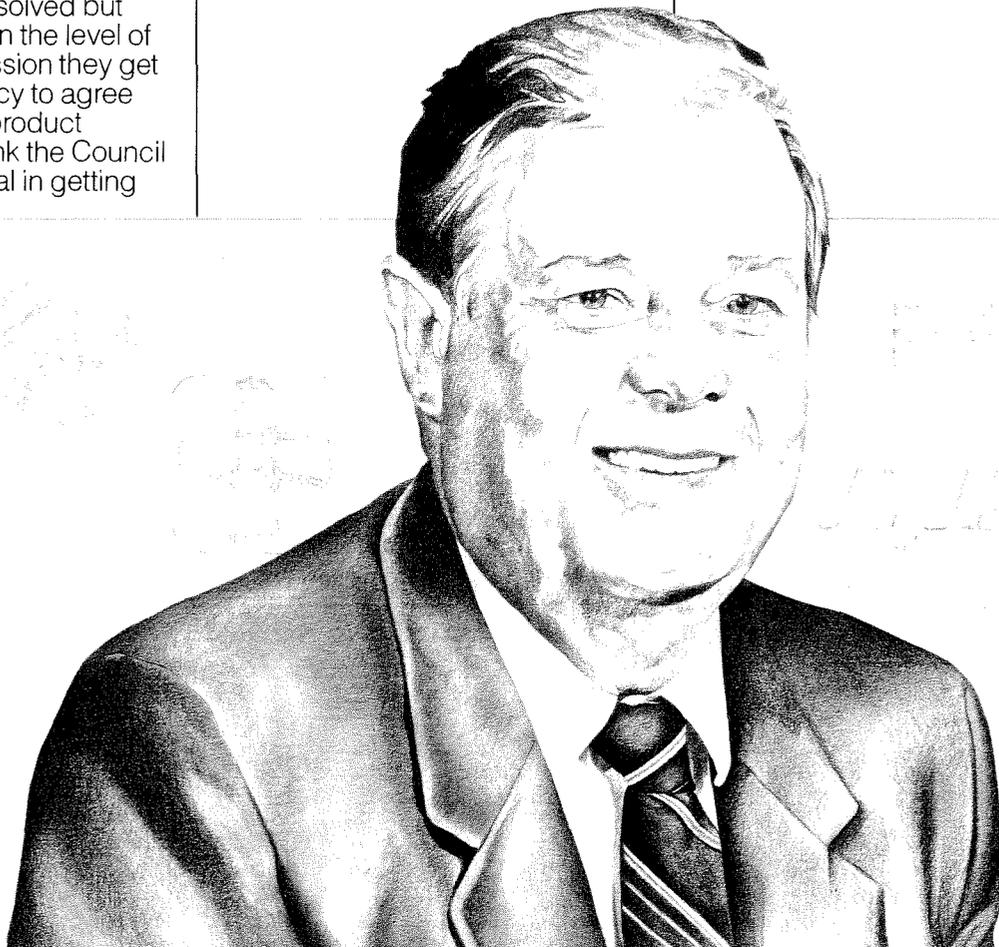
The Council has provided a level of comfort in that discussion and visibility to people who would have sat out in the brush and grumbled and griped and ran to rate cases and PUCs [Public Utility Commissions]. Now they have a place to come and talk about some issues. It gives them a level of understanding and comfort and an exposure to the utility

industry they didn't get before. They just knew that the utility industry was bad before. Now they actually see it in action, and they actually get closer. I think all those things have been very positive.

The Council's clearly changed its role over seven years, and, partly because of the changing of the Council members, we've seen dramatic changes in personalities, philosophies and approaches to problem-solving in the Council's time. That's probably been healthy.

On the negative side, the Council has ventured forth a number of times into areas that it was never envisioned to be in. There's a natural tendency for any planning body to want to become an implementor. After all, once you get your plan, that's where the action is. When the Council gets into those areas, it gets into trouble. It gets people mad at it.

One of the roles I have always advocated that the Council can play, besides just its classical planning role, is that of providing a regional forum and regional facilitation.



A number of terms and acronyms are mentioned in the accompanying interview. Where possible, explanations are inserted in brackets within the interview. However, in some cases, the explanation would interrupt the flow of the interview, which is, after all, a conversation. In those cases, terms are noted with an asterisk (*) within the interview and explained briefly below.

Intertie The intertie is the system of transmission lines that carries electrical power between the Northwest and the Southwest. The DC intertie is a direct current line between Oregon and Southern California. The intertie also includes two alternating current (AC) lines which also run from Oregon to Southern California. Together, they can carry up to 5,200 megawatts. Bonneville constructed and owns most of the intertie in Oregon and sets the policy which establishes access to its portion of the line.

Bonneville's terminal expansion project would boost the capacity of the existing direct current line from about 2,000 megawatts to 3,100 megawatts.

These industries, primarily aluminum smelters, use such a large amount of electricity that they buy it wholesale directly from the Bonneville Power Administration.

Northwest and Southwest utilities are studying the possibility of an intertie which would run between Boise, Idaho, and Las Vegas, Nevada.

Load is the amount of electrical power required at a given point in the regional system. PNUCC prepares a regular report on the status of Northwest electrical power use.

Standards These standards, established by the Council pursuant to the Northwest Power Act, set levels of energy efficiency for new electrically heated residential buildings and all new commercial buildings.

Congress has granted public bodies and cooperatives priority access, called preference, to federal power. The Bonneville Power Administration markets federal power in the Northwest.

The Northwest Power Act of 1980, frequently called the regional Act, expanded the ability of Bonneville to acquire power resources and authorized the creation of the Northwest Power Planning Council.

Power demand in the Northwest peaks during the winter because of heating load, while demand in the Southwest peaks in summer because of air conditioning. As a result, both regions can use the intertie to mutual benefit. For example, in summer the Northwest can generate power to send to California and get power back in the winter.

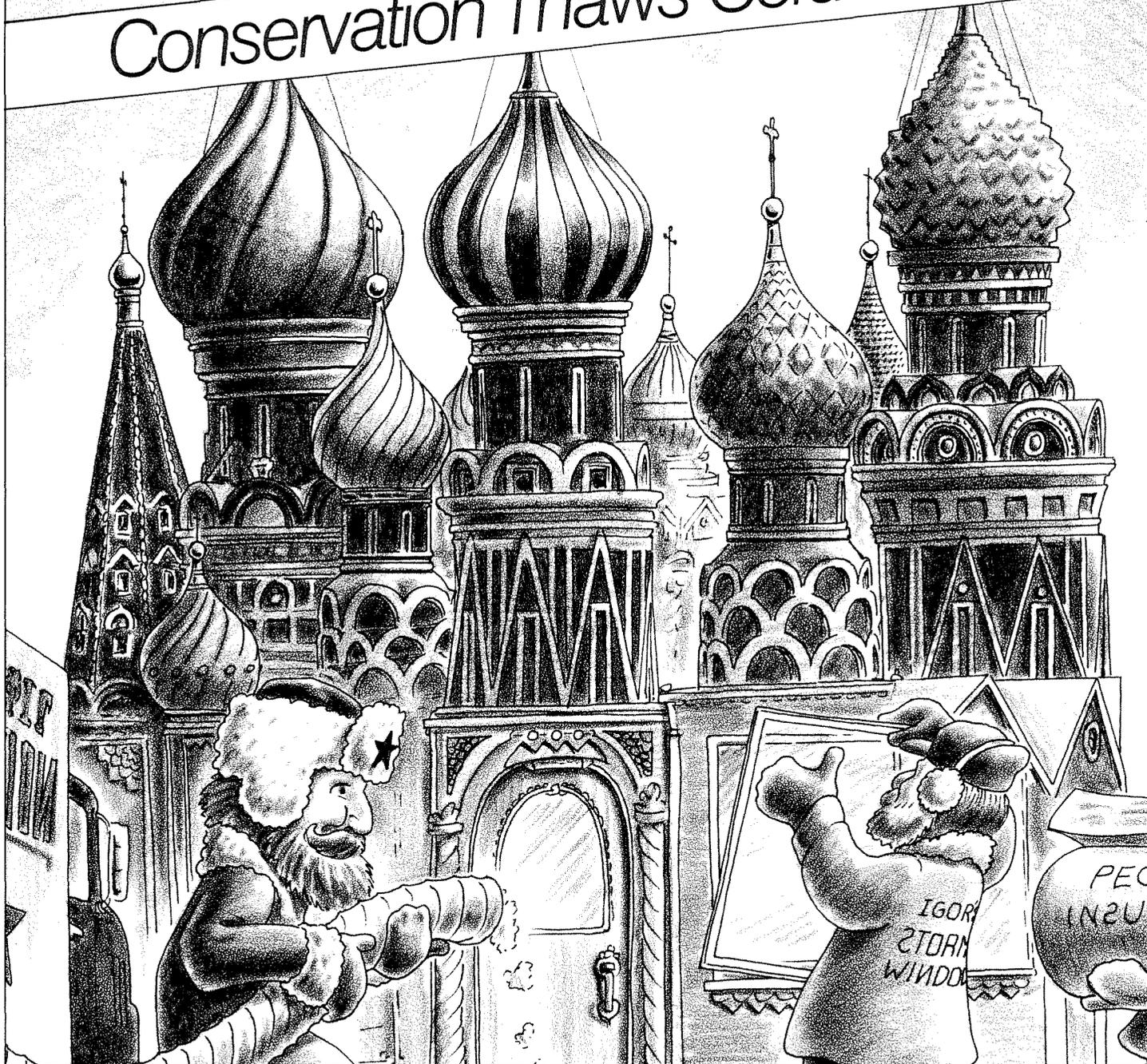
This is also called nonfirm power. It is electricity produced by the region's hydro-power system over and above that produced at the critical water (historic low) level. It is called secondary or nonfirm because it depends on the weather and cannot be relied on to meet firm loads.

This section of the Northwest Power Act provides a process through which Bonneville may acquire major new resources. The process requires a public review and a review by the Council to ensure that a resource is consistent with the Council's Northwest Power Plan.

This is one of the major computer models used by the region to determine resource cost-effectiveness. It simulates how the region's power system operates.

This proposed alternating current intertie would run between southern Oregon and the San Francisco Bay area. The line would increase intertie capacity by approximately 1,600 megawatts.

Conservation Thaws Cold War



By Paula M. Walker

While strategic arms reductions talks between the United States and the Soviet Union move in fits and starts and occupy the front pages of the world's newspapers, cooperative research efforts

between scientists from the two countries are proceeding quietly in other areas.

In the spirit of glasnost, American and Soviet scientists are cooperating on energy conservation

research. Glasnost, the term used by Soviet Premier Mikhail Gorbachev to signal a new era of openness and access to the Soviet people, could appropriately describe this new collaboration.

Illustration by Jerry Kruger

But Jim Litchfield, power planning director of the Northwest Power Planning Council, says cooperative exchanges between the two countries' scientists antedates Gorbachev's new policy.

"In the 1970s, many cooperative and technical exchanges occurred between the two countries," Litchfield said. "The idea was to reduce tension between the superpowers by improving people-to-people relations."

Those efforts ended, however, in the late 1970s when the United States cut off many such arrangements to protest the Soviet Union's invasion of Afghanistan. Since 1983, Soviet and U.S. scientists have gradually attempted to rebuild those relations.

Litchfield, a member of the National Academy of Sciences Panel on Cooperation with the U.S.S.R. on Energy Conservation Research and Development, and eight other American scientists met with their counterparts at a workshop in the Soviet Union last summer. Their goals were to share knowledge and to plan for collaborative research on energy conservation. The 14-day tour, jointly financed by the U.S. and Soviet governments, gave the Americans a closer look at Soviet technologies and perspectives on energy use and conservation, as well as an insight into Russian life.

The trip was a melange of high-level discussions with prominent Soviet scientists and rubbing elbows with Soviet citizenry. Litchfield, who visited Moscow and Kiev, kept a trip journal that described both the content of the discussions and the flavor of Russian culture. From the ornate onion-domed Kremlin to the ultra-modern Mezhdunarodnaya Hotel, where the U.S. delegation stayed in Moscow, the contrast between old Russia and recent Western influence was often stark. A restaurant constructed before the Russian Revolution maintained its pre-revolution architecture; yet its ceiling and walls reverberated with the ear-splitting vibrations of a rock band.

The Soviet and American scientists agreed to collaborate in five different areas of energy conservation research: 1) conservation techniques for electrical generation and transmission systems, including superconductivity; 2) techniques, such as cogeneration, for generating energy in a more cost-effective manner; 3) energy conservation in buildings and its influence on indoor air quality; 4) improved techniques to reduce energy use in metallurgical processes, such as smelting and refining; and 5) refinement of models to improve understanding of the relationship between energy-saving trends and the economies of both countries.

Contrasts were also apparent between Soviet and American approaches to energy conservation. Soviet interest in improving energy conservation reflects the government's concern about overconsumption of energy, Litchfield noted. The Soviet Union's next five-year economic plan proposes to satisfy 30 percent of all new energy needs through conservation.

Litchfield said the Soviets were interested in investigating the types of energy conservation they could secure during the next five years.

"They clearly recognize that they need to manage better the use of energy since the U.S.S.R. uses substantially more energy than does the U.S. for similar industrial processes, such as steel and aluminum production. And the Soviets believe the United States to be among the highest in the world in consumption per unit of production in those processes," he explained.

The Soviet and American scientists agreed to collaborate in five different areas of energy conservation research: 1) conservation techniques for electrical generation and transmission systems, including superconductivity; 2) techniques, such as cogeneration, for generating energy in a more cost-effective manner; 3) energy conservation in buildings and its influence on indoor air quality; 4) improved techniques to reduce energy use in metallurgical processes, such as smelting and refining; and 5) refinement of models to improve understanding of the relationship between energy-saving trends and the economies of both countries.

Like a summit agreement on nuclear weapon limitations, the research collaborations are carefully wrought. A 32-page document spells out the tasks for each country. The next workshop is scheduled for March 1988 in the United States. Until then, the American and Soviet teams will conduct initial research and exchange information.

Because of his background in energy planning with the Council, Litchfield was selected to help design the joint research projects on energy conservation in buildings. The agreement with the Soviets for those projects spells out three areas in which he and the project's coordinator, Robert Socolow, a professor of engineering at Princeton University, will focus initial collaboration with their Soviet counterparts.

The first area involves an extensive study of existing building standards. The scientists will compare the methods and principles underlying building standards in both countries. The Council's model conservation standards, the standards of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, the U.S. Department of Energy's Building Energy Performance Standards and Canada's R-2000 standards are potential standards for review by the U.S. team.

The Soviet team will most likely review its country's current codes on heat engineering, heating and ventilation in residential and public buildings, standards for measuring heat loss, and current Swedish building standards. Eventually, the two sides hope to improve the design of new energy conservation standards in both countries and to evaluate how well they are implemented in actual construction.

For Litchfield, the workshop provided an opportunity to explain the work being done in the Pacific Northwest to develop energy-conserving building standards and to construct and evaluate buildings to meet those standards. Both the Soviet and American scientists were impressed with the progress made in the Northwest, Litchfield said, noting that he spent as much time on the trip educating the American team members about the region's progress in achieving energy conservation as he did the Soviets.

"The Council, the Northwest Power Act and the Bonneville Power Administration have made significant strides in defining the characteristics of the conservation resource and in developing techniques and approaches for acquiring it," Litchfield said. "A lot of what we have done is unmatched anywhere in the world. The trip provided an opportunity to share with others what we have done and see if we can learn how to do some things better."

The Soviet approach to energy conservation in buildings is more technically oriented than the American approach, Litchfield said. "They're more interested in the physical properties — where is the energy going in the building, how is it leaving, how they can stop it from leaving," he said. "Whereas the U.S. approach is more economically influenced. We're concerned about cost-effective ways to achieve energy conservation."

The second area of study will involve a "dacha," an unoccupied single-family summer home in Lithuania that will be monitored to determine how the heat is distributed and lost. Emphasis will be on examining measurement techniques. The Soviet Union would do the actual monitoring. Both countries would run computer models on the building and compare the model results with the measured results of the monitoring. The United States would provide additional measurement technologies if possible.

The third area involves research to develop mathematical models to determine how heat is lost from buildings.

Litchfield stressed that uncertainty abounds in these types of projects. "It's very much like doing basic research," he said. "Often, you don't know what you are going to find out until you do it. You can't go into it thinking 'we're going to solve all the problems.'"

Both the Soviet and American scientists were impressed with the progress made in the Northwest.

The success of the entire collaborative effort may hinge upon the ability of the Americans to obtain funding for their research. Soviet research will be funded by the Academy of Science of the U.S.S.R. and the Soviet government. The U.S. team is seeking assistance from the U.S. Department of Energy and other agencies.

Communicating in the two languages on highly technical issues proved difficult at times because the interpreters were not well-versed in the terminology. At other times, the language itself failed them. For example, discussions about building standards based on performance were not productive, Litchfield said, because the Russian language appears to have no word for "performance."

Litchfield also noted that the Soviets did not appear to be disillusioned with nuclear power as a result of the Chernobyl nuclear accident, but they indicated they would build future plants further away from populated areas. A greater concern appeared to be the impact of several large hydroelectric projects on the U.S.S.R.'s valuable sturgeon runs. In fact, Litchfield said, the Soviets were considering dismantling some of the projects that were particularly harmful to the fish and replacing them with nuclear power.





QUESTIONS ABOUT THE KGB

Jim Litchfield's trip to the Soviet Union was not without its share of foreign intrigue. While the American scientists had access to many places not frequented by the average American tourist, they were well aware of the shadow of the KGB at times. The American delegation breezed through customs without a search, but some members — including Litchfield — noted signs that their luggage had been searched in their hotel rooms.

Once, upon leaving a restaurant, Litchfield and several members of the delegation approached a man who was following them. When confronted, the man admitted he was a KGB agent and said he wanted to make sure they were not bothered during their stay in Moscow.

"We informed him that he need not worry about our welfare, and he shrank into the background, although he con-

tinued to follow us," Litchfield said.

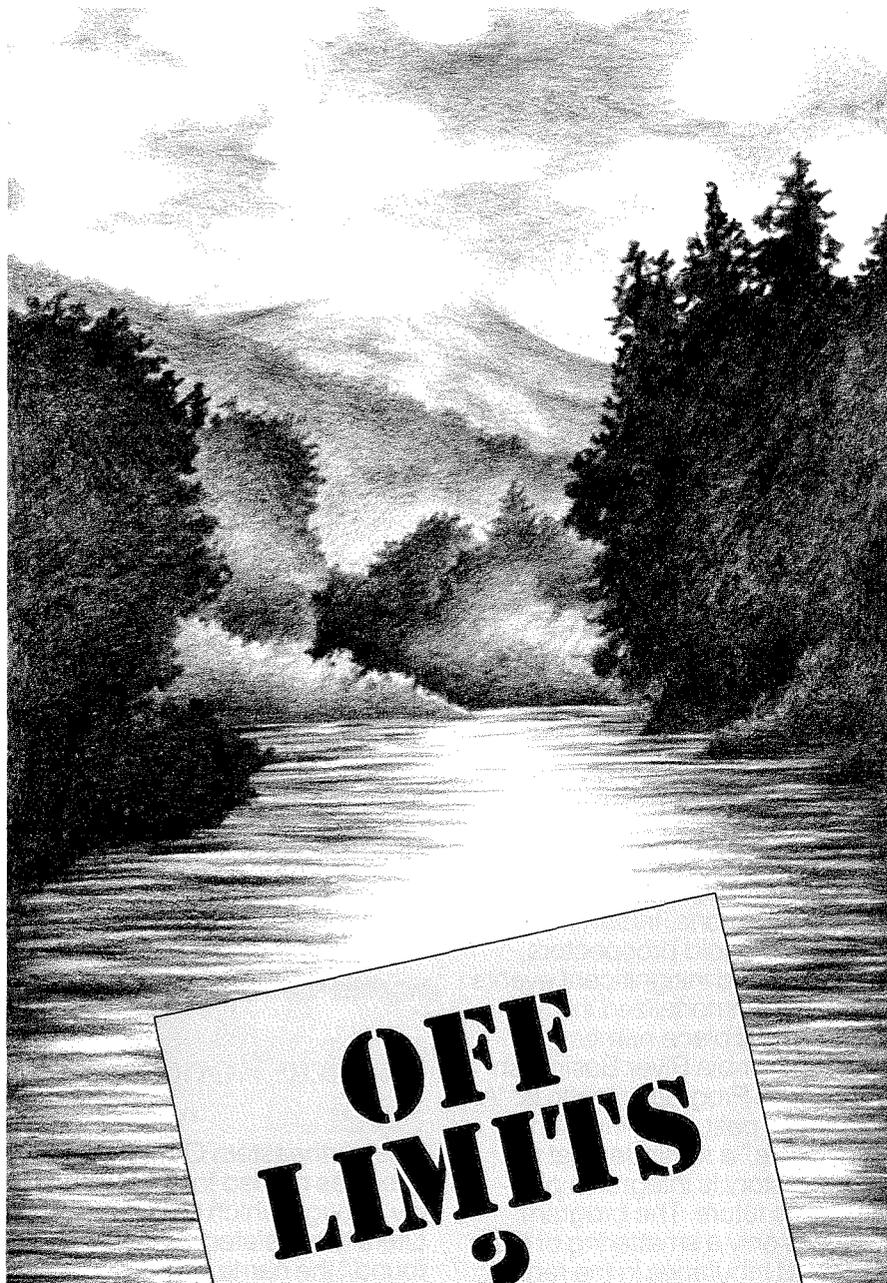
In other observations of Soviet life, Litchfield noted that cigarettes and high-fat diets were abundant. Cigarette smoke would have clouded the meeting rooms had the U.S. delegation not requested a "no-smoking" policy for the meetings, Litchfield said, noting that the Soviet scientists seemed unaware of the link between cigarette smoking and lung cancer. The Soviets also seemed to be uninformed about the detriments of a high-fat diet. Most meals included fatty meats, and fresh vegetables other than cucumbers were rare, Litchfield said. When pressed about the relationship between diet and health, one Russian responded, "You Americans are too concerned with living too long."

Because of the lack of information available to the general public, time is a scarce commodity, Litchfield said. In Moscow, people have a difficult time determining when or where to purchase basic necessities, so they carry large shopping bags with them in the event food or merchandise becomes available. Much time is spent seeking out where to buy such goods. When they do find what they need, they spend time waiting in lines to purchase it.

Litchfield noted that what seems to Americans an inefficient way to distribute goods actually operates as a constraint so that supply of those goods is not easily overrun by demand. Only so many people can gain access to products in a given day; therefore, the amount distributed to Soviet citizens is limited.

In Litchfield's words, "Time is what they use to allocate goods and services; whereas, we use money."

—PMW



**OFF
LIMITS
?**

Which Streams Should be Protected?

Among the first recommendations the Northwest Power Planning Council received in 1981 for its fledgling fish and wildlife program, was the proposition that the Council exert its influence over federal development and licensing of new hydroelectric facilities in the Columbia River Basin.

Existing dams had caused undeniable harm to salmon and steelhead runs in the basin, and the region's fish and wildlife agencies and basin Indian tribes wanted both the recovery of fish losses and a means of preventing future damage. They proposed that the Council set standards to

guide new hydroelectric planning. They also urged that new development be prohibited from streams and wildlife habitat that could be of particular value to future fish and wildlife populations in the basin.

In response, the Council, in its first program, agreed that protecting some streams and other habitat from future hydroelectric development was important, but that uniform criteria needed to be applied throughout the region. Instead of unilaterally declaring which streams deserved special protection, the Council wanted to hear the advice of representatives from all four Northwest states and the region's Indian tribes. A Hydropower Assessment Steering Committee was formed to help the Council with its deliberations on the issue.

In 1983, the Council's first Northwest Power Plan reiterated concerns about further hydroelectric expansion and called for a study to rank potential hydropower sites throughout the region based on their possible impacts on fish and wildlife populations and habitat. Such a study would provide the Council with better estimates of the amount of hydropower that could be expected from future development.

The two studies were officially combined and initiated in August 1984. With major contributions from the fish and wildlife agencies, Indian tribes, recreational and environmental groups, the Bonneville Power Administration, the U.S. Army Corps of Engineers and others, the Council and its Hydropower Assessment Steering Committee compiled and cross-referenced data about every year-round stream reach in the four-state region.

This huge data base can now be used to designate areas to be protected from development; rank proposed sites for hydropower development based on their effects on fish and wildlife; and select sites that are environmentally sound for hydropower.

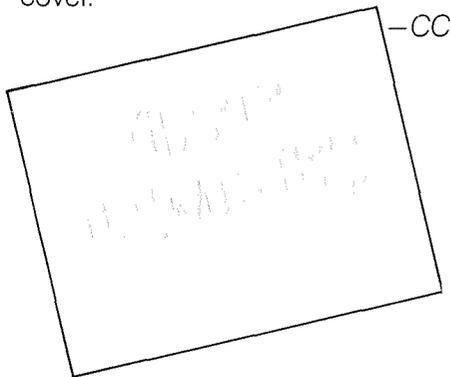
With the help of the data, the four states have proposed criteria for preserving certain stretches of streams in each state. Four general guidelines have emerged from this process.

1. Protect all areas currently used by anadromous (ocean-migrating) fish or potentially usable by anadromous fish in the Columbia River Basin.
2. Protect all areas currently used by anadromous fish outside the Columbia River Basin.
3. Protect high-quality resident fish and wildlife areas both inside and outside the Columbia River Basin.
4. Provide for re-evaluation of protected areas after system planning is completed. (The Council is about to embark on an analysis of 31 subbasins in the Columbia River Basin to determine their potential contributions to the goal of doubling salmon and steelhead runs. When these subbasin plans are completed, they will be integrated into a single basinwide or "system" plan.)

Based on these criteria, the states have each submitted detailed lists of the 350,000 miles of river reaches studied, including those recommended for protected areas status. The size of the combined lists resembles a Manhattan Island phone book.

Before making decisions on these recommendations, the Council will try to draw the widest possible public review. Either hard copy or computer diskette copies of the lists are available for groups or individuals as well as for local libraries.

For copies of an issue paper describing the states' proposals, see the order form on the back cover.



A River By

By Paula M. Walker

The history of the Pacific Northwest was shaped by a rich mixture of circumstances. History books boast tales of luck and misfortune, of conflict among humans and of conflict between humans and nature. Adventurers, ruffians, entrepreneurs and others comprised a colorful cast of characters whose actions influenced the region's development.

Both natural and man-made contributors to the region's history have been preserved in the names of towns, rivers, creeks and dams. Flora and fauna, famous and infamous persons, Indian tribes, fur trappers, gold prospectors, significant and insignificant events have been immortalized in thousands of place names.

The Columbia River Basin Fish and Wildlife Program's motto is: "A debt to the past ... An investment in the future," a reminder that the basin's history is integral to planning for its future. The program mentions only a smattering of the rivers and tributaries in the region, but even that assortment of names provides some insight into the region's history. The Columbia River, for instance, was named by its American discoverer, Captain Robert Gray, in 1792 in honor of his ship, the *Columbia Rediviva*.

Some name origins are straightforward. Names such as Oak Grove Creek, Fish Creek, Elk Lake Creek, Trout Creek and Salmon River honor the abundant flora and fauna that give the region its unique character. Indian names such as Okanogan, Lemhi, Cowlitz and Wanapum reflect the influence of the region's earliest settlers.

Other names offer intriguing explanations. The Malheur River, Murderers Creek, Bakeoven Creek and Hungry Horse Dam, for instance, are associated with vignettes that may be part fact, part folklore. Historians have conducted extensive research on the origins of place names; yet many names remain contested. Some explanations may be apocryphal; others are well documented.

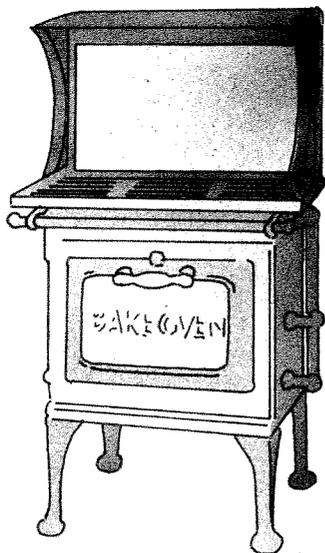
The following names, gleaned from the pages of the fish and wildlife program, illustrate both the fact and fancy attached to river and creek names in the Columbia Basin.

This northeastern Oregon river was named for the valley through which it flows. Literally translated as "great round," the name came from French Canadian fur traders to describe the valley's elliptical shape. A grammatical error distinguishes the Grande Ronde Valley in eastern Oregon from its misspelled counterpart in western Oregon, the Grand Ronde. The Grande Ronde River also may have been called the Clay River for its yellowish color where it flows out of the valley.

Another reminder of the impact of French Canadian fur traders, the Touchet River in southeastern Washington

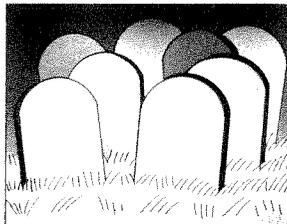
Any Other Name

may have derived its name from the French verb "toucher," meaning to drive, to strike with a whip, or the noun "toucheur" for cattle drover, another important



profession during the early growth of the Pacific Northwest. Explorers Lewis and Clark originally named it the White Stallion River for a horse they were given by the Walla Walla Indians. The river's name was later changed to Touchet, the name of an early French Canadian settlement nearby.

From the Salish Indian word "okinagan," this northern Washington river name has been translated as "meeting place of water" because the Okanogan River and Salmon Creek meet at the town of Okanogan. Another translation of the word is "rendezvous," signifying the location where Indian celebrants met for their annual festivals, called potlatches.



Another example of early entrepreneurship provides the name of this north central Oregon creek. Bakeoven is allegedly derived from the tale of a German baker who, intent upon capitalizing on gold rush fever, set off from The Dalles, Oregon, with a pack train of flour. After he crossed the Deschutes River, Indians drove off his horses, leaving only his supplies. As the story goes, he built a rough clay and stone oven and baked bread, which he sold to miners and prospectors on their way to the mines.

Misfortune was the middle name of many an explorer and pioneer. Some, like the Bakeoven baker, turned bad luck into good. Others named places for it. Malheur is French for misfortune, literally translated as "evil hour." Peter Skene Ogden, a fur trader for the Hudson's Bay Company, was the first to record the name for this central Oregon river. His journal entry for February 14, 1826, read: "We encamped on River au Malheur (unfortunate river) so called on account of property and furs having been hid here formerly, discovered and stolen by the natives."

This ominous name is said to have been given to this central Oregon stream in the 1860s after a group of Indians allegedly killed a party of eight prospectors who were exploring its banks.

An early acronym, this small creek in north central Oregon probably derived its name from the first two letters of the names of Villard, Endicott and Tolman, three early railroad entrepreneurs.

According to the Montana Historical Society, the origin of this name is disputed. One explanation holds that this creek in northwestern Montana was named for two horses, Tex and Jerry, who were chained to sleighs and lost for more than a month in deep snow. Historical Society records also contain a claim by one J.C. Eastland, who wrote in 1949 that he and his brother named the rapids of Hungry Horse Creek in 1889 after they lost a horse near there. The horse was found four days later by a Flathead Indian.

(Sources: Oregon Geographic Names by Lewis A. McArthur; Place Names of Washington by Robert Hitchman; Idaho State Library, and the Montana Historical Society.)

PULLMAN AND SPOKANE COUNTY VOTE FOR CONSERVATION

Spokane County and the city of Pullman, Washington, are the latest of a growing number of Northwest communities to make energy conservation a priority. At its August meeting, the Pullman City Council adopted the Northwest Energy Code that meets the model conservation standards (MCS) of the Northwest Power Planning Council. Spokane County followed with its adoption of the code on October 20.

The Northwest Energy Code contains energy-efficiency standards for new electrically heated residential and commercial buildings in the Northwest. The addition of Pullman and Spokane County raises the number of Washington "early adopters" to 16, including Tacoma, Seattle, Stanwood, McCleary, Elma, Republic, Milton, Fircrest, Cathlamet, Cheney, Columbia County, Wahkiakum County and Fife. The city of Spokane, Washington, is also considering adopting the standards.

Pullman's Mayor Carole Helm stated, "Pullman's early adoption of the MCS demonstrates the City Council's commitment to energy conservation and to the concept of promoting quality construction that will be cost-effective over the life of the building."

In Spokane County, the commissioners agree. "I'm pleased Spokane County had the foresight to become an early adopter," reported County Commissioner Pat Mummey. "This will benefit our ratepayers, and I hope it will be an incentive to other cities and counties."

Eastern Washington member of the Northwest Power Planning Council, Tom Trulove, added that, "These people have not only made a statement about the high quality of their communities, but they have also made a major contribution toward keeping electric rates as low as possible for both current and future generations." In Spokane County, Trulove esti-

mated county ratepayers would save approximately \$125,000 in the first year of the new standards.

The Early Adopter Program is offered in Washington, Idaho, Montana and Oregon through the Bonneville Power Administration. The program was designed to help local jurisdictions adopt the standards by providing technical assistance, building code enforcement, support for administrative costs and payments to builders for the energy savings. These energy savings represent what the Council calls a "lost-opportunity resource." That is, if not captured now, the savings are lost to the region forever. Acquiring this resource saves electricity and allows the region to defer or avoid building new thermal plants that are more expensive to the power system. The Council has estimated that energy savings from the model standards cost the region around 2.5 cents per kilowatt-hour, versus about 4.2 cents per kilowatt-hour for power from a new coal plant.

"The Early Adopter Program gives the region a variety of experiences in administering regionally cost-effective codes that can serve as the basis for future improvement," stated Trulove. "Early adopters lead the way in changing current building practices thereby hastening the day when such practices will be universally required through state building codes."

Idaho early adopters include Bonneville County, Idaho Falls, Bingham County, Iona, Ucon, Blackfoot, Franklin, Ammon, Shelley, Heyburn and Minidoka County.

For more information on the Early Adopter Program, contact the local government association in each state or Bonneville Power Administration area or district offices.

—Carol McAllister

Council

The Northwest Power Planning Council has elected Morris Brusett of Helena, Montana, to be chairman of the Council, and Tom Trulove of Cheney, Washington, to be vice chair. Brusett was vice chairman of the Council this past year. Both elections were unanimous.

Brusett served as state treasurer and director of the Montana Department of Administration from 1981 through 1984. A certified public accountant, Brusett also served as Montana's legislative auditor from 1967 to 1981. His responsibilities in that position included conducting financial and program audits of all state agencies.

Clarification

In the August/September 1987 issue of *Northwest Energy News*, the lead article, "What To Do When the River Runs Dry: Fish and Power Interests Join Forces To Counteract Low Water Levels," described cooperative efforts to improve survival of young salmon and steelhead in 1987 as they migrated down the mainstem Columbia and Snake rivers.

Cooperation was particularly important this year because water levels were much lower than normal. The article described the actions of an ad hoc group that convened to discuss mainstem passage

Elects New Officers



Morris Brusett

Brusett was appointed to the Planning Council by Montana Governor Ted Schwinden in January 1985. Vice-chairman Trulove was appointed to the Council in 1985 by Washington State Governor Booth Gardner.

Trulove had served as Mayor of Cheney, Washington, from 1978 until his appointment to the Council. He holds a doctorate in economics from the University of Oregon, and he has taught economics at



Tom Trulove

Eastern Washington University in Cheney since 1969.

Members of the Council are appointed by the governors of Idaho, Montana, Oregon and Washington. Officers of the Council are elected

by the eight Council members.

—CC

issues. To exemplify the difficult tasks faced by that group, the article highlighted the decisions to make two special releases of water from Grand Coulee Dam to help move fish stranded in the pool behind John Day Dam.

The article neglected to mention the role of the Bureau of Reclamation in those decisions. Although not technically a member of the mainstem passage group, the Bureau was actively involved in the special release decision because it operates Grand Coulee Dam.

According to John Keys III, the Bureau's Pacific Northwest regional director, General George Robertson of the U.S. Army Corps of Engineers proposed to the Bureau the two special releases of water — one from May 26 through May 31 and a second one from June 5 through June 10. The Bureau analyzed the impacts of the proposed releases upon its hydropower projects and the operation of the river and agreed to implement the Corps' proposal.

The Grand Coulee power plant generates about one-fourth of the energy produced by the entire federal Columbia River power system. As operator of Grand Coulee Dam and its power plant, the Bureau of Reclamation is an integral part of the hydropower system in the Columbia Basin.

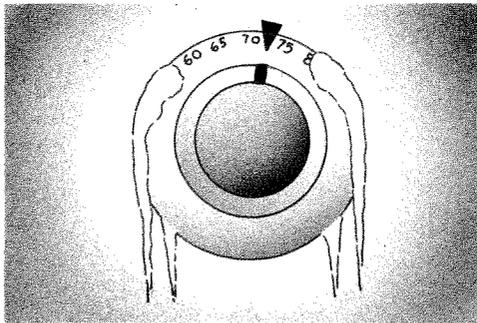
The Bureau has cooperated in implementing the measures of the Columbia River Basin Fish and Wildlife Program and deserves particular recognition for its work to improve fish passage facilities in the Yakima Basin. Along with the Bonneville Power Admin-

istration, state and local governments, utilities, tribes and other federal agencies, the Bureau of Reclamation has worked to install fish passage facilities such as screens and ladders in the Yakima. The Bureau operates all the completed Yakima fish passage facilities at eight sites and is designing and overseeing construction for most of the remaining Yakima projects.

In the Umatilla River Basin, the Bureau has also been instrumental in plans to increase water supply for salmon and steelhead.

Shorts

Plans to compensate for damage to wildlife and habitat caused by the construction and operation of Grand Coulee Dam and other hydroelectric projects have been submitted to the Northwest Power Planning Council by Northwest fish and wildlife agencies and Indian tribes. In addition to the Grand Coulee effort, the plans address damages in the Willamette River Basin in Oregon and those caused by the Palisades Dam on the South Fork of the Snake River in Idaho. The plans, which propose protection for big game, small furbearers, waterfowl and some non-game species, must now be reviewed by the Council and citizens of the Northwest before being approved. An issue paper detailing the plans will be available this winter.



Dummy thermostats to counteract people's tendencies to turn up the heat are recommended by the Interfaith Coalition on Energy as simple and effective conservation devices. "Some people begin to feel warmer when they simply make an adjustment of the thermostat," explains an article in the *ICE Melter Newsletter*, published by the Coalition. The thermostats require no wiring, so they are easy to install. The article also suggests that a "Do not touch!" sign adds emphasis (and perhaps credibility) to the placebo. (For more information: The Interfaith Coalition on Energy, Box 26577, Philadelphia, Pennsylvania 19141.)

Five states and three nations look to nuclear-powered generation for more than half their electrical supplies, according to the Washington Public Power Supply System's periodical, *Power Lines*. France is the world's leading user, relying on nuclear power for about 70 percent of its electrical needs. Vermont (65.4 percent), South Carolina (63.2 percent), Connecticut (58 percent), Maine (57.3 percent) and New Jersey (51.6 percent) follow France in their use. Belgium at 67 percent and Sweden at 50 percent also depend heavily on nuclear-fueled power generation. Nuclear power replaces about 7 million barrels of crude oil worldwide each day, according to William J. Dircks, president of the Atomic Industrial Forum. (Source: *Power Lines*, Box 968, 3000 George Washington Way, Richland, Washington 99352.)

The energy lost through U.S. windows each winter is equivalent to the energy produced by the Alaskan pipeline every year, according to Arthur Rosenfeld, director of the Center for Building Science at the Lawrence Berkeley Laboratory in Berkeley, California. Rosenfeld's statement was part of his testimony before the U.S. House Committee on the Budget Task Force on Community and Natural Resources. Rosenfeld was arguing against proposed cuts in the nation's budget for energy conservation programs. (Source: *Western Energy Update*, 6500 Stapleton Plaza, 3333 Quebec Street, Denver, Colorado 80207.)

Montana's commercial, industrial and public buildings could be made more energy-efficient because of the formation of the Montana Energy Management Institute. The institute was formed in September by sheet metal and air conditioning contractors. It is an affiliate of the National Energy Management Institute, a service organization created in 1981 to train and certify contractors in the techniques needed to make ventilating, heating, air conditioning and other energy-using systems work at maximum efficiency. (For more information: William C. Belforte, Sheet Metal and Air Conditioning Contractors' National Association, Inc., 2030 11th Avenue, Suite 11, Helena, Montana 59601, phone 406-443-4200.)

Spanish-speaking utility customers in the Northwest can become better informed about their utilities and the programs they offer, thanks to a bilingual guide published by the Puget Sound Power and Light and the Pacific Power and Light companies. The new book, "A Spanish-English Guide to Electricity," explains electrical safety, weatherization programs and billing procedures. (Contact Chris Collier, Puget Sound Power and Light, OBC-09N, Box 97034, Bellevue, Washington 98009-9734, phone 206-462-3206)

Canadian consumers of conservation improvements in their homes are guaranteed satisfaction and protection by the Contractors' Warranty Program, developed by a coalition of contractors, the National Energy Conservation Association and the Federal Department of Energy, Mines and Resources in Canada. The warranty addresses consumers' skepticism about dealing with contractors. To participate in the program, contractors and manufacturers must meet qualifications that cover their business practices, competency, financial stability and workmanship. (For more information: Energy Conservation Contractors' Warranty Corporation, 2B-7291 Victoria Park Avenue, Markham, Ontario L3R 3A4.)

Calendar

November 12-13 — Northwest Power Planning Council meeting at the Sheraton Tacoma Hotel, 1320 Broadway Plaza, Tacoma, Washington.

December 1-3 — 138th Annual Northwest Fish Culture Conference at the Best Western Executive Inn Tacoma, Fife, Washington. Sponsored by the American Fisheries Society. For more information: Bob Hager, Salmon Culture Division, Washington Department of Fisheries, 115 General Administration Building, Olympia, Washington 98504, 206-753-6640.

December 9-10 — Northwest Power Planning Council meeting at the Council's central office, Portland, Oregon.

June 27-July 1, 1988 — "International Symposium and Educational Workshop on Fish-marking Techniques" at the University of Washington in Seattle. Sponsored by the American Fisheries Society and the U.S. Fish and Wildlife Service. For more information: Dr. Nick C. Parker, Marking Symposium, U.S. Fish and Wildlife Service, Route 3, Box 86, Marion, Alabama 36756, 205-683-6175.

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. Curtis

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
- 1987 Northwest Power Planning Council Annual Report
- Issue paper on Protected Areas (see article on page 25)
- A Review of Conservation Costs and Benefits, Five Years of Experience under the Northwest Power Act (see article on page 12)
- Heating New Homes: A Comparison of the Cost of Heating With Electric, Natural Gas and Fuel Oil Heating Systems
- History and Status of Energy Conservation Standards for New Commercial Buildings in the Northwest (this and the following paper are from a series of four papers that will focus on issues related to the proposed revision of the Council's model conservation standards for new non-residential buildings)
- Issue Paper on Policy Options for Commercial Model Conservation Standards
- Western Electricity Study briefing papers (see article on page 7)

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! (public involvement newsletter mailed with the Council meeting agenda)

Name _____

Organization _____

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City/State/Zip _____

(Or call Judy Allender at the Council's central office, 503-222-5161, toll free 1-800-222-3355 in Idaho, Montana and Washington, or 1-800-452-2324 in Oregon.)

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