United States General Accounting Office 132205
Report to Congressional Committees

GAO

February 1987

FEDERAL ELECTRIC POWER

A Five-Year Status Report on the Pacific Northwest Power Act

GAO/RCED-87-6

038065

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-225290

February 19, 1987

The Honorable J. Bennett Johnston, Chairman
Committee on Energy and Natural Resources
United States Senate

The Honorable John D. Dingell, Chairman
Committee on Energy and Commerce
House of Representatives

The Honorable Morris K. Udall, Chairman
Committee on Interior and Insular Affairs
House of Representatives

This report discusses the progress made in developing and implementing the electric power planning, fish and wildlife, and public involvement programs called for by the Pacific Northwest Electric Power Planning and Conservation Act, 1980 (16 U.S.C. 839).

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of Energy; the Administrator, Bonneville Power Administration; the Chairman, Northwest Power Planning Council; Governors, Senators, and Representatives of Pacific Northwest States; and the other House and Senate Committees and Subcommittees having oversight responsibilities for the matters discussed in the report.

This work was performed under the direction of Keith O. Fultz, Associate Director. Other major contributors are listed in Appendix V.

J. Dexter Peach
Assistant Comptroller General

Executive Summary

Purpose

The Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act), among other things, established a regional planning council to develop a plan to meet the region's future electricity needs and a program to protect and enhance the region's fish and wildlife resources. The act also called for the involvement of the public in developing and implementing the region's power plans and related programs.

To assist congressional oversight committees, GAO reviewed the progress that has been made to develop and implement the region's electric power planning and fish and wildlife programs as well as the actions that have been taken to achieve public involvement in decisions related to these activities.

Background

In the 1970's, electric power rates in the Pacific Northwest were increasing rapidly and regional forecasts were projecting growing demand for electricity, with a possibility of shortages occurring in the 1980's. Further, because of the operation of hydroelectric dams over many years, regional fish and wildlife resources were being adversely affected. These factors were leading to increased public interest in participating in regional power and fish and wildlife decisions.

On December 5, 1980, the Congress enacted the Northwest Power Act. Major provisions of the act called for a coordinated regional effort, including public involvement, to (1) plan for and develop future electric power supplies and (2) protect, mitigate, and enhance regional fish and wildlife resources. The Department of Energy's Bonneville Power Administration (Bonneville), which supplies about half the region's electric power, was authorized under the act to acquire sufficient power resources consistent with the regional power plan to serve any regional utility requesting power service.

Results in Brief

The Council developed a 20-year power plan and fish and wildlife program based on guidance in the act and identified near-term actions that could be taken to implement its plan and program. GAO found that progress has been made in implementing the Council's plan and program but progress has been less than the Council anticipated. GAO also found that the Council and Bonneville have developed and are carrying out activities to inform the public about regional power matters and to solicit public comments and views on proposed plans prior to making final decisions.

Principal Findings

Power Plan

The Council's 20-year power plan identified the amounts and types of power resources needed to meet differing levels of future power demand. The Council recommended that initial power plan implementation focus on state and local governments' adoption of building energy conservation standards and development of an inventory of power resources, including conservation, that could be acquired when needed.

The Council's plan called for the adoption of the building standards by January 1986. GAO found that two of the four northwest states had partially incorporated the Council's standards in their statewide building codes. In addition, six local governments in one of the states had adopted the standards.

The Council's plan recommended that Bonneville, local governments, and electric utilities develop and test conservation programs that could be implemented when needed. Bonneville's progress in this area was less than anticipated by the Council. GAO found that the slow progress was due to start-up problems, unsynchronized planning and budgeting between the Council and Bonneville, and uncertainties about the availability of funding.

Fish and Wildlife

The Council's fish and wildlife program emphasized regional actions to protect and enhance fish resources, particularly salmon and steelhead trout. Federal, state, tribal, and utility interests were working together and coordinating their efforts to improve the passage of fish through hydroelectric dams on the Columbia River, increase the production of fish in the Yakima River Basin, and improve the flow of water in the rivers to assist juvenile fish migrating to the sea. However, the impact these activities have had on enhancing the region's fish resources will require more time to assess because, among other things, a full life cycle for some fish species has not been completed since program implementation.

Public Involvement

Both the Council and Bonneville have instituted programs to inform the public of and elicit their views on plans and activities related to regional power planning and fish and wildlife programs. Both have also taken actions to improve their programs. In GAO's view, the Council's and

Bonneville's programs should ensure that the public is made aware of regional power planning and fish and wildlife issues and is provided opportunities to participate in decisions on these matters.

Observations

The regional power planning process instituted under the act has provided, in GAO's view, a positive framework for evaluating and planning for the development of the Pacific Northwest's future electric power resources. In addition, GAO believes the Council's fish and wildlife program has had a positive and unifying effect on the region's fish and wildlife activities. Nevertheless, some issues appear to need resolution such as a clear delineation of the regional power planning responsibilities between the Council and Bonneville.

From a broader perspective, the region has experienced an electric power surplus rather than the power shortages anticipated before the Northwest Power Act was passed. As a result, some regional entities have questioned the need for and workability of regional power planning at a time when a power surplus exists. GAO believes the Council's power plan provides a positive framework for guiding the region's power resource development activities even during the current power surplus condition. GAO also believes that implementation of the plan will require the coordinated efforts of many regional entities.

Recommendations

GAO is making no recommendations in this report.

Agency Comments

Copies of a draft of this report were sent to the Northwest Power Planning Council and the Department of Energy for official comment.

The Council said that the report provided a good summary of the major implementation activities in power planning, fish and wildlife protection and enhancement, and public involvement. The Council also said it is continuing its efforts to assure success in carrying out the mandates of the Northwest Power Act.

The Department of Energy expressed its view that considerable progress had been made by the Council in carrying out its responsibilities under the Northwest Power Act. The Department said it was appreciative of the positive tone set forth in the draft. The Department was concerned, however, about the limited focus of GAO's review of the act and

that current progress is not discussed. GAO recognizes that there are provisions of the act it did not review; however, it believes the report covers those provisions that represent a unique regional approach to power planning and fish and wildlife protection and enhancement. GAO recognizes that additional progress may have been made in the areas it examined since the completion of its review in May 1986.

A draft of the report was also furnished to regional National Marine Fisheries Service officials for their information. They provided GAO with specific comments relative to the fish and wildlife program. These comments have been incorporated into chapter 3.

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Abbreviations

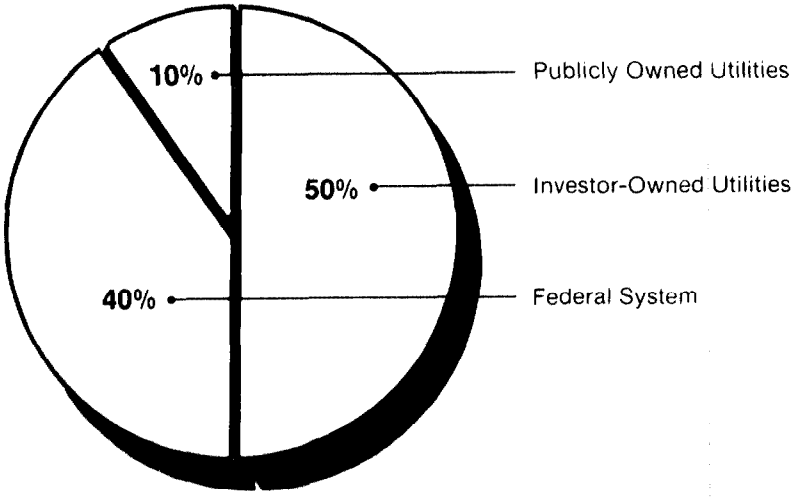
DOE	Department of Energy
FERC	Federal Energy Regulatory Commission
GAO	General Accounting Office
kW	kilowatt
kWh	kilowatt-hour
MCS	Model Conservation Standards
mw	megawatts
OMB	Office of Management and Budget
PUD	Public Utility District or Peoples Utility District

Introduction

The Pacific Northwest Electric Power Planning and Conservation Act (16 U.S.C. 839)—or the Northwest Power Act—became law on December 5, 1980. The act established a regional planning council to help the Pacific Northwest states plan for future electric power supplies and protect and enhance the region's fish and wildlife resources. The Pacific Northwest Electric Power and Conservation Planning Council (Council) is an interstate compact agency[1] responsible for developing a regional electric power plan and a regional program to protect and enhance the fish and wildlife resources adversely affected by hydroelectric dams in the Columbia River Basin. The Council provides the Pacific Northwest states a forum for jointly addressing common problems previously addressed by their respective energy offices and public utility commissions and fish and wildlife agencies.

The Pacific Northwest is diverse in the ownership and source of its electric power generation. The federal government supplies 50 percent of the region's electricity; the remaining 50 percent is supplied by investor-owned utilities (40 percent) and publicly owned utilities (10 percent). Hydroelectric power is the region's primary source of electric energy. Figure 1.1 shows the federal role in the generation of electric power for the region.

Figure 1.1: Generation of Electric Power in the Pacific Northwest, Fiscal Year 1985

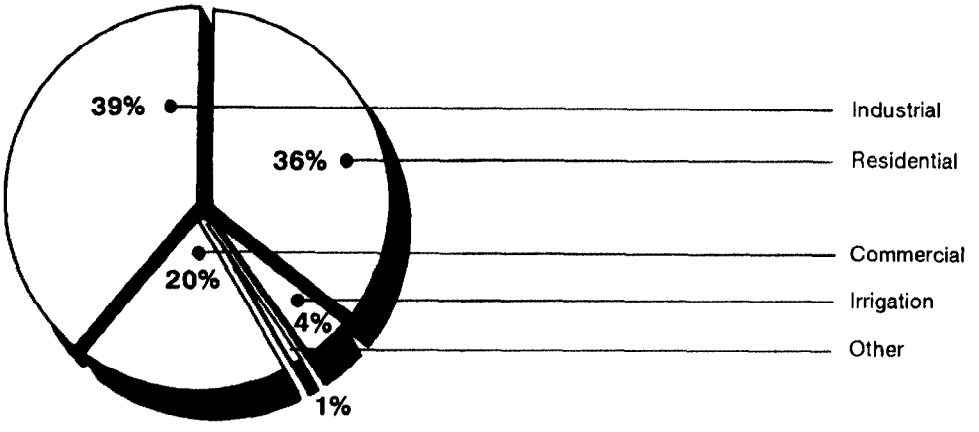


Source: Adapted by GAO from Council publications

[1]The Council is composed of two members each from the states of Idaho, Montana, Oregon, and Washington. The members are appointed by their respective governors.

Figure 1.2 shows a breakdown of 1983 electricity sales in the region by economic sector. The industrial, residential, and commercial sectors accounted for 95 percent of the region's power consumption.

Figure 1.2: Distribution of Firm Electricity Sales Among Major User Groups, 1983



Source: adapted by GAO from Council publications.

Federal electric power is sold by the Department of Energy's Bonneville Power Administration—a power-marketing agency— primarily to publicly owned utilities that have preference status and to certain federal agencies, investor-owned utilities, and industrial customers. The federal power is generated at 30 hydroelectric dams constructed by the U.S. Army Corps of Engineers and the Department of the Interior's Bureau of Reclamation.

Concerns Leading to the Northwest Power Act

In the early 1970's, many Northwest utilities and their customers saw themselves approaching a crisis in electric power supply. Regional forecasters were predicting continual increases in demand for electric power, and meeting this demand would necessitate constructing many new powerplants to avoid shortages in the 1980's. But most large hydropower sites had already been developed, and Bonneville would be unable to supply much new federal hydropower. Consequently, regional utilities were forced to consider more costly power supply alternatives, such as coal and nuclear powerplants.

Bonneville began notifying its customers that federal hydropower was going to be in short supply. In June 1976 Bonneville advised its industrial customers that their power sales contracts would probably not be renewed when the contracts expired in the 1980's because Bonneville would need that power for its preference customers. Bonneville also informed its preference customers, the publicly owned utilities, that it could not promise to fully meet their power needs after June 1983.

By 1978, power rate imbalances were developing between utilities in the region. Investor-owned utility rates were becoming much higher than publicly owned utility rates, in part, because the investor-owned utilities were the first to construct higher cost coal and nuclear powerplants. With power rates starting to increase and with heightened recognition of the environmental costs of power developments, Bonneville and the region's utilities came under considerable pressure from consumer and environmental interests seeking to participate more actively in regional power planning and decisionmaking.

In addition, past efforts to protect, mitigate, and enhance some of the region's fish and wildlife resources were proving inadequate--particularly for the anadromous salmon and steelhead trout[2] adversely affected by hydroelectric projects on the Columbia River and its tributaries. Power-producing dams contribute to declines in the salmon and steelhead fisheries in a variety of ways. The dams flood spawning habitat, slow the downstream migration of juvenile fish to the sea, and permanently block adult fish from returning upstream to their spawning grounds if fish ladders are not provided. Water pollution and siltation from farming, logging, and mining also contributed to declines in the Columbia Basin's fisheries. Despite numerous federal efforts to preserve the region's fish and wildlife resources, by 1980 all salmon and steelhead runs originating above the confluence of the Columbia and Snake Rivers were being considered for inclusion on the national list of threatened and endangered species.

To help the Northwest meet these challenges, several bills were introduced in the Congress between 1977 and 1980. During this period, we issued two reports dealing with the region's power supply problems[3] and

[2]Anadromous fish spawn in freshwater rivers and streams, migrate to the ocean to mature, and return to the freshwater rivers and streams of their origin to spawn.

[3]Region at the Crossroads—The Pacific Northwest Searches for New Sources of Electric Energy (EMD-78-76, Aug. 10, 1978).

with the legislation proposed to help resolve them.[4] In December 1980, following numerous hearings and debates, the Congress passed the Northwest Power Act.

The Northwest Power Act

The act was designed to alleviate regional concerns about future power shortages, unbalanced power rates, and declining fish populations. The central purpose of the act was to assure the region an efficient and adequate electric power supply. Its primary objectives were to

- establish a representative regional power planning process with participation and consultation from all interested parties;
- encourage cost-effective energy conservation and the development of renewable energy resources; and
- protect, mitigate, and enhance the region's fish and wildlife, particularly the anadromous fish.

To achieve the act's objectives, the Council is to develop plans that will provide the Pacific Northwest with an economical and reliable power supply. One such plan, the Council's 20-year power plan, must give priority to developing cost-effective power resources, provide for the development of conservation, renewable resources, high-efficiency generating alternatives, and all other resources, in that order. In addition, the power plan must include a program to protect, mitigate, and enhance the fish and wildlife resources adversely affected by hydroelectric dams in the Columbia River Basin.

To achieve coordinated and cost-effective resource development, the act enabled all regional utilities to ask Bonneville to meet their increased power needs. Bonneville was seen as a logical coordinator and risk-spreader for new powerplant construction because, as a federal entity, its sponsorship could lead to favorable interest rates for financing new resources. By supplying regional utilities with power and assisting them to develop conservation resources, Bonneville could become the central agency for implementing a regional approach to power planning and development.

The act gave Bonneville several tools to help it become the central agency for power resource development. The legislation authorized Bonneville, for the first time, to acquire power resources sufficient to serve any regional utility requesting power service, whether publicly

[4]Impacts and Implications of the Pacific Northwest Power Bill (EMD-79-105, Sept. 4, 1979).

owned or investor-owned. Bonneville was also authorized to (1) borrow up to $1.25 billion to finance energy conservation investments, (2) offer new contracts to its industrial customers, (3) fund the Council's fish and wildlife program, and (4) provide rate relief for utility customers with higher cost service. The act authorized Bonneville to acquire conservation and renewable resources determined to be consistent with the Council's 20-year power plan. The Council was authorized to review Bonneville's acquisitions to determine whether they were consistent with the plan and to determine the extent to which the plan was being implemented.

The act directed that the Council and Bonneville establish and maintain comprehensive programs assuring widespread public involvement in formulating regional power policies. These programs must provide for participation by the appropriate federal agencies, state and local governments, Indian tribes, electric utilities and consumers, and the public at large.

Since the act's passage, congressional committees and Members of Congress have shown continuing interest in the efforts of the Council and Bonneville to implement the act's power planning and fish and wildlife provisions. We have reported or testified on matters related to progress in implementing these provisions on four occasions. (See app. II.) Further, in 1984 and 1985, the National Governor's Association sponsored federal legislation that would allow states to voluntarily form compacts for regional planning and regulation of the electric utility industry. Widespread interest in the act's implementation also exists within the utility industry and among state and federal energy regulators.

Objectives, Scope, and Methodology

To further assist the respective House and Senate Committees that have oversight responsibilities for the Northwest Power Act, we reviewed the progress that had been made by the Council, Bonneville, and other regional entities to implement selected provisions of the act which called for the establishment of a regional power planning process and a coordinated program to protect and enhance the region's fish and wildlife. Our objectives were to identify (1) what actions had been taken with respect to the act's regional power planning, fish and wildlife enhancement, and public involvement provisions and (2) what problems, if any, had surfaced in carrying out these provisions. We focused on these provisions because they represent a unique regional approach to power planning and fish and wildlife protection and enhancement that has not been

used elsewhere in the country and their successful implementation will depend on the cooperation and coordination of several regional entities.

The purpose of our work was to provide an overview of regional efforts to implement these provisions in the first 5 years, including our views and observations on any matters that have affected or could affect their implementation. Our work on power planning and fish and wildlife programs focused on the progress made under the first power plan issued by the Council in April 1983 and its accompanying fish and wildlife program which had been adopted in November 1982. During our review, the Council revised its 1983, 20-year power plan. A draft version was issued in August 1985, and a final version was adopted in January 1986. We reviewed and considered the revised power plan in our work to the extent that it reflected progress and problems in implementing the first plan.

Our review focused on examining the progress made in implementing specific actions called for by the power plan and fish and wildlife program that the Council and Bonneville considered to be essential to overall program success. More specifically, to determine the status of the power plan, we reviewed efforts to (1) establish model energy conservation standards for new buildings, (2) develop energy conservation capabilities within utilities, industries, and local governments, and (3) develop a flexible approach (referred to as an "options" approach) to power resource development designed to reduce the risks of building new power resources. To determine the status of the region's fish and wildlife program, we reviewed the implementation of three priority elements: passage of juvenile fish through Columbia and Snake River dams, development of anadromous fish production in the Yakima River system, and development of water reserves to help speed juvenile anadromous fish in their downstream migration to the sea.

With respect to the act's public involvement provisions, we reviewed the actions that Bonneville and the Council had taken to involve the public in their plans and actions. To assist us in this effort, we employed a nationally recognized public involvement consultant. In 1984 this consultant (then under contract to Bonneville) had reviewed and reported on Bonneville's public involvement program, making a number of recommendations for improvement. For our review, the consultant evaluated the actions Bonneville had taken in response to his earlier recommendations and provided us an update on Bonneville's public involvement program. In addition, the consultant prepared for us an assessment of the Council's public involvement program. That assessment was based, in

part, on the results of a questionnaire the Council issued in late 1984 to elicit public views on its program.

To obtain institutional views on the act's power planning and fish and wildlife provisions, and on the Council's and Bonneville's progress in implementing these provisions, we interviewed representatives of 20 regional organizations, including state energy offices, state fish and game agencies, tribal organizations, environmental agencies, federal agencies, and Bonneville industrial customers. The agencies and organizations were selected to represent a cross-section of regional entities significantly affected by the act's implementation.

In carrying out our work, we reviewed documents from Bonneville, the Council, and others where appropriate. We also interviewed officials from the Council, Bonneville, and other organizations involved in implementing the act's provisions. Our work was performed primarily between February 1985 and May 1986 and was conducted in accordance with generally accepted auditing standards.

Design and Implementation of the Power Plan

The Council developed and published a 20-year power plan for the region on the basis of guidance provided in the Northwest Power Act. The plan, which used different assumed levels of future power demand, identified the kinds of power acquisitions that would be appropriate to meet each level of demand. The Council also identified specific actions, collectively referred to as the Two-Year Action Plan, that should be taken in the first 2 years to guide regional implementation of the plan.

Power acquisitions did not figure prominently in the Two-Year Action Plan because the region had surplus electricity. Instead, the action plan tasked Bonneville and other regional entities with using 1984 and 1985 to build regional capabilities for conserving electricity and to help gain acceptance for the Council's building conservation standards. Our work showed that the progress Bonneville and other regional entities made in implementing the Two-Year Action Plan fell short of the Council's expectations in certain key areas. Few state and local governments adopted the Council's conservation standards for electrically heated buildings. Bonneville's progress in developing conservation capabilities within the region was less than the Council anticipated because of start-up problems, unsynchronized planning and budgeting, and uncertainties about conservation financing. According to the Council's staff, the action plan may have set an overly ambitious start-up schedule for Bonneville.

In a broader context, because regional utilities have surplus power supplies, some regional entities have raised concerns about whether (1) regional power planning is needed, (2) the regional power plan can be fully implemented, and (3) power resource planning activities undertaken by Bonneville duplicate the Council's power planning functions.

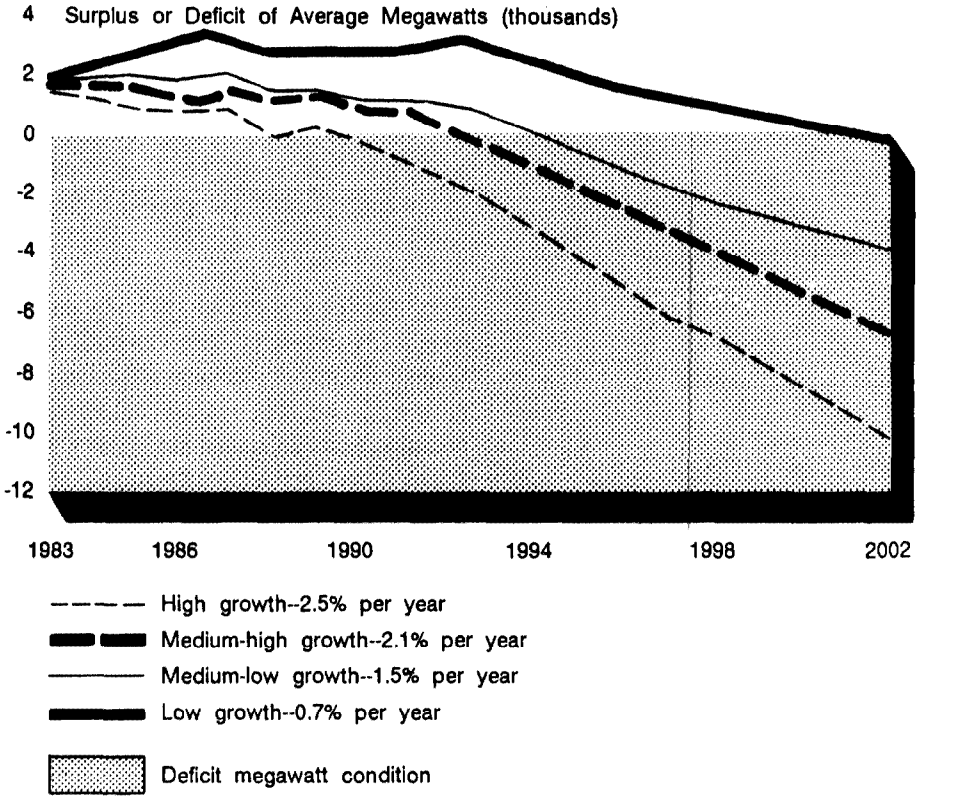
We believe that the power resource planning process instituted under the act provides a useful framework for evaluating and developing the region's future power resources regardless of the current power supply situation. Concerning plan implementation, Bonneville's role as the primary acquirer of new power resources for both investor-owned utilities and publicly owned utilities has not materialized. Thus, cooperative resource development efforts by the various regional entities will be needed to fully implement the Council's power plan. Regarding Bonneville's power resource planning activities, Bonneville has pledged to consult with the Council to eliminate any duplicative planning. We plan to monitor that effort.

First Power Plan

The Council's power plan—formally titled the Northwest Conservation and Electric Power Plan—was adopted on April 27, 1983, after extensive public involvement, including over 150 public meetings in 26 communities throughout Idaho, Montana, Oregon, and Washington. Consistent with the power resource development priorities set out in the act, the Council's plan gave priority to developing energy conservation as a regional resource. The plan recognized that surplus power existed in the region and proposed a flexible approach to meeting future power needs.

Because long-term electricity supply and demand forecasting involves much uncertainty, the Council determined that future demand for electricity should be represented not by a single 20-year forecast, but by a range of four forecasts reflecting different economic conditions that could occur. In these forecasts, the demand for electric power ranged from a low growth rate of 0.7 percent per year to a high growth rate of 2.5 percent, as shown in figure 2.1. The low-growth forecast assumed that regional employment would grow at about 1 percent per year, which approximates a low-growth estimate for the nation. The high-growth forecast assumed that regional employment would increase by 3.7 percent per year, which would be a record 20-year growth rate for the region. According to a Council official, since the plan was issued in April 1983, actual demand for electricity in the region has grown at rates in about the middle of the forecasted range.

Figure 2.1: Ability of Resources to Meet Projected Needs



Note: Assumes no conservation or consumer reaction to price.

Source: adapted by GAO from Council publications.

The Council's plan showed that more electric power could be needed as soon as 6 years or not for 20 years, depending on actual demand growth and assuming that powerplants already under construction were completed on schedule. Figure 2.1 shows when additional resources would be needed under the four growth forecasts. The Council has recognized that unanticipated delays in completing powerplants under construction could also hasten the need for additional resources. For example, when the plan was published, six coal and nuclear powerplants were under construction and were expected to provide the region with over 3,000 average megawatts[1] of electricity. However, construction of two of these

[1]A megawatt is an electrical unit of power that equals 1 million watts, or 1,000 kilowatts.

projects, accounting for one-half of the 3,000 megawatts, has been suspended. The Council's revised power plan issued in January 1986 determined that these two suspended powerplants should be preserved as insurance against high demand growth.

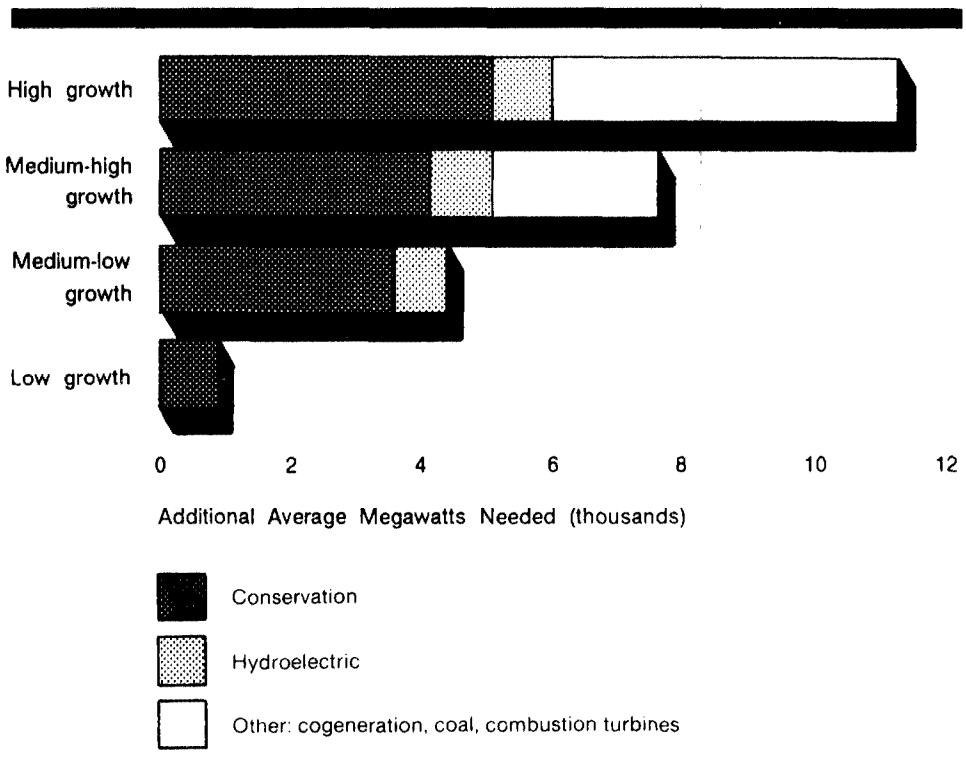
Energy Conservation as a Resource

For each of its four demand forecasts, the power plan identified how much additional power might be needed, and how it should be supplied. Consistent with the act, the plan proposed that the most cost-effective resources be developed first—specifically, energy conservation and hydropower. The act defined conservation as any reduction in electric power consumption as a result of increased efficiency in energy use, production, or distribution. The act granted a 10-percent cost advantage to conservation measures over nonconservation resources in determining the cost-effectiveness of resources to be acquired. In its plan, the Council treated conservation as a resource which, like a powerplant, could be acquired on schedule when more electricity is needed. According to the Council, conservation programs (1) can be quickly accelerated or slowed to meet actual growth, (2) require lower capital investment than other resources, and (3) are easily matched to actual growth in demand for power because they acquire energy in smaller increments than conventional powerplants.

According to Council estimates, the coordinated regional development and use of conservation resources could save regional ratepayers as much as $1.3 billion over the next 20 years. These savings would occur if investor-owned utilities, which are projected to need new power resources first, acquire undeveloped conservation resources from publicly owned utilities rather than build new power plants.

Figure 2.2 shows the plan's proposals for meeting each of the four demand forecasts for the year 2002. In the lower growth forecasts, increased demand would be met with energy conservation and some development of hydropower. In the higher growth forecasts, meeting demand would require developing higher cost power supply resources after conservation and hydropower resources had been exhausted.

Figure 2.2: Plan's Proposals for Meeting Added Demand by 2002

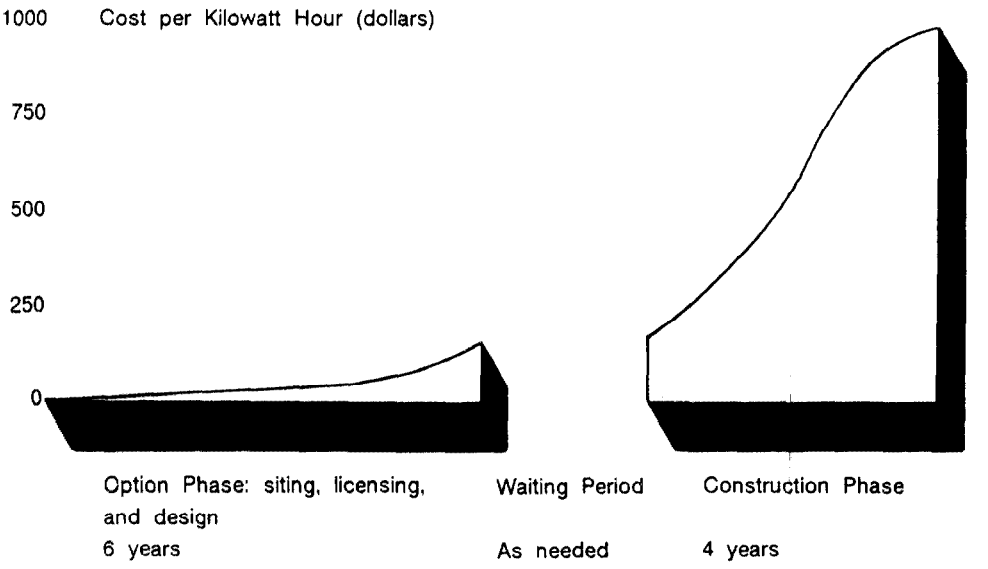


Optioning Conventional Power Resources

In building conventional powerplants, developers must demonstrate the need for a plant, obtain an approved site, assess the environmental impacts, secure a construction license, construct the plant, and obtain an operating license. The entire process can take up to 16 years, depending on the resource to be built. With respect to the development of conventional powerplants, the Council's plan proposed an innovative "options" approach to acquiring such resources.

The options approach, illustrated in figure 2.3 for a coal plant, would allow developers to take a planned power project through the relatively inexpensive but time-consuming initial stages of development (for example, obtaining an approved site and a license for construction) without committing to build. Optioned projects could then be held in a "ready to build" condition until needed and could be accelerated, delayed, or cancelled in response to actual demand growth.

Figure 2.3: Use of Options Concept for Adding a Coal-Powered Resource



Source: Adapted by GAO from Council publications

According to the Council, the options approach would enable the region to meet uncertain demand growth with less risk of over- or under-building powerplants. The power plan recognized that this approach could not be depended upon until it had been demonstrated in practice. In this regard, the Council proposed that Bonneville provide financial assistance for the initial preconstruction costs of optioned resources. The plan envisioned that through Bonneville's financial participation, the region would gain more control over subsequent decisions on when to build.

Implementation of the Two-Year Action Plan

To ensure that actions would be taken in 1984 and 1985 to meet the power plan's long-term goals, the Council developed a short-term plan not required by the act. Called the "Two-Year Action Plan," it contained actions for Bonneville, utilities, state and local governments, and the Council staff to take from April 1983 through December 1985. (See table 2.1.) "Action items" in the Two-Year Plan provided the Council and the public with a structure for assessing how implementation of the power plan was proceeding.

Table 2.1: Elements of Two-Year Action Plan

Type of program	Principal actions to be taken (Apr. 1983 through Dec. 1985)	Implementing entities
Building conservation capabilities:		
Residential weatherization	Continue Bonneville's ongoing program; add low-income and renter assistance programs	Bonneville, Council
Residential appliances	Demonstrate efficiency of appliances	Bonneville
Commercial sector existing buildings	Develop and offer a regionwide commercial conservation program	Bonneville
Commercial buildings demonstration program	Develop data on energy use and potential savings	Bonneville
State and local governments	Provide reimbursements, incentives, and support of government conservation efforts	Bonneville
Industrial conservation	Develop and offer a regionwide conservation program and provide technical assistance	Bonneville
Agricultural irrigation program	Develop and offer a regionwide irrigation conservation program	Bonneville
Establishing building standards for new and converted buildings:		
Residential new building standards	Model Conservation Standards (MCS) for electrically heated residences	Bonneville, state & local governments, utilities
Residential conversion standards	MCS for residences converting to electric heat	Bonneville, state & local governments, utilities
Commercial new building standards	MCS for new commercial buildings	Bonneville, state & local governments, utilities
Commercial conversion standards	MCS for converted buildings	Bonneville, state & local governments, utilities
Surcharges for noncompliance with MCS	Develop method to calculate	Council
Developing generating resources:		
Hydropower (optioning)	Test optioning concept by optioning 6 hydropower sites	Bonneville, Council
Geothermal	Confirm potential geothermal resources	Bonneville
Combustion turbines	Identify potential obstacles and methods to remove them	Bonneville
Cogeneration	Identify and preserve cogeneration opportunities	Bonneville

Type of program	Principal actions to be taken (Apr. 1983 through Dec. 1985)	Implementing entities
Advanced thermal technologies	Keep abreast of emerging technologies	Bonneville
Biomass	Continue ongoing Bonneville program	Bonneville
Large thermal plants	Study ways to reduce construction time	Council
Other efforts:		
Surplus interruptible energy	Develop additional markets for interruptible energy	Bonneville, Council
Surplus firm energy	Support regional efforts to sell surplus power to the Southwest	Bonneville, Council
Environmental costs and benefits	Develop methods to quantify	Bonneville, Council

As shown in table 2.1, Bonneville was the implementing agency responsible for carrying out most of the action items called for in the plan. In addition to developing implementation workplans, Bonneville conducts its own planning process to meet its power system requirements and its financial responsibilities as a federal power-marketing agency. As a part of its planning process, Bonneville develops resource strategies to determine the lowest cost mix of power resources. The resource strategies developed by Bonneville are similar to the resource strategies contained in the Council's power plan.

To assess implementation of the Council's Two-Year Action Plan, we examined the progress being made to implement building energy conservation standards, test the resource optioning approach, and develop energy conservation capabilities.

Conservation Standards Await Adoption

Consistent with the act, the Council developed conservation standards for new electrically heated residential and commercial buildings and for existing residential and commercial buildings that are converted to electric heating. The standards were designed to ensure that electrically heated buildings are constructed to include cost-effective, energy-efficient features. In the case of new residences, the Council concluded that its standards could reduce the amount of electricity needed for space heating by 60 percent. According to Council estimates, construction of new residential and commercial buildings to these standards could save the region as much as 700 megawatts of power over a 20-year period of high-demand growth.

The Council's Two-Year Action Plan called on Bonneville to encourage adoption of the building conservation standards through demonstration projects and financial and technical assistance programs. Under Bonneville's Residential Standards Demonstration project, over 400 new homes were built to the Council's standards during the spring and summer of 1984. Bonneville designed this demonstration project to help educate regional builders and to provide actual cost and performance data for further evaluation. Bonneville provided financial and technical support to jurisdictions adopting or studying adoption of the full standards and also operated "Super Good Cents," a marketing program that encouraged construction of new homes consistent with the conservation standards.

The action plan encouraged state and local governments to adopt the conservation standards, or acceptable alternatives, by January 1, 1986. The act provided that failure to adopt the Council's conservation standards or to achieve comparable savings could subject utilities and their customers to a 10-percent or greater surcharge on the power that they purchased from Bonneville. As required by the act, the Council developed a methodology for computing a surcharge and recommended that Bonneville impose the surcharge where appropriate. Bonneville developed a proposed policy for levying the surcharge, but no final policy had been adopted as of June 1986.

Few state and local governments have adopted the Council's conservation standards, although Washington and Oregon have statewide building codes that partially incorporate them. Six local governments in Washington State adopted the standards and received financial assistance from Bonneville for building code enforcement activities, but these governments represent less than 5 percent of the region's ratepayers. The Council held public hearings on this issue during 1985 and reaffirmed the need for the region's electrically heated buildings to be built in conformance with the standards.

In its revised plan adopted in January 1986, the Council provided additional time for a regional transition from current building construction practices to the levels of energy efficiency required by the conservation standards. The new plan (1) emphasizes utility marketing and incentive programs, such as Bonneville's Super Good Cents, (2) allows local jurisdictions to tailor implementation efforts to their own unique circumstances, and (3) calls for Bonneville to develop a new surcharge policy that sets reasonable performance targets for utilities.

Home Builders Sue Council

In July 1983 the Seattle Master Builders Association and nine other companies and associations in the housing industry requested the Federal Ninth Circuit Court of Appeals to declare invalid the parts of the Council's power plan relating to conservation standards in new housing. The builders were concerned that the standards might add several thousand dollars to the price of new homes and make them less marketable. The builders contended that the power plan's conservation standards were unenforceable because (1) the standards violated the act in that the Council, among other things, had not demonstrated that the standards were cost-effective or economically feasible for consumers, (2) the Council did not prepare an environmental impact statement on the conservation standards, and (3) Council members were appointed in an unconstitutional manner. The suit asked the court to return the power plan to the Council with directions to prepare an environmental impact statement and to redraft the conservation standards for new housing in light of the environmental impact statement and in accordance with the act.

The court heard oral arguments from all parties to the suit in 1985 and in its April 10, 1986, decision, concluded that "the Council violates neither the compact nor appointment clauses of the United States Constitution." The court's opinion held that

> ". . . the Act establishes an innovative system of cooperative federalism under which the states, within limits provided in the Act, can represent their shared interests in the maintenance and development of a power supply in the Pacific Northwest and in related environmental concerns."

With respect to the validity of the Council's plan, the court noted that the "preparation and consideration of the plan is a matter within Council authority over which the Act accords the Council considerable flexibility," and that "for the same reasons that we defer to Bonneville expertise in construing other sections of the Act, therefore, we will defer to the Council's interpretations . . . if reasonable." The court affirmed the reasonableness of the conservation standards and rejected the petitioners' argument that the Council should have prepared an environmental impact assessment on the standards.

The home builders filed a petition for an appeal of this decision with the U.S. Supreme Court on October 6, 1986.

Resource Optioning Remains Untested

The action plan required the Council and Bonneville to work with state siting authorities and federal and state regulatory agencies to identify and remove barriers to optioning power resources. It also charged Bonneville with responsibility for optioning six hydropower projects to demonstrate the concept.

The Council focused much of its attention on regulations implemented by the Federal Energy Regulatory Commission (FERC). The Federal Power Act (16 U.S.C. 806) requires that developers of hydroelectric power sites begin construction within 2 years after a FERC license is granted, but FERC may extend the license once up to an additional 2 years. These limitations could cause optioned hydropower projects to loose their licenses after 4 years. During discussions with the Council, FERC staff indicated that the region might gain more flexibility through an informal administrative procedure. FERC staff suggested that they could process a project application, but FERC would not formally grant the license until the Council determined that the resource was needed.

To identify state regulatory constraints to resource optioning, Bonneville chaired a state and local government task force which met on three occasions between October 1983 and February 1985. The task force concluded that the existence and impact of constraints could not be determined with certainty until Bonneville tried to option a resource. Bonneville did identify five qualifying hydropower projects of the six called for in the plan and began negotiating an options contract on the first project. Negotiations on that project were discontinued in October 1985, when Bonneville officials could not agree on the principles for setting power purchase prices. According to Bonneville officials, negotiations on the four other hydropower projects would be completed after Bonneville had reassessed how to purchase optioned resources.

In its comments on a draft of this report, the Department of Energy (DOE) said that FERC had indicated that under its current rules and procedure, it would be unable to make special accommodations to extend its licensing phase beyond the maximum 4-year period for hydro project options. DOE further said that despite the current FERC position, Bonneville was proceeding with a hydro options test program to determine how the program can be implemented within the current FERC regulations.

Slow Development of Conservation Capabilities

For the near term, the Council determined that it would be inappropriate to acquire significant conservation resources while surplus power existed in the region—such acquisitions would exacerbate the surplus and needlessly add to Bonneville's costs. Instead, the plan tasked Bonneville, local governments, and electric utilities with developing and demonstrating conservation programs that could be implemented promptly and confidently when the region needed additional power. This approach, known as "conservation capability building" was to apply to all sectors of the region's economy, including residential, commercial, industrial, agricultural, and governmental energy use.

In November 1985 the Council reported on the progress Bonneville and other entities were making to implement the action items and recommendations contained in the action plan. The report disclosed that Bonneville made substantial progress in demonstration projects supporting the Council's conservation standards. However, slow progress was reported in weatherization of low-income and rental housing and in conservation capability building in the industrial and commercial sectors.

In the industrial sector, the action plan called for Bonneville to operate a regionwide program to demonstrate industrial energy-efficiency improvements with volunteering industrial consumers. Bonneville issued a first-round solicitation for this program in September 1983. Of 18 industrial proposals received from seven sponsors, Bonneville selected 3 for negotiation, 1 of which was subsequently withdrawn. Contracts were completed on the two remaining proposals—both of which were sponsored by the same pulp and paper manufacturer—but the selecting and contracting process took more than 9 months to conclude. In May 1985 Bonneville issued a second round of solicitations for demonstrating industrial conservation. By May 1986 Bonneville had negotiated only one contract to completion, but four other potential contracts approved by Bonneville were awaiting the sponsors' signatures.

Bonneville also sponsored energy audits at 25 industrial firms to determine if there was a systematic way to estimate potential energy savings in three industries—food, wood products, and pulp and paper. The Council's staff believes that Bonneville should place greater emphasis on industrial conservation and involve a greater mix of industries within the region. The industrial sector uses nearly 40 percent of the region's electric power. In its revised plan, the Council concluded that little progress had been made in industrial conservation.

In the commercial sector, the action plan called for Bonneville to develop a program that would encourage the installation of all structurally feasible and cost-effective conservation measures in existing commercial buildings. According to the plan, Bonneville's program was to include building audits to identify needed conservation measures and was to provide financial and technical assistance to tenants and building operators. The Council's November 1985 progress report disclosed that Bonneville awarded 14 contracts in 26 utility service areas for energy audits of commercial buildings, and that about 2,500 audits had been completed out of 4,000 planned. The progress report showed that Bonneville's efforts were limited, for the most part, to developing and testing procedures and securing information on commercial conservation potentials. Council staff told us that Bonneville made slow progress in developing its commercial programs.

Bonneville's progress in developing conservation capabilities was less than the Council anticipated, but Bonneville officials maintain that they moved as fast as practical to implement the action plan. According to the Council's Executive Director, the action plan may have been too optimistic in its expectations for Bonneville's conservation programs. The Council is exploring ways to stimulate voluntary coordination among the region's utilities to develop conservation resources. In its revised power plan, the Council called for Bonneville to develop mechanisms for transferring conservation resources between the region's utilities and to support utility efforts to accomplish such transfers.

Our work showed that Bonneville's progress in carrying out its conservation programs was slowed by start-up problems, unsynchronized planning and budgeting, and uncertainties about the availability of funds for conservation activities.

Start-Up Problems

More time than the Council anticipated was required for Bonneville staff to translate the action plan into program activity. Council staff said that Bonneville's Office of Conservation, established in early 1982, suffered from staff shortages, organizational problems, and a lack of contracting expertise during the initial stages of implementing conservation items in the action plan. In July 1984 Bonneville reorganized its Office of Conservation to emphasize economic sectors identified in the Council's plan. Bonneville's Division Director for Conservation Planning and Evaluation told us that this change improved conservation operations and program delivery. The Council staff agreed with this assessment.

Unsynchronized Planning

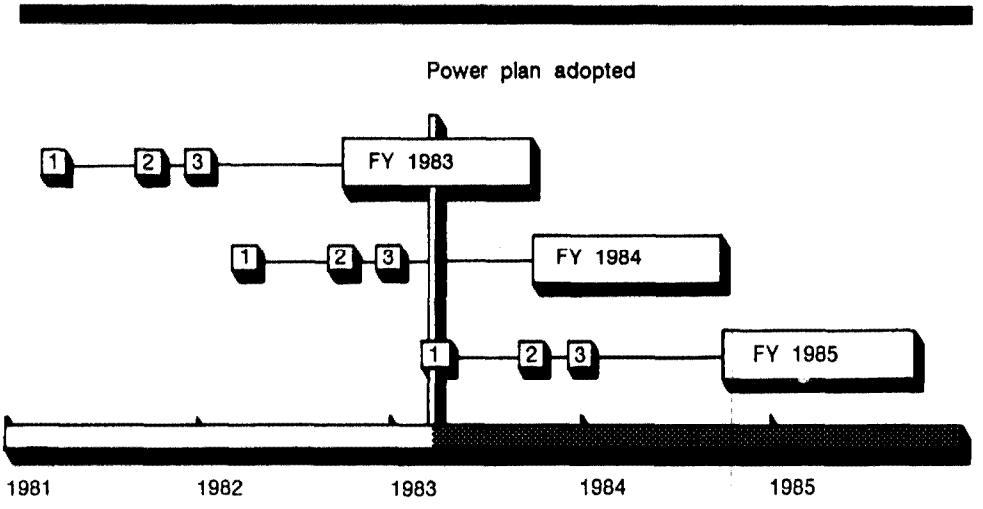
The Council's action plan was to be implemented from April 1983, when it was issued, through calendar year 1985. According to the Council staff, the Council assumed that Bonneville's budgets would provide appropriate funding for timely implementation of the action plan. However, DOE and the Office of Management and Budget (OMB) requirements for advance review and approval of Bonneville's budgets made it difficult to closely coordinate Bonneville's budgets with the Council's first plan.

To obtain DOE and OMB approvals, Bonneville submits its annual budget nearly 18 months before the new fiscal year. As figure 2.4 shows, adoption of the Council's plan in April 1983 came too late to help shape Bonneville's budget submissions for fiscal years 1983, 1984, and 1985. The action plan overlapped those budget years, but was adopted after

- Bonneville began spending its fiscal year 1983 budget;
- its budget for fiscal year 1984 had been approved by DOE, OMB, and the Congress; and
- its budget for fiscal year 1985 had been submitted to DOE.

Consequently, Bonneville's financial preparedness to implement the action plan lagged behind the Council's expectations, and Bonneville's ability to implement new programs beyond those already planned for was limited.

Figure 2.4: Bonneville Budgeting Predated Council's Plan



1. Budget submitted to Department of Energy
2. Budget submitted to Office of Management and Budget
3. Budget submitted to Congress

Period for implementing the action plan (April 1983-December 1985)

The Council and Bonneville have taken steps to better coordinate their planning and budgeting. In April 1984 Bonneville briefed the Council on its resource strategies and long-range conservation activities. For its part, the Council timed the release of its revised power plan so that updated information would be available when the Congress reviewed Bonneville's fiscal year 1987 budget. In its revised plan, the Council provided a table of resource requirements for 1986 through 1995 under the medium-high demand growth projection to guide Bonneville in setting conservation budgets and developing resource options.

Uncertainty Over Conservation Financing

Uncertainty regarding Bonneville's borrowing to finance conservation also slowed implementation of conservation measures in the action plan. The act granted Bonneville $1.25 billion in Treasury borrowing authority for conservation activities. According to Bonneville's Assistant Administrator for Conservation, Bonneville's requests to borrow funds for financing conservation activities in fiscal years 1984 and 1985 were substantially reduced by DOE and OMB during the budget review process.

Shortly after the power plan was issued, Bonneville notified the Council that, while it generally agreed with the plan's objectives, it could not assure full implementation of certain conservation activities because of uncertainty over its ability to obtain Treasury borrowing. Bonneville said that this uncertainty affected over 70 percent of the conservation activities contained in the action plan. Although the Congress subsequently restored Bonneville's budget-borrowing requests, Bonneville's Assistant Administrator for Conservation told us that the period of uncertainty between notification of the borrowing restrictions and congressional restoration disrupted Bonneville's implementation efforts. Faced with this funding uncertainty, Bonneville's Office of Conservation restricted its contractual commitments and reduced its spending plans. By the time Bonneville's borrowing requests were restored, the Office of Conservation was unable to commit funds in time to fully operate some parts of the Council's action plan.

Regional Power Planning Issues

In our interviews with officials of regional institutions and in public comments on Bonneville and Council prepared planning documents, some concerns and questions were raised related to the concept of regional power planning and related implementation activities at a time when surplus power exists. Specific concerns raised included the following: (1) Is regional power planning needed when surplus power exists? (2) Can the regional power plan be implemented when Bonneville serves only one-half of the region? (3) Does Bonneville's resource strategy planning duplicate resource planning performed by the Council?

Some regional citizens and institutions have questioned whether regional power planning is appropriate at a time when surplus power exists. They commented that the act was passed because regional forecasts were predicting power shortages, and the act provided for the development of a power plan to guide the acquisition of needed resources. Because the region has a near-term power surplus and additional resources may not be needed for several years, these groups expressed their uncertainty about the usefulness of a regional power plan.

Other concerns were expressed about whether full implementation of the Council's power plan will occur, given that the region's investor-owned utilities, which supply about one-half the region's electricity, have not requested new power supplies from Bonneville and need not

comply with resource priorities in the Council's power plan. This concern appears to stem from the act's framework for plan implementation, which envisioned that regional utilities could request that Bonneville supply their new power needs. In this way, regional conformance to the Council's resource priorities would be assured since the act requires that Bonneville acquire new power resources consistent with the Council's power plan.

Finally, potentials for duplicate planning were identified by the Director of the Intercompany Pool, an association of eight investor-owned utilities, in his February 1986 critique of Bonneville's 1986 Resource Strategy. As indicated earlier, Bonneville is developing resource strategies similar to the Council's for identifying the most economical power resources. In his critique, the Director commented that, in his view, Bonneville's development of its resource strategy gives the impression that Bonneville considers the Council and the Council's power plan to be advisory. The Director also commented that if Bonneville takes actions based on its own resource strategy, then the primary vehicle for regional resource planning and acquisition provided for in the act, the Council's power plan, will be "relegated to mere philosophy." According to the Director, Bonneville should assist the Council in developing the region's power plan rather than in developing an independent power resource strategy. Similar concerns were expressed, also in February 1986, by the Northwest Conservation Act Coalition, an alliance of 36 regional organizations advocating conservation and renewable resources, in its testimony before a subcommittee of the House Committee on Interior and Insular Affairs.

According to Bonneville, its resource strategy is a "form of independent evaluation consistent with the Administrator's obligations" as a federal power-marketing agency. In the Administrator's view, Bonneville cannot accept power resource development recommendations of the Council without testing them for utility prudence, fiscal soundness, and legal permissibility.

Agency Comments

In its comments on a draft of this report, the Northwest Power Planning Council said that its 1986 power plan places special emphasis on the need for regional cooperation in the development of resources and emphasizes the options concept as a matter of high priority. The Council noted that while several states have taken steps to accommodate options in their resource-siting procedures, both the Council and Bonneville are pursing the matter with the FERC staff.

The Council expressed its view on the need to avoid duplication of resource planning by Bonneville and the Council. The Council believes that Bonneville's efforts in this area have generated some confusion in the region and have required increased planning involvement by the affected groups. The Council said that it has been meeting with Bonneville to discuss potential areas of duplication with the goal to eliminate any unnecessary duplication of effort in its preparation of the power plan and Bonneville's development of its resource strategy.

In its comments on a draft of this report, DOE discussed Bonneville's power planning functions relative to the Council's and recent Bonneville activities related to the Council's model conservation standards for buildings. Regarding the power planning functions, DOE reiterated the need to distinquish the different purposes that are to be served by the Council's plan and Bonneville's resource strategy. According to DOE, the Council's plan provides the broad guidance and framework for serving electricity loads within the region. DOE further said that Bonneville's annual resource strategy is used to develop programs, program levels, and timing of implementation. Regarding the resource analysis segment of Bonneville's resource strategy, DOE said that the analysis was a vehicle to work with the Council in providing a second opinion on the future resource options which may be useful to the Council as a basis for amending the regional power plan.

Concerning the Council's model conservation standards, DOE said that Bonneville is currently reviewing the cost-effectiveness of the model conservation standards. This review will be based on studies of current building practices and the results of its demonstration studies that had been undertaken since the standards were developed. DOE believes the results of its efforts could have a significant impact on implementing the Council's plan, adopting the building codes by state and local governments, and imposing surcharges on power rates in the Northwest.

Overview and Observations

Overall, our work showed that the regional power planning process called for in the act has been instituted. The Council was established and it developed and published a 20-year regional power plan, giving priority to the development of energy conservation resources consistent with the act.

With respect to plan implementation, we found that Bonneville and other regional entities did not fully meet the Council's expectations for carrying out actions called for in the Council's Two-Year Action Plan.

For example, energy conservation standards for buildings have not been adopted by all states and local jurisdictions within the region as called for in the Council's action plan. Further, Bonneville's efforts to develop the region's capabilities for conserving energy fell short of the Council's expectations. Bonneville's progress in this area was limited because of start-up problems, unsynchronized planning and budgeting, and uncertainties about the availability of funds for energy conservation projects. According to the Council's staff, the action plan may have set an overly ambitious start-up schedule for Bonneville.

From a broader perspective, the regional power planning process instituted under the act has provided, in our view, a positive framework for evaluating and planning for the development of the Pacific Northwest's future electric power resources. While we recognize that the region's current surplus power supply condition caused some to question the value of regional power resource planning, the planning process has led to an identification of the types of power resources that should be developed and the timing of their development under differing future conditions. The planning process has also set in motion regional actions to provide for the timely development of future resources, giving recognition to current regional power supplies.

Regarding plan implementation actions, the current power supply situation in the region has delayed the need for regional utilities to acquire new power supplies. The Council's power plan and implementation strategy reflected this condition and focused regional implementing actions on identifying and developing energy conservation opportunities so that this resource would be available when needed. Until regional conditions call for major resource acquisitions by utilities, the workability of the act's resource acquisition process, including whether resources will be acquired in a manner consistent with the Council's plan, remains uncertain.

More specifically, it is unclear at this time whether regional utilities will turn to Bonneville to supply their future power needs through development of power resources consistent with the Council's plan. Further, if the region's utilities do not turn to Bonneville, it is uncertain whether they will voluntarily develop power resources consistent with the plan. The Council's estimate that developing conservation resources could save regional ratepayers $1.3 billion over 20 years suggests that substantial benefits could be realized through a closely coordinated, cooperative effort among the region's utilities.

Finally, Bonneville's independent development of its resource strategy, in particular, the resource analysis portion of that strategy, has been questioned. It is important, in our view, that Bonneville's power planning functions not unnecessarily duplicate or be perceived as undermining the Council's power planning functions provided for in the act. Bonneville's Administrator has pledged that Bonneville will consult with the Council to identify and eliminate unnecessary duplication, if any, in their respective power planning functions.

Fish and Wildlife Program: Coordinated Efforts Underway

In November 1982 the Council adopted a fish and wildlife program developed in accordance with procedures and standards in the Northwest Power Act. Our work showed that, overall, federal, state, tribal, and utility interests were working together to implement the fish and wildlife program. Our review of the progress being made in implementing three priority efforts in fisheries enhancement showed that, although some problems have been encountered, the responsible agencies appeared to be making progress in carrying out actions called for in the Council's program. However, it is too early to determine how successful the Council's overall program will be in protecting and restoring the region's fish and wildlife resources. In this regard, the Council is developing a process to help measure the program's effectiveness.

The Council's Program

The Northwest Power Act directed the Council to develop a fish and wildlife program based on recommendations obtained from state and federal fish and wildlife agencies, Indian tribes, and the public. According to the act, the program was to include actions to (1) improve survival of anadromous fish at hydroelectric dams located on the Columbia River system and (2) provide for river flows of sufficient quality and quantity between the river system's hydroelectric dams to improve production, migration, and survival of anadromous fish. In addition, the act gave the Council authority to monitor program implementation.

In fiscal year 1982, the Council established a Fish and Wildlife Division. On the basis of recommendations from federal and state fish and wildlife agencies, Indian tribes, and other organizations, the Division prepared a fish and wildlife program that the Council adopted in November 1982. We reviewed the manner in which the planning was performed and concluded in May 1984 that the Council had developed its fish and wildlife program in accordance with procedures and standards specified in the act.[1] The Council amended its program in October 1984 and included a 5-year action plan with specific action items for improving the river system's fish and wildlife resources. The Council's program put primary emphasis on enhancing fish resources in the region, and specifically, diminished runs of salmon and steelhead trout. The program provides for (1) improving upstream and downstream migration, (2) improving natural and hatchery propagation, and (3) identifying the fish and wildlife impacts of future hydroelectric projects. In addition,

[1] Matters for Consideration When the Columbia River Basin Fish and Wildlife Program Is Revised (B-214960, May 2, 1984).

the program includes measures to enhance fish and wildlife in locations other than where dams were built to compensate for fish and wildlife losses caused by hydroelectric project development and operation.

The program also includes measures for protecting and enhancing the basin's resident (nonmigratory) fish and wildlife. With respect to resident fish, the program provides for improving spawning habitat, constructing hatcheries, and maintaining minimum river flows, reservoir levels, and water temperatures. For wildlife, the program provides for reviewing the status of mitigation programs at each hydroelectric dam to determine the extent to which wildlife populations have been affected and to provide the basis for developing future plans.

The program specifies that various state and federal agencies, Indian tribes, and the Council are responsible for implementing action items in the 5-year action plan.[2] The Corps of Engineers (Corps) and Bonneville have responsibility for implementing about one-half of the action items in the program. As of September 30, 1985, the Corps and Bonneville had spent more than $100 million to implement the action items. All expenditures for the program are funded by Bonneville through its power sales revenues.

The Council's Fish and Wildlife Division, with a fiscal year 1985 budget of about $1.5 million and a staff of eight, monitors agency progress to ensure that the action items are being implemented. In February 1985, as part of its monitoring effort, the Division started publishing quarterly reports describing the implementation status of each action item. To help measure the overall program's effectiveness, the Division is developing a process to (1) assess fish and wildlife losses attributable to the development and operation of hydroelectric dams in the Columbia River system, (2) develop program goals and objectives to address the losses, and (3) measure progress toward meeting those goals and objectives.

[2]In an earlier report (EMD-79-105, Sept. 4, 1979), we noted that no single agency has been assigned oversight responsibility and authority for maintaining the anadromous fish runs in the Columbia River System. At that time, responsibility for protecting salmon and steelhead runs was shared by 16 federal, state, and tribal organizations.

Status of Priority Efforts to Enhance Fisheries

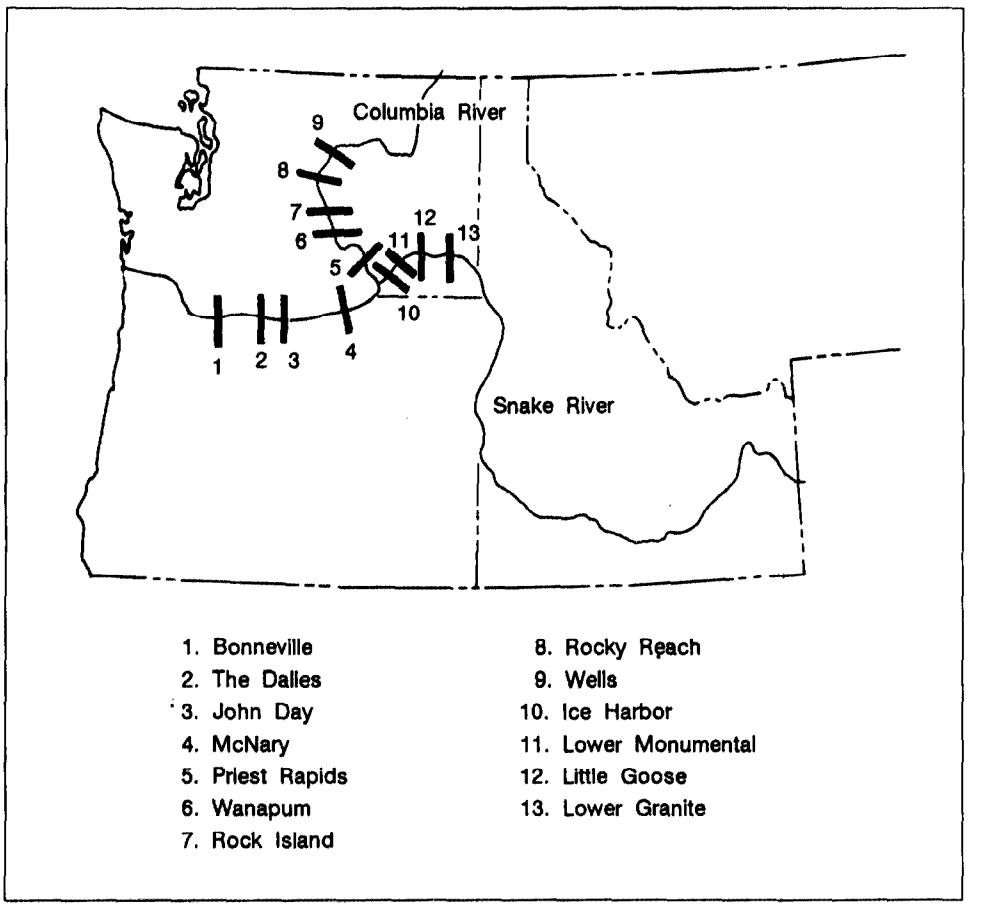
To evaluate regional progress in implementing the program's action items, we reviewed the implementation status of three program elements: passage of fish through mainstem dams,[3] production of fish in the Yakima River Basin, and development of water reserves to help speed juvenile fish seaward. These three efforts were identified by the Council's Executive Director and members of his staff as having the highest priority at this time for protecting and restoring salmon and steelhead. We found that federal, state, tribal, and utility interests were working together and coordinating their efforts on these program elements. Several hydroelectric dams were being modified to aid the passage of fish, and several changes in dam operations were made to provide better water flows for migrating fish.

Improving Juvenile Fish Passage at Mainstem Dams

Juvenile fish migrating downstream to the ocean can pass through as many as nine mainstem dams on the Columbia and Snake Rivers. (See fig. 3.1.)

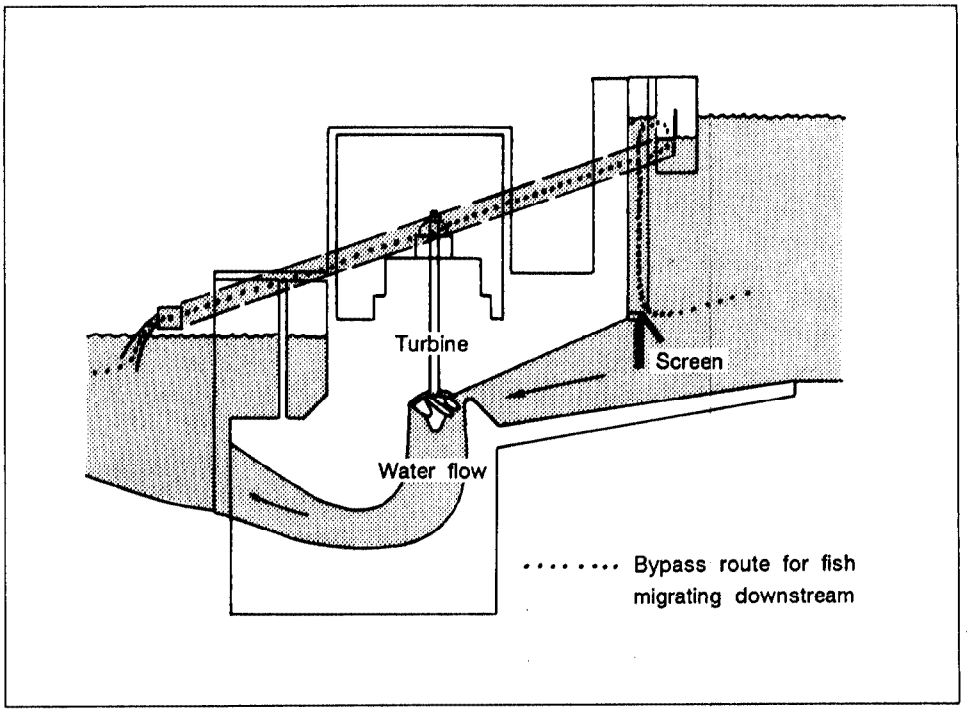
[3]Mainstem dams are those on the main channel of a river.

Figure 3.1: Columbia and Snake River Dams on Fish Migration Route



At each dam, the fish face turbines that may kill and injure many of them and stun and disorient others, making them easy prey for predators. Since construction of the dams, the Corps and public utility districts have spent millions of dollars on structural bypass systems—systems for diverting the juvenile fish away from the turbines and into conduits that allow them to safely reenter the river below the dam. (See fig. 3.2.)

Figure 3.2: Simplified Example of a Bypass System for Migrating Fish



Source: Adapted by GAO from Council publications

Before the act was passed, only one mainstem dam had a completed structural bypass system. Since then, installation of bypass systems has been completed at three more dams. The fish and wildlife program specifies that structural bypass systems be installed at eight other mainstem dams. As table 3.1 shows, installation of bypass systems has been scheduled for completion at these eight dams. However, the completion of bypass systems at two of the dams will be delayed because of contracting and planning problems and may be delayed at four other dams because of testing problems.

Corps officials told us that assuring the successful passage of juvenile fish is difficult because what works at one dam may not work at another. This difficulty has been illustrated at Bonneville Dam's new second powerhouse. Bonneville Dam is especially important to fisheries enhancement because, as the most downstream dam on the Columbia River, all juvenile fish surviving passage through other dams must pass through Bonneville to reach the sea. In 1982 the Corps completed a $23 million state-of-the-art structural bypass system at the dam's second powerhouse. Corps officials told us that the design of this bypass

system was based upon a structural bypass system operating successfully at McNary Dam, some 150 miles upstream. However, the fish passage rate has yet to exceed 35 percent as compared with the 85-percent passage rate called for in the Council's program. The Corps is conducting studies to determine what can be done to improve this bypass system. In the interim, to improve the fish survival rate, during the spring migration, the second powerhouse is not in operation at night, when fish generally migrate downstream, and operates during the day only when necessary.

Table 3.1: Installation Status of Juvenile Fish Bypass Systems in Columbia and Snake River Mainstem Dams—April 1986

Dam	Installation dates	Status
	(completed)	
Lower Granite	Installed 1978	Continual review and evaluation.
Little Goose	Installed 1981	Modifications to bypass system completed and need for other modifications identified. Work scheduled to start in 1986.
McNary	Installed 1982	Continual review and evaluation.
Bonneville	Installed 1983	Evaluate effectiveness of bypass systems at first and second powerhouses. Work scheduled to start in 1986.
	(scheduled)	
John Day	March 1986	Contract procurement problem will delay completion until March 1987.
Rocky Reach	March 1987	Unsatisfactory test results may delay completion by 1 year.
Wells	March 1987	Installation is 1 year behind schedule because of planning problems.
Priest Rapids	March 1988	On schedule.
Wanapum	March 1988	On schedule.
Ice Harbor Lower Monumental	September 1989 September 1989	Biological and prototype testing have fallen behind schedule and might extend the completion dates.
The Dalles	September 1989	Installation may be delayed 3 years for prototype screen testing.
Rock Island	Yet to be established.	Conducting design and modeling studies to determine the most effective bypass system.

Source: Northwest Power Planning Council's April 1986 Quarterly Monitoring Report.

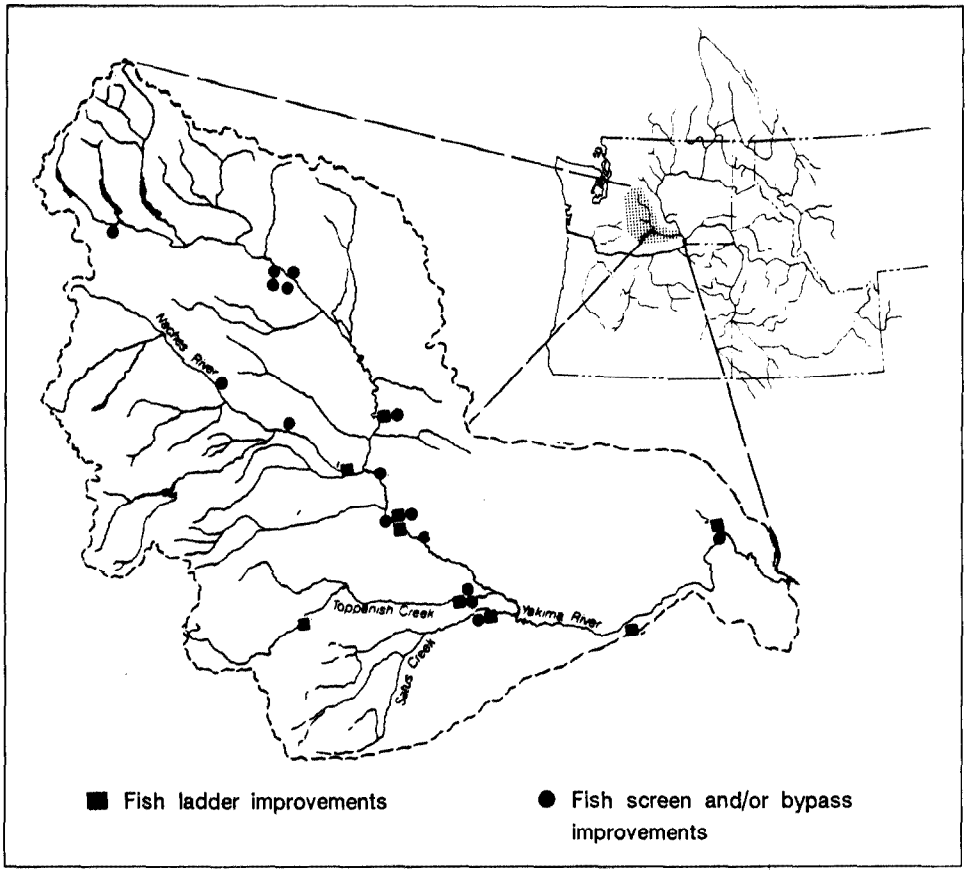
Developing Fish Production in the Yakima River Basin

To water agricultural crops in the Yakima River Basin, a variety of irrigation projects (diversion dams, canals, and ditches) have been constructed by the Bureau of Reclamation, the Bureau of Indian Affairs, and private companies during the past 120 years. The resulting demand for irrigation water often has not left sufficient river flows to support

anadromous fish. According to Council staff, inadequate fish passageways at many irrigation projects have also contributed to the decline of fish runs.

The Council's plan for developing fish production in the Yakima River Basin included 20 projects to be completed between 1985 and 1988 at an estimated cost of about $33 million. These projects are intended to compensate for the adverse effects of the irrigation projects in the Yakima Basin and to provide off-site fishery enhancements to compensate for the adverse effects of hydropower projects constructed elsewhere in the Columbia River system. Specifically, the Council's program included improving water flows in the Yakima River, building a fish hatchery, and making fish passage improvements. The fish passage improvements include repairing or replacing fish screens, bypass facilities, and fish ladders at various irrigation projects. (See fig. 3.3.)

Figure 3.3: Improvements Planned in the Yakima River Basin



Source: Adapted by GAO from Council publications

Our review of the progress being made in completing the fish passage improvement projects in the Yakima River Basin showed that several projects were behind schedule. According to an April 1986 Council monitoring report, delays in completing eight projects ranged from several months to 1 year, primarily because of various planning and design problems.

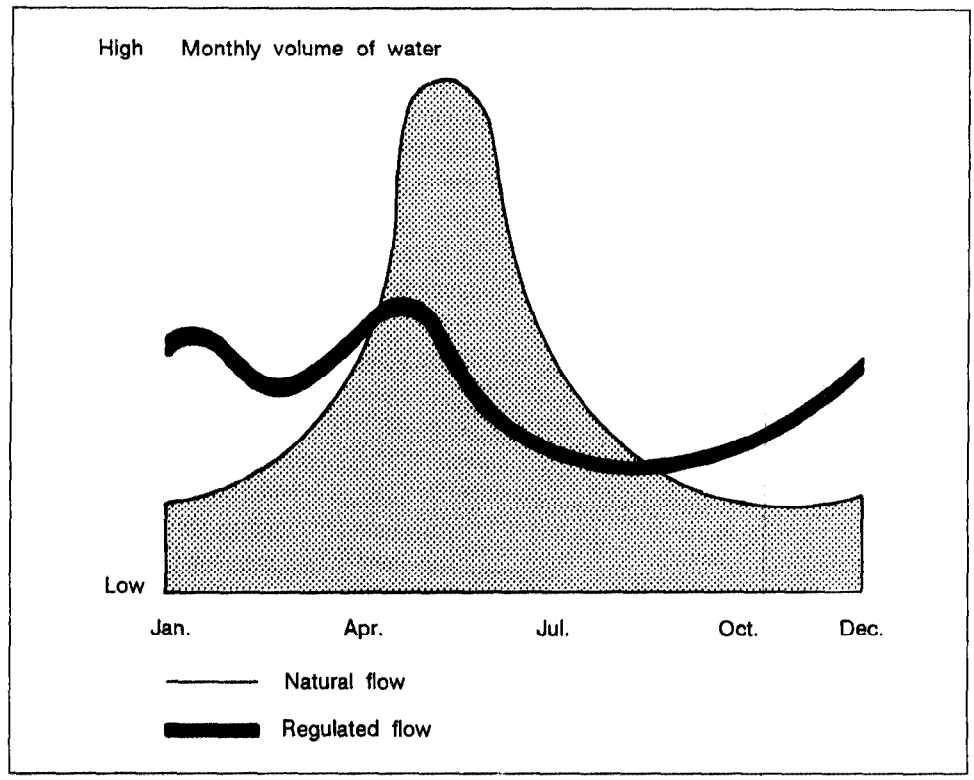
Despite these problems, the Council's Executive Director considers some completed improvements in the Yakima River Basin to be a major success for the fish and wildlife program. For example, installation of a $3 million fish screen at the Sunnyside Diversion Dam was completed on schedule, under budget, and in time to protect the 1985 spring salmon migration. The overall effectiveness of this project as well as the other projects, however, will not be known for 3 to 5 years because this is the amount of time needed for salmon and steelhead trout to mature and

return to spawn. Thus, the effectiveness of projects in the Yakima Basin should become evident in the mid-1990's.

Reserving Sufficient River Water to Speed Fish Seaward

The construction and operation of hydroelectric dams have altered significantly the natural river flows in the Columbia River system. The extent of the alteration is indicated in figure 3.4. High river flows that normally occur in the spring are now held in reservoirs for later use during periods of naturally low flows. While regulating river flows in this fashion has increased power production capability, it also has reduced river flows in the spring, when juvenile fish are migrating downstream. National Marine Fisheries Service records show that reduced spring water flows have more than doubled the average time required for juvenile fish to migrate from the upper river to the sea (from 38 to 78 days). Delayed migration (1) increases exposure of juvenile fish to predators, higher water temperatures, and different water chemistry and (2) affects the ability of juvenile fish to resist diseases and make the transition from freshwater to saltwater.

Figure 3.4: Regulated Flow Versus Natural Flow of the Columbia River



Source: Adapted by GAO from Council publications

To address the water flow problem, the Council's fish and wildlife program specifies that river flows of sufficient quantity—water budgets[4]—be provided on the Columbia and Snake Rivers to improve the survival rate of juvenile salmon and steelhead trout migrating downstream. In response to the program, a water budget center was established under the direction of two managers—one representing the federal and state fish and wildlife agencies and the other representing Indian tribes. The center is to manage the water budget, design and oversee research on the relationship between anadromous fish survival and water flows, and monitor river operations to improve fish survival.

Prior to the juvenile fish migrations in 1985, the Corps—in cooperation with fish and wildlife agencies, Indian tribes, Bonneville, the Bureau of Reclamation, and regional utilities—prepared plans for operating the water budget on the Columbia and Snake Rivers. According to the Director of the Council's Fish and Wildlife Division, the 1985 water

[4]The water budget is a volume of water reserved for use from April 15 to June 15 to increase spring river flows and help speed juvenile anadromous fish in their downstream migration.

budget was generally successful in maintaining proper river flows. For example, according to Council records, the 1985 water budget flows requested for the Columbia River were met by the Corps and Bonneville throughout the water budget period. On the other hand, Council records showed that the Snake River water flows were below levels called for in the water budget plan for a portion of the water budget period. Reasons provided by the Council's staff for this situation were that precipitation was below average, which limited natural runoff, and that decisions were made by the Corps and the Idaho Power Company not to release water below levels that would assure refill of the Dworshak and Brownlee reservoirs, respectively.

Overall, according to the water budget managers, the Columbia River Basin's salmon and steelhead trout populations appear to be on the increase. The managers told us that the 1985 run of juvenile anadromous fish migrating to the ocean was one of the largest in 10 years. The 1985 steelhead run was larger than the record run in 1984. The number of chinook salmon returning from the ocean to spawn in the spring of 1985 was substantially larger than it was in 1984, and indications are that some of the 1986 runs may be larger still.

Notwithstanding these results, according to the Council, the 1985 experience with low water flows in the Snake River pointed to a need to reevaluate 1985 water budget procedures and to develop, if necessary, new procedures and agreements among the parties assuring that sufficient water budget flows will be available for the Snake River in 1986. As a result of the 1985 experience, numerous water budget planning meetings were held between November 1985 and April 1986 to discuss and develop coordinated plans for operating the 1986 Columbia River and Snake River water budgets. Assessments of the 1986 water budget procedures were not yet available at the completion of our review.

Regional Views

We discussed the Fish and Wildlife Program and its implementation with selected federal, state, tribal, and utility industry representatives throughout the Pacific Northwest. Generally, these officials believed that there was a cooperative spirit in developing the program and viewed the program as an unprecedented joint venture to identify the various fish and wildlife needs in the Columbia River system. These individuals also believed that the Council's program would result in a better understanding of the fish and wildlife problems that exist and focus the region's efforts on the most important problems.

While the Council's overall program was generally viewed positively by various regional groups, officials of some fish and wildlife organizations expressed concern about how FERC was interpreting a requirement in the Council's program that calls for regulators to assess the cumulative environmental effects of proposed hydropower developments in river drainage areas. The timing of such assessments was an issue in litigation before the Ninth Circuit Court of Appeals.

The litigation concerning FERC involved the Salmon River drainage in Idaho which, according to the Council, is the single largest spawning habitat for certain salmon and steelhead trout in the Columbia River Basin. FERC had received preliminary permit applications for seven small nonfederal hydroelectric dams in the Salmon River Basin. In 1982 the National Wildlife Federation filed a petition against FERC regarding preliminary permits issued for these dams. The Federation argued that FERC violated the Northwest Power Act by failing to consider the potential cumulative effect of these projects on fish and wildlife as required by the Council's program.

FERC pointed out that the act requires it to take into account the Council's program only at relevant stages of the decision-making process. FERC contended that because the purpose of preliminary permits is merely to enable the permittees to gather information for their license applications and to establish their priority for licenses, FERC did not need to address the environmental impacts of the projects at the permitting stage. FERC indicated that it would assess the cumulative environmental effects at the licensing stage. On September 30, 1986, the court issued its decision that FERC had not adequately taken into account the Council's fish and wildlife program and overturned FERC's issuance of preliminary permits.

Agency Comments

In its comments on a draft of this report, the Northwest Power Planning Council agreed that the report identified some of the major priorities in the fish and wildlife program. The Council recognized that some mainstem bypass projects have been delayed, but it is continuing its efforts to ensure that sufficient funds are available to avoid any further unjustifed delays. The Council also said it was continuing its discussions with FERC concerning the criteria used to determine the need for hydroelectric power and has offered its analyses to FERC for use in its decision-making on proposed hydroelectric projects. The Council further said that it is

consulting with affected parties and is working with Bonneville to identify priorities in the implementation of the fish and wildlife program during difficult budgetary times at Bonneville.

A copy of a draft of this report was also furnished to the Northwest Region of the National Marine Fisheries Service (Service) for its information. In commenting on the draft, the Regional Director of the Service expressed concern about the slow progress in completing the fish bypass facilities on the mainstem dams. The Service said that all of the facilities completed since 1980 had been agreed to at the time the Northwest Power Act was passed. The Service further said that while bypass design studies had been conducted at other projects, no facilities or facility designs were developed for these other projects. Overall, the Service believed that while the Council deserved recognition for its efforts to have bypass facilities constructed, its efforts had been unsuccessful in having facilities installed as soon as practical.

Further, the Service said that despite significant progress by the Council in the fish program, numerical goals have still not been established. The Service expressed the view that numerical goals are needed to guide implementation and provide accountability for progress in the fish program.

The Service also expressed reservations concerning the effectiveness of the Council's water budget program. In the Service's view, the problems occurring in the Snake River water flows in 1985 because of the Corps' and Idaho Power's actions, raise questions about the effectiveness of this measure during low-water years, which is the situation the water budget is intended to address. In the Service's view, it is not yet clear that the water budget provides any improvement in fish flows over what existed prior to the Northwest Power Act.

Observations

Our review indicated that the Council's program has had a positive, unifying effect on the region's fish and wildlife activities. The program is credited for channeling resources to the most important problems and for giving the various agencies and tribes a common focus in their efforts. We found that progress is being made in carrying out key items in the Council's program, although delays have occurred in the scheduled completion of certain projects.

With respect to whether the overall program will succeed in protecting and enhancing the region's fish and wildlife resources, we concur with

the Director of the Council's Fish and Wildlife Division, who told us that it is too early to determine the program's beneficial impacts. According to the Director, more time will be needed to assess the program because (1) the impacts of the efforts prior to the act have not been determined, (2) facilities constructed because of the act have not been in operation long enough to evaluate their effectiveness, (3) water conditions in the basin during the past 3 years have generally been good, (4) a life cycle of salmon and steelhead has not been completed since implementation of program measures started, and (5) it is difficult to separate program benefits from the results of nonprogram activities, such as setting more strict harvest limits on the ocean salmon fishery. In this regard, the Council is developing a process to measure overall program effectiveness. We support that effort.

Public Involvement: Substantial and Improving

The Northwest Power Act called for programs that would involve the public in developing plans, programs, and decisions affecting the region's power supplies and fish and wildlife resources. The Council and Bonneville have established programs and processes to keep the public informed and to solicit public comments on proposed plans prior to making final decisions. Both agencies' programs, in our view, provide assurance that public interests have better opportunities to participate in regional power planning and fish and wildlife programs. Additionally, both agencies have been working to improve their programs.

Public Involvement Required for Regional Planning

As we reported in 1978, the region's power planning and resource development process was conducted with little public participation and somewhat in isolation from the public view.[1] By 1980, when the act was passed, public interest in regional decisionmaking had been heightened by rising electric rates, increased recognition that resource developments have environmental costs, and concerns about predicted power shortages.

In recognition of these concerns, the act required that the views of states, local governments, consumers, users of the Columbia River system, and the public at large be incorporated into the development of the region's power plan and the fish and wildlife program. Specifically, the act requires that Bonneville and the Council develop and maintain comprehensive public involvement activities. It also directs the Council to hold public hearings on the power plan prior to its adoption or revision. Further, it requires the Council to provide for public participation and comment in developing the fish and wildlife program.

Public Involvement Programs Have Been Developed

Both the Council and Bonneville have instituted programs to inform and to elicit the public's views on plans and activities being carried out in the areas of regional power planning and fish and wildlife protection and enhancement. In addition, the Council has taken action to improve its public involvement activities on the basis of public comments. Bonneville used a consultant's evaluation to improve its public involvement program.

[1]See Region at the Crossroads—The Pacific Northwest Searches for New Sources of Electric Energy (EMD-78-76, Aug. 10, 1978) p. 5.8.

Council's Public Involvement Activities

In developing its initial power plan and fish and wildlife program, the Council sought the views of the public. Council representatives participated in over 150 public meetings between 1981 and 1983. During and subsequent to these meetings, the Council received several recommendations and extensive testimony with supporting documentation concerning the development of its plan and program. In addition, the Council established advisory committees and met with individual agencies, utilities, Indian tribes, and other interested groups to evaluate issues, recommendations, and comments raised by the public. The Council developed its power plan and fish and wildlife program on the basis of public comments it received.

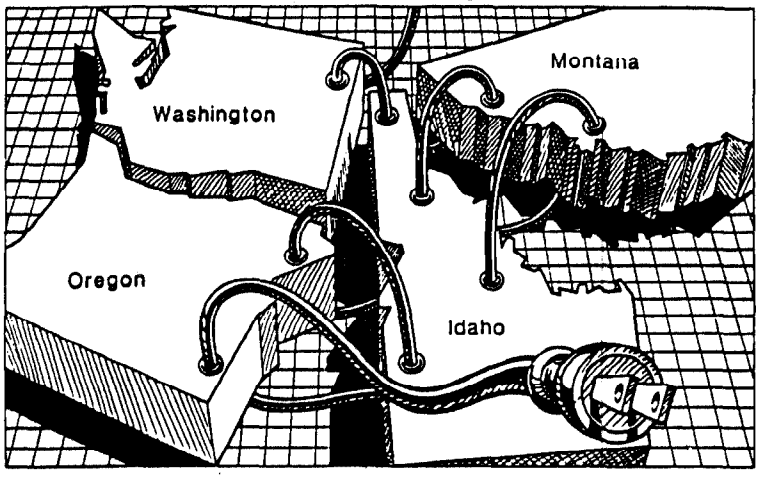
When the Council revised its power plan, it also expanded its process for obtaining public comments. In October 1984 Council staff prepared a public involvement plan. One of the activities called for was a public involvement questionnaire, which the Council published in the November/December 1984 issue of its bimonthly magazine. The questionnaire was to (1) identify public attitudes about the Council's public involvement activities, (2) solicit suggestions for improving public involvement, and (3) inform the public about the Council's public involvement activities for power plan amendment.

From the responses to its questionnaire, the Council decided that the public needed to be better informed about the Council's responsibilities and how people can become more involved in the decisionmaking process. The Council also decided that it needed to have more extensive contact with the public. As a result, the Council

- began issuing periodic listings of Council publications and coming meetings,
- awarded a contract to identify groups in the region that were underrepresented in Council decisionmaking,
- conducted public involvement training for its staff members, and
- advertised the availability of issue papers and the draft power plan in regional newspapers. Figure 4.1 shows one of these advertisements.

Figure 4.1: Council Public Involvement Advertisement

Get involved with your energy future



The Northwest Power Planning Council is developing a new 20-year electrical power plan for the Pacific Northwest region (Idaho, Montana, Oregon and Washington). The goal of the plan is to ensure that the region has an adequate and reliable supply of electrical energy at the lowest cost for ratepayers. The Council will be taking public comment on a variety of issues including:

- Forecasting electrical energy demand
- Conservation & generating resources to meet demand
- Direct Service Industries (aluminum plants)
- Model conservation standards
- WPPSS 1 and 3 (two mothballed nuclear plants)
- Out of region power sales and purchases

Papers that describe these and other issues dealing with regional electrical power planning are being presented for public comment at open Council meetings in each of the four states. Every three weeks, the Council sends out meeting agendas and updates of all current issue papers with public comment deadlines noted. If you would like to be on this mailing list, please check the box and send it to the address below.

In July, the Council will publish a draft 20-year power plan for the Northwest encompassing all the individual issues. The Council will be accepting public comment on the draft throughout the summer and fall. The final plan will be adopted in December. To receive the draft, please check the box below.

☐ Please put me on the mailing list to receive updates, which lists all issue papers available as well as meeting agendas.

☐ Please send me a copy of the Draft 1985 Northwest Power Plan to be available in July.

NAME _____

ORGANIZATION _____

STREET _____

CITY/STATE/ZIP _____

MAIL TO: PUBLIC INVOLVEMENT DIRECTOR, NORTHWEST POWER PLANNING COUNCIL, 850 S.W. BROADWAY, SUITE 1100, PORTLAND, OREGON 97205

OR CALL: (503) 222-5161 OR TOLL FREE (OREGON 1-800-452-2324) OR (IDAHO, MONTANA, WASHINGTON 1-800-222-3355).

NORTHWEST POWER PLANNING COUNCIL

In addition to involving the public in regional power and fish and wildlife planning activities, the Council has generally kept the public

informed of ongoing events and emerging issues. During the implementation of its plan and program, the Council continued to meet with the public throughout the four Northwest states. More than 40 Council meetings were held in various communities between April 1983, when the power plan was issued, and December 1985, when we completed our work. These meetings, held every 3 to 4 weeks, provided formal opportunities for the public to present its views on power or fish and wildlife issues. For each such issue, an issue paper is prepared by the Council staff, presented at one of the Council's public hearings, and distributed to the public. A public comment period on the issue is then scheduled for a second Council meeting. During the period between Council meetings, Council members may hold informal meetings with interested groups or individuals who wish to discuss the issue. This discussion period may be extended for controversial issues. The Council usually announces its decision at a third public meeting—at least 6 weeks after the issue paper was first distributed to the public for review and comment.

The Council also established, in June 1983, a Public Information and Involvement Division. The Division's main function is to act as an information source for the public. To accomplish this, the Division

- produces educational films, slide presentations, and public service announcements;
- publishes a bimonthly magazine focusing on regional energy news and on current issues regarding power rates, forecasting, conservation, and fish and wildlife protection and enhancement; and
- assists the Council's program staff by editing and mailing issue papers and notifying the public of available documents, public meetings, and consultations related to the issues.

The Council has received five first-place awards from the International Association of Business Communications for the quality of the Division's publications.

Bonneville's Public Involvement Activities

While the Council's public involvement activities focus on obtaining regional entities' views on its broad regional power planning and fish and wildlife activities, Bonneville's public involvement activities are directed more at involving and informing the public concerning actions it takes as a key implementor of the Council's plans and programs.

Because of Bonneville's role, the public can be affected more immediately, through electric power bills or environmental impacts, by Bonneville's actions. Consequently, higher public interest in Bonneville's decisionmaking processes often can be expected.

In November 1981, in testimony before the House Subcommittees on Oversight and Investigation and Energy Conservation and Power, we said that Bonneville had attempted to meet its public involvement responsibility under the act by expanding a small public involvement subunit established in its Office of Power Management before the act became law. We observed that Bonneville had not (1) established an independent office of public participation, (2) developed a comprehensive public education/planning program to assure knowledgeable and timely public participation in its decisions, or (3) used communication specialists to help design and lead public planning forums.

In December 1982 Bonneville's Administrator elevated the public involvement function from the Office of Power Management to the External Affairs Office, which is within Bonneville's Office of the Administrator. Before the change, the public involvement staff, in addition to planning public involvement programs, performed many administrative functions such as processing mailings, preparing Federal Register notices, establishing and maintaining official records, and assisting in preparing reports. Following the change, the staff assumed managerial responsibilities in public involvement policy, guidance, and overall agency coordination.

In 1983, as one part of its efforts to improve its overall public involvement program, Bonneville employed a consultant to review and evaluate the effectiveness of its public involvement activities. In an August 1984 report, the consultant observed that Bonneville was slow in developing a commitment to public involvement. The consultant made more than 60 recommendations to Bonneville for improving public involvement. The recommendations were, among others, that Bonneville (1) revise its public involvement policy, develop internal guidelines for implementing the policy, and prepare public involvement plans, (2) develop a training plan for its staff covering various aspects of public involvement principles and techniques, and (3) provide opportunities for the public to participate in its decisionmaking process at the broadest, most generic level.

Bonneville subsequently took a variety of actions aimed at improving its public involvement programs. A public involvement committee was established to advise managers on the need for reaching the public on its

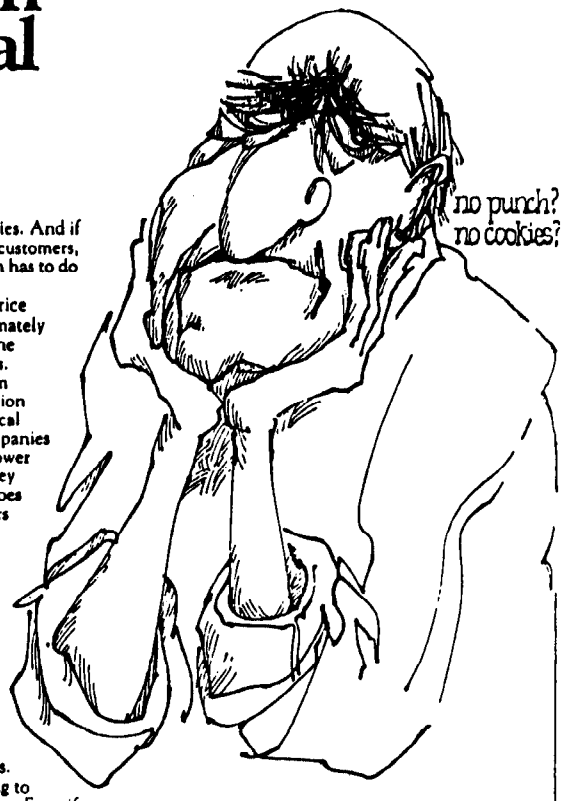
policy-making. In addition, the public involvement policy was revised through a public process and published in July 1986. According to Bonneville officials, the revised policy is one phase of a three-phase effort to document Bonneville's approach to public involvement. The second phase will be to clarify organizational responsibilities and provide staff with additional information on public involvement planning. The third phase is a guide that describes the general theory behind public involvement and explains how to carry out public involvement efforts.

Currently, Bonneville prepares public involvement plans near the beginning of each major decisionmaking process. These plans include, among other items, (1) a description of the major issues that may emerge, (2) an estimate of the level of public interest likely to be generated by a decision, and (3) a sequential plan of public involvement activities integrated with the decisionmaking process. To assist its staff in implementing these actions, Bonneville developed a public involvement training plan. Training during the first year was conducted by six contractors and covered topics such as conducting public meetings, designing public information programs, and maintaining media relations.

With respect to generally informing the public, Bonneville now prepares and distributes informative documents explaining policy and program issues. These documents, called "Issue Alerts" and "Backgrounders,"are designed to explain controversial and complex issues in readily understandable terms. Bonneville's staff also advertises in newspapers to inform the public of opportunities to participate in upcoming decisions. Figure 4.2 shows one such advertisement.

Figure 4.2: Bonneville Public Involvement Advertisement

Why should you bother to show up for BPA's forum on industrial electric rates?



We don't serve punch and cookies. And if you're not one of our industrial customers, you may wonder what the forum has to do with you.

The answer: plenty. The price industry pays for electricity ultimately affects the price you pay. And the dilemma goes beyond mere rates.

Take the region's aluminum industry. It contributes $1.5 billion annually in payroll, state and local taxes. Most area aluminum companies say they can't survive without lower electric rates. One company, they point out, has folded already. Does that necessarily mean that others would fold? If so, should Northwest ratepayers give incentives to BPA's industrial customers to keep them in business? Or should we do nothing? They buy one third of BPA's power; if they don't survive, could BPA find other customers to replace them? Just how important is the industry's survival to the price you pay for electricity?

Big questions. Big problems. Someday soon, somebody's going to have to do something about them. Even if it's a decision to do nothing.

Someday's here. Somebody is us. And that includes you. We're already hearing from industry. But it's your destiny, too. And since BPA belongs to you, we could sure use a piece of your mind.

BPA Forum to discuss rates and options for Direct Service Industries
Thursday, April 25, Holiday Inn (Airport), Marabella Room, 8439 N.E. Columbia Blvd. Portland, Oregon
Registration: 7:00 pm Hearing 7:30 pm

If you'd like to tell us a thing or two but can't attend the forum, please drop us a line:

Bonneville Power Administration
Post Office Box 12999 • Portland, Oregon 97212

If you have questions, or want more background information, just give us a call.

Portland 230-3478 • Oregon, toll free, 1-800-452-8429 • Washington, Idaho, Montana, toll free 1-800-547-6048

Public Involvement Programs Are Working

To assist us in evaluating the Council's and Bonneville's public involvement efforts, we employed a nationally recognized consultant who had previously reviewed Bonneville's progress in this area. The consultant assisted us in assessing the two agencies' activities on the basis of (1) his knowledge of Bonneville's public involvement activities and organization, (2) an examination of information obtained during our work, and (3) a series of interviews with Bonneville, Council, and utility personnel.

With respect to the Council, the consultant concluded that (1) the Council has established a clear commitment to public involvement, (2) its efforts in public involvement have been significant in establishing the legitimacy of the Council in developing Northwest energy policy, and (3) the Council's public involvement program has improved substantially during the past 2 years.

Concerning Bonneville's public involvement activities, our consultant concluded that Bonneville was generally on course in implementing his previous recommendations. In addition, the consultant observed that:

- Bonneville's new requirement that public involvement plans be developed for each major decisionmaking process may prove to be the single most important public involvement action Bonneville has taken. This requirement necessitates careful front-end planning, which aids program managers in preparing for public involvement, and requires identification of resources and responsibilities by each internal participant in the process.
- Organizational units within Bonneville that were described in his August 1984 report as having substantial doubts about the benefits of public involvement are the same units that conducted the largest and most significant public involvement activities during 1985.

Agency Comments

In its comments on a draft of this report, DOE said that our description does not begin to encompass the activities and efforts that Bonneville has taken in the last 3 years. It believes that Bonneville is a leader in the field of public involvement, exposing its decision making to the public spotlight as no other federal agency does. According to DOE, Bonneville's efforts have resulted in improved decisions that reflect the public's concerns.

Observations

Our review showed that the Council's and Bonneville's public involvement activities and programs encourage the public to offer its views and

participate in decisions on regional power planning and fish and wildlife programs. Since the act's passage, both entities have shown progress in improving their respective public involvement activities. These efforts should ensure that the public is made aware of regional power planning and fish and wildlife issues and is provided improved opportunities to participate in decisions on these matters.

List of GAO Reports and Testimony on Northwest Power Legislation

1. Testimony before the Subcommittee on Energy and Power, House Committee on Interstate and Foreign Commerce, on H.R. 13931, September 19, 1978.

2. Letter report to Representative Max Baucus regarding H.R. 13931, referring to Bonneville's placing priority on conservation, others having sufficient input and influence on decisions Bonneville makes, Bonneville's authority to construct thermal generating plants, and effects on current preference customers, EMD-79-4, October 26, 1979.

3. Letter report to Representative James H. Weaver on issue papers prepared by the Bonneville Power Administration supporting S. 855 and H.R. 3508, EMD-79-96, July 30, 1979.

4. Testimony before the Subcommittee on Water and Power Resources, House Committee on Interior and Insular Affairs, referring to Region at the Crossroads—The Pacific Northwest Searches for New Sources of Electric Energy (EMD-78-76, Aug. 10, 1978) and H.R. 3508 and H.R. 4159, July 30, 1979.

5. Letter report to the Chairman, Subcommittee on Water and Power Resources, House Committee on Interior and Insular Affairs, addressing conservation programs, renewable energy projects, power rates, thermal powerplants, and direct and indirect social and environmental costs as these relate to H.R. 3508 and H.R. 4159, August 1979.

6. Report to the Chairman, Subcommittee on Energy and Power, House Committee on Interstate and Foreign Commerce, Impacts and Implications of the Pacific Northwest Power Bill (EMD-79-105, Sept. 4, 1979).

7. Testimony before the House Committee on Interstate and Foreign Commerce on H.R. 3508 and GAO report EMD-79-105, Oct. 19, 1979.

8. Letter report to the Chairman, Subcommittee on Energy and Power, House Committee on Interstate and Foreign Commerce, on S. 885, the Council and Bonneville relationship, regional commissions, and other issues, November 21, 1979.

9. Letter report to the Chairman, Subcommittee on Energy and Power, House Committee on Interstate and Foreign Commerce, regarding alignment of recommendations in EMD-79-105 with Senate bill 885, January 2, 1980.

10. Letter report to Representative Jim Weaver, Administrative Feasibility of the Two-Tiered Pricing by the Bonneville Power Administration (EMD-80-57, Feb. 6, 1980).

11. Letter report to the Chairman, Subcommittee on Energy and Power, House Committee on Interstate and Foreign Commerce, Comments on Pacific Northwest Electric Power Planning and Conservation Act - H.R. 8157 (EMD-81-28, Oct. 29, 1980).

List of GAO Reports and Testimony on Actions to Implement the Northwest Power Act (As of July 1, 1985)

1. Letter report to the Secretary of Energy, Bonneville Power Administration's Efforts in Implementing the Pacific Northwest Electric Power Planning and Conservation Act (EMD-81-67, Apr. 8, 1981).

2. Letter report to Representative Mike Lowry, Bonneville Power Administration's Efforts to Implement the Conservation Provisions of Public Law 96-501 (EMD-81-99, June 8, 1981).

3. Testimony before the Subcommittee on Oversight and Investigations and the Subcommittee on Energy Conservation and Power, House Committee on Energy and Commerce, regarding Bonneville's efforts to implement the multiple purposes of the Northwest Power Act (Public Law 96-501), November 10, 1981.

4. Testimony before the Subcommittee on Energy Conservation and Power, House Committee on Energy and Commerce, regarding Bonneville's capability and preparations to implement the Northwest Power Plan, June 13, 1983.

5. Letter report to the Chairman, Northwest Power Planning Council on Matters for Consideration When the Columbia River Basin Fish and Wildlife Program is Revised (B-214960, May 2, 1984).

6. Report to the Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, Implementation of the Pacific Northwest Electric Power Planning and Conservation Act's Fish and Wildlife Provisions (GAO/RCED-84-166, Aug. 17, 1984).

Comments From the Northwest Power Planning Council

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

NORTHWEST POWER PLANNING COUNCIL

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PORTLAND, OREGON 97205 • (503) 222-5161

Toll free number for Idaho, Montana & Washington: 1-800-222-3355
Toll free number for Oregon: 1-800-452-2324

November 19, 1986

Mr. Keith Fultz
U.S. General Accounting Office
Room 491A
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Fultz:

Thank you for the opportunity to comment on the draft General Accounting Office (GAO) report entitled "Federal Electric Power: A Five Year Status Report on the Pacific Northwest Power Act." Council staff has enjoyed a productive relationship with GAO staff in exploring the complexities of the Pacific Northwest electricity system and is very appreciative of the time and effort required for preparation of the report.

The report provides a good summary of major implementation activities in power planning, fish and wildlife restoration and public involvement. Comments provided below embellish and update information in the report.

As noted in the report, the Council's 1986 power plan places special emphasis on the need for regional cooperation in the development of resources. We continue to meet with relevant utilities and regulatory commissions to discuss the benefits of cooperative development and the substantial savings that would accrue to the region. The options concept also remains a matter of high priority. Several states in the region have taken steps to accommodate options in their resource siting procedures and the Council and Bonneville are pursuing discussions with the Federal Energy Regulatory Commission (FERC) staff on the options concept. In addition, since the power plan is not simply a plan for energy deficits, the Council continues to emphasize the importance of carefully planned action during the period of surplus. Prime activities include conservation capability building in all sectors of the economy, lost opportunity resources and the Western Energy Study. The latter is an effort to identify and evaluate opportunities for mutually beneficial out-of-region sales and purchases for their impact on the power plan.

The GAO report correctly notes that there have been discussions concerning the need to avoid duplication in resource planning by Bonneville and the Council. The Council believes that this is an important issue especially given Bonneville's current financial difficulties. It has generated some confusion in the region and has required increased planning involvement by affected groups. Accordingly, the Council has been meeting with Bonneville to discuss potential areas of duplication. The goal is to eliminate unnecessary duplication of effort in the Council's preparation of its power plan and Bonneville's development of its resource strategy.

-1-

See comment 1.

The report correctly identifies some of the major priorities of the Columbia River Basin Fish and Wildlife Program: mainstem bypass, the water budget and timely completion of fish passage facilities in the Yakima River Basin. Although, as noted in the report, the schedule for completion of mechanical bypass for juvenile salmon and steelhead at mainstem projects has been delayed, the Council is continuing its efforts to ensure that sufficient funds are available for the projects and that unjustified delays are avoided.

The report mentions the Salmon River Basin litigation brought by the National Wildlife Federation challenging the FERC hydroelectric licensing process. The Council filed an amicus brief in that case. The Ninth Circuit has issued its decision, finding that FERC has not adequately taken the Council's program into account. The Council staff is continuing its involvement in FERC cluster impact assessments and, most recently, has met with FERC staff to discuss the criteria FERC employs to determine need for hydroelectric power. The Council has offered to provide analyses based on the Council's power planning approach for use in FERC decision-making on proposed hydroelectric projects.

The Council is also consulting with affect parties in the region and is working with Bonneville to identify priorities in implementation of the fish and wildlife program during difficult budgetary times at Bonneville. It is hoped that this effort, and related consultations concerning the budget for power planning activities, will help overcome past difficulties occasioned by the inability to synchronize the Bonneville budget process and the development of the Council power plan.

Thank you for the opportunity to comment on the draft study. We look forward to continuing a strong working relationship in monitoring implementation of the Northwest Power Act.

Sincerely,

Edward Sheets
Executive Director

-2-

The following are GAO's comments on the Northwest Power Planning Council's letter dated November 19, 1986.

GAO Comments

1. Report amended to show that the court has rendered its decision in the case. (See p. 47.)

Comments From the Department of Energy

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

Department of Energy
Washington, DC 20585

OCT

Mr. J. Dexter Peach
Assistant Comptroller General for
Resources, Community, and
Economic Development Division Programs
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Peach:

The Department of Energy appreciates the opportunity to review and comment on the General Accounting Office (GAO) draft report entitled, "Federal Electric Power: A Five-Year Status Report on the Pacific Northwest Power Act."

While the report contains no recommendations, we are appreciative of the positive tone set forth in the draft which partially recounts the accomplishments of the Bonneville Power Administration (BPA) in meeting the demanding tasks required by the Act. We also concur in the considerable progress ascribed to the Pacific Northwest Power Planning Council. We hope the success of the Council is partially the result of our support of that unique regional body.

We are concerned, however, that the report lacks comprehensive coverage of the full range of actions necessary to make the Act successful, seeming to be selective in highlighting only certain purposes and portions of the Act without explanation. Further, the report is fully out of date with current progress. By highlighting problems which have already been overcome, the report may unnecessarily focus attention away from momentum which is building, particularly in relations between BPA and the Council. We believe there are additional matters which have not been fully recognized in the report which we would like to mention for your consideration.

See comment 1.

1. Regarding the scope of this report on progress under the Act, we note that major provisions of the Act are omitted from discussion or review. In particular, the central purpose of "providing the region with an efficient and adequate power supply" is not discussed.

See comment 2.

Discussion of the progress on options and the testing of that concept are dated. Federal Energy Regulatory Commission (FERC) has indicated that, under its current rules and procedures, it will be unable to make special accommodation for hydro options to extend the current maximum 4-year period. Despite this current FERC position, BPA is proceeding with a hydro options test program to determine how an options program might be implemented with current FERC regulations.

2. In discussion of the planning mechanisms of the Act, the report cites possible duplication of effort between the Council's Plan and BPA's Resource Strategy. We welcome GAO monitoring of these activities to assure that unnecessary duplication of effort does not occur. However, we must distinguish the BPA Resource Strategy from the Council's Power Plan. The Council's Plan provides the broad guidance and framework for the BPA Administrator in serving loads. The Resource Strategy is an annual document used to develop programs, program levels, and timing of implementation. The resource analysis in the Resource Strategy is also a vehicle to work with the Council in providing a second opinion which may be useful to the Council as a basis for amending the Plan.

In addition, the BPA Administrator is required and expected to perform a variety of functions which are outside the scope of the Council's Plan and Program. For such activities as annual Federal budgets, rate-setting, and transmission system planning and construction, the Administrator requires sound planning tools beyond that provided in the Council's Plan. Thus, BPA has been coordinating planning efforts with the Council while maintaining its own ability to provide essential analytical and program support to management decisions.

3. Without commenting on the report's characterization of progress in the conservation programs, we point out that a review of the cost effectiveness of the model conservation standards is presently underway. This review will be based on studies of current building practices and the results of demonstration studies since the standards were first adopted. It would be important for this GAO progress report to acknowledge the significance of these studies to implementation of the Council's Plan, code adoption by State and local governments, and the imposition of surcharges in the Northwest.

4. Finally, regarding the report's discussion of BPA's public involvement program, we suggest that the modest description does not begin to encompass the activities and efforts BPA has taken in the last 3 years. The summary is missing some very important information, most of which had been furnished in interviews with GAO auditors.

BPA's public involvement program has undergone a virtual revolution. We believe, and many in the region and across the country recognize, that BPA is the leader in the field of public involvement programs. We have exposed decisions to the public spotlight which are rarely taken outside an agency (e.g., settlement of litigation). Our policies and programs developed with public participation reflect public concerns and our decisions are improved as a result. All parts of the agency have dedicated considerable time and effort

to public involvement and we have a first-class program. We believe that the GAO report should acknowledge the commitment we have made and the successes that have come from our efforts.

The draft report mentions that we have adopted a "revised public involvement policy." A review of our policy, which was published in the Federal Register dated March 12, 1986, reveals the far reaching aspect of BPA's public involvement practices and illustrates clearly that we involve the public in immeasurably more actions than those BPA "takes as a key implementor of the Council's plans and programs." The Oregonian, which has not always been positive in review of BPA, applauded the agency for its commitment to involving the public in the Federal decisionmaking process in its editorial dated July 29, 1986.

BPA's public involvement program has not only been far reaching in scope, it has demonstrated techniques that are creative and innovative. In 1985, we involved the region--and many parts of the Nation--in trying to resolve the critical problems faced by the Northwest because of the problems facing BPA's direct service industries (the aluminum smelters). Diverse regional groups participated in the development of BPA's DSI Options Study which resulted in several alternative solutions. A regionwide symposium cosponsored with the League of Women Voters met an educational need on issues surrounding this problem. Participants included Members of Congress, a Governor, world recognized economic and aluminum industry experts, and regional leaders. Because of the extensive public participation undertaken, the options selected in this process are being implemented with little difficulty--the true test of effective public involvement. The Senate Committee on Appropriations commended BPA for the public policy and involvement process employed in the development of this study (page 213 from Senate Report No. 99-110 dated July 25, 1985).

Examples such as the DSI Options Study effort are not unique for BPA. We have involved the citizens of the region in settling a multibillion dollar lawsuit concerning a nuclear plant. This issue was fraught with all the controversy of public and private power interests and the history of Washington Public Power Supply System and ended in a consensus conclusion achieved through, we believe, an unprecedented effort. We have been unable to find any other government agency that has extended the boundaries of decisionmaking to include involvement of the public in settling litigation.

It should be noted also that BPA practices public involvement in its ongoing day-by-day activities and does not limit it to special issues. The Administrator and his top staff consult regularly with key publics in Public Interest

Group Leader meetings, State and local government consultation meetings, State regulatory body meetings, fish and wildlife consultation meetings, and customer meetings. For instance, while other agencies contact public interest group leaders on an occasional basis, the BPA Administrator has made and kept a commitment to meet with these leaders every 2 months during the past several years.

Because of the success and value of the public involvement program to BPA and to the citizens, the Secretary of Energy on September 4, 1986, nominated BPA's Public Involvement Manager for consideration for the Congressional Award for Exemplary Service to the Public. Recognition at this level exemplifies a program which far exceeds the moderate description contained in the draft report. Indeed, we believe that public involvement can be cited as the single most important factor leading to successes in implementation of the Northwest Power Act. It is these efforts which build regional consensus despite controversy and changing conditions.

We appreciate the opportunity to review GAO's draft report and trust that you will find our comments helpful. We also appreciate the courtesy shown by the GAO staff and officials during the course of this study. Editorial comments have been provided directly to the auditor under separate cover.

Sincerely,

Harry L. Peebles
Acting Assistant Secretary for
Management and Administration

The following are GAO's comments on the Department of Energy's letter dated October 10, 1986.

GAO Comments

1. Report amended to reflect the central purpose of the Northwest Power Act. (See p. 11.)

2. Report amended to provide updated information in the report. (See p 26.)

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Glossary

Anadromous Fish	Fish that hatch in fresh water, migrate to the ocean, mature there, and return to fresh water to spawn. For example, salmon or steelhead trout.
Average Megawatt	A unit of energy output over a year. It is equivalent to the total energy in megawatt-hours divided by 8,760 (the number of hours in a year).
Bypass System	Structures that provide a route for fish movement around or though dams or other passage barriers.
Capacity	Maximum power output, expressed in kilowatts or megawatts.
Conservation	According to the Northwest Power Act, any reduction in electric power consumption as a result of increases in the efficiency of energy use, production, or distribution.
Demand or Load Forecast	An estimate of the level of energy that is likely to be needed at some time in the future.
Direct Service Industry	An industrial customer that buys power directly from the Bonneville Power Administration.
Federal Base System (Federal System Power)	The system includes the Federal Columbia River Power System hydroelectric projects, resources acquired by the Bonneville Power Administration under long-term contracts prior to the Northwest Power Act, and resources acquired to replace reductions in the capability of existing resources subsequent to the act.
Hydroelectric Power (Hydropower)	The generation of electricity using falling water to turn turbo-electric generators.
Investor-Owned Utility	A utility that is organized under state law as a corporation to provide electric power service and earn a profit for its stockholders.

ilowatt (kW)	The electrical unit of power that equals 1,000 watts.
ilowatt-Hour (kWh)	A basic unit of electrical energy that equals 1 kilowatt of power applied for 1 hour.
oad	The amount of electric power required at a given point in time.
legawatt	The electrical unit of power that equals 1 million watts, or 1,000 kilowatts.
lodel Conservation tandards	Energy-efficient building standards (developed by the Council) for electrically heated buildings.
acific Northwest (The egion)	According to the Northwest Power Act, the area consisting of Oregon, Washington, Idaho, and Montana west of the Continental Divide, and such portions of Nevada, Utah, and Wyoming as are within the Columbia River Basin. It also includes any contiguous areas not more than 75 miles from the above areas that are part of the service area of a rural electric cooperative customer served by Bonneville on the effective date of the act and whose distribution system serves both within and without the region.
reference	Priority access to federal power by public bodies and cooperatives.
ublicly Owned Utilities	Refers to Public Utility District or Peoples Utility District (PUD), municipalities, and cooperatives that market power. PUDs are separate units of government established by voters of a proposed district. Cooperatives are private, nonprofit corporations operating within state laws, but essentially self-regulating. Each publicly owned utility is a preference customer of the Bonneville Power Administration.
hermal Resource	A facility that generates electricity by burning coal, oil, or other fuel or by nuclear fission.

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