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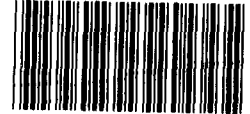
United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-252738

March 31, 1993

The Honorable George Miller
Chairman, Committee on Natural Resources
House of Representatives



148851

Dear Mr. Chairman:

This letter with enclosures responds to your February 1993 request that we summarize our work on the Bonneville Power Administration (BPA) since the enactment in 1980 of the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act). You asked that we include our relevant work on other federal agencies involved in the operations of the BPA system. These include the U.S. Army Corps of Engineers and the Bureau of Reclamation, which operate dams on the Columbia River; the Department of Energy, BPA's parent agency; and the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, which are responsible for protecting the Columbia River's endangered and threatened fish species.

To respond to your request, we searched GAO's automated database to identify products on BPA and the related agencies issued from December 1980, when the Northwest Power Act was enacted, to the present. For those products in which we had recommended that an agency or agencies take action, we retrieved from other GAO automated files the documentation indicating whether and how the agency or agencies had responded to the recommendation(s). We reviewed each of the identified products for content and relevance. As agreed with your office, we categorized the products according to the issues identified in your letter and several related issues.

Each of the eight enclosures to this letter summarizes our work on one of these issues, as follows:

- Enclosure I - Financial Management
- Enclosure II - Endangered Species
- Enclosure III - Resource Acquisition
- Enclosure IV - Irrigation
- Enclosure V - Electricity Transmission

GAO/RCED-93-133R, GAO Products on Bonneville Power Administration

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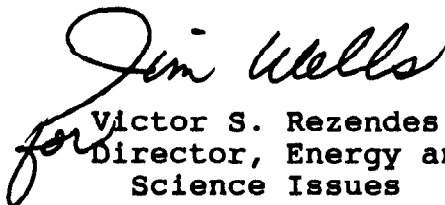
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Enclosure VI - Administrative Matters
Enclosure VII - Washington Public Power Supply System
(WPPSS)
Enclosure VIII - Power Marketing Administration (PMA)
Rates/Repayment

For each of the identified issues, the summary includes our conclusions and recommendations and the action(s) taken by the agency or agencies in response to our recommendations. We have also included within each enclosure a complete list of our relevant products.

If you have any questions, please contact me at (202) 512-3841.

Sincerely yours,


for Victor S. Rezendes
Director, Energy and
Science Issues

FINANCIAL MANAGEMENTBACKGROUND

Federal law requires the Bonneville Power Administration (BPA) to repay the federal investment in the Columbia River Power System --about \$8.5 billion as of 1987--and to set electric power rates at the lowest possible level consistent with sound business practices. The Federal Columbia River Transmission System Act of 1974 placed BPA on a self-financing basis, giving it authority to fund its operations from the revenues of power and transmission service sales and to borrow from the U.S. Treasury. This law also provided that BPA apply revenues to pay for, among other things, the costs of (1) operation and maintenance, (2) purchased and exchanged power, and (3) transmission service.

BPA made repayments on the federal investment from 1939 through 1965, using a cost-based method that incorporated fixed annual repayments. In 1965, BPA switched to a "repayment study method," under which annual repayments are not required; BPA need only repay the federal investment within its repayment period (usually 50 years).

GAO WORK

In June 1981, we concluded that BPA's repayment study method was unacceptable and recommended that BPA replace it with a cost-based (mortgage-type) approach. We found that since BPA had adopted the repayment study method, its repayments of the federal investment had fallen far behind levels that would have been expected if annual schedules had been maintained. We based our recommendation on a number of factors that we believed BPA should consider in evaluating its policies and alternatives, including the requirements of the 1980 Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) and the principles of good government. We found that the repayment study method made it virtually impossible for BPA to (1) adequately meet some of the requirements of the Northwest Power Act, such as the requirement that BPA allocate costs among its various customers, and (2) conform to principles of good government, such as those calling for the establishment of credible and reliable processes, the encouragement of economy and efficiency, and the prevention of unsanctioned burdens on the taxpayer.

In testimonies before the Congress in August and September 1983 and in a report issued in October 1983, we continued to recommend that BPA adopt a repayment method based on costs with fixed annual payments. Our October 1983 report cited the fixed repayment requirement that the Congress had placed on the Tennessee Valley Authority to suggest that a cost-based approach was

practicable. Our October report also included two additional recommendations. First, we recommended that BPA stop its practice of first paying the highest interest-bearing obligations, rather than repaying debts in the order in which they were incurred. We concluded that the practice of first paying high-interest obligations reduces BPA's payment to the Treasury. As a result, the Treasury has to borrow more money at interest rates that usually exceed those paid by BPA, thereby costing the taxpayer more.

The report also recommended that the cost-based method contain a provision that late or missed repayments incur interest costs at the higher of the project's interest costs or the Treasury's current cost of borrowing. In response to our recommendations, the Department of Energy (DOE) stated that (1) BPA's repayment study method was appropriate but that DOE and BPA were continuing to study alternative methodologies, including the cost-based method that we had recommended; (2) imposing an interest penalty on missed repayments was not legally permissible; and (3) paying the highest interest-bearing capital obligation first was consistent with sound business principles.

In a September 1989 report, we reviewed the authority of several federal agencies, including BPA, to borrow funds when this authority was not provided in advance in annual appropriations acts. At the time, agencies with authority to borrow were financing a large portion of their programs with debt and were repaying their debt with appropriations or new borrowing rather than collections. We recommended that those agencies that would, in all likelihood, be able to repay their borrowings entirely with collections be granted authority to borrow. We concluded that, since BPA had not received appropriations to reduce debt and since BPA had attempted to set its rates at a level sufficient to recover its costs, it was reasonable to expect that BPA would be able to repay its \$1.8 billion in borrowings with collections.¹

Our 1990 report reviewed BPA's Residential Exchange Program, which was created by the Northwest Power Act. The purpose of this program was to reduce the disparity in electric rates paid by residential and small farm customers of the region's utilities by having BPA "exchange" its relatively low-cost power with Northwest utilities that had higher-cost power. We found that, although the program reduced the disparity in rates, this reduction stemmed mostly from significant increases in BPA's rates over the period rather than from reductions in rates attributable to utilities' purchases of lower-cost BPA power. After finding that BPA had not

¹The report noted that BPA was also required to pay \$6.7 billion in debt resulting from appropriations.

ENCLOSURE I

ENCLOSURE I

been conducting the reviews necessary to ensure that utilities were passing on lower costs to residential and small farm customers, we recommended that the BPA Administrator initiate such reviews. BPA adopted our recommendations, including procedures to verify that customers' rates are adjusted by Northwest utilities to account for purchases of BPA's lower-cost power.

GAO PRODUCTS

Federal Electric Power: Bonneville's Residential Exchange Program (GAO/RCED-90-34, Feb. 6, 1990).

Budget Issues: Agency Authority to Borrow Should Be Granted More Selectively (GAO/AFMD-89-4, Sept. 15, 1989).

Nuclear Science: Effect of Conversion of Washington Nuclear Plant No. 1 on Debt and Electric Rates (GAO/RCED-89-88FS, Mar. 9, 1989).

Federal Electric Power: Development of Bonneville Electricity Rates for the 1988-89 Period (GAO/RCED-88-126, June 7, 1988).

Bonneville Power Administration's Repayment of Federal Investment in Columbia River Power System (GAO testimony, 125176, Sept. 13, 1984).

Implementation of the Pacific Northwest Electric Power Planning and Conservation Act's Fish and Wildlife Provisions (GAO/RCED-84-166, Aug. 17, 1984).

Policies Governing Bonneville Power Administration's Repayment of Federal Investment Still Need Revision (GAO/RCED-84-25, Oct. 26, 1983).

Bonneville Power Administration's Repayment of the Federal Investment (GAO testimony, 122327, Sept. 14, 1983).

Federal Investment in the Columbia River Power System: Status of Repayment (GAO testimony, 122041, Aug. 3, 1983).

Bonneville Power Administration's Capability and Preparations to Implement the Regional Power Plan (GAO testimony, 121651, June 13, 1983).

Actions by the Bonneville Power Administration to Implement the Long-Term Contracting Provisions of P.L. 96-501 (GAO/EMD-81-140, Sept. 4, 1981).

Policies Governing the Bonneville Power Administration's Repayment of Federal Investments Need Revision (GAO/EMD-81-94, June 16, 1981).

Bonneville Power Administration's Efforts in Implementing the Pacific Northwest Electric Power Planning and Conservation Act (GAO/EMD-81-67, Apr. 8, 1981).

ENDANGERED SPECIESBACKGROUND

Hydropower facilities in the Columbia River Basin have contributed to an estimated 80-percent decline in the numbers of salmon and steelhead trout that migrate to the ocean as young fish and return as adults to spawn. Dams have been built by the Department of the Interior's Bureau of Reclamation (Bureau), the U.S. Army Corps of Engineers (Corps), or public utility districts.

The Pacific Northwest Electric Power Planning and Conservation Act, enacted in 1980, established the Pacific Northwest Electric Power and Conservation Planning Council (Council) and directed it to develop a program for enhancing, mitigating, and protecting fish and wildlife affected by the Columbia River Basin power-generating facilities. The Council's program was first adopted in 1982 and was revised in 1984 to include a 5-year action plan that put primary emphasis on enhancing fish resources. The action plan also included measures for protecting and enhancing the habitat of the basin's nonmigratory fish and wildlife.

The Department of Commerce's National Marine Fisheries Service (NMFS) listed the Snake River sockeye salmon as an endangered species in 1991 and the Snake River fall chinook salmon and spring/summer chinook salmon as threatened species in 1992.

GAO WORK

In 1984, we reviewed the Council's compliance with the act's requirement to develop a fish and wildlife program and found that the Council had developed a program according to the procedures and standards specified in the act. In 1987, we again reviewed the Council's program and found that the Bonneville Power Administration (BPA) and other responsible agencies appeared to be making progress in carrying out the Council's program. BPA and the Corps have responsibility for implementing roughly one-half of the action items included in the program, and, as of 1985, BPA and the Corps had spent more than \$100 million on implementing these items. All expenditures for the program are funded by BPA through its power sales revenues. We noted, however, that it was too early to determine the success of the overall program in protecting and restoring the region's fish and wildlife resources. We also noted that both the Council and BPA had instituted programs to inform the public of, and elicit their views on, plans and activities related to fish and wildlife programs.

In 1990, we examined the efforts made by the Corps to determine the most effective method for assisting fish migration past certain Columbia and Snake River dams. We found that the

Corps had excluded several factors from calculations used to determine that the costs of constructing bypasses at two dams outweighed the benefits and that the inclusion of these factors could have led to the opposite conclusion. In addition, we found that the Corps did not adequately involve fish and wildlife agencies or other groups, as its regulations require, in making its decisions. We determined that the Corps was not obligated to restore the numbers of migrating fish to a specific level and therefore had no benchmark to assess the need for additional fish migration projects.

On the basis of these findings, we recommended that the Secretary of the Army direct the Corps, in consultation with other interested groups, to establish a mitigation objective and determine which measures, such as bypass facilities, were necessary to meet the objective. We also recommended that, in performing future cost-benefit analyses, the Corps take such steps as using validated models to project impacts on fish stock and consulting with other agencies and other parties involved in resource management. In response, the Army stated that the Corps was developing mitigation objectives and expected to have a detailed analysis in 1993 or 1994. In addition, the Corps agreed to adopt our recommendations regarding cost-benefit analyses.

In 1992, we reviewed past actions taken to address declines in salmon runs, together with the costs of these actions. We also reviewed the results of studies and research that evaluated the effectiveness of the salmon recovery measures undertaken. We found that, since 1981, federal agencies and regional organizations had spent over \$1.3 billion (in 1991 dollars) to construct and operate fish hatcheries, construct fish ladders and other facilities to assist salmon in their migration to and from the sea, improve salmon habitats, and conduct research to learn more about salmon or to assess and improve salmon runs. The effectiveness of the actions taken has varied by the type and location of the action. For example, hatcheries have been successful, but problems have resulted from mixing wild and hatchery-bred salmon; facilities to assist salmon in their migration, such as bypass screens and fish ladders, have also had differing results, depending on the location of the dams and the type of salmon.

A 1993 follow-up report identified the potential economic costs and effectiveness of future actions that could be taken to further protect endangered and threatened salmon stocks. We found that a preliminary estimate of the impacts of additional salmon protection measures on employment would not be available until mid-1993 at the earliest. Preliminary estimates of the direct net economic costs of some potential salmon protection measures range from \$2 million to \$211 million annually (in 1990 dollars). These protection measures would alter stream flows to improve the

survival of fish migrating downstream; more definitive estimates of economic impact cannot be determined until NMFS identifies the specific measures to be taken. We found no conclusive evidence to indicate how effective any of the salmon protection measures proposed to date would be in sustaining populations of threatened or endangered salmon.

GAO PRODUCTS

Endangered Species: Potential Economic Costs of Further Protection for Columbia River Salmon (GAO/RCED-93-41, Feb. 23, 1993).

Endangered Species: Past Actions Taken to Assist Columbia River Salmon (GAO/RCED-92-173BR, July 13, 1992).

Hydroelectric Dams: Issues Surrounding Columbia River Basin Juvenile Fish Bypasses (GAO/RCED-90-180, Sept. 6, 1990).

Electric Power: Issues Concerning Expansion of the Pacific Northwest-Southwest Intertie (GAO/RCED-88-199, Sept. 14, 1988).

Federal Electric Power: A Five-Year Status Report on the Pacific Northwest Power Act (GAO/RCED-87-6, Feb. 19, 1987).

Matters for Consideration When the Columbia River Basin Fish and Wildlife Program Is Revised (GAO letter, 124359, May 2, 1984).

RESOURCE ACQUISITIONBACKGROUND

The Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) was enacted in 1980, in part, to alleviate regional concerns about future power shortages. Its primary objectives included (1) establishing a regional power planning process with participation from all interested parties and (2) encouraging cost-effective energy conservation and development of renewable energy resources. The act strongly emphasized conserving electricity and developing renewable resources by making these activities the first and second priorities of the Bonneville Power Administration (BPA) when acquiring new resources. In addition, the act also authorized BPA to borrow up to \$1.25 billion to finance energy conservation investments. Under the act, BPA was authorized to acquire conservation and renewable resources consistent with the Pacific Northwest Electric Power and Conservation Planning Council's (Council) power resource plan, and the Council was authorized to review BPA's acquisitions for consistency with the plan.

GAO WORK

In an April 1981 report, we found that, to implement the act successfully, BPA should consider (1) developing an expertise in demand forecasting, (2) including provisions in power contracts allowing BPA access to customers' records to verify conservation investments, (3) developing conservation programs for BPA's industrial customers, (4) completing the acquisition procedures and guidelines for renewable resources, and (5) examining BPA's organizational structure in light of new legislative responsibilities.

During congressional testimony in November 1981, we reported that BPA's efforts to carry out the act's provisions had proceeded too quickly in some instances (signing contracts) and too slowly in others (formulating conservation policies and developing renewable energies). This testimony reiterated most of the suggestions of our April 1981 report.

In a 1987 review of BPA's implementation of the Northwest Power Act, we found that the regional power planning process instituted under the act had provided a positive framework for evaluating and planning for the development of the Pacific Northwest's future electric power resources. We concluded that, through the planning process, BPA had identified the types of power resources that should be developed and the timing of their development under differing future conditions. However, we noted that, until regional conditions called for utilities to acquire

major resources, the workability of the act's resource acquisition process, including whether resources would be acquired in a manner consistent with the Council's plan, would not be certain. We also concluded that both the Council and BPA had instituted programs to inform the public of, and elicit their views on, plans and activities related to regional power planning.

In 1991, we reviewed the potential savings in electricity from utility energy efficiency programs, as well as the progress made by states, utilities, and federal power agencies to encourage more efficient electricity use. We found that BPA was promoting the conservation of electricity by (1) providing financial and technical assistance to consumers of electricity, (2) encouraging states and local jurisdictions within its service areas to develop energy-efficient building codes, and (3) transferring energy-efficient technologies. We noted that, with an explicit legislative mandate and authority to charge more for its power unless customer utilities implemented demand-side management (DSM) programs, BPA was a recognized DSM program authority.

GAO PRODUCTS

Electricity Supply: Utility Demand-Side Management Programs Can Reduce Electricity Use (GAO/RCED-92-13, Oct. 31, 1991).

Federal Electric Power: A Five-Year Status Report on the Pacific Northwest Power Act (GAO/RCED-87-6, Feb. 19, 1987).

Implementation of the Pacific Northwest Electric Power Planning and Conservation Act by DOE's Bonneville Power Administration (GAO testimony, 116852, Nov. 10, 1981).

Bonneville Power Administration's Efforts to Implement the Conservation Provisions of Public Law 96-501 (GAO/EMD-81-99, June 8, 1981).

Bonneville Power Administration's Efforts in Implementing the Pacific Northwest Electric Power and Planning and Conservation Act (GAO/EMD-81-67, Apr. 8, 1981).

IRRIGATIONBACKGROUND

The Department of the Interior's Bureau of Reclamation (Bureau) and the U.S. Army Corps of Engineers (Corps) are the principal federal agencies that build and operate multipurpose water projects. The Bureau constructs and operates projects for storing, diverting, or developing water resources to reclaim land in the arid or semiarid areas of the country. The Corps constructs and operates water projects associated with rivers, harbors, and waterways. Both agencies build and operate multipurpose reservoirs that provide municipal and industrial water supplies, hydroelectric power generation, irrigation, fish and wildlife enhancement, flood control, outdoor recreation, and river regulation and control.

The Bureau has been primarily responsible for the development of irrigation projects in the Pacific Northwest. The Reclamation Project Act of 1939, as amended, authorized the Secretary of the Interior to undertake projects to provide water not only for irrigation but also for other purposes, such as flood control and power generation. The act provides that the construction costs associated with the various purposes of such projects are to be recovered from the parties receiving the benefits.

In general, users of irrigation water repay their share of a project's costs without interest. These interest-free payments generally are required to be made within 50 years, on the basis of the irrigator's ability to pay as determined by the Bureau's economic analysis of the specific project. Irrigation costs above the water user's ability to pay are to be repaid by revenues from surplus hydroelectric power sales and other miscellaneous project revenues, again without an interest charge.

GAO WORK

In October 1985, we testified on the development of hydroelectric and federal water projects in the Pacific Northwest. Among other issues, we assessed whether the Bonneville Power Administration (BPA) should be required to repay the costs of constructing irrigation projects from its power sales revenues (irrigation assistance). We concluded that the Reclamation Project Act of 1939 does not authorize the use of power revenues for irrigation assistance but that a substantial number of individual project authorizations either require or allow irrigation assistance. For irrigation projects in the Pacific Northwest, Bureau documents indicate that about \$2.7 billion in irrigation assistance is to be provided from revenues received by BPA from federal power sales.

In a July 1985 report, we noted that the Congress, in a 1966 law (P.L. 89-561), had limited BPA's authority to provide irrigation assistance, as well as the amount of the assistance. We noted that the law represented an attempt by the Congress to balance the somewhat conflicting interests of power users and irrigators. The law provides that (1) irrigation assistance may be paid only from net revenues (defined by the act as revenues not required to repay project costs allocated to power and irrigation assistance authorized before the passage of Public Law 89-561; (2) construction of irrigation projects after 1966 will be scheduled so that any irrigation assistance provided to those projects, together with already authorized irrigation assistance, will not require an increase in BPA rates; and (3) the total amount of irrigation assistance may not average more than \$30 million per year in any period of 20 consecutive years.

We found that, according to the legislative history of the 1966 law, the key to balancing the interests of power users and water users is the scheduling of construction of post-1966 irrigation projects. The Congress reasoned that the repayment of the irrigation costs of any project authorized after 1966 would not be necessary until 2026 at the earliest, and probably not until 2030 or 2035. By that time, the Congress reasoned, BPA should have substantially reduced its power-related costs and could shift its revenues to the repayment of irrigation-related costs without having to increase power rates.

In a 1986 review of a proposed expansion of irrigation facilities in the Columbia Basin Project, we examined who would repay the costs of constructing the facilities and what share of the total costs each group would pay. We found that the main difference between the Bureau's analysis and the other two analyses that we reviewed was that the Bureau's analysis did not take into account the interest subsidy granted to users of federal irrigation. According to the two studies that took the subsidy into account, the U.S. Treasury would pay 74 percent or 82 percent of the total cost of the project. In contrast, the Bureau's study, which did not consider the interest subsidy, showed that irrigators would pay the largest share (46 percent) of the total cost and the Treasury would bear no expense in the project.

GAO PRODUCTS

Water Resources: Issues Concerning Expanded Irrigation in the Columbia Basin Project (GAO/RCED-86-82BR, Jan. 31, 1986).

Hydroelectric Development at Federal Facilities in the Pacific Northwest (GAO testimony, 128095, Oct. 8, 1985).

Recovering a Portion of Federal Irrigation Project Construction Costs Through Revenues From Department of Energy Electric Power Sales (GAO/RCED-85-128, July 26, 1985).

ELECTRICITY TRANSMISSIONBACKGROUND

The Bonneville Power Administration (BPA) owns and operates some 14,000 miles of high-voltage electricity transmission lines. Two regions--the Pacific Northwest and California--are joined by three high-voltage transmission lines (intertie), which allow for an exchange of electricity between the two regions. BPA owns about 80 percent of the Northwest segment of the intertie. The intertie, completed in 1970, also made Canadian power available through the Northwest into California. The regions benefit from the exchange because of the difference in the costs of generating electricity--the Northwest uses relatively low-cost hydropower, while California relies on higher cost oil- and gas-fired generation.

GAO WORK

In 1980, we found that the intertie should be expanded so that California could save roughly 4 million barrels of oil per year, while the Northwest could earn additional revenues from the sale of surplus energy. We recommended that the Secretary of Energy take a more active role in facilitating the proposed expansion. In a November 1983 follow-up review, we again recommended that the Secretary of Energy ensure that BPA continue to facilitate negotiations to expand the intertie. We also recommended that the Secretary direct BPA to resolve several outstanding concerns among BPA and participating utilities. The Department of Energy (DOE) concurred with our recommendations and stated that it would work to resolve outstanding issues. In addition, the 1985 DOE appropriations legislation contained authorization for BPA to upgrade portions of the existing intertie and to expand the intertie.

In 1988, we assessed, among other things, both the economic justification for a proposed \$883 million expansion of the intertie and the relationship of the expansion to Canadian power imports. We found the economic rationale for the expansion inadequate and determined that Canadian power imports could increase as a result of the expansion. We recommended that BPA clarify the economic justification for the proposed expansion. BPA later performed the supplemental economic analysis, as recommended.

GAO PRODUCTS

Electric Power: Issues Concerning Expansion of the Pacific Northwest-Southwest Intertie (GAO/RCED-88-199, Sept. 14, 1988).

Expanding the Pacific Northwest/Southwest Intertie--Benefits and Impediments (GAO/RCED-84-38, Nov. 4, 1983).

Potential for Expanding Electric Power Transmission Between the Pacific Northwest and California (GAO testimony, 121900, July 11, 1983).

Analysis of Bonneville Power Administration's Estimate to Bury Segments of Transmission Line in Montana (GAO/EMD-82-80, May 7, 1982).

Oil Savings From Greater Intertie Capacity Between the Pacific Northwest and California (GAO/EMD-80-100, Sept. 24, 1980).

ADMINISTRATIVE MATTERSBACKGROUND

In 1983, we issued several reports on the management by the Bonneville Power Administration (BPA) of its automatic data processing systems development activities. These reviews were based, in part, on our 1978 review of BPA's management of automatic data processing systems development activities and on a 1981 audit conducted by the Department of Energy.

GAO WORK

In March 1983, we reviewed computer security at BPA's control system computer center. We found that BPA had made strides in implementing a computer security program but that more could be done. Identified weaknesses included lack of written computer security procedures, inadequate site security, and lack of a fully developed contingency plan in the event of a computer failure. We recommended that BPA develop an action plan to correct these weaknesses and that the Chief Auditor periodically review the computer center's security program. BPA took corrective action in response to our recommendations.

Our February 1983 report reviewed BPA's electricity billing processes to assess the actions planned by BPA to improve the timeliness of its billings. We found that more than \$3.2 million in interest expenses could be avoided annually if BPA were to change its customer billing processes. Specifically, BPA could achieve significant savings by (1) charging certain customers monthly rather than quarterly and (2) requiring federal agency customers to pay their bills promptly or be charged interest on late payments.

GAO PRODUCTS

Bonneville's ADP Resource Management Controls Show Improvement, but More Needs to Be Done (GAO/AFMD-83-63, June 22, 1983).

Bonneville Power Administration Control System's Computer Security --More Needs to Be Done (GAO letter, 122958, Mar. 18, 1983).

Changes in BPA Billing Practices Could Reduce Interest Costs and Improve Cash Flow (GAO/RCED-83-64, Feb. 28, 1983).

Federal Agencies Still Need to Develop Greater Computer Audit Capabilities (GAO/AFMD-82-7, Oct. 16, 1981).

BPA Management of ADP Systems Development Activities (GAO letter, 092132, May 30, 1978).

WPPSSBACKGROUND

Created in 1957, the Washington Public Power Supply System (WPPSS) was a municipal corporation and a joint operating agency of the state of Washington. It consisted of 19 operating public utility districts and four cities in the state of Washington. WPPSS had the authority, among other things, to acquire, construct, and operate plants and facilities for the generation and transmission of electric power and energy. In 1969, WPPSS agreed to construct three nuclear-powered electric generating stations, and the Bonneville Power Administration (BPA) agreed to participate in financing these facilities (plants 1, 2, and 3).

In 1972, BPA's ability to assist in the financing of additional generating units was halted because of (1) rising construction costs for power plants 1, 2, and 3 and (2) a change in U.S. Treasury regulations. In spite of BPA's lack of financial participation, WPPSS decided to build two additional nuclear plants (plants 4 and 5) that would be financially backed by participating utilities (participants). Between 1976 and 1981, WPPSS continued to construct plants 4 and 5. Construction delays and dramatic cost increases at plants 4 and 5 led eventually to WPPSS' decision, in 1982, to terminate the construction of both plants because the financial market was not able to absorb the bond financing. However, by this time, WPPSS had sold \$2.25 billion in bonds that required the participants to pay off the bonds in the amount of their proportionate share, regardless of whether the plants were ever completed or operated. A number of participants and ratepayers filed lawsuits contesting the validity of these obligations.

GAO WORK

We issued two reports in 1982 on BPA's involvement in WPPSS' nuclear plant projects. One report, issued on July 2, reviewed the potential impacts from default or successful legal challenge by participants in the financing of plants 4 and 5 on the Pacific Northwest's ability to raise funds for public works and other programs. We found that a default on the bond obligations by the participants would probably have adversely affected the economy of the region and its ability to raise capital in the bond market. Also, participants that defaulted could expect to pay higher interest rates for future bond sales.

Our other 1982 report, issued on July 30, examined, among other things, the role of BPA in the development and termination of plants 4 and 5. We found that BPA had (1) helped small regional utilities forecast the demand for electricity, (2) endorsed the

need for additional generating units, (3) supported utilities' participation in the financing of the plants, and (4) acted to indirectly facilitate the termination of the plants.

In testimony before the Congress in March 1984, we assessed both the impact of the costs of nuclear plants 1, 2, and 3 on BPA's rates and on BPA's responsibilities for project oversight. We found that BPA's ratepayers were responsible for almost \$1 billion annually in costs related to plants 1, 2, and 3 and that costs from the projects represented about 30 percent of BPA's total projected revenue requirements for 1985. We also found that BPA's oversight staff and management staff were uncertain of BPA's oversight objectives and staff responsibilities. We identified means by which BPA could better exercise its existing contractual authorities for oversight, including conducting more comprehensive audits and budget reviews and participating in project-related meetings.

In our August 1984 report, we recommended to the Secretary of Energy that BPA take several steps to strengthen its oversight program, including defining its organizational roles and policies, adopting procedures for implementing its oversight objectives, outlining its intent to implement its contractual oversight authorities, and reviewing its oversight staffing and organizational format to ensure their adequacy and appropriateness to support a comprehensive oversight program. The Department of Energy (DOE), in commenting on a draft of our report, agreed with the general thrust of our recommendation that BPA improve the effectiveness of its oversight. However, DOE believed that recent changes in BPA's oversight structure had overcome many of the problems and therefore believed that no further action was needed to address the specific problems identified in our report.

Our 1989 report reviewed several issues involving DOE's possible acquisition and conversion of a partially completed commercial nuclear power plant (plant 1) to a nuclear materials production facility. We found that if DOE acquired the plant, it would probably complete the power-generating capability of the plant, thus making it a dual-purpose--production and power--reactor. We reviewed, among other things, whether a DOE acquisition and conversion of plant 1 through condemnation could lead to a default on bonds for the plant, and what effect such an acquisition would have on BPA's liability for BPA's share of debt in the plant. We also examined the rate that DOE would charge for electricity generated by the converted reactor.

We found that DOE could acquire the plant either through voluntary sale or condemnation. We determined that selling the plant for less than the amount of the outstanding bonds (roughly \$2.1 billion) could cause a default. Condemnation, however, would

not lead to default or make the bonds immediately due and payable because the condemnation would be considered a transfer of the reactor "through the operation of the law." In addition, we found that although many factors could be expected to influence the rate charged for electricity from the plant, the cost of electricity from plant 1 would probably be lower than the cost of electricity produced from the most economical power-generating alternative.

GAO PRODUCTS

Nuclear Science: Effect of Conversion of Washington Nuclear Plant No. 1 on Debt and Electric Rates (GAO/RCED-89-88FS, Mar. 9, 1989).

Status of Bonneville Power Administration's Efforts to Improve Its Oversight of Three Nuclear Power Projects (GAO/RCED-84-27, Aug. 3, 1984).

The Bonneville Power Administration's Oversight Activities Related to Washington Public Power Supply System (GAO testimony, 123637, Mar. 12, 1984).

Bonneville Power Administration and Rural Electrification Administration Actions and Activities Affecting Utility Participation in Washington Public Power Supply System Plants 4 and 5 (GAO/EMD-82-105, July 30, 1982).

Financial Community's Perceived Impacts Which Could Result From Default or Successful Legal Challenge by Participants in Washington Public Power Supply System Nuclear Project Nos. 4 and 5 (GAO/EMD-82-106, July 2, 1982).

PMA RATES/REPAYMENTBACKGROUND

The Bonneville Power Administration (BPA) and the Department of Energy's four other power-marketing administrations (PMA)-- Alaska, Southeastern, Southwestern, and Western--sell wholesale power from hydroelectric facilities built and operated by the Department of the Interior's Bureau of Reclamation (Bureau) or by the U.S. Army Corps of Engineers (Corps). These projects are financed largely by the federal government. Project costs properly allocated for irrigation, power generation, and municipal and industrial (M&I) water supplies must be repaid in accordance with repayment policies and contract terms established by the Congress and through Bureau and Corps administrative decisions made over a long period of time. In general, repayment provisions for irrigation users require water users to repay the federal construction costs, without interest, over a period of time (usually 50 years).

Federal laws and regulations require power-marketing administrations to establish power rates at levels necessary to ensure that revenues from power sales are sufficient to recover all power-related costs. BPA and Western are also required to recover some costs for certain Bureau irrigation projects through power sales revenues (irrigation assistance). Generally, irrigation assistance is not repaid in annual installments; usually, it is deferred until the end of the payment period (usually 50 years).

GAO WORK

In March 1981, we reported that the price of irrigation water is much lower than the federal government's cost of producing the water. To show policymakers the direct economic value of producing more irrigation water, we recommended that, as part of the congressional authorization and appropriations process, the Secretary of the Interior provide estimates of (1) the federal government's full cost of providing irrigation water, including the cost of borrowing at the then-current rate of interest for federal borrowing; (2) the increases in crop yield expected for acres receiving federal water, and (3) the change in net income on the acres to receive federal water at full cost.

In August 1981, we recommended that the Secretaries of the Interior and of the Army change certain policies to, among other things, (1) require that all reservoir users share equitably in cost recovery, (2) include interest expense in all M&I water sales prices, and (3) accumulate all unrecovered operations and maintenance costs and consider such costs in future price determinations.

In our October 1981 report, we concluded that interest-free financing for irrigation projects and future M&I water supply costs had become a costly burden on the U.S. Treasury. We calculated that the interest subsidy for only four reviewed projects would cost the Treasury more than \$667 million. We recommended that the Congress (1) amend the appropriate federal laws to ensure that M&I water users would fully repay their share of interest costs and (2) require the Secretaries of the Interior and of the Army to (a) use interest rates, developed by the Treasury, that would more appropriately reflect the Treasury's costs of borrowing funds and (b) revise the method of computing interest on construction. The Treasury concurred with our recommendations.

In 1985, we reported that revenues to the U.S. Treasury could be increased if irrigation assistance were to be repaid in annual installments over the life of the repayment period instead of being repaid in a lump sum at or near the end of the repayment period. For example, we calculated that this change would result in a net benefit to the Treasury of about \$8.7 million for one project for which BPA provides irrigation assistance. We noted that the benefits might not be realized if BPA deferred power cost repayments to compensate for accelerated irrigation assistance payments.

In our September 1986 report, we analyzed several alternatives for determining federal power prices and concluded that certain changes could more fully identify and recover the government's costs or, in some cases, produce revenues in excess of costs. Alternatives based on the existing cost-of-service objective (which generally requires that the costs of providing electric service be recovered through rates) included options for (1) computing a power project's interest costs and (2) scheduling payments to the Treasury to repay the federal investment in constructing the power projects and financing their costs. We concluded that these alternatives would generally reduce or eliminate the under-recovery of costs and result in pricing methods that were more consistent with those of nonfederal electric utilities. In addition, we analyzed alternatives based on criteria other than the cost of service, including alternative methods for recovering some irrigation project costs through power sales revenues, marginal cost pricing, market pricing, and user fees. We concluded that the use of these methods could produce revenues in excess of costs.

GAO PRODUCTS

Federal Electric Power: Pricing Alternatives for Power Marketed by the Department of Energy (GAO/RCED-86-186BR, Sept. 30, 1986).

Federal Power: Additional Information on Repaying Federal Investments in Electric Power Facilities (GAO/RCED-86-44FS, Nov. 12, 1985).

Additional Information Concerning Irrigation Project Costs and Pricing Federal Power (GAO/RCED-86-18FS, Oct. 10, 1985).

Reforming Interest Provisions in Federal Water Laws Could Save Millions (GAO/CED-82-3, Oct. 22, 1981).

Changes in Federal Water Project Repayment Policies Can Reduce Federal Costs (GAO/CED-81-77, Aug. 7, 1981).

Federal Charges for Irrigation Projects Reviewed Do Not Cover Costs (GAO/PAD-81-07, Mar. 3, 1981).

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