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A Special Report

TACOMA

Washington Public Power Supply System: At The Crossroads

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Records
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SUMMARY

The recommendation by the Managing Director of the Washington Public Power Supply System ("the Supply System") that a six to twelve-month moratorium or "construction slowdown", as it was subsequently defined, be declared on the construction of Nuclear Projects Nos. 4 and 5, ushers in a new era in both the evolution of the Supply System, and in the application of the "take or pay" financing arrangement securing the bulk of the public power financings. Present developments and an array of legal, political, economic, and financial uncertainties have led us to review the underlying security arrangements behind the Supply System's respective Revenue Bond issues.

WASHINGTON PUBLIC POWER SUPPLY SYSTEM REVENUE BONDS

With regard to the WPPSS Projects Nos. 4 and 5 Revenue Bonds, we believe that it is necessary that all 88 Participants reaffirm their ability and willingness to meet their obligations under the Bond Resolution. Clearly, conditions have changed significantly since the Participants' original agreements, and any "take or pay" financing arrangement must be viewed in the context of the current political, economic and financial milieu. The principal vehicle for conveying this expression of commitment could be through unanimous agreement to Bond Resolution amendments providing:

- A) A prior claim before contractors' liens by Bond Service on the Revenue Fund in the event of Project termination (there currently is no priority of lien for principal and interest over other contractual and operating expenses);
- B) Enhanced Reserve Account requirements during construction (now at maximum future semi-annual interest) to a level of at least future maximum annual debt service; and
- C) Strengthened rate covenants providing that the Participants will, through their rate structures, provide current coverage of their respective operations and maintenance and debt service, and at least 1.25 times WPPSS Projects Nos. 4 and 5 pro rata future maximum annual debt service.

Assuming the above mentioned changes and commitments are made, we believe that, based on both credit and market considerations, the WPPSS Projects Nos. 4 and 5 Revenue Bonds should trade appropriately as mid-range "Baa-1/BBB+" equivalents. Absent this commitment, we view the Supply System's ability to raise additional capital for Projects Nos. 4 and 5 to accomodate the slowdown as highly questionable, and the status of the outstanding bonds as in serious jeopardy.

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Assuming the above mentioned changes and commitments are made, we believe that, based on both credit and market considerations, the WPPSS Projects Nos. 4 and 5 Revenue Bonds should trade appropriately as mid-range "Baa-1/BBB+" equivalents. Absent this commitment, we view the Supply System's ability to raise additional capital for Projects Nos. 4 and 5 to accomodate the slowdown as highly questionable, and the status of the outstanding bonds as in serious jeopardy.

Our analysis of the WPPSS Projects Nos. 1, 2 and 3 Revenue Bonds leads us to believe that, based on both credit and market considerations, they should trade appropriately as mid-range "Aa/AA" equivalents, trending to mid-range "A-1/A+" over the next three years. Moreover, we believe that the security strength behind these Bonds would be further diluted and market saturation likely under any scenario incorporating a BPA assumption of the generating capacity of, and financial liability for, WPPSS Projects Nos. 4 and 5.

STATUS OF THE PROJECTS

The moratorium (slowdown) recommendation was accompanied by revised construction cost budget estimates of \$23.8 billion on the five nuclear projects, including \$21.9 billion attributable to the Supply System. The \$1.9 billion difference is a result of the private investor-owned utilities' 30% ownership share of Project No. 3 and 10% ownership share of Project No. 5. Of the Supply System's requirements, approximately \$11.2 billion would be for Projects Nos. 4 and 5, an amount considerably above earlier estimates of construction costs. These financing requirements are due to a multitude of problems which have led to the Supply System's continual revisions in estimated costs for the five Projects, including: increased costs of fuel, wages, materials, equipment, and licensing requirements; substantially increased capital outlays and longer construction periods for the large, complex generating units; compliance with changing environmental, safety, and licensing requirements; litigation and proposed legislation designed to delay or prevent construction of nuclear electric generating facilities; and work stoppages resulting from contractor labor problems. At the inception of Project financing in the early 1970's, the simultaneous construction and financing of five nuclear projects appeared to be viable. Now, with \$3.83 billion for Projects Nos. 1, 2, and 3, and \$2.25 billion for Projects Nos. 4 and 5 presently outstanding, the Supply System would have to borrow approximately \$4.2 billion on the net-billed Projects, and \$8.9 billion for Projects Nos. 4 and 5. This level of financing would be unprecedented, and would exacerbate the already evident Supply System saturation of institutional investment portfolios.

THE FEDERAL ROLE

The call for a construction slowdown, subsequently voted upon unanimously by the Supply System's Executive Committee, should not have been a surprise in light of the uncertainties over continued market absorption of additional Projects Nos. 4 and 5 debt not enjoying a Bonneville Power Administration (BPA) net billing contractual arrangement. It is possible that the Pacific Northwest Power Act ("the Act"), signed into law on December 5, 1980, encouraged the expectation that BPA would acquire the generating capacity on WPPSS Projects Nos. 4 and 5 in a similar arrangement to the Net Billing Agreements on WPPSS Projects Nos. 1, 2, and 70% of Project No. 3. It has additionally been believed that BPA's superior financial capacity could enhance the underlying security behind the WPPSS Projects Nos. 4 and 5 Bonds. However, the Act's requirement that BPA emphasize generation offsets through conservation and renewable resources development, before any consideration can be given to acquiring additional generating capacity, is unequivocal. A series of studies over the past five years suggesting the potential for conservation as an alternative to large-scale central station thermal power development in the Northwest, accompanied by the increasing controversy over load growth forecasts within the Region, have made it highly uncertain whether

or not BPA could arrange to acquire the generating capacity of Project No. 4 and 90% of Project No. 5 in the imminent future, if at all. Finally, it now appears that BPA wholesale purchased power rates, before accounting for acquisition of savings from conservation or acquisition of generating capacity from renewable resources, fuel-efficient cogeneration facilities, or WPPSS Projects Nos. 4 and 5, are likely to increase so rapidly over the next eight years that the comparative advantage in electric rates the Pacific Northwest holds over the rest of the nation will diminish considerably. Therefore, contrary to earlier expectations, acquisition of WPPSS Projects Nos. 4 and 5 will more likely imperil the strength of the security behind the WPPSS Projects Nos. 1, 2, and 3 Bonds through a dilution of BPA's financial operations.

CONSTRUCTION SLOWDOWN OR TERMINATION: THE UNCERTAIN FUTURE

A construction slowdown of WPPSS Projects Nos. 4 and 5, which were 24.2% and 13.7% complete, respectively, as of May, 1981, heightens investor concerns over the prospects of termination of one or both projects. Termination is not necessarily elected by the Participants but could occur in the event of a determination by the Supply System that it is unable to proceed with construction due to financing, construction, or other conditions which are beyond its control. Were termination to take place, the Participants in WPPSS Projects Nos. 4 and 5 would be required to begin paying to the Supply System their respective shares of the total annual costs of Projects Nos. 4 and 5 (including debt service on the Bonds, required annual payments to the reserve funds, and decommissioning costs) as early as one year after the date of Project termination. It is possible that the Participants will be able to meet \$187.9 million of debt service costs on Projects Nos. 4 and 5 as early as FY 1984 (after two years capitalized interest on hand, and reserve funds, were expended) through a series of rate increments to be phased in between now and then, were termination to occur. However, the ability to raise during that period as much as \$750 million, or more, for decommissioning expenses, by means of either rate increments or "Termination Bonds", is highly questionable. With such concerns now surfacing, we believe enhanced security features would have to be pledged to any additional bonds issued to finance either an estimated maximum of \$800 million to \$1 billion in costs to be incurred over a full twelve-month construction slowdown (the Supply System would require considerably less than that amount if the slowdown lasted only six months) or to accomodate the resumption of construction at previously indicated schedules.

Without the consent of any holder of Bonds or additional bonds, the Supply System may adopt supplemental resolutions to authorize the issuance of subsequent series of Bonds or additional bonds and to add to the covenants and restrictions of the Supply System. It is our opinion that a supplemental resolution explicitly creating a prior claim before contractors' liens by Bond Service on the Revenue Fund, in the event of termination of one or both Projects, is crucial.

The investment community anxiously awaits some decision from the Supply System as to how it will proceed. Regardless of what course of action is pursued, the requirements establishing the underlying security behind additional WPPSS Projects Nos. 4 and 5 Bonds should be firm, unequivocal, and demonstrative of the willingness of the Participants to meet investor concerns. As for

electric power planning in the Pacific Northwest Region, it is not clear how the Region will proceed in meeting its projected loads over the next two decades. Conservation scenarios, while appealing, are still unproven in most locations throughout the country. However, if there is any region of the country in which conservation would be particularly appropriate, it would be the Pacific Northwest where electricity use is approximately twice as high as the national average. Additionally, load growth forecasting has become highly suspect in the post-1973 energy climate. There remains great uncertainty as to the optimal public policy approach which should be taken to solve the dilemmas confronting the Region, and the nature of the Supply System's involvement in the ultimate solution. Yet, there is one thing we can be sure of -- the Supply System has arrived at the crossroads!

July 24, 1981

INTRODUCTION

The recommendation by the Managing Director of the Washington Public Power Supply System ("the Supply System") that a six to twelve-month moratorium, or "construction slowdown", as it was subsequently defined, be declared on the construction of Nuclear Projects Nos. 4 and 5, ushers in a new era in both the evolution of the Supply System, and in the application of the "take-or-pay" financing arrangement securing the bulk of the public power financings. We believe that a reaffirmation of the willingness of all 88 Participants to meet their obligations under the Bond Resolution is required at this time. The principal vehicle for conveying this expression of commitment could be through modifications to the Bond Resolution by means of supplemental resolutions consistent with Article X, Section 10.1(9) of the Bond Resolution. To the extent that such modifications are forthcoming, we believe that, based on both credit and market considerations, the Washington Public Power Supply System Projects Nos. 4 and 5 Revenue Bonds should trade appropriately as mid-range "Baa-1/BBB+" equivalents. In the absence of this commitment, we view the Supply System's ability to raise additional capital for Projects Nos. 4 and 5 to accomodate the slowdown as highly questionable, and the status of the outstanding WPPSS Projects Nos. 4 and 5 Revenue Bonds as in serious jeopardy.

The call for a construction slowdown, subsequently voted upon unanimously by the Supply System's Executive Committee, should not have been a surprise in light of the mandate for consideration of conservation factors incorporated in the Pacific Northwest Electric Power Planning and Conservation Act of 1980 ("the Act"). The Act's unequivocal orientation toward conservation and renewable resources development, accompanied by a series of studies over the past five years suggesting the potential for conservation as an alternative to large-scale central station thermal power development, has made it highly uncertain whether or not the Bonneville Power Administration (BPA) could arrange to acquire the generating capacity of Project No. 4, and 90% of Project No. 5 in the imminent future, if at all. The most recent of these studies, a "Draft Technical Assessment of the Potential for Conservation and End-Use Renewable Resources in the West Group Area 1980-2000", released by the Division of Conservation of the BPA on April 28, 1981, seems to have represented a major turning point in the perceptions of policy makers in the Region. The Draft Technical Assessment asserts that BPA could conceivably implement programs achieving up to 1,535 average megawatt (MW) savings by 1990, increasing to an optimum 3,170 average MW with the assumption of regional regulations on appliance efficiencies and building codes in the residential and commercial sectors.

It had been our concern that without a BPA contractual arrangement behind WPPSS Projects Nos. 4 and 5 (with respective capacities of 1,250 MW and 1,240 MW) similar to the Net Billing Agreements securing Nuclear Projects Nos. 1, 2, and 3, the Supply System would not be able to sustain its ambitious borrowing schedule on 4 and 5 (now estimated at approximately \$800 million to \$1 billion in fiscal year (FY) 1982 under a twelve-month construction slowdown, and as high as \$1.65 billion if construction was to have proceeded at previously

determined levels). Furthermore, it now appears that BPA wholesale purchased power rates, before accounting for acquisition of savings from conservation or acquisition of generating capacity from renewable resources, fuel-efficient cogeneration facilities, or WPPSS Projects Nos. 4 and 5, are likely to increase so rapidly over the next eight years that the comparative advantage in electric rates the Pacific Northwest holds over the rest of the nation will diminish considerably. Therefore, we now believe that, based on both credit and market considerations, the WPPSS Projects Nos. 1, 2, and 3 Revenue Bonds should trade appropriately as mid-range "Aa/AA" equivalents, trending to mid-range "A-1/A+" in the next three years, and caution that the security strength behind the Net Billing Agreements could be imperiled through credit dilution by a BPA assumption of the generating capacity from Projects Nos. 4 and 5.

We perceive the moratorium (slowdown) recommendation as both a tribute to the improved management of the Supply System, as well as a tacit recognition of the uncertainties over both market absorption of additional Supply System debt and power demand forecasts in the Pacific Northwest Region. By Spring, 1983, the Pacific Northwest Electric Power and Conservation Planning Council should complete its Regional Plan setting forth a general scheme for implementing conservation measures throughout the Region. If the Regional Plan indicates that conservation goals appear to be unrealistic and if conservation initiatives, renewable resources technologies, and fuel-efficient cogeneration facilities meeting the test of cost-effectiveness vis-a-vis large-scale central station power should prove insufficient, BPA may consider the acquisition of WPPSS Projects Nos. 4 and 5 generating capacity, among several alternative conventional modes of power generation (including Washington Water Power Company's planned Creston Projects Nos. 1, 2, 3 and 4 [500 MW coal-fired units each]). Pursuant to the 1980 Act, BPA may consider the acquisition of WPPSS Projects Nos. 4 and 5 generating capacity prior to a Regional Plan being completed but must formulate its acquisition program in accordance with the priorities as stipulated in the Act. Any BPA initiative preceding the completion of the Regional Plan could invite legal challenges from interested parties within the Region. Section 9(e)(5) delineates the procedures for adjudicatory recourse under the Act.

Revised cost estimates of \$23.8 billion for the five nuclear plants, with approximately \$11.8 billion attributable to Projects Nos. 4 and 5 (before any inflationary impact which may occur from the construction slowdown), further suggests the uncertainty of Projects Nos. 4 and 5 meeting the Act's cost-effectiveness criterion. Under the proposed 1982 budgets, the Supply System's share, excluding 30% of Project No. 3 and 10% of Project No. 5, would be \$21.9 billion. Total Supply System borrowing for Projects Nos. 4 and 5 alone would amount to \$11.2 billion, with approximately \$8.9 billion yet to be financed. Considering present cost estimates, including costs of borrowing for Projects Nos. 4 and 5 (projected to be at a 12 1/2% rate over the next twelve months and at 11% from FY 1983 on), and full operational capacity at 70%, the eventual cost of power from Projects Nos. 4 and 5 may be about 120 mills/kWh during the initial year of full operational capacity. Although no one disputes the need for planning to meet base electric demand in the Northwest over the next two decades, scenarios implying that Projects Nos. 4 and 5 are the most cost-effective allocations of resources have become highly suspect.

CONSTRUCTION SLOWDOWN OR TERMINATION: THE UNCERTAIN FUTURE OF WASHINGTON PUBLIC POWER SUPPLY SYSTEM PROJECTS NOS. 4 AND 5

Construction slowdown on WPPSS Projects Nos. 4 and 5, which were 24.2% and 13.7% complete, respectively, as of May, 1981, heightens investor concerns over the prospects of termination of one or both projects. A major question to be resolved concerns the debt service requirements for Projects Nos. 4 and 5 Revenue Bonds. Interest on the outstanding \$2.25 billion Projects Nos. 4 and 5 Revenue Bonds is capitalized through March 1, 1983. Note that interest is capitalized in full for two years subsequent to the date of each additional Bond issue. This has been the policy of the Supply System but may be subject to change. Article VI, Section 6.1 of the Bond Resolution for WPPSS Projects Nos. 4 and 5 adopted February 23, 1977 focuses on the Revenue Fund in the context of the flow of funds procedure. Section 6.1 states that the Supply System:

"...covenants and agrees that all income, revenues, receipts, profits and other moneys shall be trust funds in the hands of the System and shall be used and applied as provided by this Resolution, solely for the purpose of paying the principal of, premium, if any, and interest on the bonds issued pursuant to this Resolution, the costs of operating and maintaining the Projects and all other costs, charges and expenses in connection therewith, including the costs of making repairs, renewals, replacements, additions, betterments and improvements to and extensions of the Projects, and for the purpose of paying all other charges or obligations against said revenues, income, receipts, profits and other moneys of whatever nature now or hereafter imposed thereon by law or contract, to the payment of which for such purposes said revenues, income, receipts, profits and other moneys are hereby pledged."

The Resolution does not clearly discriminate among the flow of funds from the Revenue Fund, and it is highly uncertain whether the Bond Fund has a prior claim before contractors on payments made from the Revenue Fund. In the event of termination, contractors may have a lien on payments made by the Participants to the Supply System prior to any bondholders' lien. It is not clear how termination costs would be financed nor is it clear what the scheduling of termination costs will be.

Termination of one or both of the Projects would occur in the event of a determination by the Supply System that it is unable to proceed with construction due to financing, construction, or other conditions which are beyond its control. Decommissioning could be undertaken immediately. As part of its overall management program, the Supply System undertook in November, 1980 a study to identify the options available if construction funds were insufficient to maintain optimum construction activity at the Projects. The study, completed in March, 1981, featured a "preliminary scoping analysis" (presently being updated) on the prospective decommissioning costs required to preserve the investment in place. Assuming that Projects Nos. 4 and 5 could be cancelled as early as March 1, 1981, the study indicated an order of magnitude estimate of at least \$750 million in decommissioning costs before any costs presently shared between Projects Nos. 1 and 4 and Projects Nos. 3 and 5 were reallocated. Were termination to take place, the Participants on WPPSS Projects Nos. 4 and 5 would be required to begin paying the Supply System their respective shares of the total annual costs of either or both Projects Nos. 4 and 5 (including debt service on the Bonds, required annual

payments to the reserve funds, and decommissioning costs) as early as one year after the date of Project termination.

If a decision is made to terminate immediately, the Participants would be obligated to meet an interest requirement on the Bonds in the amount of \$187.9 million in the fiscal year commencing July 1, 1983. This amount remains level through FY 1988. There are available approximately \$98.6 million on deposit in the Reserve Account in the Bond Fund and \$10.7 million in the Reserve and Contingency Fund, if needed, to ease the transition to full assumption of debt service by the Participants in FY 1984. The full costs of annual debt service (rising to \$211.9 million for the fiscal year beginning July 1, 1989 including the initial principal retirement of approximately \$24 million) will be borne directly by the Participants, with each liable for up to 25% above its contractual share of the Projects.

It is possible that the Participants would be financially capable of meeting the \$187.9 million of debt service costs as early as FY 1984 through a series of rate increments to be phased in between now and then, if termination was to occur. However, the ability to raise during that period as much as \$750 million, or more, for decommissioning expenses by means of either rate increments or "Termination Bonds" is highly questionable. A twelve-month construction slowdown on Projects Nos. 4 and 5 could require maximum borrowing of \$800 million to \$1 billion (the Supply System would require considerably less than that amount if the slowdown lasted only six months) during the interim period for capitalized interest requirements, architectural and engineering fees, fixed-price contracts, fuel payments and pre-purchased equipment. It is our opinion that enhanced security features will be required to market additional bonds issued to finance the construction slowdown or to accommodate the resumption of construction at previously indicated schedules. A crucial enhancement would be a modification of Article VI, Section 6.1 of the Bond Resolution explicitly indicating a priority of flow of funds from the Revenue Fund to the Bond Fund for payment of principal and interest prior to contractors' expenses incurred by the System in the event of termination of one or both projects. This improvement would be necessary to attract investors due to the heightened market awareness of the possibilities of termination prior to completion.

While it would not be politically popular to increase rates for the costs of an abandoned investment, member public utility districts, municipal utility systems and rural electric cooperatives must carefully consider their obligations under the "take or pay" financing concept. As this would represent the first test of the "take or pay" obligation financing concept for a project of such magnitude, the prospect is real for concerted lobbying efforts by other joint action agencies, financial advisors, and BPA to ensure that the Participants make their required payments to the Supply System. Clearly, the failure of this financing mechanism would bode ill for comparable public power credits nationwide, due to the stereotypical nature of the bond markets. Finally, the inability or unwillingness to meet early debt service obligations on WPPSS Projects Nos. 4 and 5 Revenue Bonds could forestall the financing of completion of WPPSS Projects Nos. 1, 2, and 3 which should continue to be engaged in borrowing activity through and beyond FY 1984.

A SENSITIVITY ANALYSIS OF THE 15 LARGEST PARTICIPANTS ON
WASHINGTON PUBLIC POWER SUPPLY SYSTEM PROJECTS NOS. 4 AND 5

Participants
on Projects
Nos. 4 and 5

Under the "take or pay" agreements, the Participants are obligated to pay the Washington Public Power Supply System the annual costs of the Projects, including debt service on the Projects Nos. 4 and 5 Bonds, whether or not the Projects are completed, operable or operating and notwithstanding the suspension, reduction or curtailment of the Projects' output. The 88 Participants which have contracted to purchase power from WPPSS Projects Nos. 4 and 5 are situated principally throughout the States of Washington and Oregon, with several located in Idaho, Montana, Wyoming, Utah, Nevada, and northern California. They include municipally-owned utility systems, public utility districts, and rural electric cooperatives ranging in size from the City of Tacoma and the Snohomish County Public Utility District, with respective base loads of 4,574,600 mWh and 5,109,636 mWh in 1980, to small cooperatives serving agricultural farming districts in eastern Washington and Oregon. Many of the Participants serve exclusively as retail distribution systems for power purchased on a wholesale basis from the BPA. Most, if not all, of the Participants have also entered into one or more contractual arrangements on WPPSS Projects Nos. 1, 2 and 3 in which purchased power is assigned to the BPA through Net Billing Agreements. Fifty-five of the Participants account for approximately 96% of the contractual obligations for purchased power from WPPSS Projects Nos. 4 and 5.

Participants'
Obligations

As a matter of practicality, we have reviewed the 15 largest Participants which collectively have contracted for 72.1% of the purchased power from WPPSS Projects Nos. 4 and 5 as to their ability to meet annual debt service requirements on the Bonds, before confronting the financing options on possible project termination. Their obligations in FY 1984 would total \$135,503,361 of the \$187,904,208 interest requirements for the Bonds outstanding. If a Participant which is a municipal corporation or a Participant which is not a municipal corporation defaults under its Participant's Agreement, the shares of other Participants in the respective Participant class will be automatically increased for the remaining term of the Participants' Agreements, pro rata, up to an additional accumulated maximum of 25% of a Participant's original share of Project Capability. As a stronger test for each of the 15 largest Participants, we have computed their shares plus the additional 25% liability, in the event some of the smaller Participants in the respective classes cannot fulfill their obligations. This would then account for \$169,379,202 or 90.1% of the \$187,904,208 interest requirements.

Present Low Costs of Power Present power costs on gross sales of electricity are among the lowest in the country, due to substantial amounts of relatively inexpensive hydroelectric power in the Pacific Northwest from the Federal Base System resources. In 1980, these costs to consumers ranged from an average of 9.09 mills/kWh charged by the Cowlitz County PUD, to a 29.1 mills/kWh average charged by Consumers Power Inc., a rural electric cooperative. If the maximum 1.25 times share of the FY 1984 interest requirements were imputed immediately, Cowlitz County P.U.D.'s average rates would increase to 14.85 mills/kWh while Consumers Power rates would be 41.29 mills/kWh. In percentage terms, Cowlitz County P.U.D. would reflect a 63.4% increase in rates while Consumers Power would register a 41.9% increase. Hypothetical rate increases range from the City of Tacoma's 34.4% to the Franklin County P.U.D.'s 92.9%. The variance in hypothetical rate increases is a result of a combination of factors. These include: the size of the electric system and its respective gross revenue base; the original percentage share of WPPSS Projects Nos. 4 and 5; and whether or not the electric system is an exclusive distributor of BPA power or derives a portion of its energy from its own generating plant. As a matter of accounting procedure, it should be noted that the Participants' obligations under WPPSS Projects Nos. 4 and 5 would be categorized as purchased power expenses.

BPA Wholesale Power Costs BPA implemented approximately a 59% average wholesale rate increase on July 1, 1981 to cover both increasing costs of operation and maintenance, as well as its assumption of debt service costs in July, 1980, of WPPSS Project No. 1 which reached its "date certain" on September 1, 1980. The "date certain" is the date in which interest on the Bonds for the respective Projects would no longer be capitalized, and debt service payments would commence by means of net billing by BPA. The rate adjustment of 88% in late 1979 included coverage of debt service requirements on WPPSS Project No. 2 which had reached its "date certain" on September 1, 1977. There is anticipated to be a further BPA rate increase imposed before July 1, 1983 because the "date certain" will be reached on WPPSS Project No. 3 on September 1, 1982.

It is difficult to incorporate BPA rate increases into our model of hypothetical rate increases due to assumption of the 1.25 times interest costs requirements on WPPSS Projects Nos. 4 and 5. This is with particular regard to the uncertain impact implementation of the Pacific Northwest Power Act will have on BPA rates between now and FY 1984. We identified, however, the various amounts of purchased power for each of the 15 largest Participants as a percentage of their respective gross sales revenues in 1980. Most of this power was derived from BPA. The smaller the share of purchased power, the less the impact the BPA rate increases will have on the financial operations of these electric systems over the next three years. Note that purchased power costs range from 24% for the City of Tacoma to 65% for the Cowlitz County P.U.D.

It is possible that the Participants will be able to phase in rate increments between now and FY 1984 to absorb their respective shares of the \$187.9 million interest requirements on WPPSS Projects Nos. 4 and 5 due in that year if termination occurs. However, the ability to meet additionally as much as \$750 million, or more, of termination costs required to preserve the investment in place from rate increments during that same period is highly questionable. Keep in mind that electric rates in the Pacific Northwest Region are presently the lowest in the nation due to the low embedded costs of the hydroelectric power marketed by BPA. Additionally, BPA's 88% wholesale rate increase was easily absorbed by the electric systems two years ago. While total electric power costs over the next three years will continue to have a comparative advantage over the rest of the nation, there is a chance that sizeable price increments phased in over a short period of time will serve as an additional inducement for electricity conservation activities on the part of individual consumers. If a significant reduction in load growth occurs, it could lend credibility to the conservation scenarios that have been suggested by various non-sanctioned power planning organizations.

IMPLEMENTATION OF THE PACIFIC NORTHWEST POWER ACT

Purpose of Pacific North- west Power Act	The Pacific Northwest Electric Power Planning and Conservation Act was signed into law on December 5, 1980 as a means of enabling the region to meet its power planning and allocation needs over the remaining part of this century. The avoidance of prospectively lengthy litigation, including a suit by the City of Portland, Oregon challenging the validity of certain Bonneville Power Administration power sales contracts, was also cited in the Congressional debate as an objective behind the legislation. Although a BPA acquisition of the generating capacity from WPPSS Projects Nos. 4 and 5 is feasible under the Act, in our opinion the successful implementation of such a decision is highly unlikely before the Pacific Northwest Electric Power and Conservation Planning Council completes its Regional Plan.
Conservation Incentives	<u>The Pacific Northwest Power Act is unequivocal in its prioritization of conservation, renewable resources, and cogeneration options before conventional large-scale thermal power plants may be considered.</u> Each mode of generating capacity (conservation serves to reduce load growth, thereby eliminating the need for discrete increments of capacity) must be evaluated on a cost-effectiveness basis, with conservation measures or resources costs permitted to be as high as 110% of the cost of other modes to meet the cost-effectiveness criterion. Conservation activities range from the imposition of model conservation standards, to loans and grants to consumers for insulation or weatherization and increased system efficiency. Finally, in implementing conservation policies, BPA is directed to provide "billing credits" to wholesale customers for achieving conservation savings. BPA may also impose surcharges, ranging from 10% to 50% of rates,

FINANCIAL ANALYSIS OF 15 LARGEST PARTICIPANTS ON PROJECTS NOS. 4 AND 5

Participant	\$ Share of WPPSS 4 & 5	\$ Share of F.Y. 1984 D.S.*	1.25X \$ Share of FY 1984 D.S.	1980 Purchased Power As % of Gross Sales	1980 Gross Sales of Electricity	Total kWh Sold in 1980	1980 Average cost	Hypo-theoretical cost with Fiscal Year 1984 D.S. mills/kWh	Hypo-theoretical cost with 1.25 F.Y. 1984 D.S.	\$ Increase 1.25X \$Share of F.Y. 1984 D.S. Over 1980 Avg. Costs
Snohomish County P.U.D.	13.05	\$ 24,523,378	\$ 30,654,223	56.3	\$66,537,503	5,109,636,000	13.02	17.82	19.02	46.1
Tacoma	10.7	20,098,234	25,122,793	23.9	73,100,195	4,574,599,873	15.98	20.37	21.47	34.4
Clark County P.U.D.	9.86	18,523,597	23,154,496	51.0	38,975,925	2,668,658,000	14.6	21.55	23.28	59.4
Cowlitz County P.U.D.	9.13	17,159,412	21,449,265	65.0	33,865,353	3,723,941,000	9.09	13.7	14.85	63.4
Benton County P.U.D.	5.08	9,545,534	11,931,917	54.1	17,743,916	1,320,425,085	13.43	20.66	22.47	67.3
Grays Harbor County P.U.D.	4.41	8,286,576	10,358,219	43.5	21,530,613	1,643,471,768	13.10	18.14	19.4	48.1
Umatilla Electric Coop. Assn.	3.57	6,713,817	8,392,272	51.2	9,988,376	702,938,631	14.21	23.76	26.15	84.0
Franklin County P.U.D.	2.93	5,496,198	6,870,248	54.7	7,395,758	538,795,000	13.73	23.93	26.48	92.9
Central Lincoln P.U.D.	2.67	5,017,042	6,271,303	59.4	14,738,342	1,199,594,000	12.29	16.47	17.51	42.5
Inland Power & Light	2.24	4,216,570	5,270,713	34.6	10,100,956	412,589,899	24.48	34.7	37.26	52.2
Lewis County P.U.D.	2.02	3,797,544	4,746,930	54.0	9,288,283	636,484,035	14.59	20.56	22.05	51.1
Richland	1.97	3,692,318	4,615,397	45.2	8,701,333	516,621,657	16.84	23.99	25.77	53.0
Springfield	1.76	3,314,630	4,143,288	46.8	11,005,000	688,210,235	15.99	20.81	22.01	37.6
Clallam County P.U.D.	1.37	2,579,925	3,224,906	44.2	7,570,912	410,737,751	18.43	24.71	26.28	42.6
Consumers Power Inc.	1.35	2,538,586	3,173,232	31.9	7,579,980	260,0445,000	29.1	38.85	41.29	41.9
Totals	72.11	\$135,503,361	\$169,379,202							

* Annual debt service equal to \$187,904,208 in fiscal years 1982 through 1988.

SERVICE AREA CHARACTERISTICS OF 15 LARGEST PARTICIPANTS ON PROJECTS NOS. 4 AND 5

<u>Utility System</u>	<u>Customers</u>	<u>% Residential</u>	<u>% Commercial</u>	<u>% Industrial</u>	<u>% Irrigation</u>	<u>% Other</u>	<u>Type</u>
Snohomish County P.U.D.	145,339	58.0	18.1	24.1	--	0.7	SMSA
Tacoma	103,000	35.0	14.5	27.3	--	23.2	Urban
Clark County P.U.D.	81,149	64.0	22.6	11.2	--	2.2	SMSA
Cowlitz County P.U.D.	36,060	32.0	13.0	51.8	--	3.2	SMSA
Benton County P.U.D.	30,360	52.4	18.9	14.0	13.0	1.7	Rural
Grays Harbor County P.U.D.	34,217	35.6	13.0	7.0	--	44.1	Rural
Umatilla Electric Coop. Assn.	8,276	22.9	9.1	30.6	36.8	0.6	Rural
Franklin County P.U.D.	14,636	44.1	36.4	--	17.2	2.3	Rural
Central Lincoln P.U.D.	24,222	40.7	17.0	40.2	--	2.1	Rural
Inland Power & Light	19,560	82.7	11.6	--	2.3	3.4	Rural
Lewis County P.U.D.	19,728	55.5	15.8	20.1	0.4	8.2	Rural
Richland	13,844	60.1	39.9	--	--	--	SMSA
Springfield	20,139	55.7	44.3*	--	--	--	SMSA
Clallam County P.U.D.	19,567	75.4	14.7	--	0.4	9.5	Rural
Consumers Power Inc.	14,105	67.5	6.8	20.4	2.9	1.9	Rural

* Includes industrial customers.

on wholesale customers which have not implemented conservation measures that achieve energy savings comparable to those which would be obtained under model conservation standards. Model conservation standards will be developed by the Pacific Northwest Electric Power and Conservation Planning Council and will be designed to produce all power savings that are cost-effective for the region and economically feasible for consumers, taking into account financial assistance made available to consumers.

BPA Obligations to Preference Customers

The 88 Participants in WPPSS Projects Nos. 4 and 5 may not be disadvantaged directly by the Pacific Northwest Power Act. Under Section 5(b)(1) of the Act, whenever requested, BPA must offer each preference customer and each requesting investor owned utility electric power to meet firm power loads to the extent such load exceeds: (A) the capability of such entity's firm peaking and energy resources used in the year prior to enactment of the Act, and (B) such other resources as such entity determines, pursuant to the contracts under the Act, will be used to serve its firm load in the Region. If BPA cannot acquire sufficient resources under its contractual obligation to meet the Regional load requirement, then the preference customers, including public bodies and cooperatives, will have priority over the firm capability of the Federal Base System resources. In BPA's fiscal year ending September 30, 1980, public bodies and cooperatives purchased 37,769,130 mWh of electric energy or 52.1% of total electric energy marketed of 72,548,755 mWh. Although there may be power deficits in the Pacific Northwest as forecasted by the Pacific Northwest Utilities Conference Committee (PNUCC), the solution to meeting these deficits is, under the Act, first a problem of BPA and then a problem which will lie with the individual utility systems, public as well as private investor-owned, throughout the region.

Load Growth Forecasting

The controversy over load growth forecasts within the Pacific Northwest Region complicates an analysis of actual need for WPPSS Projects Nos. 4 and 5. In 1974, the PNUCC projected an average demand within the West Group Area of approximately 30,184 MW by the 1989-1990 operating year. This amount had declined to 24,015 MW in the West Group Area forecast of September 2, 1980. The recently released Northwest Regional forecast of power loads and resources indicates a further downward revision in West Group Area average demand through 1989-1990, reflecting 1,350 MW cost-effective programmatic savings due to conservation. Alternative scenarios prepared in recent years by the Natural Resources Defense Council, Inc. (NRDC) of San Francisco and the U.S. General Accounting Office suggest that conservation measures undertaken by individual consumption units on a decentralized decision-making basis can generate the required reductions in energy demand sufficient to avoid projected electric power deficits. The NRDC study, "Choosing an Electrical Energy Future for the Pacific Northwest: An Alternative Scenario" (funded by a grant from the U. S. Department of Energy), indicates that the need for WPPSS Projects Nos. 4 and 5 could be eliminated through the

sole implementation of conservation strategies. The recent study, the "Draft Technical Assessment of the Potential for Conservation and End-Use Renewable Resources in the West Group Area 1980-2000" by the Conservation Division of BPA lends credibility to the conservation movement. The BPA projections do not, however, indicate that the need for WPPSS Projects Nos. 4 and 5 would be eliminated.

It should be emphasized that these studies are based largely on hypothetical scenarios of conservation activities and it cannot be determined at this time whether such conservation activities will be implemented accordingly. Yet, these studies, while not conclusive, are supportive of conservation program development under the implementation of the Pacific Northwest Power Act and can augment conservation measurement in the Council's formulation of a final Regional Plan. The following passages, excerpted from the Office of Technology Assessment of the United States Congress Analysis of the Pacific Northwest Electric Power Planning and Conservation Act, dated March 20, 1980 and introduced into the Congressional Record by Senator Henry M. Jackson of Washington on November 19, 1980, underscore the legislative intent behind the conservation measures embodied in the Act:

"The proposed legislation is a unique attempt by the Congress to encourage the Pacific Northwest Region to set a national standard in determining the wise use of limited resources, protecting the environment, insuring equitable distribution of the costs and benefits of power needs, and testing the opportunities for shifting onto conservation and renewable resources to provide a stable and substantial future. S.885 appears to effectively encourage conservation, both through technical approaches and behavioral changes in an effort to stretch our energy resources and provide an opportunity for a significant national experiment in regional cooperation, planning and use of renewable resources. The legislation reflects a dramatic change from the historical approach used within the region to meet power needs and generation. The principal mechanisms of the bill designed to promote conservation -- the 110 percent preference calculation, the use of billing credits and the imposition of surcharges -- should clearly reduce the barriers now inherent in our economic system that often act to restrain desirable conservation measures."

and

"A number of federal programs are now, or will shortly be, in place which will add to the regional data base and assist the effort. The Building Energy Performance Standards (BEPS), which will be sent to the Congress this year, will provide a standard for

energy efficiency in new construction that the region should be able to use as a model. The Residential Conservation Service (RCS), to be implemented next year, mandates that most utilities begin offering home energy audits and information on weatherization."

Uncertainty
Over Implemen-
tation of
Regional Plan

Whether or not conservation potential is actually sufficient to eliminate the need for generating capacity of 2,490 MW from WPPSS Projects Nos. 4 and 5, the Pacific Northwest Power Act is subject to so many varying interpretations that the potential for dilatory litigation over the Regional Plan is high. The Pacific Northwest Power Act states that BPA may acquire resources that are consistent with the order of prioritization in the Act. However, it does not specify the nature of the acquisition arrangement. Acquisition of generating capacity may not necessarily be on a "take or pay" basis nor must the acquisition program match the life of the power resource.

BPA will only be required to grant "billing credits" to the extent that they reduce BPA's obligation that otherwise would have existed to acquire resources under the Act. Consistent with the Act, BPA is presently in the process of negotiating new contracts with each public body, cooperative and investor-owned utility in the Region to provide firm peaking and energy resources required to meet the respective firm loads. These wholesale customers may not necessarily enter into new contracts with BPA if they believe that they can better serve their retail customers at lower rates through the acquisition of conservation and renewable resources on their own.

Congressional
Oversight

BPA is required to submit an annual budget to the United States Congress for review. Although BPA's expenditures from its revenues have not required formal Congressional approval since the enactment of the Federal Columbia River Transmission System Act (FCRTA) in 1974, Congress may impose specific directives or limitations on such expenditures. A BPA decision to acquire the generating capability of WPPSS Projects Nos. 4 and 5 prior to the completion of the Regional Plan will require express Congressional authorization for the expenditure of BPA funds for such purpose.

WASHINGTON PUBLIC POWER SUPPLY SYSTEM PROJECTS NOS. 1, 2 AND 3

Net Billing
Agreements

The security structures behind the Net Billing Agreements on WPPSS Projects Nos. 1, 2 and 70% of Project No. 3 are complicated and easily subject to misinterpretation. One thing that is clear is that they are inextricably tied to the financial operations of the Bonneville Power Administration. Net billing is the crediting procedure in which BPA pays for the project capability sold by the Participants in WPPSS Projects Nos. 1, 2 and 3 to BPA by giving the Participants credits against the amounts the Participants owe BPA under their existing purchased power sales contracts and any other contracts for power exchange and services. Project capability will be 1,250 MW on Project No. 1, 1,100 MW on Project No. 2, and 868 MW (70% of 1,240 MW) on Project No. 3. Additionally, there are 104 Participants on Project No. 1, 94 Participants

on Project No. 2, and 103 Participants on the 70% share of Project No. 3. The City of Seattle is among the Participants on Projects Nos. 1, 2 and 3 but elected not to participate in Projects Nos. 4 and 5.

BPA has contracted to purchase, by means of net billing, the entire capability of Projects Nos. 1 and 2, and 70% of Project No. 3 from the respective Participants. In turn, BPA is obligated to pay the Participants, and the Participants are obligated to pay the Washington Public Power Supply System, the total annual costs of the Projects, including debt service on the respective Bonds, whether or not the Projects are completed, operable or operating and notwithstanding the suspension, reduction or curtailment of the Projects' output.

Security
Behind Net
Billings

It is BPA's legal obligation to charge rates for electric power and transmission of electric power that provides the underlying security behind the Net Billing Agreements. In terms of BPA's financial operations, cash payments are required to be made under the Net Billing Agreements prior to any payment required to be made by BPA to the U. S. Treasury for repayment of: (a) the Federal investment in the Columbia River Power System; (b) U.S. Army Corps of Engineers and U.S. Bureau of Reclamation costs connected with the System; and (c) bonds issued pursuant to the Federal Columbia River Transmission System Act and the Pacific Northwest Power Act.

If the net billing capability of a Participant is insufficient to cover its respective share of costs, including annual debt service requirements on WPPSS Projects Nos. 1, 2 and 70% of Project No. 3, BPA has several options at its disposal. First, BPA shall use its best efforts to reassign shares in Project capability to another Participant or any other BPA customer which does have the ability, in terms of its power purchases from BPA, to net bill it. This would eliminate each Participant's net billing deficiency. Second, there may be mandatory assignments to other Participants in amounts not exceeding 25% of each Participant's original share of Project capability, to the extent that payments made by the Participant to the Supply System would not exceed the amount of BPA billing credits. Third, BPA may make payments from its operating revenues to cover net billing deficiencies. This, in fact, is what BPA has done since September 1, 1977, when the "date certain" was reached on Project No 2, advancing \$15.9 million to the Supply System based on net billing deficiencies. If BPA does not have sufficient revenues to cover net billing deficiencies, it may seek appropriations from Congress. Finally, if appropriations are not forthcoming, the Participant may withdraw its share of the generating capacity sold to BPA for use in its own system or for resale to another entity. This final step, if it is ever traversed, may have serious rate implications because it is contingent on either the Participants' need for the power and ability to directly cover Project costs or their ability to sell excess power at "spot" market prices, throughout the life of the Bonds.

**Present Status
of Projects
Nos. 1, 2,
and 3**

Present WPPSS Bonds are outstanding in the amounts of \$1.455 billion for Project No. 1, \$1.466 billion for Project No. 2, and \$905 million for the Supply System's 70% share of Project No. 3. Annual debt service on WPPSS Project No. 2 Bonds has been met through net billings and net billing deficiency payments by BPA since the "date certain" was reached on September 1, 1977. Annual debt service on the respective outstanding Bonds by FY 1983, the initial year after the "dates certain" for all three Projects are reached, will be \$111,838,000 on Project No. 1, \$115,022,631 on Project No. 2, and \$68,962,918 on the 70% share of Project No. 3. In the Reserve Accounts in the respective Bond Funds for each Project, there presently exist amounts equivalent to approximately one-half maximum annual interest requirements. As of May, 1981, Project No. 1 was approximately 49.6% complete, Project No. 2 approximately 85.8% complete, and Project No. 3 approximately 30.6% complete. Note that approximately \$1.5 billion additional Bonds for WPPSS Projects Nos. 1, 2 and 3 are scheduled to be issued between now and June 30, 1982.

AN ANALYSIS OF THE BONNEVILLE POWER ADMINISTRATION

**Federal Base
System**

The Bonneville Power Administration was established by the Bonneville Project Act of 1937. Originally conceived as a marketing and transmission agency for power generated at the Bonneville Dam, BPA markets and transmits power sold on a wholesale basis from 30 hydroelectric dams in the Pacific Northwest. The dams, having an installed peak generating capacity of approximately 21,100 MW and an average firm energy of approximately 7,600 MW, were constructed and are owned by the U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation. These dams, along with the City of Eugene, Oregon's 30% ownership share of the Trojan Nuclear Project, the Supply System's Projects Nos. 1, 2 and 70% of Project No. 3, the Supply System's 860 MW Hanford Nuclear Project, and 15.5 million acre-feet of hydro storage on the Columbia River through the Columbia Storage Power Exchange, comprise the Federal Base System. Additionally, several small and miscellaneous thermal resources are included. Through 1985-1986 BPA will receive average firm energy exchanged from the Pacific Southwest of 343 MW, declining to 191 MW in 1986-1987 and 18 MW in 1987-1988.

The disparity between peak and firm resources is the crux of the power planning dilemma in the Northwest. Hydroelectric power resources are highly variable due to unpredictable meteorological phenomena. As a matter of prudent planning practice, the PNUCC assumes critical water period conditions in gauging available generating resources. Therefore, the conditions that prevailed over the critical period in the hydrologic record of 42 1/2 months from August, 1928 through February, 1932, are the basis for determining the average firm energy of 7,600 MW.

The PNUCC does not recognize nonfirm resources that may be available to BPA in supplementing its resources under critical period conditions. Over the 40-years hydrologic record through the 1976-1977 operating year, there has been an average of surplus above critical water period conditions of approximately 2,600 MW. The Pacific Northwest-Pacific Southwest Intertie linking the Federal Columbia River Power System to utilities in the State of California enables the Northwest and the Southwest to exchange surplus energy when either is offpeak. The potential capacity for import via the Intertie by BPA during the winter would be approximately 4,000 MW. Transmission lines connecting the Pacific Northwest with British Columbia Hydro could provide a potential capacity for import of 2,000 MW. This energy may not necessarily be available year-round, particularly during Pacific Northwest peaking periods. Forced outages may potentially be averted through purchases on a short-term basis of these supplemental resources. Resources would be adequate, particularly during average water years. However, the capacity to continuously meet base load fails to convey to consumers a sense of urgency over electric power planning in the region.

BPA Statutory Authority

Under the Bonneville Project Act, the BPA is not expressly authorized to own directly any power generating capacity. It does, however, set rates for the costs associated with the acquisition, conservation and transmission of electric power, including the recovery of the Federal investment in the Federal System transmission and generating facilities. These rates must be confirmed and approved by the Federal Energy Regulatory Commission. BPA's operations are further delineated by FCRTA. Under Section 11(b)(6) of the FCRTA, BPA may acquire electric power on a short-term basis to meet temporary deficiencies in electric power for which it is obligated by contract to supply.

BPA Repayment Study

The required level of revenues BPA's rates must produce is determined by a repayment study prepared by BPA annually and must be sufficient to cover the costs of:

- 1) the purchase and exchange of power, including the cost of the net billed projects and resources acquired under the Pacific Northwest Power Act;
- 2) Federal System operation and maintenance;
- 3) interest and amortization of revenue bonds sold by BPA to the Treasury, with authorization presently up to \$1.25 billion for the purpose of constructing transmission facilities under the Federal Columbia River Transmission System Act; and increased by an additional \$1.25 billion for the purpose of providing funds for conservation and renewable resource loans and grants under the Pacific Northwest Power Act;

- 4) interest and amortization on Federal power facilities financed with appropriated funds (the investment in Federal hydroelectric projects must be amortized within 50 years after they become revenue producing, with investment in transmission facilities amortized within 35 years);
- 5) certain irrigation costs assigned to be repaid from power revenues;
- 6) costs and expenses incurred by BPA under the Pacific Northwest Power Act and other provisions of law.

The Federal investment remaining to be amortized was approximately \$6.65 billion as of September 30, 1980, including BPA borrowings from the U. S. Treasury of \$235,000,000 under a short-term note and \$290,000,000 under long-term bonds, for the construction of transmission facilities. The average rate for electric power charged to BPA preference customers, including the Participants, in FY 1980 was 6.35 mills/kWh. Approximately 37,769,130 mWh were sold to publicly-owned utilities, including rural electric cooperatives, in FY 1980.

As a matter of cash flow, the amounts credited to the respective Participants under net billings are forwarded by the Participants in WPPSS Projects Nos. 1, 2 and 70% of Project No. 3 directly to the Washington Public Power Supply System. BPA does not receive this money. An analysis of BPA's financial operations with regard to the security behind the WPPSS Projects Nos. 1, 2 and 3 Bonds must initially focus on BPA's ability to reassign shares in Project capability in the event of net billing insufficiencies. As a matter of cash flow, the amounts which may prospectively be credited to the respective Participants and other BPA customers would once again be forwarded by the Participants and customers directly to the Washington Public Power Supply System. This feature is very strong. However, it is necessary to further examine the demographic, economic and financial characteristics of the various segments of BPA's customer base. In the year ended June 30, 1980, the Federal Base System accounted for approximately 50% of the Region's energy requirements.

Demographic, and Economic Characteristics of BPA Service Area BPA markets wholesale power principally to 146 utility, industrial, and government customers throughout the Pacific Northwest, a service area of over 300,000 square miles with a population of approximately eight million. The Pacific Northwest is one of the most rapidly growing regions in the country. Additionally, between 1970 and 1979 personal income increased at a rate of approximately 40% above the national figure. However, there remains some concern over the cyclical nature of major sectors in the Region's economy, particularly within the forestry products industries in Oregon and Washington. While Western

Washington has diversified considerably over the past decade from its reliance on the aerospace industry, transportation equipment manufacturing is still the largest manufacturing sector within the State. The Ports of Seattle and Portland continue to grow due to both their proximity to the Orient and their location as importing centers for expanding Western U.S. markets. Unemployment rates were 7.4% in Idaho, 6.1% in Montana, 9.6% in Oregon, and 8.4% in Washington as of April, 1981.

Financial
Characteris-
tics of BPA
Customer
Base

Financially, there may be significant problems among certain BPA customers. First, the 88 Participants on WPPSS Projects Nos. 4 and 5 could encounter difficulties in financing their pro rata shares of debt service on the Projects Nos. 4 and 5 Bonds or perhaps any costs associated with termination of either one or both projects (this would not apply, however, if the generating capacity of Projects Nos. 4 and 5 were acquired by BPA, an event which is highly uncertain). Second, four of the seven private investor-owned utilities serving the Region -- Pacific Power & Light Company, Portland General Electric Company, Puget Sound Power & Light Company, and Washington Water Power Company -- are viewed toward the lower end of the quality spectrum in terms of corporate financial analysis. Their respective qualities of earnings are below average; coverages of corporate debt are low for existing bond quality ratings; and costs of construction programs in relation to gross plant are above average. Additionally, unlike the Supply System Participants, the private investor-owned utilities are subject to state regulation of electric rates. Third, there is considerable uncertainty regarding BPA's aluminum direct service industrial customers. The "Draft Technical Assessment of the Potential for Conservation and End-Use Renewable Resources in the West Group Area 1980-2000" asserts that the aluminum industry would probably use electricity savings due to cost-effective cogeneration retrofitting to increase production, and there would be no reduction in their power requirements. Increased production may not necessarily be desirable because the aluminum industry world-wide is likely to be facing over-capacity due to new smelters, modernization of old smelters and a greater increase in scrap recovery. Then again, the smelters in the Northwest may benefit from both greater efficiencies and the proximity to Boeing, a major aluminum purchaser. Therefore, it is not clear whether BPA's aluminum direct service customers will maintain long-term energy purchases equivalent to the 22,915,947 mWh in FY 1980.

BPA Financial Operations The following table illustrates BPA's financial operations over the most recent four fiscal years:

Federal System Historic Revenues and Expenses
(\$ Thousands)

<u>Revenues</u>	Fiscal Year Ended September 30,			
	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Sales of Electric Power:				
Publicly Owned Utilities	125,292	136,373	146,796	258,087
Privately Owned Utilities	24,299	68,475	48,131	75,567
Federal Agencies	3,530	8,764	4,840	8,045
Aluminum Industry	37,401	74,676	53,168	116,647
Other Industries	4,083	7,379	4,584	12,374
Transmission and Other				
<u>Operating Revenues</u>	<u>28,987</u>	<u>38,297</u>	<u>39,040</u>	<u>41,746</u>
Total Operating Revenues	223,592	333,964	296,559	512,466
Less: Net Billing Credits	<u>66,807</u>	<u>96,704</u>	<u>110,584</u>	<u>165,732</u>
Net Received	<u><u>156,785</u></u>	<u><u>237,260</u></u>	<u><u>185,975</u></u>	<u><u>346,734</u></u>
Application of Revenues in Order of Priority:				
1) BPA Operation & Maintenance	59,476	72,077	81,847	108,028
Net Billing Deficiency Payments	15,158	22,413	18,185	10,399
2) Army Corps of Engineers and Bureau of Reclamation Operation and Maintenance (Payable to U. S. Treasury)	35,314	38,021	41,301	46,026
3) Other Amounts Available for <u>Payment to U. S. Treasury</u>	<u>46,836</u>	<u>104,749</u>	<u>44,642</u>	<u>182,281</u>
Total Application of Revenues	<u><u>156,785</u></u>	<u><u>237,260</u></u>	<u><u>185,975</u></u>	<u><u>346,734</u></u>

The uncertainty over whether BPA could reassign net billings to its non-Participant customers, compounded by the economic and financial uncertainty derived from an analysis of BPA's customer base, leads us to focus on BPA's ability to continue to cover in full the net billing requirements, particularly net billing deficiencies. BPA pays to the Supply System any required net billing deficiencies from its own operating revenues. BPA gross revenues will be based on BPA rates in effect reflecting BPA total operation and maintenance, including its acquisition of resources, and amortization of Federal investment cost requirements. These rates will be translated into higher costs of wholesale purchased power to BPA customers. In turn, BPA wholesale customers are likely to pass along higher wholesale purchased power costs, in the form of higher rates to their retail customers, due to increases in their average costs of power.

The gross revenue coverages of the total net billings costs of \$81,965,000 in FY 1977, \$119,117,000 in FY 1978, \$128,769,000 in FY 1979, and \$176,131,000 in FY 1980 were 2.72 times, 2.80 times,

2.30 times, and 2.90 times, respectively. However, a more stringent and appropriate test for net billing costs coverage would be with net revenues after BPA operation and maintenance expenses are deducted from gross revenues. Such net revenues of \$164,116,000 in FY 1977, \$261,887,000 in FY 1978, \$214,712,000 in FY 1979, and \$404,438,000 in FY 1980 provided coverages of 2.00 times, 2.19 times, 1.66 times, and 2.29 times, respectively.

It should be noted that U. S. Army Corps of Engineers and U.S. Bureau of Reclamation operation and maintenance costs of the Federal Base System dams are funded directly by Congressional appropriations and repaid from BPA revenues after net billing credits and BPA operation and maintenance costs. However, in the wake of extensive budget cutting by the Federal Government, continued annual appropriations could be in jeopardy. As a means of setting BPA's financial structure within a framework comparable to publicly-owned electric systems issuing municipal bonds, the deduction of total operation and maintenance costs from gross operating revenues would have yielded coverages of net billing costs of 1.57 times in FY 1977, 1.87 times in FY 1978, 1.34 times in FY 1979, and 2.03 times in FY 1980.

Table of Comparative Coverages

	<u>Fiscal Year Ended September 30,</u>			
	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
	(Times Coverage)			
Gross Revenue Coverage of Net Billings Costs	2.72	2.80	2.30	2.90
Net Revenue Coverages of Net Billings Costs after deducting BPA Operation and Maintenance	2.00	2.19	1.66	2.29
Net Revenue Coverages of Net Billings Costs after deducting Total Operation and Maintenance	1.57	1.87	1.34	2.03
Future BPA Financial Operations	Thus far, BPA has demonstrated its ability to raise more than sufficient revenues from its rate base to cover net billing requirements on the WPPSS Project No. 2 Bonds. Net billing requirements on the WPPSS Project No. 1 Bonds will be covered for the first time in BPA's 1981 Fiscal Year. These coverages, together with the cushion provided by the amounts calculated in the rate base to amortize both the Federal investment in the Columbia River Transmission System and the Base System, reflect the underlying security strength behind the WPPSS Projects Nos. 1, 2 and 3 Bonds. However, these coverages may be weakened by the time WPPSS Projects Nos. 1, 2 and 3 commence commercial operation.			

Under the Supply System's proposed 1982 budgets, which have not yet been formally adopted, the respective costs of Project operation during FY 1988, the earliest year when all three Projects are expected to be completed, are estimated to be \$467,604,000 for Project No. 1, \$397,185,000 for Project No. 2, and \$351,907,000 for Project No. 3. This total of net billing requirements of \$1,216,696,000 represents a substantial increase over the net billing requirements of \$176,131,000 in FY 1980. The 1980 BPA Repayment Study indicates that BPA plans to amortize approximately \$319,888,000 of the Federal investment in FY 1988. These amortization requirements established in FY 1981 substantially reduce the cushion provided in the BPA rate base as measured as a percentage of net billing requirements. In essence, the implications are that BPA wholesale purchased power rates are likely to increase so rapidly over the next eight years that the comparative cost advantage the Pacific Northwest holds over the rest of the nation will diminish considerably.

Financial Implications of Pacific Northwest Power Act

The Pacific Northwest Power Act raises concerns which could alter BPA's financial capability to meet the net billing requirements. First, the potential acquisition of WPPSS Projects Nos. 4 and 5 will mean the assumption of the debt service costs on the Projects Nos. 4 and 5 Bonds which presently equal \$187.9 million annually. In FY 1988, total costs of operation for Projects Nos. 4 and 5 would be approximately \$1,181,638,000, increasing to \$1,699,670,000 in FY 1990, the initial year of full operational capacity. Once again, these estimates are based on the Supply System's proposed 1982 construction budgets which have not yet been formally adopted. Additional BPA acquisition of conservation and renewable resources would increase BPA purchase obligations as well. In lieu of acquisition, BPA would be required under the Act to grant "billing credits" for conservation and renewable resources demonstrated to be attained or in place by wholesale customers to the extent that BPA's obligations to provide electric power were reduced. If these activities result in BPA supplemental rate charges to electric utilities that exceed certain electric utilities' average system costs of power, these electric utilities may terminate, upon reasonable terms and conditions, their purchase and sale of resources arrangements with BPA. BPA may then have to sell excess power at "spot" market prices outside of the Region to cover its costs.

REGARDING THE FEDERAL ROLE

Statutory Basis of Net Billings

There is not presently, nor has there ever been, a pledge of the full faith and credit of the United States behind the Net Billing Agreements on the WPPSS Projects Nos. 1, 2 and 3 Bonds. In fact, Congress never expressly authorized nor appropriated Federal moneys to finance the construction of any of the nuclear power plants under net billing. The Bonneville Power Administration, in anticipation of electrical power demand surpassing available resources by the 1980's, submitted

a Hydro-Thermal Power Program to Congress on October 18, 1968. The Program entailed an agenda for constructing a series of coal and nuclear power plants throughout the Pacific Northwest to complement the vast hydroelectric power resources harnessed by the Federal Base System. In that same year the Secretary of the Interior of the United States, as well as the Bureau of the Budget, approved the use of net billing to achieve the goals of the Hydro-Thermal Power Program.

The Net Billing Agreements were codified into law by means of the Public Works Appropriations Acts for fiscal years 1970 (P. L. No. 91-144) and 1971 (P.L. No. 91-439). In the former, \$100,000 was appropriated for preliminary engineering required by BPA in connection with "the proposed agreements with Portland General Electric and the Eugene, Oregon Water and Electric Board to acquire from preference customers and pay by net billing for generating capability from non-Federally financed thermal generating plants in the manner described in the Committee Report."

The Public Works Appropriations Act for Fiscal Year 1971 made available \$150,000 for preliminary engineering required by the BPA in connection with "the proposed agreements relating to three non-Federally financed generating plants proposed under the hydro-thermal program to be sponsored jointly or severally by the Washington Public Power Supply System." As is evident, Federal moneys were appropriated for engineering studies only. However, the legislative history of a public law may carry weight in court. The key to the net billing arrangements may be found through inspection of the House of Representatives Committee Reports accompanying the respective Appropriations Bills. They read as follows:

Committee Report accompanying H. R. 14159, Public Works Appropriations Bill 1970 (regarding the Eugene, Oregon Water and Electric Board): "The Program does not contemplate Federally financed and owned thermal facilities. The Committee approves implementation of this program by the use of net billing as the means of effecting payment by BPA for part of the generating capacity of non-Federally financed thermal plants, under suitable arrangements between BPA and preference customers to accomplish this purpose. Such agreements would provide that BPA will acquire from a date certain, on a cost basis, the preference customers' rights to the generating capacity of non-Federally financed plants, whether or not they are operable..."

Committee Report accompanying H. R. 18127, Public Works Appropriations Bill 1971 (regarding the Washington Public Power Supply System), citing a memorandum submitted by the Office of Solicitor, U. S. Department of Interior to the Assistant Secretary, Water and Power Development: "The program includes the construction of seven thermal generating plants between 1971 and 1981. None will be Federally constructed, financed, or owned. The Committee approves implementation of the remainder

of the program by the Bonneville Power Administration for part or all of the generating capacity of non-Federally financed thermal plants, under suitable agreements between BPA and preference customers to accomplish this purpose. Such agreements would provide that the BPA will acquire from a date certain, on a cost basis, the preference customers' rights to the generating capability of non-Federally financed plants, whether or not they are operable. Any costs or losses to the BPA under these agreements will be borne by BPA ratepayers through rate adjustments, if necessary."

The purpose of the Net Billing Agreements is perhaps best summed up by BPA Counsel Kenneth Kaseberg in the hearings before the U. S. House of Representatives Appropriations Subcommittee on the 1971 Public Works Appropriations Bill:

"The authority for Bonneville to acquire thermal power is implied from other provisions of the Federal power marketing laws. There is no express authority authorizing these purchases to which you can point your finger and say Congress expressly said you would do this. These net billing agreements are part of the security behind the bonds that the public agencies will issue to supply the funds with which to build these plants. Since these bond issues involve such substantial amounts of money, the bond counsel and the underwriting bankers have requested the Congress give express recognition to this existing implied authority to acquire the power...."

It should be noted at this time that WPPSS Projects Nos. 4 and 5 were conceived during the early 1970's under Phase II of the Hydro-Thermal Power Program. However, regulations promulgated in 1972 under the Revenue and Expenditure Control Act of 1968 precluded the issuance of tax-exempt bonds for resources which would be acquired by Federal power marketing agencies under such arrangements as net billing. Accordingly, WPPSS Projects Nos. 4 and 5 were undertaken by the 88 Participants without net billing arrangements. Now, under the Pacific Northwest Power Act, BPA would be legally able to purchase the generating capacity from WPPSS Projects Nos. 4 and 5 without impairing the tax-exemption. Section 9(f) of the Act states that the exemption from gross income of interest on certain governmental obligations provided in Section 103(a)(1) of the Internal Revenue Code of 1954, as amended, shall not be affected by BPA's acquisition of resources financed with tax-exempt bonds, if the resources are acquired for sale to public bodies, cooperatives, and Federal agencies. In conformance with the Internal Revenue Code, no more than 25% of the power generated over the life of the Project may be sold on a contractual basis to non-exempt entities.

Improbability
of a Federal
Bail-Out

It would be difficult for the Federal Government to act beyond the bounds of the Pacific Northwest Power Act to facilitate the financing of WPPSS Projects Nos. 4 and 5. Since the Bonneville Project Act of 1937, citizens in the Northwest have been the beneficiaries of low cost power from the Federal Base System and the Federal Columbia River Transmission System. The Army Corps of Engineers and The Bureau of Reclamation constructed the dams with low-cost financing provided by Congressional appropriations. It is unlikely that taxpayers throughout the rest of the country would continue to underwrite the costs of power generating capacity in the Northwest after considering the comparative cost advantage presently enjoyed by the Region. Finally, Federal involvement at this time would be in conflict with the general atmosphere in the nation's capital for budget paring and reduced Federal involvement in domestic affairs.

REGARDING THE STATE ROLE

Washington
State
Political
Climate

In the absence of any actions by the Federal government to facilitate the financing of WPPSS Projects Nos. 4 and 5, the State of Washington is likely to be called upon for assistance. We believe that the prospects for State support for the Supply System are not favorable. Article VIII of the Washington State Constitution restricts the contracting of debt for bonds issued or included under the constitutional debt limitation by providing that the requirement for debt service in any fiscal year on obligations secured either directly or indirectly by any of the general state revenues, may not exceed 9% of the average of total state revenues for the three fiscal years immediately preceding the year in which debt is contracted. This limitation was subsequently reduced in 1979 by Statute to 7%. The WPPSS Projects Nos. 4 and 5 Revenue Bonds are authorized to be issued pursuant to the Revised Code of Washington, Chapter 43.52. Projected annual debt service on the \$8.9 billion Projects Nos. 4 and 5 Revenue Bonds remaining to be issued would exceed the 7% limitation if the State of Washington was called upon to add its general obligation pledge to future bond issues.

Looking beyond present legal restrictions, in our opinion it is highly uncertain whether the State would be willing to assist the Supply System at this juncture. A report issued by the Washington State Senate Committee on Energy and Utilities in early 1981 recommended that a study be undertaken to determine the feasibility, cost-effectiveness, need and financing of Projects Nos. 4 and 5. The Washington Energy Research Center of Washington State University has been engaged to manage such a study. It is expected that the study will be completed around January-March, 1982.

Political opposition has been evidenced this year by two petitions which have been circulated within the State, similar to unsuccessful petitions in recent years, which call for a State referendum on the Washington Public Power Supply System to be held at the State-wide general election on November 3, 1981. The Supply System was not explicitly identified in

either petition but the implications for the Supply System are clear. Initiative Petition No. 394 was filed by the deadline, July 3, 1981, with the requisite number of signatures (which have yet to be validated). The Petition, if placed on the ballot and enacted into law, would require that the Supply System be authorized to issue or sell bonds by a majority of the voters in the service areas of each jurisdiction that is a member of the Supply System. It is not clear whether the respective amounts of bonds required to complete Projects Nos. 1, 2, and 3 and Projects Nos. 4 and 5 would be authorized at one referendum or through individual referenda preceding each additional bond issuance. Furthermore, any subsequent upward revisions in construction cost estimates could require additional bond authorization. Although the Petition may not be successful, it is indicative of the widespread concern by the Washington State citizenry over the future financing activity of the Supply System.

CONCLUSIONS

With the recommended moratorium (slowdown) on WPPSS Projects Nos. 4 and 5, investors' consciousness of the prospects and implications of termination has been greatly sensitized. While termination of one or both nuclear projects at present stages of completion would not be unprecedented for the electric utility industry, it would be the first time a joint action agency cancelled a project which had been financed exclusively through the issuance of municipal bonds. The "take or pay" obligation to meet the total annual costs of the Projects, whether or not the Projects are operable or operating and notwithstanding the suspension, reduction or curtailment of the Projects' output, would surely be tested. It would not be politically popular to raise rates. Public utility district commissioners, as well as administrators in localities where there are municipally-owned electric systems, would be held accountable by their respective electorates.

Either construction slowdown or resumption of construction at previously indicated schedules will mean the need for additional capital and entail subsequent borrowings of WPPSS Projects Nos. 4 and 5 Bonds. Additional bonds could require enhanced security features, among other measures, due to heightened market awareness of the possibilities of termination prior to completion. Without the consent of any holder of Bonds or additional bonds, the Supply System may adopt supplemental resolutions to authorize the issuance of subsequent series of Bonds or additional bonds and to add to the covenants and restrictions of the Supply System under Article X, Section 10.1 of the Resolution. With regard specifically to the uncertainty of priority of claims of the Bond Fund from the flow of funds through the Revenue Fund in the event of termination, a possible approach would be by means of Section 10.1(9) which states that the System may adopt resolutions supplemental to the Resolution:

"...With the consent of the Bond Fund Trustee, to cure any ambiguity or defect or inconsistent provision in the Resolution, or to insert such provisions clarifying matters or questions arising under the Resolution as are necessary or desirable and either (i) not adverse to the rights and interests of the Bondholders or (ii) not contrary to or inconsistent with the Resolution as therefore in effect."

We believe a supplemental resolution explicitly creating a prior claim before contractors' liens by Bond Service on the Revenue Fund, in the event of termination of one or both Projects, is crucial.

Two other areas that should be addressed are the existing rate covenants and Reserve Account requirements. Each Participant has covenanted that it will establish, maintain and collect rates or charges for power and energy and other services furnished through its electric utility properties which shall be adequate to make the required payments to the Supply System under its Participant's Agreement. Amended covenants should require that rates or charges be in place to cover the operation and maintenance costs on each individual electric system, direct debt service requirements of the individual system, and revenues sufficient to cover pro rata future maximum annual debt service on the WPPSS Projects Nos. 4 and 5 Bonds by at least 1.25 times. This will insure that rates are in place at the time of each Bond issuance to produce required revenues to cover debt service within a year, under the implicit threat of project termination. Additionally, the Reserve Account requirement that reserves in the Bond Fund be maintained in an amount equivalent to one-half maximum annual interest requirements on the Bonds should be amended. We feel that under the present circumstances the Reserve Account should be required to be filled at the time of each Bond issuance with an amount equivalent to at least maximum annual debt service on the Bonds with higher multiples desirable from a security standpoint to create market acceptance.

One final word on electric power planning in the Pacific Northwest Region is in order at this time. It is highly uncertain how the Region will proceed to meet its projected loads over the next two decades. Conservation scenarios, while appealing, are still unproven in most locations throughout the country. However, if there is any region of the country in which conservation would be particularly appropriate, it would be the Pacific Northwest where electricity use is approximately twice as high as the national average. Additionally, load growth forecasting has become highly suspect in the post-1973 energy climate. These issues have elevated the political debate within the Region to a feverish pitch. There remains great uncertainty as to the optimal public policy approach which should be taken to solve the dilemmas confronting the Region.

Regardless of what course of action is pursued, the requirements establishing the underlying security behind additional WPPSS Projects Nos. 4 and 5 Bonds should be firm, unequivocal and demonstrative of the willingness of the Participants to meet investor concerns. We believe that a reaffirmation of the willingness of all 88 Participants to meet their obligations under the Bond Resolution is required at this time. The principal vehicle for conveying this expression of commitment could be through modifications to the Bond Resolution by means of supplemental resolutions consistent with Article X, Section 10.1(9) of the Bond Resolution. To the extent that such modifications are forthcoming, we believe that, based on both credit and market considerations, the Washington Public Power Supply System Projects Nos. 4 and 5 Revenue Bonds should trade appropriately as mid-range "Baa-1/BBB+" equivalents. In the absence of this commitment, we view the Supply System's ability to raise additional capital for Projects Nos. 4 and 5 to accomodate the slowdown as highly questionable, and the status of the outstanding WPPSS Projects Nos. 4 and 5 Revenue Bonds as in serious jeopardy. Our evaluation of

the WPPSS Projects Nos. 4 and 5 Bonds would not likely improve beyond "Baa-1/BBB+" equivalents until Project completion is imminent because of the prospects of early termination and uncertainty over ratepayers willingness to finance the full costs of a potentially abandoned investment. Contrary to earlier expectations, acquisition of WPPSS Projects Nos. 4 and 5 generating capacity by the Bonneville Power Administration will not serve to enhance the security of the Projects Nos. 4 and 5 Bonds, but will more likely imperil the strength of the security behind the WPPSS Projects Nos. 1, 2 and 3 Bonds through a dilution of BPA's financial operations. Finally, implications that BPA wholesale purchased power rates are likely to increase rapidly over the next eight years lead us to believe that the comparative advantage in electric rates the Region holds over the rest of the nation will diminish considerably. Therefore, we now believe that, based on both credit and market considerations, the WPPSS Projects Nos. 1, 2 and 3 Bonds should trade appropriately as mid-range "Aa/AA" trading equivalents trending to mid-range "A-1/A+" equivalents over the next three years.

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