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1989 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

BONNEVILLE POWER ADMINISTRATION
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1989 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

OVERVIEW

The 1989 Pacific Northwest Loads and Resources Study establishes the Bonneville Power Administration (BPA) planning basis for an adequate, cost-effective, and environmentally sound supply of electricity to BPA's customers. BPA's long-range planning incorporates generating resource availability with a range of forecasted electrical consumption. The future electrical demands--firm loads--are subtracted from the available resources to determine whether BPA and the region will be surplus or deficit. If resources are greater than loads in any particular year or month, there is a surplus of energy and/or capacity. Conversely, if firm loads exceed available resources, there is a deficit of energy and/or capacity, and additional conservation, contract purchases, or generating resources will be needed to meet load growth. This analysis updates the 1988 Pacific Northwest Loads and Resources Study, published in December 1988.

BPA's loads and resources analysis is presented in two documents: 1) This summary of Federal system and Pacific Northwest region loads and resources, and 2) a technical appendix detailing the loads and resources for each major Pacific Northwest generating utility. The 1989 Pacific Northwest Loads and Resources Study Technical Appendix is available from the BPA Public Involvement Office, toll-free 1-800-624-9495, or in Oregon 1-800-841-5867.

FORMAT OF THE PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

The Pacific Northwest Loads and Resources Study evaluates the loads and resources of the Federal system and Pacific Northwest region. This study presents the Federal system and regional analyses for five load scenarios: high, medium-high, medium, medium-low, and low. This analysis projects the yearly average energy consumption and resource availability for operating years (OY) 1990-91 through 2009-10. 1/ The study shows the Federal system's and the region's monthly estimated maximum electrical demand--capacity--and monthly maximum generating capability for OYs 1990-91, 1995-96, 2000-01 and 2009-10. The Federal system and regional monthly capacity surpluses/deficits are summarized for 20 operating years. A glossary of terms is included in Section X, page 83.

CHANGES IN THE 1989 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

This section describes the major changes in the structure or assumptions of the 1989 Pacific Northwest Loads and Resources Study versus the 1988 Pacific Northwest Loads and Resources Study. Other changes are reflected in the data for each utility contained in the Technical Appendix.

Planning Horizon

The 1989 Pacific Northwest Loads and Resources Study is a BPA planning document. To avoid conflict with the current Pacific Northwest Coordination Agreement operating plan, this analysis does not include OY 1989-90. This causes a 2-year shift in the starting point of this year's study. The loads and resources analysis for the current operating year, OY 1989-90, is reported in the Pacific Northwest Coordination Agreement Data and Pool Operating Program 1989-90, published by the Northwest Power Pool.

WNP-2 Reduced Energy Availability

This study reduced the annual capacity factor of Washington Public Power Supply System (WPPSS) nuclear plant 2 (WNP-2) from 70 percent to 65 percent. The expected annual output of WNP-2 was reduced by 56 average megawatts to 711 annual average megawatts. This reduction reflects a more realistic level of historical performance obtained from boiling water reactors.

1/ Operating year (OY) is the 12-month period July 1 to June 30. For example, OY 1990-91 is July 1, 1990 through June 30, 1991.

BACKGROUND INFORMATION

This study presents analyses of the Pacific Northwest's projected loads and available generating resources in two parts: 1) The loads and resources of the Federal system, for which BPA is the marketing agency; and 2) the larger Pacific Northwest regional profile, which includes loads and resources in addition to the Federal system. The following contains general background information and an explanation of the load forecasting techniques used in preparing this study.

Pacific Northwest Planning Area

The Pacific Northwest regional planning area is defined by the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act). It includes Oregon, Washington, Idaho, Montana west of the Continental Divide, and portions of Nevada, Utah, and Wyoming that lie within the Columbia River drainage basin. The Pacific Northwest region also includes any rural electric cooperative customers not in the geographic area described above that were served by BPA on the effective date of the Northwest Power Act.

Pacific Northwest Firm Resources

The Pacific Northwest regional resources are comprised of generating resources built by Federal entities, public agencies, investor-owned utilities (IOUs), and independent power producers. This study contains BPA's current assessment of existing regional hydro projects and thermal resources.

BPA long-range planning is based on the firm energy capability of the hydro system. The firm hydro energy capability is the amount of power produced by these regional hydro resources in the worst low-water period--called the critical period--recorded for the Columbia River Basin. The energy produced by the region's hydro projects during the critical period is calculated using the generation average from the 39-month period of September 1928 through February 1932, excluding the months of May. May is eliminated from the critical period average to avoid overstating the Federal firm hydro energy generation resulting from implementing water budget flows to assist fish migration. The regional hydro system generates approximately 12,300 average megawatts of firm energy under critical water conditions.

The monthly capacity of hydro projects is defined as the full-gate-flow maximum available generation at each project, based on the average monthly elevation, resulting from 1929-30 water levels. BPA assumes 1929-30 water levels to estimate the regional hydro capability because that year approximates a peaking capability that is consistent with the reliability criteria set forth in the Pacific Northwest Coordination Agreement (Coordination Agreement). (For additional information on water-year selection, see the 1989 Pacific Northwest Loads and Resources Technical Appendix).

The hydro capability at each project is limited to 10 times the project's average monthly energy production because, at low or minimum streamflows, a plant may not have enough storage to achieve maximum capacity. The region's hydro projects have constraints and storage limitations within any water level. BPA's planning projections reduce the estimated instantaneous hydro capacity to reflect a Federal sustained peaking level of 50 hours per week. This provides firm hydro capacity estimates that can be maintained each day and continued for weeks at a time. The hydro generation is also adjusted to allow for scheduled hydro maintenance, spinning reserves, and forced outage reserves.

Pacific Northwest hydro projects have many uses besides power generation. The projects may provide flood control, supply irrigation for farming, assist in river navigation and recreation, and contribute to municipal water supplies. These nonpower uses place operating constraints on the reservoirs and limit hydroelectric power production. Additional constraints are in place to protect and enhance anadromous fish populations. BPA's resource planning takes into account all presently known hydro constraints in assessing regional hydro system capability. There may be future constraints which will change hydro operation and hydro capability.

The expected output of regional thermal resources is based on the energy and capacity capabilities submitted to BPA by the project owners. The output of all thermal plants is reduced to allow for scheduled maintenance, spinning reserves, and forced outage reserves. This study does not include WNP-3 and WNP-1 as planned resources, though the plants have been retained in a state of preservation.

Federal System Firm Loads and Resources

BPA is a power marketing agency, responsible for acquiring and delivering sufficient power to meet its contractual obligations to serve the electrical needs of its customers. BPA does not own generating resources. BPA's customer loads and contractual obligations, combined with the resources from which BPA acquires the power it sells, is referred to as the Federal system.

The Federal system loads are made up of the net requirements of the region's public agencies, BPA sales to DSIs, BPA sales to other Federal agencies, and other BPA contractual obligations to deliver power. The public agencies' net requirements and the DSI loads comprised over 80 percent the Federal system loads in OY 1988-89.

The hydro resources of the Federal system are owned and operated by the U.S. Bureau of Reclamation (USBR), the U.S. Army Corps of Engineers (COE), plus hydroelectric projects owned by the city of Idaho Falls and WPPSS. BPA also markets the thermal generation from WNP-2, operated by WPPSS, and 30 percent of the output of Portland General Electric's Trojan nuclear power plant.

The Federal system analysis begins on page 8.

Regional Firm Loads and Resources

The Pacific Northwest regional analysis contains the Federal system loads and resources, plus other non-Federal regional loads, contractual obligations, and generating resources. The region has three load groups: Federal system, public agencies, and IOUs. The regional hydro resources are owned and operated by various Federal entities, public agencies, and IOUs. The regional thermal generating resources are owned and operated by regional entities; they are fueled by biomass, coal, natural gas, oil, and nuclear power.

The regional analysis begins on page 28.

Pacific Northwest Nonfirm Resources

BPA resource planning uses critical water flows to compute the hydro firm energy. The regional hydro system has historically experienced precipitation levels which produce greater than critical period flows. This excess water is used to produces nonfirm energy.

BPA planning does not include nonfirm energy in the loads and resources balance. The average annual nonfirm energy increases regional resources by about 3,800 average megawatts when averaged over 50 years of historical water flows and is larger when based on 102 years of historical water flows.

Load Forecasting Methodology

The load forecasts used in this study were prepared jointly by BPA and the Northwest Power Planning Council (Council). The load forecasting process takes into account the impacts of electrical power and fossil fuel prices, changes in technologies and conservation actions, and effects of employment, population, and household growth. A range of forecasts of employment, population, households, and fossil fuel prices is first developed based on national economic forecasts, relationships between the Pacific Northwest and national economies, and judgement. These major determinants are fed through a system of electric power demand and pricing models to produce electricity forecasts. This modeling system accounts for the interactions between electrical power demand and electrical power prices, and incorporates consideration of the new resource costs that determine future electric power prices. The result is a range of public agencies and IOUs load forecasts for: high, medium-high, medium, medium-low, and low cases. In a similar manner, a range of DSI load projections are produced, with the major determinants being aluminum prices, electricity costs, and manufacturing costs.

The medium load forecast represents the center of the distribution of the load projections. The most likely range of loads is between the medium-high and medium-low forecasts. There is a 50 percent probability that loads will be in this range. The probability of loads being between the high and medium-high or between the medium-low and low cases is 20 percent each. The high and low load forecasts represent unlikely extremes of possible future loads, with probabilities of being higher than the high case or lower than the low case of 5 percent each.

These load forecasts assume utilities and state or local governments do not implement new or additional demand-side load-reduction initiatives such as conservation programs, adoption of model conservation standards (MCS), and cost-effective cogeneration beyond currently budgeted programs. These long-term price-effects forecasts include:

- Price-induced conservation;
- Future impacts of all current building codes and appliance standards. These impacts include Federal appliance standards that will become effective in 1990;
- Conservation savings that have already been achieved, such as weatherization of existing dwellings, construction of Super Good Cents houses, and savings from conservation programs budgeted through fiscal year 1991;
- Anticipated savings from aluminum DSIs contracted conservation and modernization programs; and
- The levels of electricity prices for consumers if the region pursues the least-cost mix of conservation, demand-side load-reductions, and new generating resources.

The medium load forecast used in this study was produced by merging BPA's mid-term public agencies' econometric load forecast with the 1989 Joint Forecast. The IOUs load forecast was generated from the long-term forecasting models and not merged. BPA combined the public agencies' mid-term and joint long-term load projections in order to take advantage of the strengths of both near-term and long-term forecasting methods. BPA's mid-term forecast of public agency loads incorporates seasonal and cyclical variations in employment and near-term economic projections without breakdown by consumer sector. The mid-term forecast of the public agencies' load was merged with the long-term forecast, beginning with July 1994. Only the medium forecast is merged in this manner. The high, medium-high, medium-low, and low forecasts were produced solely from the long-term forecasting models.

For more information about the preparation of the joint forecast and load forecasting methodologies, refer to the joint BPA/Council publication entitled Forecast of Electricity Use in the Pacific Northwest, published in August 1989.

MAJOR SOURCES OF UNCERTAINTY

Loads and Resources Uncertainty

Future Federal system and regional firm surpluses/deficits are subject to a number of uncertainties over the study horizon. These uncertainties include:

- Changes in forecasted load growth;
- Changes in conservation program levels, including MCS implementation; and
- Failure of generating resources to operate at anticipated times and levels.

These uncertainties affect both the size of projected surpluses or deficits and the times at which they occur.

Contractual Uncertainty

This study assumes that the following contracts will extend throughout the study horizon. These contracts that will expire may affect the future of the Federal system and regional loads and resources balances:

- The Pacific Northwest Coordination Agreement will expire July 1, 2003. BPA expects this agreement, which coordinates operation of the Pacific Northwest power system and that of Canada, will be replaced with a new agreement. The provisions of a new agreement are unknown and may represent changes from the existing agreement. Any changes will affect the later years of this analysis.

- BPA's power sales contracts with its DSI, public agency, and IOU customers expire June 30, 2001. Renegotiation of these contracts may result in new or different Federal obligations during the last 9 years of the study period.

- BPA's obligation to serve future regional load growth is uncertain because there is no precise way to predict the amount of load growth regional utilities will place on BPA in the coming years.

- British Columbia Hydro and BPA are currently studying ways of increasing U.S.-Canadian coordination of the Columbia River system. This involves coordinating 5 million acre-feet of non-treaty storage. Studies on the increased coordination indicate a possible increase of 300 average megawatts in Firm Energy Load Carrying Capability (FELCC) for the combined Canadian and Pacific Northwest systems.

BPA will consider these loads, resources, and some of the contractual uncertainties in developing its 1990 Resource Program. In developing the recommendations for resource programs for fiscal years (FY) 1992 and 1993, BPA will examine a variety of future regional loads and resources conditions.

FEDERAL SYSTEM ANALYSIS

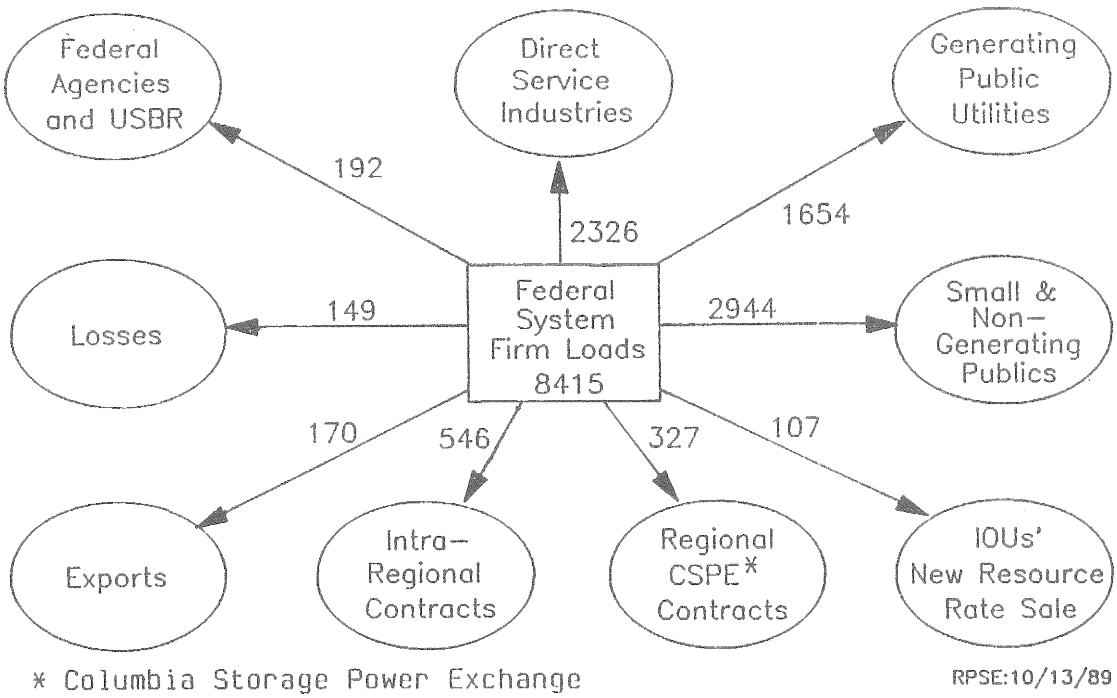
The Federal system loads and resources analysis is keyed on the following assumptions:

- The Pacific Northwest Coordination Agreement, which expires July 1, 2003, is replaced with a like agreement;
- BPA's power sales contracts with Pacific Northwest Federal and public agencies, IOUs, and DSI contracts, which expire June 30, 2001, are renewed with like agreements;
- All existing Federal contractual arrangements not included under Pacific Northwest power sales contracts expire and are not renewed;
- The IOUs do not make long-term BPA purchases under their power sales contracts; and
- No new Federal resources are acquired.

Federal Firm Energy Loads

The Federal system firm loads include BPA's firm DSI load, sales to other Federal agencies, current obligations to regional public agencies and IOUs under their power sales contracts, and other inter- and intra-regional contractual obligations. Figure 1 shows the components of the Federal system firm load for OY 1990-91.

Figure 1
FEDERAL SYSTEM FIRM LOAD
OY 1990–91 Medium Load Forecast
Energy in Average Megawatts

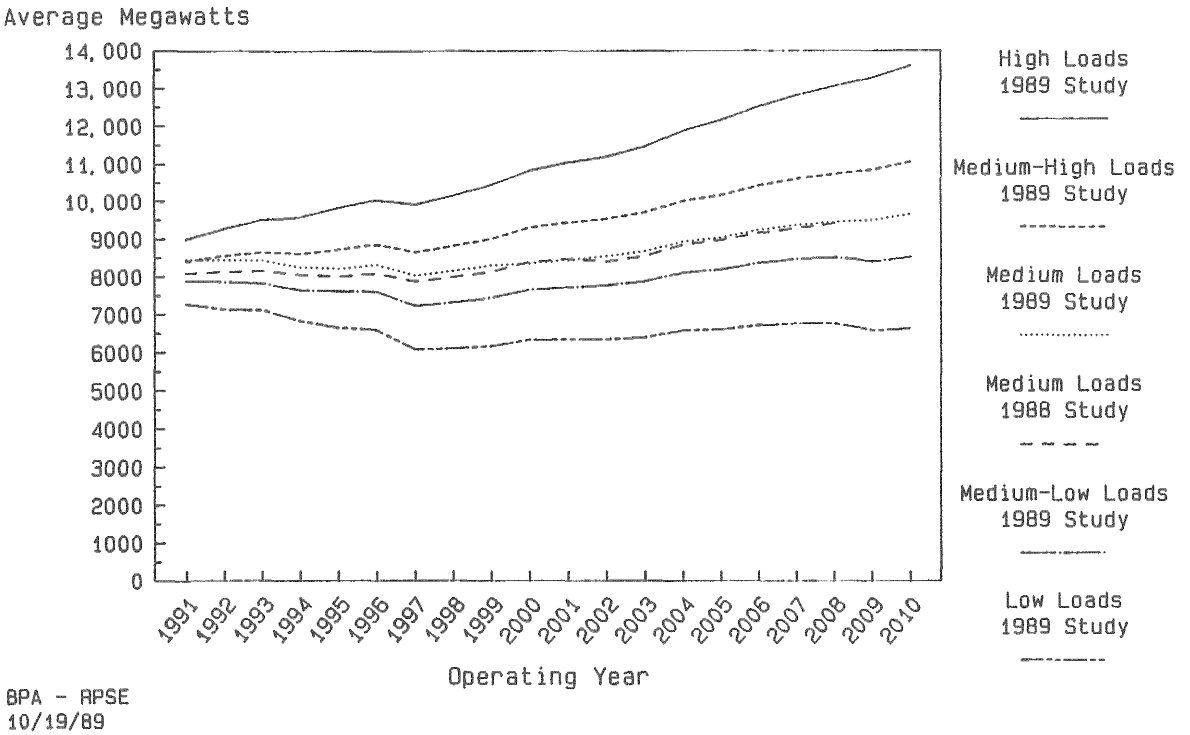


The Federal system firm energy loads under the high, medium-high, medium, medium-low, and low load forecasts for OYs 1990-91 through 2009-10 are shown in Figure 2. The loads are based on the long-term 1989 Joint Forecast prepared by BPA and the Council. BPA assumes that it will serve only those loads that it is requested to serve. This study assumes that BPA serves all of the public agencies' net firm load requirements not served by their own resources. Additionally, the Federal loads assume no long-term IOU power sales contract purchases from BPA. This is due to the uncertainty of the IOUs intentions on whether to make long-term BPA purchases under their power sales contracts. BPA believes this decision is reasonable because: 1) The IOUs have not informed BPA to the contrary; and 2) the 7-year notice provisions in their power sales contracts provide BPA adequate time to secure resources to meet IOU obligations. Only one IOU, Puget Sound Power and Light, is currently purchasing energy from BPA under its power sales contract, which expires June 30, 1993. The Federal firm energy loads under the medium forecast are presented in Exhibit 1, line 15, pages 38 through 41. The Federal firm energy loads under the high, medium-high, medium-low, and low forecasts are shown on line 15 of Exhibits 2 through 5, pages 42 through 57.

Figure 2

FEDERAL FIRM ENERGY LOADS

1989 Joint Forecast



Federal Firm Peak Loads

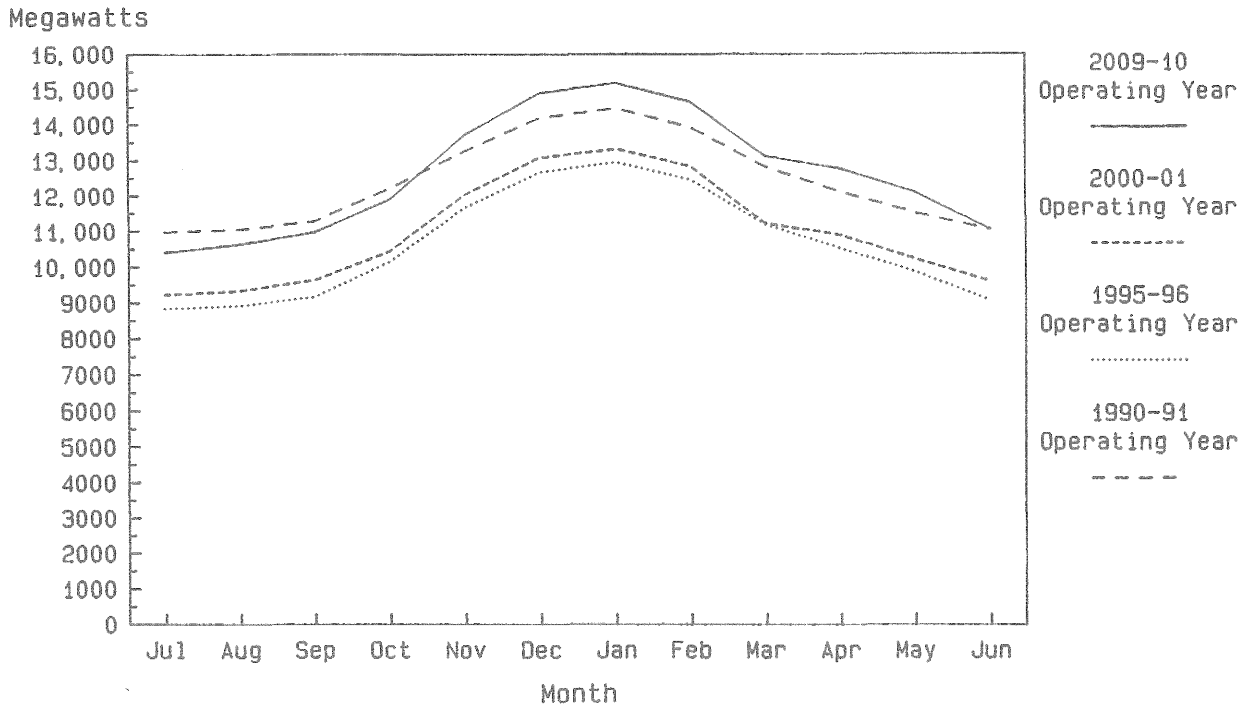
Figure 3, page 10, shows the Federal firm peak loads under the medium load forecast for OYs 1990-91, 1995-96, 2000-01, and 2009-10. The load projections are based on the 1989 Joint Forecast. The peak loads project the expected 1-hour maximum demand for each month. There is a 50 percent probability that

the actual load will be either higher or lower at some time during that month. The loads include BPA's inter- and intra-regional contractual on-peak commitments. The peak load projections are reduced by a diversity component to address the fact that all peak electrical demands do not occur simultaneously throughout the region. This study assumes that public agencies will purchase capacity from BPA to meet peak loads not served by their own resources under their power sales contracts.

Figure 3

FEDERAL FIRM PEAK LOADS

Medium BPA Loads



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10/19/89

BPA Budgeted Resource Acquisitions

BPA has budgeted conservation savings and resource additions for FYs 1990 and 1991. The forecasts used in this study include these currently budgeted conservation savings. BPA currently is developing the 1990 Resource Program that will plan resource expenditures for FYs 1992 and 1993.

Federal System Firm Resources

The Federal system hydro resources from which BPA markets power are shown in Table 1, page 11. In addition, BPA markets the capability of non-Federally-owned resources which BPA has purchased. BPA also has capacity/energy exchange contracts that provide energy as payment for the capacity BPA delivers. The non-Federally-owned resources and BPA's existing exchange contracts are shown in Table 2, page 12. In combination, these resources represent BPA's available firm resources.

TABLE 1

Federal System Hydroelectric Projects
September 30, 1988

Project	Initial Year of Service	Number of Units	Generating Capacity (peak MW)	Firm Energy (aMW)
U.S. Bureau of Reclamation Hydroelectric Projects				
Grand Coulee	1941	30	6,984	1,859
Hungry Horse	1952	4	328	103
Palisades	1957	4	131	61
Anderson Ranch	1950	2	40	11
Minidoka	1909	7	16	9
Roza	1958	1	13	4
Chandler	1956	2	13	7
Black Canyon	1925	2	10	7
Boise River Diversion	1912	3	2	1
Total Bureau of Reclamation Projects		55	7,537	2,062
U.S. Army Corps of Engineers Hydroelectric Projects				
Chief Joseph	1955	27	2,687	1,129
John Day	1968	16	2,484	885
The Dalles	1957	22	2,076	704
Bonneville	1938	18	1,147	554
McNary	1953	14	1,127	621
Lower Granite	1975	6	930	190
Lower Monumental	1969	6	930	184
Little Goose	1970	6	930	190
Ice Harbor	1961	6	693	193
Libby	1975	5	604	179
Dworshak	1974	3	460	151
Lookout Point	1954	3	138	27
Detroit	1953	2	115	36
Green Peter	1967	2	92	23
Lost Creek	1975	2	56	23
Albeni Falls	1955	3	49	29
Hills Creek	1962	2	35	15
Cougar	1964	2	29	14
Foster	1968	2	23	12
Big Cliff	1954	1	21	10
Dexter	1955	1	17	8
Total Corps of Engineers Projects		149	14,643	5,177
Total Bureau of Reclamation and Corps of Engineers Projects		204	22,180	7,239

TABLE 2

Non-Federally-Owned BPA Resources
and Contracts

Project	Type	Operator	Date in Service	Capacity (peak MW)	Firm Energy (aMW)
Non-Federally-Owned BPA Resources					
Trojan (30%)	Nuclear	PGE	1976	331	235
WNP-2	Nuclear	WPPSS	1984	1,095	711
Packwood Lake	Hydro	WPPSS	1964	32	7
Idaho Falls	Hydro	City of Idaho Falls	1982	27	18
Total Non-Federally-Owned BPA Resources				1,485	971
Firm Contracts					
Montana Power Capacity Energy Exchange			--	0	29
WNP-3 Exchange Settlement Agreement			--	0	114
Total BPA Firm Contracted Resources				0	143

Table 3 summarizes the Federal system firm energy resources and contracts available to meet Federal firm loads for OY 1990-91. Hydroelectric power comprises 87 percent of the Federal system firm energy resources. Of the remaining firm energy resources, 11 percent comes from two nuclear plants and 2 percent from BPA's exchange contracts.

TABLE 3

Federal System Firm Resources
for OY 1990-91 [1/]

Project Type	Firm Energy (aMW)	% of Total Firm Energy	Instantaneous Peak Capacity (MW)	% of Total Peak Capacity
Hydro resources	7,264	87	22,239	94
Nuclear plants	946	11	1,426	6
Firm Contracts	143	2	0	0
Total Federal Resources	8,353	100	23,665	100

1/ Operating year (OY) is the 12-month period July 1 to June 30. For example, OY 1991 is July 1, 1990 through June 30, 1991.

Federal Nonfirm Resources

BPA planning does not include nonfirm energy in its Federal system loads and resources balance, however, it is an important component of BPA's marketing programs and revenue forecasts. Including the average annual nonfirm energy would increase the Federal system resources by about 2,400 average megawatts when averaged over 50 years of historical water flows, and is larger when based onhistorical water flows of the past 102 years.

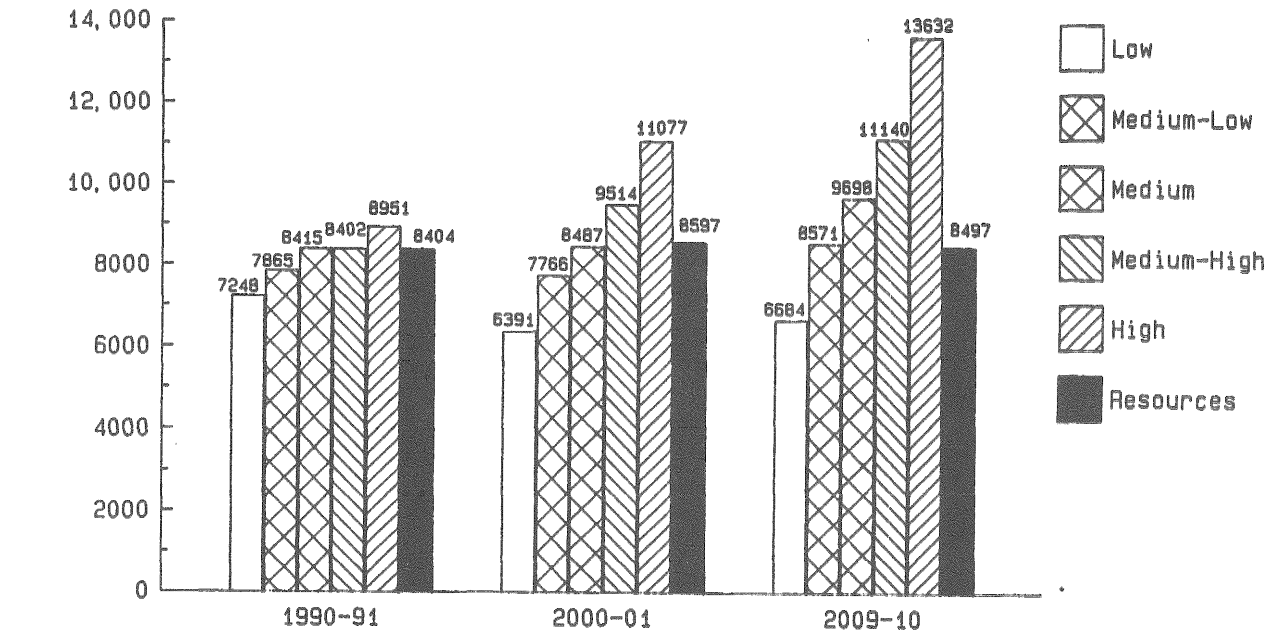
Federal Firm Energy Surpluses/Deficits

Figure 4 illustrates the variability of the Federal firm energy loads and available Federal resources under the high, medium-high, medium, medium-low, and low load forecasts. The Federal resource changes over time due to yearly scheduled maintenance and the expiration of inter- and intra-regional contracts.

Figure 4

FEDERAL FIRM ENERGY LOADS AND RESOURCES

Assuming No New Resource Acquisitions
Includes Inter- and Intra-Regional Contracts



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10/19/89

The Federal firm energy surpluses/deficits under the various load forecasts for OYs 1990-91 through 2009-10 are presented in Table 4, page 15, and Figure 5, page 16. The Federal system is in approximate loads and resources balance through OY 2000-01 under the medium load forecast. The Federal system would become energy deficit in OY 1991-92 assuming the high load scenario, in OY 1991-92 under medium-high loads, and in OY 2007-08 in the medium-low load case. The Federal system would remain firm energy surplus throughout the planning horizon in the low load forecast.

BPA considers that, under medium loads, the Federal system is in approximate loads and resources balance through the turn of the century. BPA believes the amount of firm surplus energy is small in comparison to the size of the Federal firm loads and considering the uncertainty in future load growth. For example, in OY 1996-97, the Federal system firm load is projected at 8,400 average megawatts. In that same operating year, the projected Federal firm surplus energy of 388 average megawatts--the largest surplus in the study period--is less than 5 percent of the Federal firm load. The loads and resources balance is maintained for this extended period due to the following:

- The firm DSI load projections decrease approximately 400 average megawatts during OYs 1990-91 through 1996-97;
- The WNP-1 exchange obligation contracts expire June 30, 1996, returning 340 average megawatts of firm energy to the Federal system;
- The Southwest firm energy surplus sales are assumed to terminate and convert to capacity/energy exchanges beginning in OY 1999-2000, making 207 average megawatts of additional power available to the Federal system; and
- The surplus firm energy sale of 75 average megawatts to Puget Sound Power and Light is assumed to terminate and convert to a seasonal power exchange contract beginning in OY 1999-2000.

This study shows that all BPA surplus firm energy sales terminate and convert to exchange contracts in the same year. In actual practice, BPA would terminate energy deliveries and convert these contracts to exchanges on an individual basis, depending on regional preference and contract provisions. The study assumes that when BPA terminates energy deliveries of the Southwest surplus sales and converts them to exchanges, exchange energy will be available to BPA as a firm resource. Associated supplemental energy from these exchange contracts and BPA's option to purchase energy from Southern California Edison are both treated as resource options, which BPA may elect to purchase. These contracts are not included as firm resources in this study.

The components of the Federal energy loads and resources balance are presented in Exhibits 1 through 5, pages 38 through 57. The Federal system firm energy surpluses/deficits, based on medium loads, is presented in Exhibit 1, line 41, pages 38 through 41. The 20-year Federal system firm energy surpluses/deficits under the high, medium-high, medium-low, and low load scenarios are shown on line 41 of Exhibits 2 through 5, pages 42 through 57.

TABLE 4

Federal System Firm Energy Surpluses/Deficits

Assuming Existing Contracts And
No New Resource Acquisitions

Energy In Average Megawatts

OPERATING YEAR 1/	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
High Loads	-494	-788	-1027	-1104	-1353	-1520	-1382	-1640	-1912	-2267
Medium-High Loads 2/	55	-120	-213	-172	-296	-375	-167	-339	-527	-793
Medium Loads	-11	-7	-1	172	210	99	388	266	125	195
Medium-Low Loads	540	568	602	784	804	807	1187	1094	980	791
Low Loads	1157	1295	1310	1592	1766	1821	2335	2305	2250	2114

OPERATING YEAR	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
High Loads	-2480	-2668	-2928	-3320	-3602	-3965	-4262	-4505	-4784	-5134
Medium-High Loads	-917	-1052	-1213	-1497	-1659	-1907	-2093	-2221	-2395	-2642
Medium Loads	110	-27	-143	-376	-492	-691	-825	-900	-1016	-1200
Medium-Low Loads	737	700	607	397	313	141	31	184	90	-73
Low Loads	2113	2126	2085	1929	1897	1785	1732	1745	1873	1813

1/ Operating year (OY) is the 12-month period July 1 to June 30. For example, OY 1991 is July 1, 1990 through June 30, 1991.

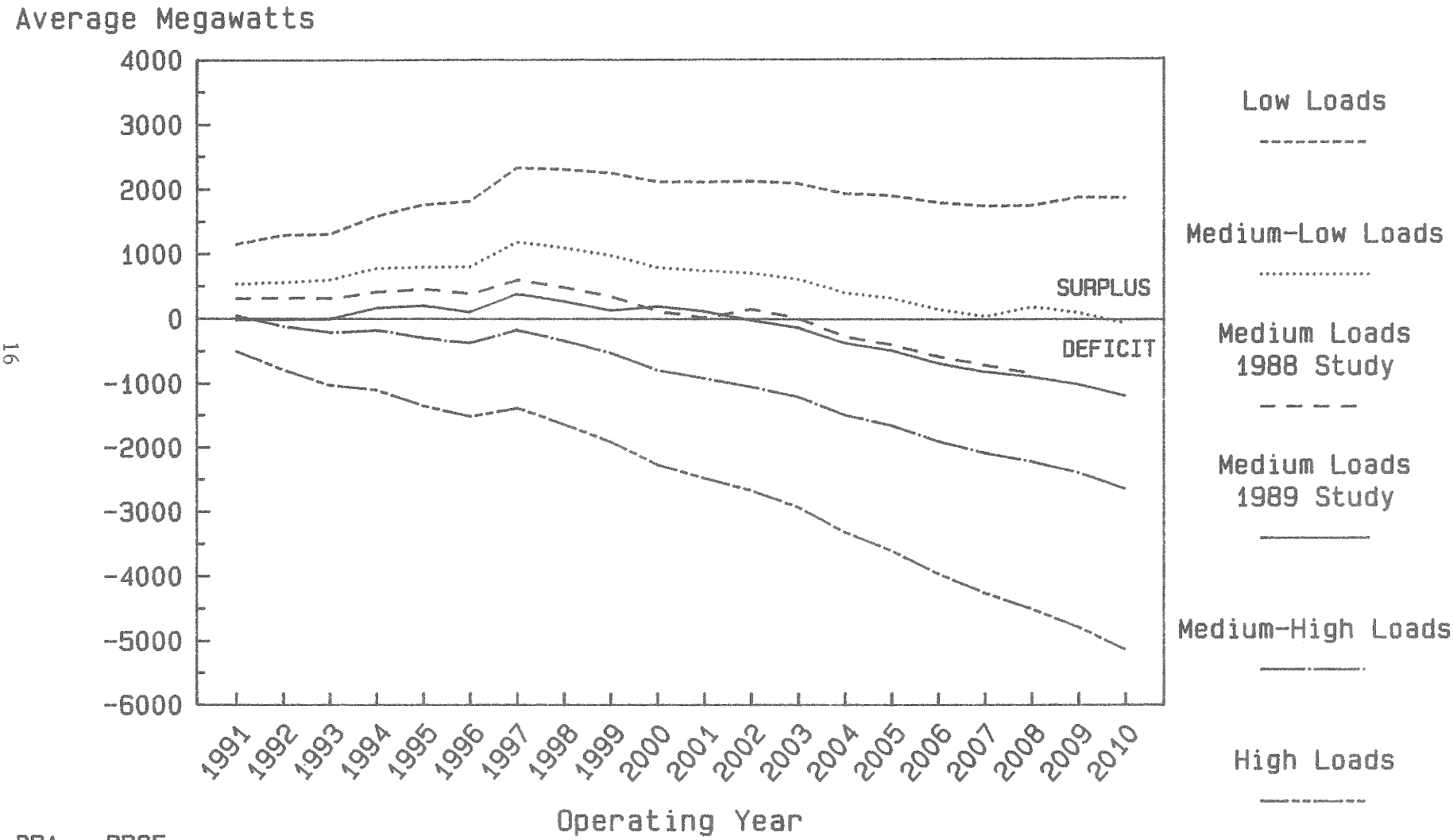
2/ In OY 1991, the Federal surplus for medium-high loads is greater than the medium case due to assumed termination of all Federal firm surplus sales to the Southwest in that year.

Figure 5

FEDERAL FIRM ENERGY SURPLUSES/DEFICITS

20-Year Projection

Assuming No New Resource Acquisitions



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Contractually Available Resources

BPA has long-term surplus firm energy sale and exchange contracts with four Southwest utilities and one Northwest utility: Southern California Edison; the cities of Burbank, Glendale, and Pasadena; and Puget Sound Power and Light. BPA also has two short-term surplus sales, a summer sale with Portland General Exchange that expires September 30, 1991; and fall sales with both Portland General Electric and Portland General Exchange, which expire December 31, 1991. These contracts contain provisions for complete or partial termination of energy deliveries if that energy is needed to serve BPA's firm requirements.

The sale and exchange agreements with Southwest utilities contain provisions which allow BPA to terminate energy deliveries under the following conditions:

- On an annual basis, following a determination by BPA under annual Pacific Northwest Coordination Agreement planning; or
- On 60-days' notice pursuant to Public Law 88-552.

These provisions relieve BPA's of its energy delivery obligations and make those resources available to BPA for meeting firm energy requirements, based on the following:

- Energy made available from the termination of energy deliveries under Southwest surplus firm energy sales;
- Exchange energy available upon conversion of the Southwest surplus firm energy sales to capacity/energy exchanges; and
- Supplemental energy available to BPA for purchase upon conversion of the Southwest surplus firm energy sales to capacity/energy exchanges.

In the event that BPA terminates energy deliveries of these Southwest surplus sales and convert them to exchanges, provisions within the contracts allow for reversion to surplus energy sales, depending on the availability of Federal surplus firm energy. This study assumes that, under the medium load forecast, these sales terminate and convert to capacity/energy exchanges beginning in OY 1999-2000. After BPA terminates these sales and converts them to exchanges, exchange energy becomes available to BPA as a firm resource. BPA may also elect to purchase supplemental energy under these exchange contracts. Supplemental energy is considered a resource option and not included as a firm resource in this study.

If energy from these surplus sales is needed for Pacific Northwest requirements earlier than OY 1999-2000, BPA can terminate surplus energy deliveries and convert these contracts. Upon early termination and conversion of these contracts, deliveries which would otherwise have been made of surplus energy, exchange energy, and supplemental energy will become available to BPA in the year of conversion. The additional resources resulting from early conversion of these contracts is shown in Table 5, lines 1, 2, and 3, page 19.

BPA also has contractual rights to purchase optional energy from Southern California Edison. This contract allows BPA to purchase up to 71 average megawatts of optional energy on a rolling 5-year basis starting in OY 1990-91. BPA considers this contract as a resource option, which BPA may elect to purchase; it is not considered a firm resource in this study. BPA included SCE option energy as a firm resource in the 1989-90 Pacific Northwest Coordination Agreement operating plan. The total optional energy available to BPA under this contract is shown in Table 5, line 4, on page 19.

In addition, BPA has a sale and exchange agreement with Puget Sound Power and Light. This contract contains provisions that allow BPA to terminate the surplus energy sale on the earlier of:

- 5-years' written notice from BPA; or
- on July 1, 2001.

In this event, the surplus energy sale converts to a seasonal power-for-power exchange. BPA's right to issue 5-years' written notice is in accordance with Section 5(a) of the Bonneville Project Act; (Public Law 75-329, as amended), and Section 5(f) of the Northwest Power Act (Public Law 96-501). This study assumes that this surplus sale will terminate and convert to a seasonal power exchange beginning OY 1999-2000 under the medium load forecast. If the energy is needed in the region earlier, the contract is assumed to convert to a seasonal power exchange in that year and for the remainder of the contract. The amount of resources available to BPA from the conversion of this contract to a seasonal power exchange is shown in Table 5, line 5, page 19.

TABLE 5

Federal System Contractually Available Resources

Medium Load Forecast

Energy In Average Megawatts

OPERATING YEAR 1/	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1. Termination of Southwest Surplus Energy Sales	163	163	162	162	162	162	162	162	162	0
2. Exchange Energy from Southwest	53	52	52	51	51	50	49	47	46	0
3. Supplemental Energy from Southwest	34	34	35	35	36	37	38	39	40	42
4. Optional Energy from Southwest	71	71	71	71	71	0	0	0	0	0
5. Termination of Northwest Surplus Energy Sale	0	0	0	0	0	75	75	75	75	0

OPERATING YEAR	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Termination of Southwest Surplus Energy Sales	0	0	0	0	0	0	0	0	0	0
2. Exchange Energy from Southwest	0	0	0	0	0	0	0	0	0	0
3. Supplemental Energy from Southwest	43	43	45	46	47	48	48	48	45	0
4. Option Energy from Southwest	0	0	0	0	0	0	0	0	0	0
5. Termination of Northwest Surplus Energy Sale	0	0	0	0	0	0	0	0	0	0

1/ Operating year (OY) is the 12-month period July 1 to June 30. For example, OY 1991 is July 1, 1990 through June 30, 1991.

Federal Firm Capacity Surpluses/Deficits

Figures 6 through 9, pages 21 and 22, show the Federal firm capacity surpluses/deficits under the high, medium-high, medium, medium-low and low load forecasts for OYs 1990-91, 1995-96, 2000-01, and 2009-10. The monthly capacity surpluses assume that the Federal system has the ability to meet a peak load of 50 hours per week with surplus capacity that is available after serving all Federal capacity needs with 1929-30 water levels.

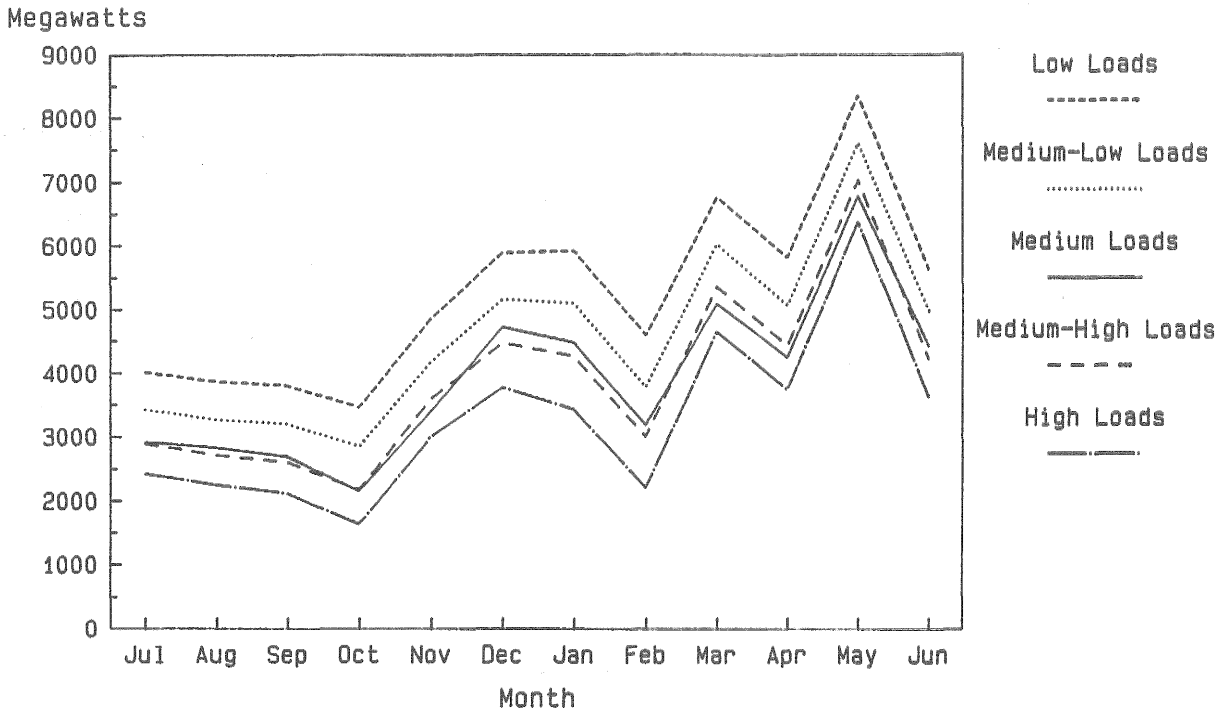
These projections estimate the capacity that is surplus to the Federal system requirements. The figures assume that contractual or other provisions would be made to relieve off-peak problems when energy is returned under future capacity sales. Federal hydro constraints and low Federal nighttime loads limit the system's ability to store return energy. Depending on energy return provisions, these contracts could create forced energy sales and may reduce the Federal system's ability to meet firm loads. These potential problems are presented in the Federal Marketable Capacity section on page 24.

The 20-year summary of Federal capacity surpluses/deficits, based on medium loads, is shown in Exhibit 6, page 60. The Federal system 20-year summary of capacity surpluses/deficits under high, medium-high, medium-low, and low loads is presented in Exhibits 7 through 10, pages 61 through 64.

Figure 6

1990–91 FEDERAL FIRM CAPACITY SURPLUSES/DEFICITS

Assuming No New Resource Acquisitions



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NOTE: The Federal surplus for medium-high loads is greater than the medium case in some months due to assumed termination of all Federal firm surplus sales to the Southwest in that year.

Figure 7

1995–96 FEDERAL FIRM CAPACITY SURPLUSES/DEFICITS

Assuming No New Resource Acquisitions

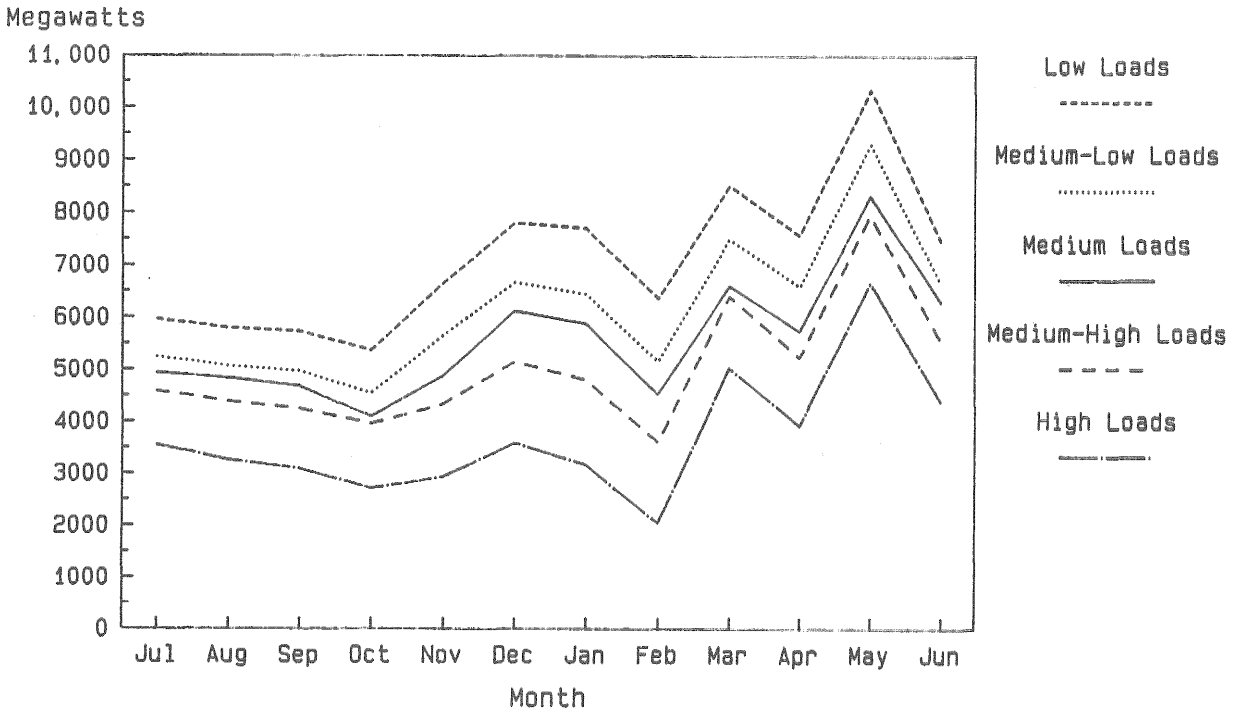

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Figure 8

2000-01 FEDERAL FIRM CAPACITY SURPLUSES/DEFICITS

Assuming No New Resource Acquisitions

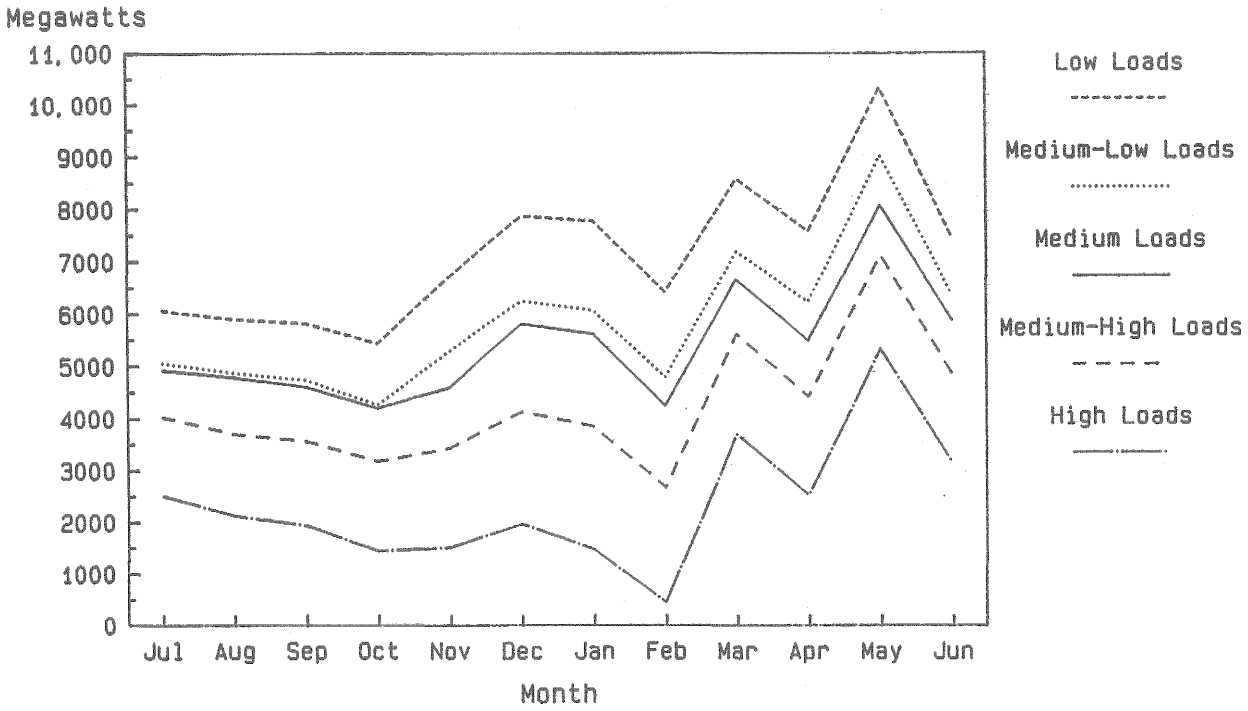

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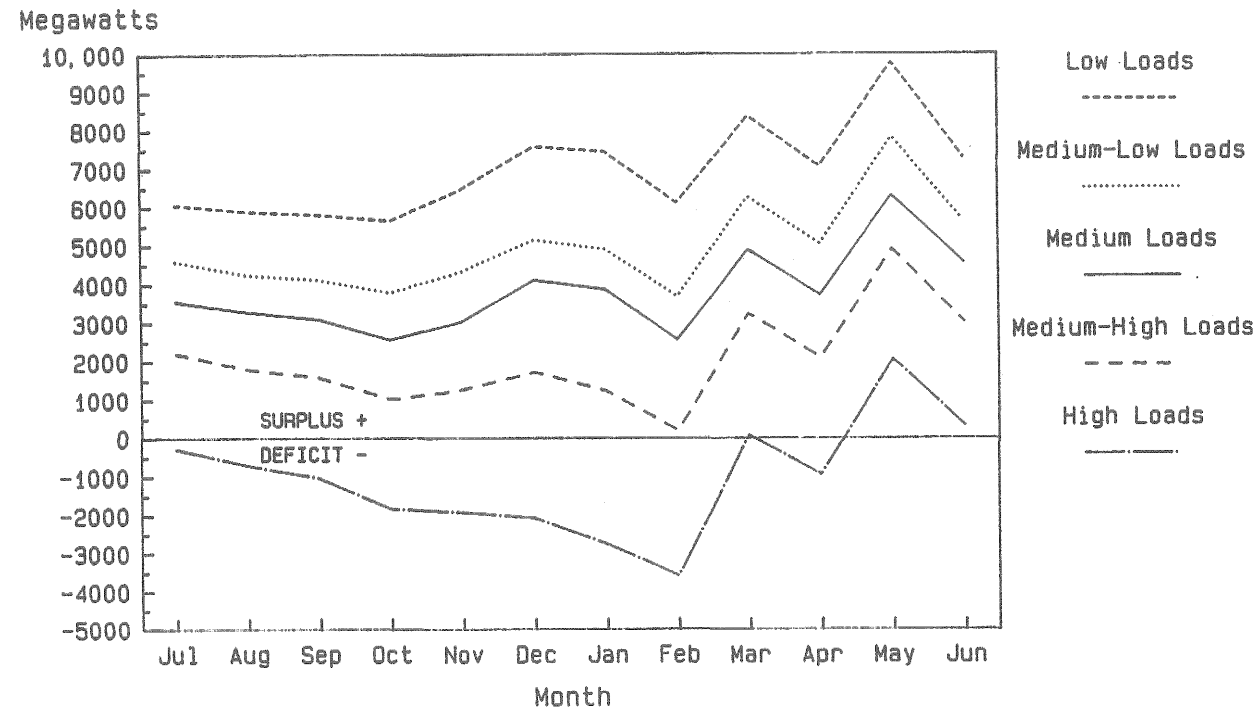
Figure 9

2009-10 FEDERAL FIRM CAPACITY SURPLUSES/DEFICITS

Assuming No New Resource Acquisitions



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Federal Marketable Energy

The projected amount of available Federal surplus firm energy for the various load scenarios are shown in Table 4, page 15. The amount of surplus firm energy which may be marketed is dependent on the surplus firm energy available under annual Pacific Northwest Coordination Agreement planning.

The analysis is based on these major assumptions:

- The region experiences medium load growth;
- The Pacific Northwest Coordination Agreement, which expires July 1, 2003, is replaced with a like agreement;
- BPA's power sales contracts with Pacific Northwest Federal and public agencies, IOUs, and DSI contracts, which expire June 30, 2001, are renewed with like agreements;
- All existing Federal contractual arrangements not included under Pacific Northwest power sales contracts expire and are not renewed;
- BPA's surplus firm energy sales with Southern California Edison, Glendale, Pasadena, and Burbank terminate and convert to capacity/energy exchange contracts beginning in OY 1999-2000;
- BPA's surplus firm energy sale with Puget Sound Power and Light terminates and converts to a seasonal power exchange beginning in OY 1999-2000;
- The IOUs do not make long-term BPA purchases under their power sales contracts; and
- No new Federal resources are acquired.

This study assumes that all BPA surplus firm energy sales and exchange agreements terminate and convert to exchanges in OYs 1999-2000. In actual operation, the sales would convert to exchanges on an individual basis, depending on regional preference and contract provisions.

A sale of Federal surplus firm energy requires an appropriate amount of surplus firm capacity to support the sale. Therefore, surplus firm energy sales reduce both Federal surplus firm energy and capacity. The amount of the surplus firm capacity loss depends on the shape, load factor, and seasonality of the energy sale.

Federal Marketable Capacity

The Federal system has substantial surplus firm capacity lasting through the study horizon. Exhibit 6, page 60, shows that the long-term Federal surplus firm capacity, under the medium load forecast, exceeds 2,600 peak megawatts in all except four months of the study. BPA, however, continues to use the 2,600 peak megawatts of capacity surplus in developing its marketing strategy. The region will need future energy resource acquisitions to put the system in energy loads and resources balance. These new resources will most likely provide capacity and increase the capacity surplus in the later years. Since these studies do not reflect any resource additions, the capacity surplus numbers beyond the Federal system firm energy loads and resources balance period are conservative. The following assumptions were used in developing the Federal marketable capacity forecast:

- The region experiences medium load growth;
- The Pacific Northwest Coordination Agreement, which expires July 1, 2003, is replaced with a like agreement;
- BPA's power sales contracts with Pacific Northwest Federal and public agencies, IOUs, and DSI contracts, which expire June 30, 2001, are renewed with like agreements;
- All existing Federal contractual arrangements not included under Pacific Northwest power sales contracts expire and are not renewed;
- BPA's surplus firm energy sales with Southern California Edison, Glendale, Pasadena, and Burbank terminate and convert to capacity/energy exchange contracts beginning in OY 1999-2000;
- BPA's surplus firm energy sale with Puget Sound Power and Light terminates and converts to a seasonal power exchange beginning in OY 1999-2000;
- The IOUs do not make long-term BPA purchases under their power sales contracts;
- No new Federal resources are acquired;
- Sustained capacity limits are 50 hours per week;
- Surplus firm capacity availability does not reflect nighttime return problems; and
- There are no commitments of Federal firm capacity to support any future Federal firm surplus energy sales.

BPA's surplus firm capacity values take into account the following Federal system hydro constraints:

- Limitations on moving water between projects, including upstream storage;
- Pondage limitations due to hydraulic imbalance from reservoir to reservoir;
- Navigation and recreation constraints, including restrictions on the rate of rise or fall of tailwater and forebay elevations; and
- Minimum flow and generation requirements for fisheries.

BPA's capacity marketing efforts hinge on the ability of the Federal system to resolve return energy problems. Non-power hydro constraints and lack of nighttime loads limit the Federal system's ability to accept the return energy from large capacity sales. Under some conditions, minimum flow constraints at night restrict the ability to return energy even though there is surplus generating capability during the daytime. These constraints are common in summer and fall, when the Northwest nighttime loads are low. Depending on provisions for return energy, capacity agreements could create forced energy sales and may reduce the Federal system's ability to meet firm energy loads. The surplus firm capacity values do not consider the potential for nighttime overgeneration problems. BPA's future Federal surplus capacity transactions will include provisions to:

- Limit return energy to a percentage of contract demand;
- Defer energy returns to a time more favorable to system operations; or
- Cash-out provisions for nighttime return energy.

Loads and Resources Comparison

Table 6, page 27, shows changes in the 1989 Pacific Northwest Loads and Resources Study compared to the 1988 Pacific Northwest Loads and Resources Study for OYs 1990-91 through 2007-08. The table lists the Federal firm energy surpluses/deficits for the 1988 study and adjustments to obtain the current firm energy analysis for the medium load forecast. Positive values in the table indicate an increase and negative values indicate a decrease in the Federal system firm energy surpluses/deficits.

Adjustments were based on the following changes in contracts and resources:

- USBR Loads: The USBR loads decrease due to a reduced in the 1989 study forecast of irrigation pumping requirements. This demand is caused by a reduction in the estimated amount of land to be irrigated.

- DSI Aluminum Loads: The DSI aluminum loads contain optimistic economic trends and a strong aluminum market. This caused the DSI aluminum load forecast to increase in OYs 1990-91 through 1995-96 in the 1989 study.

- DSI Non-Aluminum Loads: The former Hanna Nickel smelter operation at Riddle, Oregon has resumed operation under control of the Nickel Joint Venture Company. The company plans to produce the 3- to 4-year supply of nickel which is available in the waste ore pile. It is assumed that the market price of nickel will fall in about 3 years, which will make the production of nickel uneconomical. The 1989 study shows this load increase of 75 average megawatts through OY 1992-93.

- Sales to Public Agencies: The 1989 study shows increased sales to public agencies because of higher forecasted loads and more load obligation being placed on BPA. Forecasted loads are increased by 130 average megawatts for the first year of the study, and the difference between forecasts diminish through the planning period. The load projections are equal by OY 2004-05 and decrease in OY 2005-06 through OY 2009-10. Also, the public agencies' resources used to serve their firm loads are decreased by 70 average megawatts compared to the 1988 study. This results in more obligation on the Federal system.

- WNP-2 Reduced Generation: This study reduces the WNP-2 annual capacity factor from 70 to 65 percent. The expected annual output of WNP-2 was reduced by 56 average megawatts. This reduction represents a more realistic level of past boiling water reactor performance.

- Conversion of Federal Surplus Energy Sales: The 1989 study determined that the Federal system becomes deficit firm energy in OY 1999-2000. This is 2 years earlier than projected in the 1988 study. The timing of the Federal loads and resources balance causes the termination of BPA's surplus firm energy deliveries in OY 1999-2000 instead of OY 2001-02. The conversion of these contracts from surplus firm energy sales to exchanges results in resource changes for OYs 2000-01 and 2001-02.

- Miscellaneous Changes: The miscellaneous changes in the 1989 study include new estimates of the hydro generation, updates in thermal generating resources data, and minor changes in contractual obligations.

TABLE 6

Changes in Federal System Firm Surplus/Deficit

Medium Loads

Energy in Average Megawatts

Operating Year 1/	1991	1992	1993	1994	1995	1996	1997	1998	1999
1988 Federal Firm Surplus/Deficit 2/	319	328	309	418	459	381	598	479	344
Adjustments:									
USBR Loads	20	24	24	24	24	24	24	23	24
DSI Aluminum Firm Loads	-10	-27	-73	-69	-31	-12	40	16	-4
DSI Non-Aluminum Loads	-71	-71	-5	-6	-6	-7	-8	-9	-10
Sales to Public Agencies	-220	-211	-205	-154	-200	-246	-236	-213	-197
WNP-2 Reduced Generation	-56	-56	-56	-56	-56	-56	-56	-56	-56
Conversion of Contracts	0	0	0	0	0	0	0	0	0
Miscellaneous Changes	7	6	5	15	20	15	26	26	24
1989 Federal Firm Surplus/Deficit	-11	-7	-1	172	210	99	388	266	125

Operating Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
1988 Federal Firm Surplus/Deficit	114	12	150	1	-276	-403	-588	-719	-848
Adjustments:									
USBR Loads	23	23	23	23	23	23	23	23	23
DSI Aluminum Firm Loads	-3	-25	-33	-23	0	3	-17	-28	-30
DSI Non Aluminum Loads	-9	-10	-10	-9	-10	-9	-10	-10	-11
Sales to Public Agencies	-187	-169	-150	-130	-108	-98	-89	-78	-51
WNP-2 Reduced Generation	-56	-56	-56	-56	-56	-56	-56	-56	-56
Conversion of Contracts	282	281	0	0	0	0	0	0	0
Miscellaneous Changes	31	54	49	51	51	48	46	43	73
1989 Federal Firm Surplus/Deficit	195	110	-27	-143	-376	-492	-691	-825	-900

1/ Operating year (OY) is the 12-month period July 1 to June 30. For example, OY 1991 is July 1, 1990 through June 30, 1991.

2/ 1988 Pacific Northwest Loads and Resources Executive Summary, Table 2, page 22.

REGIONAL ANALYSIS

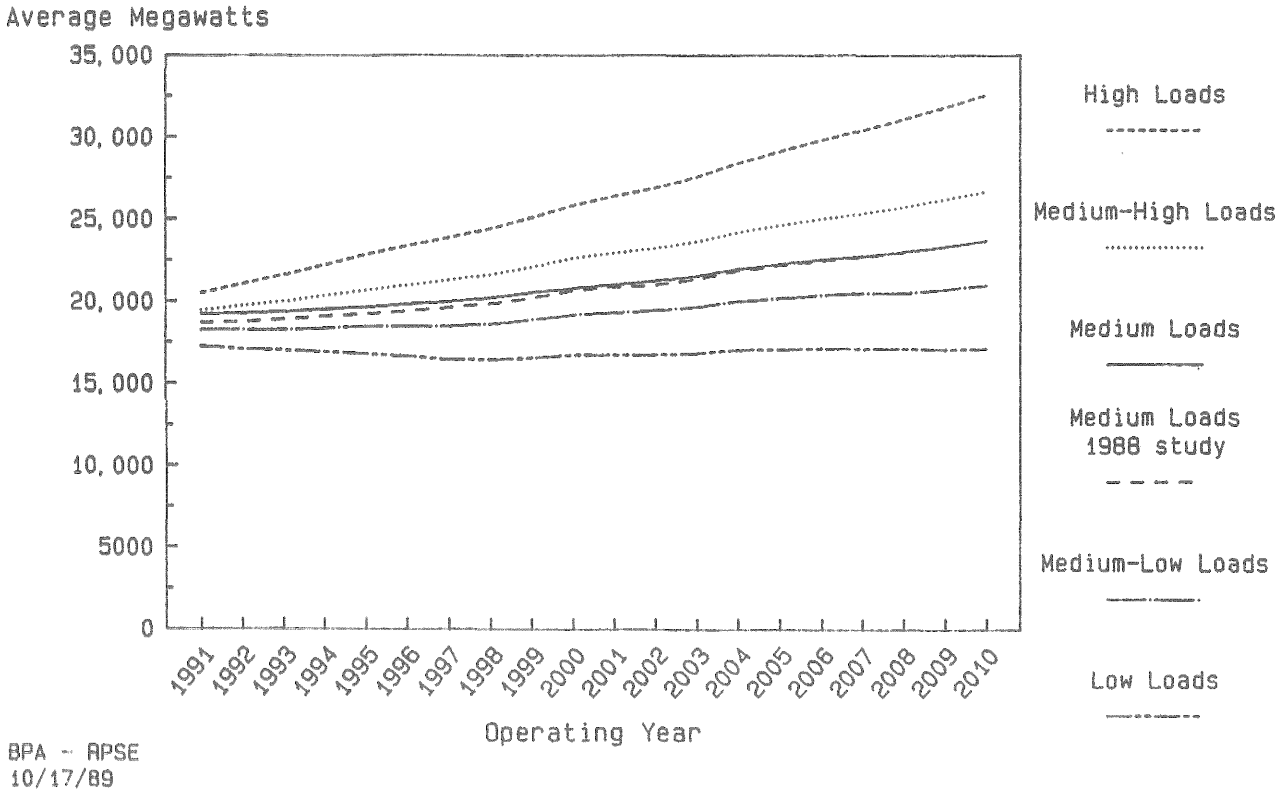
The regional loads and resources analysis is keyed on the following assumptions:

- The Pacific Northwest Coordination Agreement, which expires July 1, 2003, is replaced with a like agreement;
- BPA's power sales contracts with Pacific Northwest Federal and public agencies, IOUs, and DSI contracts, which expire June 30, 2001, are renewed with like agreements;
- All existing regional contractual arrangements not included under Pacific Northwest power sales contracts expire and are not renewed; and
- No new regional resources are acquired.

Regional Firm Energy Loads

The regional firm energy load projections for OYs 1990-91 through 2009-10 under the high, medium-high, medium, medium-low, and low load growth scenarios are shown in Figure 10. The load forecast is based on the 1989 Joint Forecast prepared by BPA and the Council. The 1989 Joint Forecast reflects updated long-range projections of economic activity, fuel and electricity prices, and other factors influencing electricity use. The load projections also include

Figure 10
REGIONAL FIRM ENERGY LOADS
1989 Joint Forecast

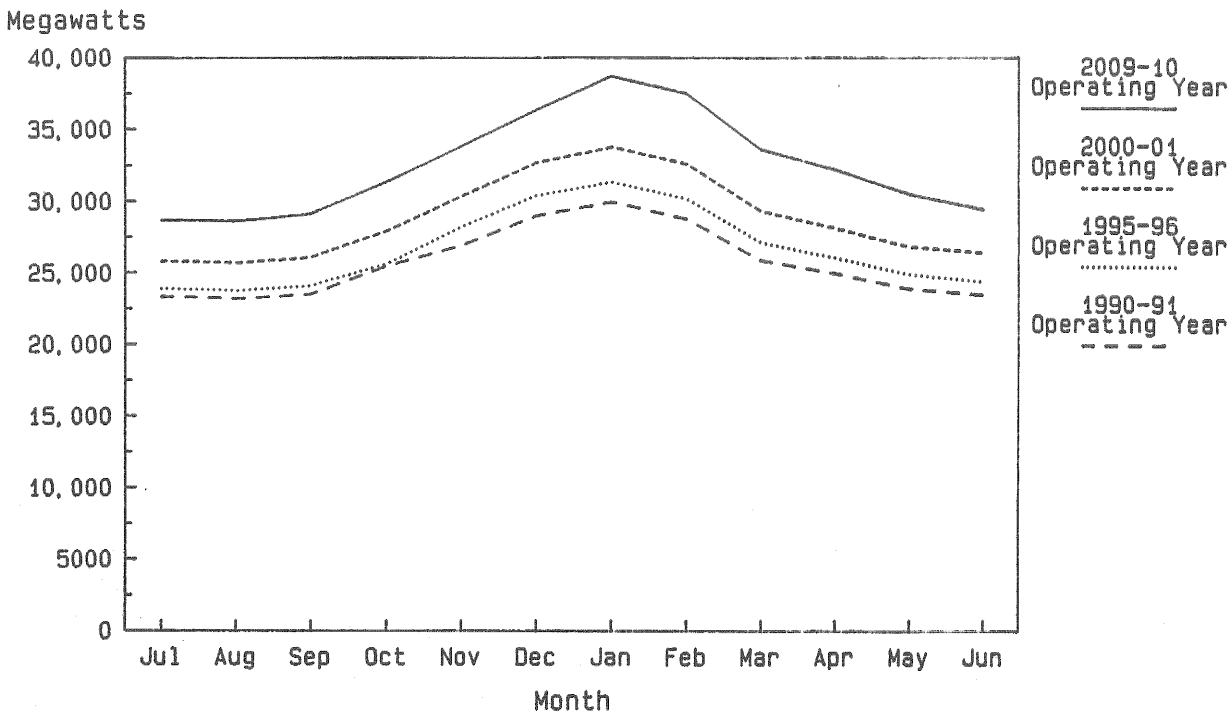


all intra-regional contracts made by Pacific Northwest utilities and the Federal system. The regional firm energy loads for the medium forecast are presented in Exhibit 11, line 5, pages 66 and 67. The regional firm energy loads under the high, medium-high, medium-low, and low forecasts are presented on line 5 of Exhibits 12 through 15, pages 68 through 75.

Regional Firm Peak Loads

Figure 11 illustrates the regional firm peak loads under the medium load forecast for OYs 1990-91, 1995-96, 2000-01, and 2009-10. The load estimates are based on the 1989 Joint Forecast. The forecasted peak load is the expected maximum 1-hour peak demand for each month. There is a 50 percent probability that the actual load will be either higher or lower at some time during the month. The projected regional peak loads include all intra-regional contracts made by Pacific Northwest utilities and the Federal system. The peak projections are decreased by a diversity factor due to the fact that all peak electrical demands do not occur simultaneously throughout the region.

Figure 11
REGIONAL FIRM PEAK LOADS
Medium BPA Loads



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Regional Resources

Table 7 summarizes the regional system resources for OY 1990-91. Hydroelectric resources make up a smaller percentage of the regional resources than of the Federal system resources because most of the thermal resources are owned by utilities in the region. These thermal resources are composed primarily of IOU-owned coal and nuclear plants. A detailed listing of all regional generating resources is contained in the 1989 Pacific Northwest Loads and Resources Technical Appendix.

TABLE 7

Regional Firm Resources
for OY 1990-91 1/

Project Type	Firm Energy (aMW)	% of Total Firm Energy	Instantaneous Peak Capacity (MW)	% of Total Peak Capacity
Hydro	12,466	64	33,009	76
Coal	3,414	17	4,173	10
Nuclear	1,493	8	2,199	5
Imports	1,328	7	2,083	5
Combustion Turbines	455	2	1,467	3
Miscellaneous	434	2	692	1
Total Resources	19,590	100	43,623	100

1/ Operating year (OY) is the 12-month period July 1 to June 30. For example, OY 1991 is July 1, 1990 through June 30, 1991.

Regional Nonfirm Resources

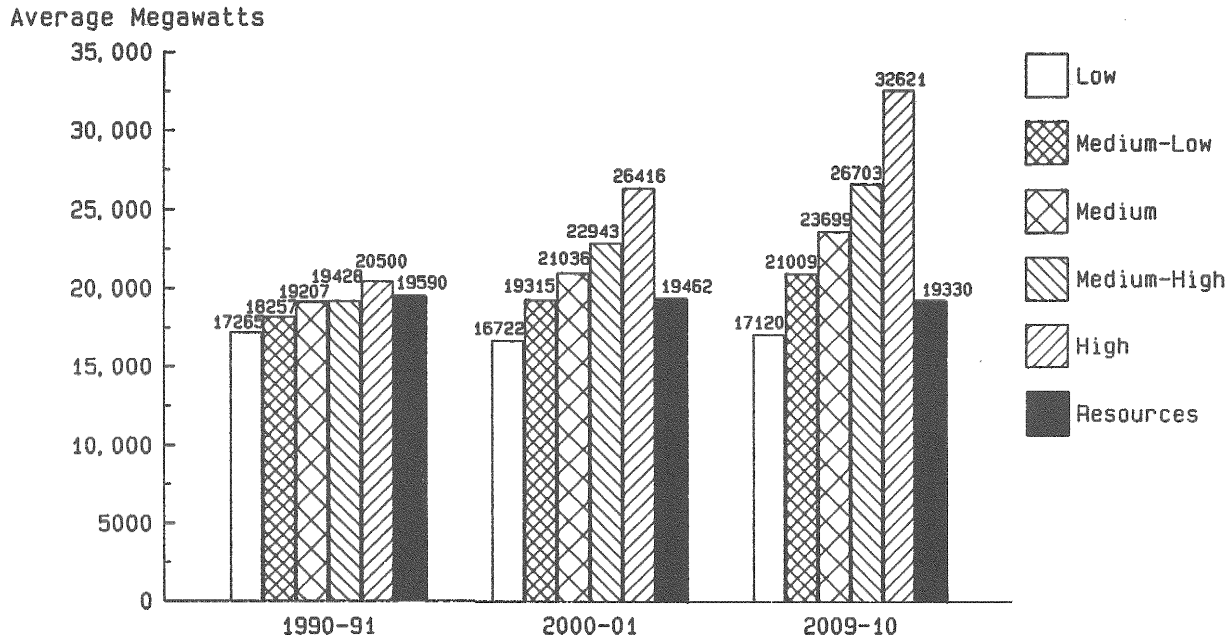
As previously discussed, BPA uses critical water flows to compute the regional hydro firm energy for resource planning. Nonfirm energy is created when the region's hydro projects experience water flows greater than critical period levels.

Regional planning does not include nonfirm energy in the loads and resources balance. The average annual nonfirm energy increases regional resources by about 3,800 average megawatts when averaged over 50 years of historical water flows and is larger when based on 102 years of historical water flows.

Regional Firm Energy Surpluses/Deficits

Figure 12 illustrates the variability of the regional firm energy loads and resources under the high, medium-high, medium, medium-low, and low load forecasts. The resources change over time due to yearly scheduled maintenance and the expiration of intra-regional contracts.

Figure 12
REGIONAL FIRM LOADS AND RESOURCES
Assuming No New Resource Acquisitions
Includes Intra-Regional Contracts



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The regional firm energy surpluses/deficits for the various load scenarios for OYs 1990-91 through 2009-10 are presented in Table 8, page 32, and Figure 13, page 33. The region experiences firm energy deficits in OY 1990-91 under the high load scenario, in OY 1991-92 assuming medium-high loads, in OY 1994-95 under medium loads, and in OY 2001-02 in the medium-low load case. The region remains firm energy surplus under the low load growth scenario.

The components of the regional energy loads and resources balance are presented in Exhibits 11 through 15, pages 66 through 75. The regional firm energy surpluses/deficits, based on the medium forecast, are presented in Exhibit 11, line 34, pages 66 and 67. The 20-year regional firm energy surpluses/deficits under the high, medium-high, medium-low, and low load scenarios are shown on line 34 of Exhibits 12 through 15, pages 68 through 75.

TABLE 8

Regional Firm Energy Surpluses/Deficits

Assuming Existing Contracts and
No New Resource Acquisitions

Energy in Average Megawatts

OPERATING YEAR 1/	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
High Loads	-818	-1571	-2086	-2633	-3290	-3853	-4186	-4860	-5481	-6202
Medium-High Loads	226	-281	-514	-805	-1191	-1541	-1692	-2156	-2563	-3058
Medium Loads	383	111	33	-72	-244	-473	-473	-831	-1130	-1299
Medium-Low Loads	1312	1113	1119	1066	929	870	1012	737	526	239
Low Loads	2284	2286	2363	2498	2598	2676	3032	2889	2806	2643

OPERATING YEAR	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
High Loads	-6812	-7354	-7940	-8854	-9592	-10241	-10877	-11547	-12237	-13037
Medium-High Loads	-3436	-3771	-4095	-4751	-5206	-5565	-5935	-6344	-6770	-7294
Medium Loads	-1574	-1857	-2078	-2611	-2945	-3183	-3424	-3695	-3983	-4369
Medium-Low Loads	53	-145	-284	-728	-958	-1111	-1273	-1261	-1467	-1760
Low Loads	2587	2516	2508	2191	2097	2090	2068	2031	2139	2027

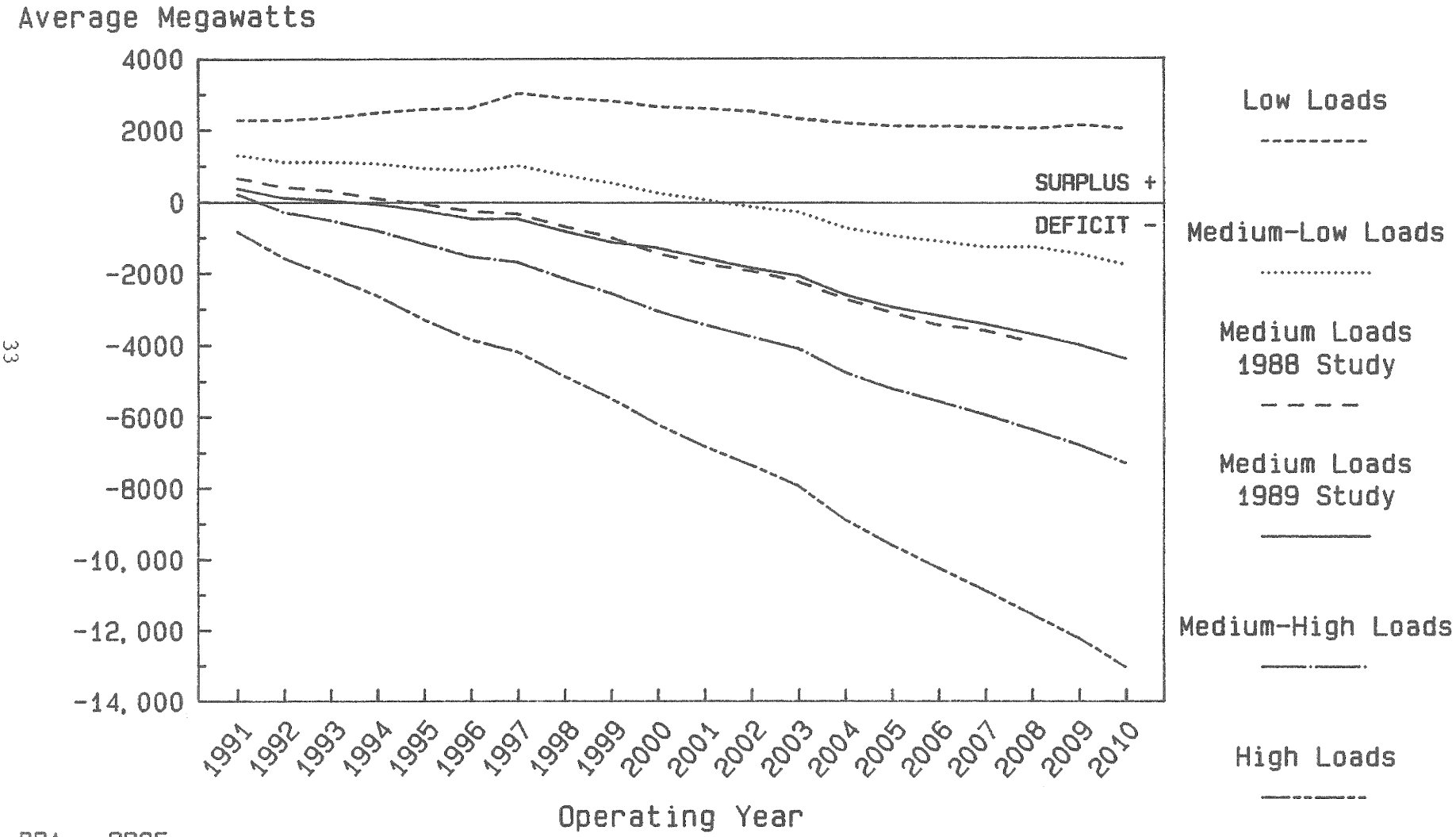
1/ Operating year (OY) is the 12 month period July 1 to June 30. For example, OY 1991 is July 1, 1990 through June 30, 1991.

Figure 13

REGIONAL FIRM ENERGY SURPLUSES/DEFICITS

20-Year Projection

Assuming No New Resource Acquisitions



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Regional Firm Capacity Surpluses/Deficits

Figures 14 through 17, pages 35 and 36, show the region's firm capacity surpluses/deficits under the high, medium-high, medium, medium-low, and low load forecasts for OYs 1990-91, 1995-96, 2000-01, and 2009-10. The monthly capacity surpluses/deficits assume that the region has the ability to meet a capacity load of 50 hours per week using surplus capacity that is available after serving all regional capacity needs with 1929-30 water levels.

These projections estimate the capacity that is surplus to regional requirements. The figures assume that contractual or other provisions would be made to relieve off-peak problems when energy is returned under future capacity sales. Regional hydro constraints and low nighttime loads limit the system's ability to store return energy. Depending on energy return provisions, these contracts could create low-priced forced energy sales and may reduce the region's ability to meet firm loads.

The 20-year summary of regional capacity surpluses/deficits, based on medium loads, is shown in Exhibit 16, page 78. The regional 20-year summaries of capacity surpluses/deficits under high, medium-high, medium-low, and low loads are presented in Exhibits 17 through 20, pages 79 through 82.

Figure 14

1990-91 REGIONAL FIRM CAPACITY SURPLUSES/DEFICITS

Assuming No New Resource Acquisitions

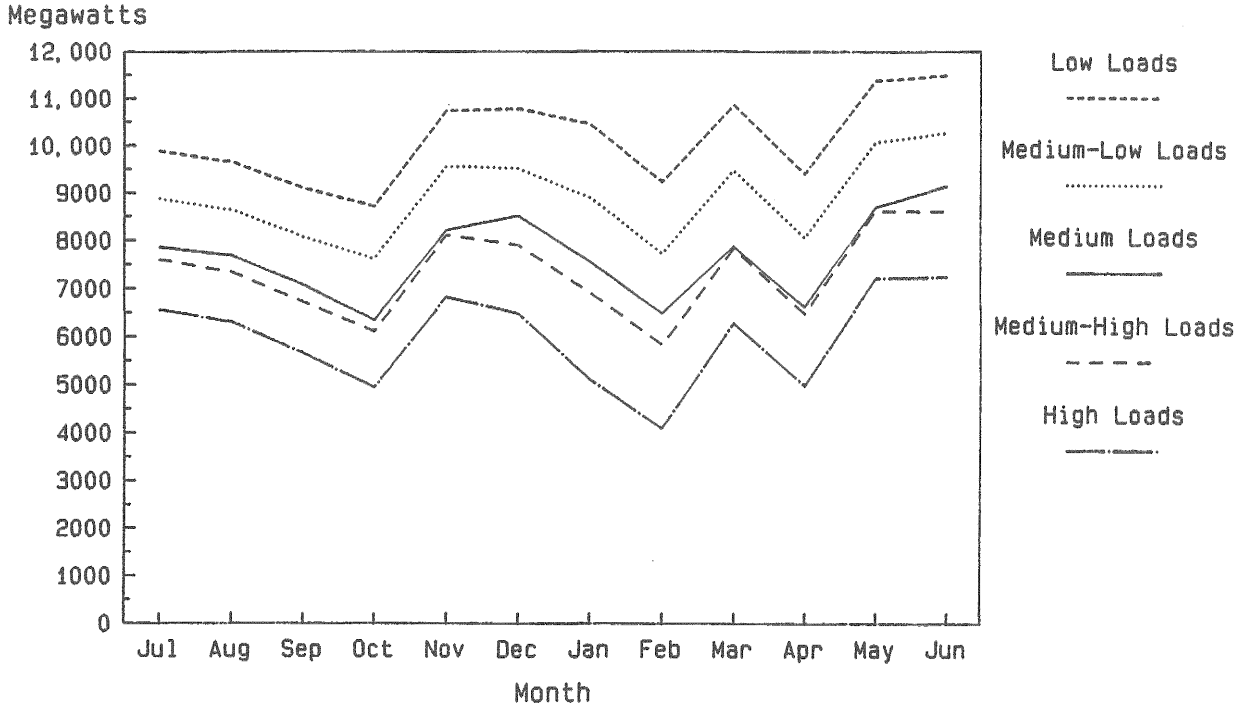

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Figure 15

1995-96 REGIONAL FIRM CAPACITY SURPLUSES/DEFICITS

Assuming No New Resource Acquisitions

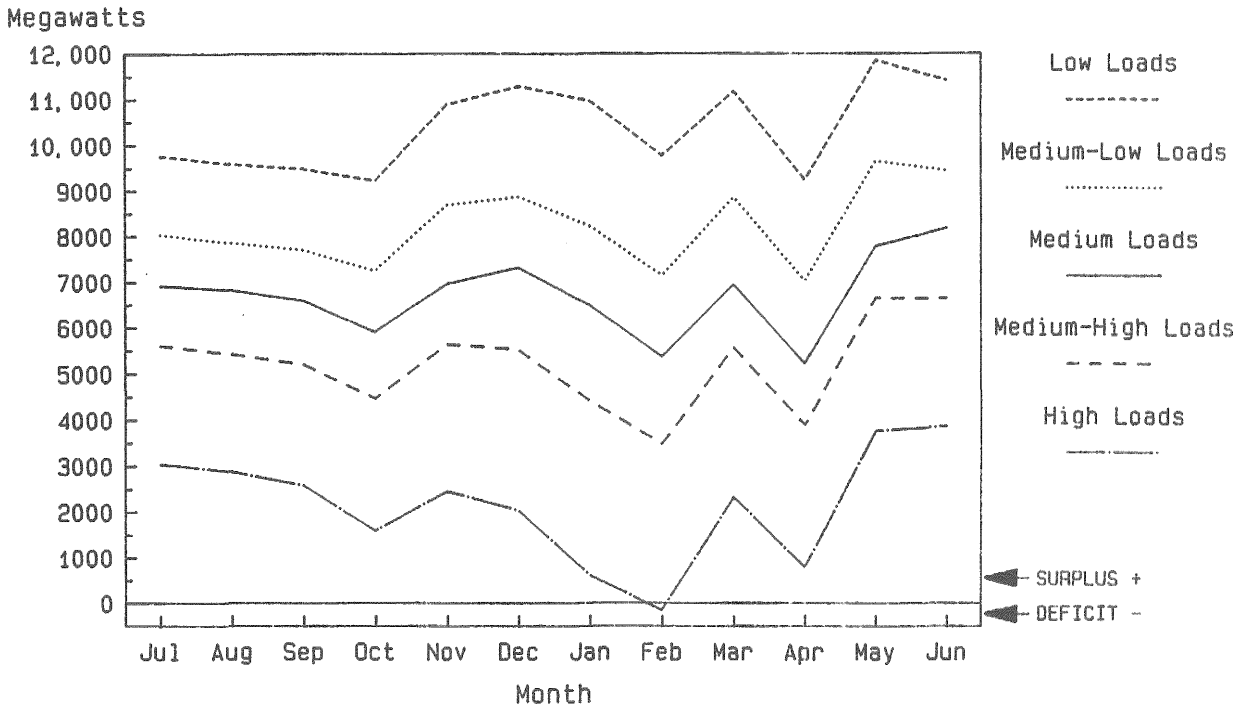

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Figure 16

2000-01 REGIONAL FIRM CAPACITY SURPLUSES/DEFICITS

Assuming No New Resource Acquisitions

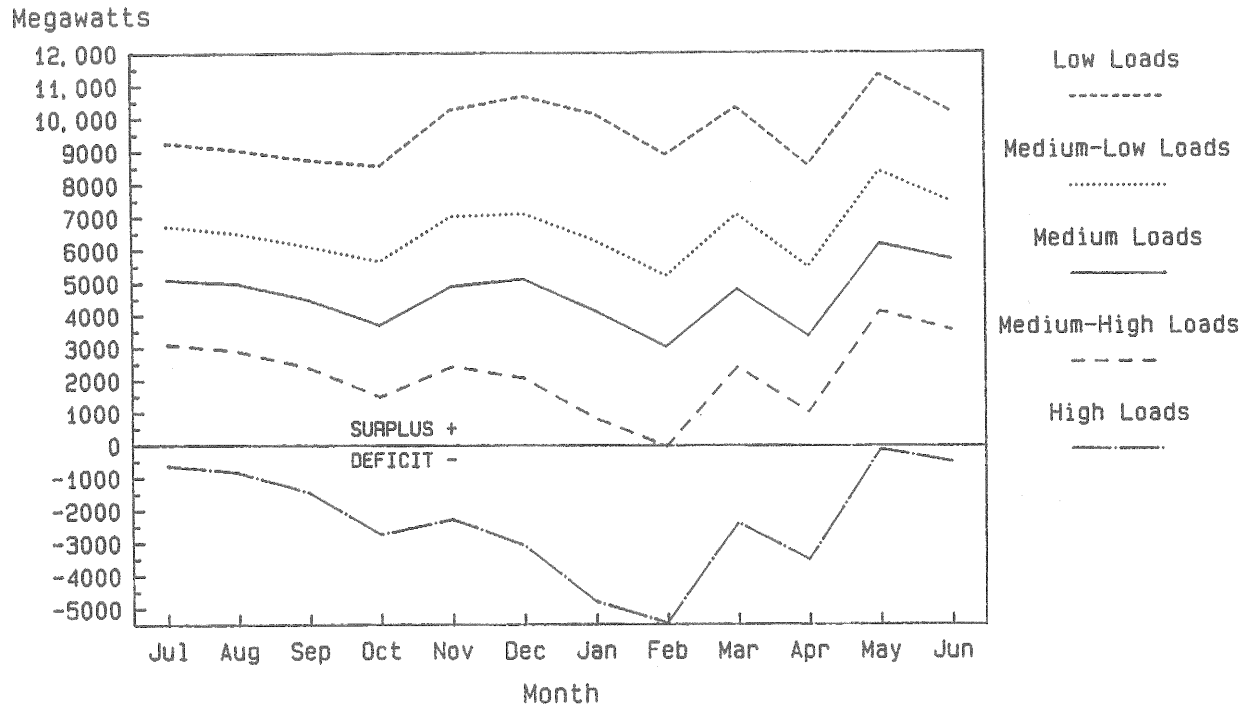

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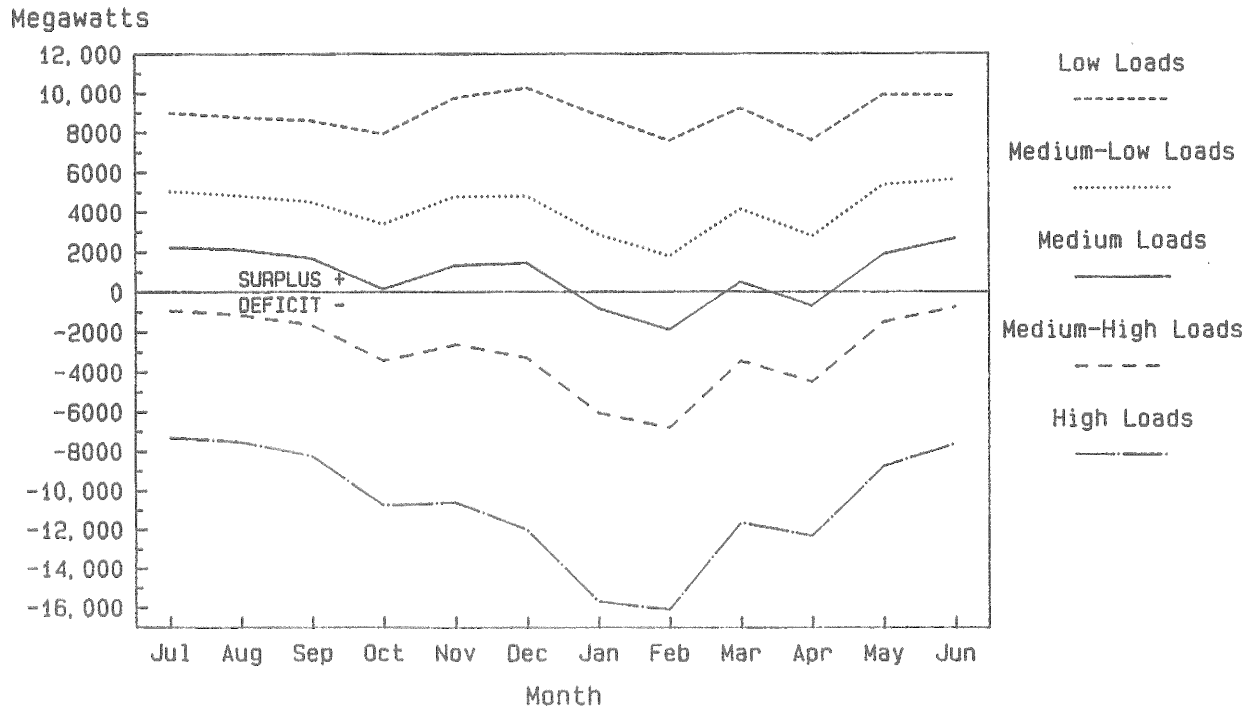
Figure 17

2009-10 REGIONAL FIRM CAPACITY SURPLUSES/DEFICITS

Assuming No New Resource Acquisitions



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SECTION VIII

FEDERAL SYSTEM EXHIBITS

EXHIBIT 1

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O A D S

MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS											
1 FEDERAL AGENCIES		135	137	138	139	141	142	143	143	144	145
2 FEDERAL & GEN PUBLIC LOSSES		149	153	156	153	153	156	151	153	155	155
3 USBR		57	57	57	57	57	57	57	58	57	58
4 DSI ALUMINUM FIRM		2019	1891	1841	1808	1770	1751	1715	1714	1714	1714
5 DSI NON-ALUM FIRM		248	248	175	175	175	176	177	178	179	179
6 DSI FIRM LOSSES		59	56	53	52	51	50	49	49	49	49
7 SM & NON GEN PUB PURCH	1/	2944	2980	3029	3059	3080	3142	3195	3243	3293	3346
8 FIRM SYSTEM LOAD		5611	5522	5449	5443	5427	5474	5487	5538	5591	5646
TRANSFERS OUT											
9 EXPORTS	2/	170	169	168	168	168	168	169	182	290	318
10 CONTRACTS OUT	3/	546	612	596	596	597	596	267	272	272	248
11 CSPE TO WEST GROUP UTIL	4/	327	315	302	289	276	264	252	238	187	102
12 GEN PUBLIC AGEN PURCH	1/	1654	1717	1759	1788	1775	1849	1896	1968	2012	2092
13 GEN PRIVATE UTIL PURCH	5/	107	138	188	0	0	0	0	0	0	0
14 FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS		8415	8473	8463	8284	8243	8351	8071	8198	8352	8405
16 DSI ALUM TOP QUARTILE	7/	673	631	614	602	590	584	571	571	571	571
17 DSI NON-ALUMINUM TQ	7/	81	83	58	58	58	59	59	59	60	60
18 TOP QUARTILE LOSSES	7/	20	19	18	17	17	17	16	16	16	16
19 TOTAL LOADS		9189	9205	9152	8962	8908	9010	8718	8844	8999	9053
RESOURCES											
20 SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21 CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A CAN. ENT. NON-FED(CSPE)	9/	75	71	67	62	58	55	54	50	40	23
23B CAN. ENT. NON-FED(CNDA)	9/	0	0	0	0	0	0	0	3	27	72
24 RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25 TOTAL HYDRO		7316	7312	7308	7303	7299	7296	7295	7294	7308	7336
26 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28 RENEWABLES		0	0	0	0	0	0	0	0	0	0
29 COGENERATION		0	0	0	0	0	0	0	0	0	0
30 IMPORTS	11/	0	0	0	0	0	0	0	0	0	45
31 CONTRACTS IN	12/	143	208	208	208	208	208	218	224	224	274
32 LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33 FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34 TOTAL RESOURCES		8404	8465	8461	8456	8452	8449	8458	8463	8477	8600

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O A D S

MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8404	8465	8461	8456	8452	8449	8458	8463	8477	8600
41 FIRM SURPLUS/DEFICIT		-11	-7	-1	172	210	99	388	266	125	195
42 TOTAL SURPLUS/DEFICIT		-785	-739	-691	-506	-456	-560	-259	-381	-522	-452
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		322	321	320	320	320	324	324	324	324	42

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER MEDIUM LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1999-00
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1999-00
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 1999-00
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 1994-95
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

EXHIBIT 1 (Continued)

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS											
1 FEDERAL AGENCIES		146	147	147	148	149	149	150	150	151	152
2 FEDERAL & GEN PUBLIC LOSSES		156	159	160	162	165	170	173	175	179	182
3 USBR		58	58	58	58	58	58	58	58	58	58
4 DSI ALUMINUM FIRM		1714	1714	1714	1714	1714	1714	1714	1714	1714	1714
5 DSI NON-ALUM FIRM		180	180	181	180	180	181	181	181	182	182
6 DSI FIRM LOSSES		49	49	49	49	49	49	49	50	49	49
7 SM & NON GEN PUB PURCH	1/	3388	3431	3479	3535	3591	3651	3704	3754	3805	3865
8 FIRM SYSTEM LOAD		5691	5738	5788	5846	5906	5972	6029	6082	6138	6202
TRANSFERS OUT											
9 EXPORTS	2/	315	311	369	548	542	537	531	526	519	514
10 CONTRACTS OUT	3/	248	248	247	248	248	248	248	215	164	164
11 CSPE TO WEST GROUP UTIL	4/	98	94	70	0	0	0	0	0	0	0
12 GEN PUBLIC AGEN PURCH	1/	2135	2201	2241	2329	2388	2525	2607	2663	2722	2818
13 GEN PRIVATE UTIL PURCH	5/	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS		8487	8591	8714	8971	9084	9281	9415	9486	9543	9698
16 DSI ALUM TOP QUARTILE	7/	571	571	571	571	571	571	571	571	571	571
17 DSI NON-ALUMINUM TQ	7/	60	60	60	60	60	60	60	60	60	60
18 TOP QUARTILE LOSSES	7/	16	16	16	16	16	16	16	16	16	16
19 TOTAL LOADS		9135	9239	9362	9619	9732	9929	10063	10134	10191	10346
RESOURCES											
20 SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21 CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A CAN. ENT. NON-FED(CSPE)	9/	22	21	16	0	0	0	0	0	0	0
23B CAN. ENT. NON-FED(CNDA)	9/	71	70	83	124	122	121	120	118	117	116
24 RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25 TOTAL HYDRO		7334	7332	7340	7365	7363	7362	7361	7359	7358	7357
26 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28 RENEWABLES		0	0	0	0	0	0	0	0	0	0
29 COGENERATION		0	0	0	0	0	0	0	0	0	0
30 IMPORTS	11/	44	42	41	40	39	38	38	36	28	0
31 CONTRACTS IN	12/	274	245	245	245	245	245	245	245	195	195
32 LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33 FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34 TOTAL RESOURCES		8597	8564	8571	8595	8592	8590	8589	8585	8526	8497

EXHIBIT 1 (Continued)

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8597	8564	8571	8595	8592	8590	8589	8585	8526	8497
41 FIRM SURPLUS/DEFICIT		110	-27	-143	-376	-492	-691	-825	-900	-1016	-1200
42 TOTAL SURPLUS/DEFICIT		-537	-674	-791	-1023	-1139	-1339	-1473	-1548	-1664	-1848
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		43	44	46	47	48	49	49	49	46	0

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER MEDIUM LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1999-00
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1999-00
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 1999-00
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 1994-95
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

EXHIBIT 2

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

H I G H L O A D S

MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS											
1 FEDERAL AGENCIES		135	137	138	139	140	141	142	143	144	145
2 FEDERAL & GEN PUBLIC LOSSES		155	161	165	165	167	172	168	172	175	177
3 USBR		57	57	57	57	57	57	57	57	57	57
4 DSI ALUMINUM FIRM		2204	2210	2220	2230	2240	2250	2260	2270	2280	2290
5 DSI NON-ALUM FIRM		308	312	312	312	312	312	312	312	312	312
6 DSI FIRM LOSSES		65	66	66	66	67	67	67	67	68	68
7 SM & NON GEN PUB PURCH	1/	3159	3271	3375	3497	3616	3733	3835	3939	4045	4156
8 FIRM SYSTEM LOAD		6083	6214	6333	6466	6599	6732	6841	6960	7081	7205
TRANSFERS OUT											
9 EXPORTS	2/	4	3	0	0	0	0	1	14	121	318
10 CONTRACTS OUT	3/	546	612	596	596	597	572	243	248	248	248
11 CSPE TO WEST GROUP UTIL	4/	327	315	302	289	276	264	252	238	187	102
12 GEN PUBLIC AGEN PURCH	1/	1884	2024	2121	2261	2383	2502	2605	2741	2849	2995
13 GEN PRIVATE UTIL PURCH	5/	107	138	188	0	0	0	0	0	0	0
14 FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS		8951	9306	9540	9612	9855	10070	9942	10201	10485	10868
16 DSI ALUM TOP QUARTILE	7/	735	737	740	743	747	750	753	757	760	763
17 DSI NON-ALUMINUM TQ	7/	101	104	104	104	104	104	104	104	104	104
18 TOP QUARTILE LOSSES	7/	22	22	22	22	22	22	22	22	23	23
19 TOTAL LOADS		9809	10168	10406	10481	10728	10946	10821	11084	11372	11758
RESOURCES											
20 SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21 CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A CAN. ENT. NON-FED(CSPE)	9/	75	71	67	62	58	55	54	50	40	23
23B CAN. ENT. NON-FED(CNDA)	9/	0	0	0	0	0	0	0	3	27	72
24 RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25 TOTAL HYDRO		7316	7312	7308	7303	7299	7296	7295	7294	7308	7336
26 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28 RENEWABLES		0	0	0	0	0	0	0	0	0	0
29 COGENERATION		0	0	0	0	0	0	0	0	0	0
30 IMPORTS	11/	53	52	52	51	50	50	49	47	46	45
31 CONTRACTS IN	12/	143	208	208	208	208	258	270	274	274	274
32 LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33 FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34 TOTAL RESOURCES		8457	8517	8513	8507	8502	8549	8559	8560	8573	8600

EXHIBIT 2 (Continued)

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

H I G H L O A D S

MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8457	8517	8513	8507	8502	8549	8559	8560	8573	8600
41 FIRM SURPLUS/DEFICIT		-494	-788	-1027	-1104	-1353	-1520	-1382	-1640	-1912	-2267
42 TOTAL SURPLUS/DEFICIT		-1351	-1651	-1893	-1974	-2225	-2396	-2262	-2523	-2799	-3157
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		105	106	107	107	108	37	38	39	41	42

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER HIGH LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1990-91
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1990-91
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 1995-96
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 1994-95
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

H I G H L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS											
1 FEDERAL AGENCIES		146	147	147	148	149	149	150	150	151	152
2 FEDERAL & GEN PUBLIC LOSSES		180	183	186	190	195	201	206	211	216	222
3 USBR		58	58	58	58	58	58	58	58	58	58
4 DSI ALUMINUM FIRM		2300	2311	2321	2331	2342	2352	2363	2374	2384	2395
5 DSI NON-ALUM FIRM		312	237	237	237	237	237	237	237	237	237
6 DSI FIRM LOSSES		68	66	67	67	67	68	68	68	69	68
7 SM & NON GEN PUB PURCH	1/	4256	4358	4469	4594	4723	4855	4977	5098	5218	5350
8 FIRM SYSTEM LOAD		7320	7360	7485	7625	7771	7920	8059	8196	8333	8482
TRANSFERS OUT											
9 EXPORTS	2/	315	311	369	548	542	537	531	526	519	514
10 CONTRACTS OUT	3/	248	248	247	248	248	248	248	215	164	164
11 CSPE TO WEST GROUP UTIL	4/	98	94	70	0	0	0	0	0	0	0
12 GEN PUBLIC AGEN PURCH	1/	3097	3221	3328	3494	3633	3851	4014	4154	4295	4472
13 GEN PRIVATE UTIL PURCH	5/	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS		11077	11234	11499	11915	12194	12555	12852	13091	13311	13632
16 DSI ALUM TOP QUARTILE	7/	767	770	774	777	781	784	788	791	795	798
17 DSI NON-ALUMINUM TQ	7/	104	79	79	79	79	79	79	79	79	79
18 TOP QUARTILE LOSSES	7/	23	22	22	22	22	23	23	23	23	23
19 TOTAL LOADS		11971	12105	12374	12794	13076	13441	13741	13984	14207	14532
RESOURCES											
20 SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21 CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A CAN. ENT. NON-FED(CSPE)	9/	22	21	16	0	0	0	0	0	0	0
23B CAN. ENT. NON-FED(CNDA)	9/	71	70	83	124	122	121	120	118	117	116
24 RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25 TOTAL HYDRO		7334	7332	7340	7365	7363	7362	7361	7359	7358	7357
26 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28 RENEWABLES		0	0	0	0	0	0	0	0	0	0
29 COGENERATION		0	0	0	0	0	0	0	0	0	0
30 IMPORTS	11/	44	43	41	40	39	38	38	36	28	0
31 CONTRACTS IN	12/	274	245	245	245	245	245	245	245	195	195
32 LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33 FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34 TOTAL RESOURCES		8597	8565	8571	8595	8592	8590	8589	8585	8526	8497

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

H I G H L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8597	8565	8571	8595	8592	8590	8589	8585	8526	8497
41 FIRM SURPLUS/DEFICIT		-2480	-2668	-2928	-3320	-3602	-3965	-4262	-4505	-4784	-5134
42 TOTAL SURPLUS/DEFICIT		-3373	-3540	-3803	-4198	-4484	-4851	-5152	-5398	-5681	-6034
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		43	44	46	47	48	49	49	49	46	0

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER HIGH LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1990-91
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1990-91
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 1995-96
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 1994-95
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

EXHIBIT 3

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M H I G H L O A D S

MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS											
1 FEDERAL AGENCIES		135	137	138	139	141	142	142	143	144	145
2 FEDERAL & GEN PUBLIC LOSSES		150	155	159	157	158	162	157	160	162	163
3 USBR		57	57	57	57	57	57	57	58	58	58
4 DSI ALUMINUM FIRM		2033	2016	2016	2016	1998	1979	1979	1979	1979	1979
5 DSI NON-ALUM FIRM		278	280	243	244	244	244	245	245	245	246
6 DSI FIRM LOSSES		60	60	59	59	58	58	58	58	58	58
7 SM & NON GEN PUB PURCH	1/	2997	3066	3128	3204	3279	3365	3440	3509	3581	3656
8 FIRM SYSTEM LOAD		5710	5771	5800	5876	5935	6007	6078	6152	6227	6305
TRANSFERS OUT											
9 EXPORTS	2/	4	3	0	0	0	0	1	14	121	318
10 CONTRACTS OUT	3/	546	612	596	596	597	572	243	248	248	248
11 CSPE TO WEST GROUP UTIL	4/	327	315	302	289	276	264	252	238	187	102
12 GEN PUBLIC AGEN PURCH	1/	1708	1799	1841	1919	1991	2082	2153	2248	2317	2421
13 GEN PRIVATE UTIL PURCH	5/	107	138	188	0	0	0	0	0	0	0
14 FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS		8402	8638	8727	8680	8799	8925	8727	8900	9100	9393
16 DSI ALUM TOP QUARTILE	7/	678	672	672	672	666	660	660	660	660	660
17 DSI NON-ALUMINUM TQ	7/	91	93	81	81	81	81	81	82	82	82
18 TOP QUARTILE LOSSES	7/	20	20	20	20	19	19	19	19	19	19
19 TOTAL LOADS		9191	9423	9500	9453	9566	9685	9487	9661	9861	10155
RESOURCES											
20 SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21 CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A CAN. ENT. NON-FED(CSPE)	9/	75	71	67	62	58	55	54	50	40	23
23B CAN. ENT. NON-FED(CNDA)	9/	0	0	0	0	0	0	0	3	27	72
24 RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25 TOTAL HYDRO		7316	7312	7308	7303	7299	7296	7295	7294	7308	7336
26 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28 RENEWABLES		0	0	0	0	0	0	0	0	0	0
29 COGENERATION		0	0	0	0	0	0	0	0	0	0
30 IMPORTS	11/	53	52	52	51	51	50	49	47	46	45
31 CONTRACTS IN	12/	143	208	208	208	208	258	270	274	274	274
32 LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33 FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34 TOTAL RESOURCES		8457	8517	8513	8507	8503	8549	8559	8560	8573	8600

EXHIBIT 3 (Continued)

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M H I G H L O A D S

MEGAWATTS	OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
35 HYD,SM THRM & MISC RES 15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES 16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES 17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES 18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT 19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES	8457	8517	8513	8507	8503	8549	8559	8560	8573	8600
41 FIRM SURPLUS/DEFICIT	55	-120	-213	-172	-296	-375	-167	-339	-527	-793
42 TOTAL SURPLUS/DEFICIT	-734	-905	-986	-945	-1062	-1136	-928	-1100	-1288	-1554
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES										
43 CONTRACTUAL AVAIL RESOURCES	105	106	107	107	108	37	38	39	41	42

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER MEDIUM HIGH LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1990-91
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1990-91
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 1995-96
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 1994-95
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M H I G H L O A D S

	MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS												
1	FEDERAL AGENCIES		146	146	147	148	148	149	150	151	151	152
2	FEDERAL & GEN PUBLIC LOSSES		165	168	170	172	176	181	185	188	193	197
3	USBR		58	58	58	58	58	58	58	58	58	58
4	DSI ALUMINUM FIRM		1979	1979	1979	1979	1979	1979	1979	1979	1979	1979
5	DSI NON-ALUM FIRM		246	209	209	209	209	209	209	209	209	209
6	DSI FIRM LOSSES		58	57	57	57	57	57	57	57	57	57
7	SM & NON GEN PUB PURCH	1/	3717	3778	3846	3925	4004	4087	4164	4239	4317	4409
8	FIRM SYSTEM LOAD		6369	6395	6466	6548	6631	6720	6802	6881	6964	7061
TRANSFERS OUT												
9	EXPORTS	2/	315	311	369	548	542	537	531	526	519	514
10	CONTRACTS OUT	3/	248	248	247	248	248	248	248	215	164	164
11	CSPE TO WEST GROUP UTIL	4/	98	94	70	0	0	0	0	0	0	0
12	GEN PUBLIC AGEN PURCH	1/	2484	2569	2633	2748	2830	2993	3102	3185	3275	3401
13	GEN PRIVATE UTIL PURCH	5/	0	0	0	0	0	0	0	0	0	0
14	FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15	FIRM LOADS		9514	9616	9784	10092	10251	10497	10683	10807	10922	11140
16	DSI ALUM TOP QUARTILE	7/	660	660	660	660	660	660	660	660	660	660
17	DSI NON-ALUMINUM TQ	7/	82	69	69	69	69	69	70	70	70	70
18	TOP QUARTILE LOSSES	7/	19	19	19	19	19	19	19	19	19	19
19	TOTAL LOADS		10276	10365	10533	10841	11000	11246	11432	11556	11671	11888
RESOURCES												
20	SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21	CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22	SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A	CAN. ENT. NON-FED(CSPE)	9/	22	21	16	0	0	0	0	0	0	0
23B	CAN. ENT. NON-FED(CNDA)	9/	71	70	83	124	122	121	120	118	117	116
24	RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25	TOTAL HYDRO		7334	7332	7340	7365	7363	7362	7361	7359	7358	7357
26	SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27	COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28	RENEWABLES		0	0	0	0	0	0	0	0	0	0
29	COGENERATION		0	0	0	0	0	0	0	0	0	0
30	IMPORTS	11/	44	42	41	40	39	38	38	36	28	0
31	CONTRACTS IN	12/	274	245	245	245	245	245	245	245	195	195
32	LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33	FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34	TOTAL RESOURCES		8597	8564	8571	8595	8592	8590	8589	8585	8526	8497

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M H I G H L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8597	8564	8571	8595	8592	8590	8589	8585	8526	8497
41 FIRM SURPLUS/DEFICIT		-917	-1052	-1213	-1497	-1659	-1907	-2093	-2221	-2395	-2642
42 TOTAL SURPLUS/DEFICIT		-1678	-1800	-1961	-2245	-2407	-2655	-2842	-2970	-3144	-3391
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		43	44	46	47	48	49	49	49	46	0

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER MEDIUM HIGH LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1990-91
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 1990-91
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 1995-96
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 1994-95
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

EXHIBIT 4

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O W L O A D S

MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS											
1 FEDERAL AGENCIES		135	137	138	139	141	142	142	143	144	145
2 FEDERAL & GEN PUBLIC LOSSES		144	148	151	148	148	151	146	148	149	149
3 USBR		57	57	57	57	57	57	57	57	58	58
4 DSI ALUMINUM FIRM		1939	1800	1732	1670	1589	1493	1405	1402	1402	1402
5 DSI NON-ALUM FIRM		174	174	137	138	138	138	138	139	139	140
6 DSI FIRM LOSSES		55	52	49	47	45	43	40	40	40	40
7 SM & NON GEN PUB PURCH	1/	2757	2789	2821	2864	2907	2957	2998	3033	3070	3110
8 FIRM SYSTEM LOAD		5261	5157	5085	5063	5025	4981	4926	4962	5002	5044
TRANSFERS OUT											
9 EXPORTS	2/	170	169	168	168	168	168	169	182	290	486
10 CONTRACTS OUT	3/	546	612	596	596	597	596	267	272	272	272
11 CSPE TO WEST GROUP UTIL	4/	327	315	302	289	276	264	252	238	187	102
12 GEN PUBLIC AGEN PURCH	1/	1454	1507	1520	1557	1583	1633	1658	1716	1746	1811
13 GEN PRIVATE UTIL PURCH	5/	107	138	188	0	0	0	0	0	0	0
14 FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS		7865	7897	7860	7673	7648	7642	7272	7370	7497	7714
16 DSI ALUM TOP QUARTILE	7/	646	600	577	557	530	498	468	467	467	467
17 DSI NON-ALUMINUM TQ	7/	57	58	46	46	46	46	46	46	46	47
18 TOP QUARTILE LOSSES	7/	18	17	16	16	15	14	13	13	13	13
19 TOTAL LOADS		8586	8573	8499	8291	8239	8200	7799	7896	8024	8241
RESOURCES											
20 SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21 CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A CAN. ENT. NON-FED(CSPE)	9/	75	71	67	62	58	55	54	50	40	23
23B CAN. ENT. NON-FED(CNDA)	9/	0	0	0	0	0	0	0	3	27	72
24 RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25 TOTAL HYDRO		7316	7312	7308	7303	7299	7296	7295	7294	7308	7336
26 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28 RENEWABLES		0	0	0	0	0	0	0	0	0	0
29 COGENERATION		0	0	0	0	0	0	0	0	0	0
30 IMPORTS	11/	0	0	0	0	0	0	0	0	0	0
31 CONTRACTS IN	12/	143	208	208	208	208	208	218	224	224	224
32 LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33 FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34 TOTAL RESOURCES		8404	8465	8461	8456	8452	8449	8458	8463	8477	8505

EXHIBIT 4 (Continued)

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O W L O A D S

MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8404	8465	8461	8456	8452	8449	8458	8463	8477	8505
41 FIRM SURPLUS/DEFICIT		540	568	602	784	804	807	1187	1094	980	791
42 TOTAL SURPLUS/DEFICIT		-182	-108	-38	165	213	249	659	567	454	264
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		322	321	320	320	320	320	320	320	320	320

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER MEDIUM LOW LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 2007-08
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 2007-08
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 2000-01
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OCTOBER 2009
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

EXHIBIT 4 (Continued)

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O W L O A D S

	MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS												
1	FEDERAL AGENCIES		146	146	148	148	149	149	150	150	151	152
2	FEDERAL & GEN PUBLIC LOSSES		150	152	153	155	157	162	164	167	170	173
3	USBR		58	58	58	58	58	58	58	58	58	58
4	DSI ALUMINUM FIRM		1402	1402	1402	1402	1402	1402	1402	1402	1402	1402
5	DSI NON-ALUM FIRM		140	140	140	140	140	140	140	141	141	141
6	DSI FIRM LOSSES		40	40	40	40	40	40	40	40	40	40
7	SM & NON GEN PUB PURCH	1/	3138	3171	3208	3253	3295	3343	3385	3425	3467	3519
8	FIRM SYSTEM LOAD		5074	5109	5149	5196	5241	5294	5339	5383	5429	5485
TRANSFERS OUT												
9	EXPORTS	2/	483	479	537	716	711	705	700	526	519	514
10	CONTRACTS OUT	3/	272	248	247	248	248	248	248	215	164	164
11	CSPE TO WEST GROUP UTIL	4/	98	94	70	0	0	0	0	0	0	0
12	GEN PUBLIC AGEN PURCH	1/	1839	1893	1921	1998	2040	2165	2234	2278	2325	2408
13	GEN PRIVATE UTIL PURCH	5/	0	0	0	0	0	0	0	0	0	0
14	FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15	FIRM LOADS		7766	7822	7923	8158	8240	8411	8521	8402	8437	8571
16	DSI ALUM TOP QUARTILE	7/	467	467	467	467	467	467	467	467	467	467
17	DSI NON-ALUMINUM TQ	7/	47	47	47	47	47	47	47	47	47	47
18	TOP QUARTILE LOSSES	7/	13	13	13	13	13	13	13	13	13	13
19	TOTAL LOADS		8293	8349	8451	8685	8767	8938	9048	8929	8964	9098
RESOURCES												
20	SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21	CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22	SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A	CAN. ENT. NON-FED(CSPE)	9/	22	21	16	0	0	0	0	0	0	0
23B	CAN. ENT. NON-FED(CNDA)	9/	71	70	83	124	122	121	120	118	117	116
24	RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25	TOTAL HYDRO		7334	7332	7340	7365	7363	7362	7361	7359	7358	7357
26	SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27	COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28	RENEWABLES		0	0	0	0	0	0	0	0	0	0
29	COGENERATION		0	0	0	0	0	0	0	0	0	0
30	IMPORTS	11/	0	0	0	0	0	0	0	36	28	0
31	CONTRACTS IN	12/	224	245	245	245	245	245	245	245	195	195
32	LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33	FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34	TOTAL RESOURCES		8503	8522	8530	8555	8553	8552	8551	8585	8526	8497

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O W L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8503	8522	8530	8555	8553	8552	8551	8585	8526	8497
41 FIRM SURPLUS/DEFICIT		737	700	607	397	313	141	31	184	90	-73
42 TOTAL SURPLUS/DEFICIT		210	173	80	-130	-214	-386	-497	-344	-438	-601
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		320	249	249	249	249	249	249	49	46	0

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER MEDIUM LOW LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 2007-08
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 2007-08
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 2000-01
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OCTOBER 2009
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

EXHIBIT 5

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

L O W L O A D S

	MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS												
1	FEDERAL AGENCIES		135	137	138	139	141	142	142	143	144	145
2	FEDERAL & GEN PUBLIC LOSSES		140	143	144	141	141	143	136	137	138	137
3	USBR		57	57	57	57	57	57	57	58	57	58
4	DSI ALUMINUM FIRM		1727	1551	1537	1449	1291	1218	1063	1058	1058	1058
5	DSI NON-ALUM FIRM		100	100	100	100	100	100	100	100	100	100
6	DSI FIRM LOSSES		48	43	43	41	36	34	30	30	30	30
7	SM & NON GEN PUB PURCH	1/	2599	2597	2593	2599	2606	2619	2627	2635	2647	2662
8	FIRM SYSTEM LOAD		4806	4628	4612	4526	4372	4313	4155	4161	4174	4190
TRANSFERS OUT												
9	EXPORTS	2/	170	169	168	168	168	168	169	182	290	486
10	CONTRACTS OUT	3/	546	612	596	596	597	596	267	272	272	272
11	CSPE TO WEST GROUP UTIL	4/	327	315	302	289	276	264	252	238	187	102
12	GEN PUBLIC AGEN PURCH	1/	1292	1309	1285	1286	1274	1287	1281	1306	1305	1341
13	GEN PRIVATE UTIL PURCH	5/	107	138	188	0	0	0	0	0	0	0
14	FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15	FIRM LOADS		7248	7170	7152	6865	6686	6628	6124	6159	6228	6391
16	DSI ALUM TOP QUARTILE	7/	576	517	512	483	430	406	354	353	353	353
17	DSI NON-ALUMINUM TQ	7/	33	33	33	33	33	33	33	33	33	33
18	TOP QUARTILE LOSSES	7/	16	14	14	13	12	11	10	10	10	10
19	TOTAL LOADS		7873	7735	7711	7394	7162	7079	6521	6555	6624	6787
RESOURCES												
20	SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21	CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22	SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A	CAN. ENT. NON-FED(CSPE)	9/	75	71	67	62	58	55	54	50	40	23
23B	CAN. ENT. NON-FED(CNDA)	9/	0	0	0	0	0	0	0	3	27	72
24	RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25	TOTAL HYDRO		7316	7312	7308	7303	7299	7296	7295	7294	7308	7336
26	SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27	COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28	RENEWABLES		0	0	0	0	0	0	0	0	0	0
29	COGENERATION		0	0	0	0	0	0	0	0	0	0
30	IMPORTS	11/	0	0	0	0	0	0	0	0	0	0
31	CONTRACTS IN	12/	143	208	208	208	208	208	218	224	224	224
32	LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33	FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34	TOTAL RESOURCES		8404	8465	8461	8456	8452	8449	8458	8463	8477	8505

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

L O W L O A D S

MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8404	8465	8461	8456	8452	8449	8458	8463	8477	8505
41 FIRM SURPLUS/DEFICIT		1157	1295	1310	1592	1766	1821	2335	2305	2250	2114
42 TOTAL SURPLUS/DEFICIT		532	731	751	1062	1291	1371	1937	1909	1854	1718
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		322	321	320	320	320	320	320	320	320	320

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER LOW LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 2009-10
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 2009-10
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 2000-01
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OCTOBER 2009
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

L O W L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS											
1 FEDERAL AGENCIES		146	146	147	148	149	149	150	150	151	152
2 FEDERAL & GEN PUBLIC LOSSES		138	139	140	140	142	146	148	150	153	155
3 USBR		57	58	58	58	58	58	58	58	58	58
4 DSI ALUMINUM FIRM		1058	1058	1058	1058	1058	1058	1058	1058	1058	1058
5 DSI NON-ALUM FIRM		100	100	100	100	100	100	100	100	100	100
6 DSI FIRM LOSSES		30	30	30	30	30	30	30	30	30	30
7 SM & NON GEN PUB PURCH	1/	2666	2675	2689	2710	2727	2750	2767	2782	2797	2822
8 FIRM SYSTEM LOAD		4195	4206	4222	4244	4264	4291	4311	4328	4347	4375
TRANSFERS OUT											
9 EXPORTS	2/	483	479	537	716	711	705	700	683	519	514
10 CONTRACTS OUT	3/	272	248	247	248	248	248	248	215	164	164
11 CSPE TO WEST GROUP UTIL	4/	98	94	70	0	0	0	0	0	0	0
12 GEN PUBLIC AGEN PURCH	1/	1343	1369	1370	1419	1433	1523	1561	1579	1596	1631
13 GEN PRIVATE UTIL PURCH	5/	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS		6391	6396	6446	6627	6656	6767	6819	6804	6625	6684
16 DSI ALUM TOP QUARTILE	7/	353	353	353	353	353	353	353	353	353	353
17 DSI NON-ALUMINUM TQ	7/	33	33	33	33	33	33	33	33	33	33
18 TOP QUARTILE LOSSES	7/	10	10	10	10	10	10	10	10	10	10
19 TOTAL LOADS		6787	6792	6842	7023	7052	7163	7215	7200	7021	7080
RESOURCES											
20 SYSTEM HYDRO		7264	7264	7264	7264	7264	7264	7264	7264	7264	7264
21 CONTRACT HYDRO		0	0	0	0	0	0	0	0	0	0
22 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
23A CAN. ENT. NON-FED(CSPE)	9/	22	21	16	0	0	0	0	0	0	0
23B CAN. ENT. NON-FED(CNDA)	9/	71	70	83	124	122	121	120	118	117	116
24 RESTORATION	10/	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23
25 TOTAL HYDRO		7334	7332	7340	7365	7363	7362	7361	7359	7358	7357
26 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
28 RENEWABLES		0	0	0	0	0	0	0	0	0	0
29 COGENERATION		0	0	0	0	0	0	0	0	0	0
30 IMPORTS	11/	0	0	0	0	0	0	0	0	0	0
31 CONTRACTS IN	12/	224	245	245	245	245	245	245	245	195	195
32 LARGE THERMAL	13/	945	945	945	945	945	945	945	945	945	945
33 FED PLANNED ACQUIS	14/	0	0	0	0	0	0	0	0	0	0
34 TOTAL RESOURCES		8503	8522	8530	8555	8553	8552	8551	8549	8498	8497

SUMMARY OF FEDERAL LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

L O W L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
35 HYD,SM THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0
36 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0
37 SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
38 DSI RESERVES	18/	0	0	0	0	0	0	0	0	0	0
39 FEDERAL HYDRO MAINT	19/	0	0	0	0	0	0	0	0	0	0
40 NET RESOURCES		8503	8522	8530	8555	8553	8552	8551	8549	8498	8497
41 FIRM SURPLUS/DEFICIT		2113	2126	2085	1929	1897	1785	1732	1745	1873	1813
42 TOTAL SURPLUS/DEFICIT		1716	1730	1689	1533	1501	1389	1336	1349	1477	1417
CONTRACTUALLY AVAILABLE RESOURCES FROM SURPLUS FIRM SALES											
43 CONTRACTUAL AVAIL RESOURCES		320	249	249	249	249	249	249	237	73	0

NOTE: BPA POWER SALES WITH THE PSW CONVERT TO CAPACITY/ENERGY EXCHANGES AND BPA POWER SALE WITH PSP&L CONVERTS TO A SEASONAL POWER EXCHANGE WHEN BPA BECOMES ENERGY DEFICIT. UNDER LOW LOADS CONTRACT CONVERSIONS ARE ASSUMED AS FOLLOWS:

A. BPA TO BGP, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 2009-10
B. BPA TO SCE, POWER SALE TO CAPACITY/ENERGY EXCHANGE CONVERTS IN OY 2009-10
C. BPA TO PSP&L, POWER SALE TO SEASONAL POWER EXCHANGE CONVERTS IN OY 2000-01
D. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OCTOBER 2009
E. BGP TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
F. SCE TO BPA, SUPPLEMENTAL ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS
G. SCE TO BPA, OPTION ENERGY IS A BPA RESOURCE OPTION AND NOT INCLUDED IN THIS ANALYSIS

FEDERAL SYSTEM FOOTNOTES

For Exhibits 1 through 5

1/ BPA's public agencies' purchases are requirements which these agencies place on BPA under their power sales contracts and BPA's partnership program. BPA's obligation is each agency's net firm load requirements not served by its own dedicated resources.

2/ BPA's exports include BPA's contracts with Northern California public agencies; BPA's short-term surplus firm energy sales to Portland General Electric and Portland General Exchange; BPA's surplus firm sales energy to the cities of Burbank, Glendale, and Pasedena, and to Southern California Edison through OY 1998-1999; BPA's capacity sales to the cities of Burbank, Glendale, and Pasedena, and to Southern California Edison beginning OY 1999-2000; BPA's contract with BC Hydro for Canadian Entitlement beginning April 1998; and Northwest-Southwest intertie losses.

3/ BPA's contracts out include BPA's contracts of Canadian Entitlement capacity and supplemental capacity to public agencies and IOUs; BPA's contracts with Clark County PUD and other public agencies (Packwood Lake); BPA's WNP-1 obligation contract with Montana Power Company, Pacific Power and Light, Portland General Electric, Puget Sound Power and Light, and Washington Water Power; BPA's WNP-3 settlement contract with Montana Power Company, Pacific Power and Light, Portland General Electric, Puget Sound Power and Light, and Washington Water Power; BPA's capacity contracts with Pacific Power and Light and Portland General Electric; BPA's short-term surplus firm energy sale with Portland General Electric; and BPA's surplus firm energy sale to Puget Sound Power and Light.

4/ Columbia Storage Power Exchange (CSPE) is the sale of the Canadian share of downstream benefits under the Treaty with Canada to a group of Northwest utilities expiring April 1, 2003.

5/ Generating private utility purchase is the contracted peak and energy requirement placed on the Federal system under the IOUs' power sales contracts with BPA. Puget Sound Power and Light is the only IOU purchasing energy from BPA through June 30, 1993 under its power sales contract.

6/ Federal diversity is a percentage reduction applied to the Federal system non-coincidental peak utility requirements. This is due to the fact that all peaking electrical loads do not occur simultaneously throughout the region.

7/ Industrial top quartile and first-quartile line losses are part of BPA's interruptible DSI loads.

8/ Sustained peaking adjustment is a percentage reduction applied to the Federal hydro system to meet a capacity load of 50-hours per week. This adjustment also includes reductions for Federal hydro maintenance, spinning reserves, and forced outage reserves.

9/ Canadian Entitlement Return non-Federal (CSPE) reflects the public agencies' and IOUs' obligation of Canadian Entitlement allocation to the Northwest entities of the CSPE, which expires April 1, 2003. Canadian Entitlement Return non-Federal (Canada) reflects the Federal system, public agencies', and IOUs' obligation of Canadian Entitlement allocation to Canada, which begins April 1, 1998.

10/ Restoration deals with the losses and gains of the hydro system due to Canadian storage under the terms of the Pacific Northwest Coordination Agreement. It is an obligation to those utilities that gained generation from the addition of Canadian storage, and a resource gain to utilities which lost generation from Canadian storage.

11/ BPA's imports include exchange energy from the cities of Burbank, Glendale, and Pasadena, and from Southern California Edison when their surplus firm sales convert to capacity/energy exchanges in OY 1999-2000.

12/ Contracts in include Montana Power Company's return of exchange energy under its capacity/energy exchange contract with BPA; BPA's WNP-3 settlement contract with Montana Power Company, Pacific Power and Light, Portland General Electric, Puget Sound Power and Light, and Washington Water Power; and Puget Sound Power and Light's seasonal power exchange contract with BPA when the current surplus firm contract converts in OY 1999-2000.

13/ Federal large thermal includes the generation from WNP-2, operated by WPPSS, and 30 percent of Portland General Electric's Trojan nuclear power plant.

14/ Federal planned acquisitions are BPA's budgeted conservation and resource acquisitions. BPA currently has no new acquisition programs over those budgeted for FY 1990 and 1991.

15/ Hydro, small thermal and miscellaneous resources, and combustion turbine reserve requirements are estimated at 5 percent of the Federal capacity of these resources.

16/ Large thermal reserve requirements are estimated at 15 percent of the Federal share of Pacific Northwest thermal resources.

17/ Federal spinning reserve is the reserve generating capacity maintained to provide a regulating margin for the automatic generation and frequency control of power generation.

18/ Direct service industrial reserve requirements are two-thirds of the industrial firm load, or the sum of the reserve requirements for Federal hydro, small thermal and miscellaneous resources, combustion turbines and large thermal, whichever is smaller.

19/ Hydro maintenance is the sum of the Federal hydro maintenance based on the mean of the 1983-84 through 1988-89 schedules submitted to the Northwest Power Pool.

EXHIBIT 6

FEDERAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING FEDERAL CONTRACTS AND NO FEDERAL SYSTEM ACQUISITIONS

M E D I U M L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	2916	3723	2823	2688	2154	3410	4735	4488	3188	5109	4255	4713	6798	4438
1991-92	3049	3869	2969	3829	3303	4644	6018	5810	4531	6420	5548	6006	8136	5797
1992-93	4460	5257	4357	4254	3669	4776	6141	5878	4536	6464	5679	6136	8186	5872
1993-94	4469	5274	4375	4257	3705	4823	6189	5925	4613	6563	5712	6169	8309	5959
1994-95	4667	5461	4562	4420	3856	4922	6179	5961	4581	6695	5891	6348	8384	6064
1995-96	4938	5730	4831	4680	4092	4884	6134	5887	4523	6620	5742	6201	8329	6305
1996-97	5298	6105	5205	5047	4440	5221	6469	6229	4856	6969	6035	6493	8620	6598
1997-98	5224	6018	5118	4948	4314	5077	6306	6071	4710	6851	5943	6401	8456	6413
1998-99	5088	5887	4982	4804	4150	4897	6115	5877	4516	6675	5519	5977	8021	6049
1999-00	5010	5782	4867	4698	4300	4720	5917	5690	4355	6779	5592	6049	8268	5975
2000-01	4936	5706	4786	4609	4198	4608	5821	5619	4245	6687	5490	5950	8093	5887
2001-02	4941	5701	4774	4601	4182	4575	5777	5580	4208	6668	5482	5941	8006	5898
2002-03	4874	5629	4697	4519	4088	4462	5650	5468	4099	6570	5089	5548	7587	5433
2003-04	4431	5134	4202	4041	3606	3962	5145	4932	3586	6056	4930	5389	7435	5192
2004-05	4320	5011	4079	3910	3463	3800	4960	4736	3390	5897	4771	5229	7285	5178
2005-06	4172	4861	3929	3755	3288	3464	4602	4359	3029	5577	4357	4816	7047	4878
2006-07	3921	4574	3642	3460	2979	3295	4418	4178	2856	5419	4208	4668	6831	4747
2007-08	3805	4455	3523	3335	2840	3207	4313	4087	2766	5349	4146	4632	6752	4692
2008-09	3442	4091	3159	2964	2448	3344	4442	4207	2896	5217	4022	4482	6613	4829
2009-10	3575	4221	3289	3087	2553	3044	4118	3859	2558	4904	3721	4181	6324	4555

SEPTEMBER 28, 1989

EXHIBIT 7

FEDERAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING FEDERAL CONTRACTS AND NO FEDERAL SYSTEM ACQUISITIONS

H I G H L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	2428	3147	2248	2116	1636	3008	3784	3440	2206	4663	3749	4206	6389	3640
1991-92	2275	2991	2079	2936	2436	3878	4694	4328	3121	5651	4745	5201	7453	4770
1992-93	3411	4125	3196	3084	2494	3665	4438	4075	2862	5441	4629	5084	7269	4623
1993-94	3267	3969	3029	2885	2301	3424	4160	3749	2558	5221	4343	4797	7084	4426
1994-95	3150	3834	2895	2731	2118	3196	3892	3426	2254	4972	4193	4647	6871	4315
1995-96	3555	4192	3253	3092	2711	2938	3589	3170	2041	5042	3921	4377	6672	4395
1996-97	3795	4384	3446	3299	2894	3091	3714	3271	2140	5202	4031	4486	6783	4518
1997-98	3595	4156	3219	3062	2628	2777	3351	2903	1796	4923	3784	4238	6463	4138
1998-99	3321	3872	2939	2777	2309	2415	2955	2504	1413	4586	3173	3627	5860	3630
1999-00	2746	3291	2359	2178	1697	1788	2285	1779	754	3952	2801	3254	5670	3381
2000-01	2522	3066	2134	1939	1441	1519	1976	1472	449	3706	2531	2986	5344	3145
2001-02	2468	3003	2071	1867	1350	1405	1825	1308	311	3599	2439	2893	5191	3087
2002-03	2252	2783	1851	1634	1087	1114	1495	948	-38	3304	1831	2284	4600	2433
2003-04	1600	2127	1195	960	385	367	721	91	-859	2543	1472	1924	4264	1980
2004-05	1312	1837	905	654	42	-23	276	-386	-1337	2159	1103	1554	3920	1801
2005-06	990	1509	577	311	-342	-628	-474	-1084	-2005	1621	497	952	3507	1332
2006-07	552	1062	130	-151	-844	-1009	-928	-1542	-2443	1258	150	604	3108	1029
2007-08	272	776	-156	-452	-1175	-1320	-1319	-1935	-2814	978	-115	364	2844	803
2008-09	-254	244	-688	-1000	-1762	-1407	-1482	-2085	-2946	644	-421	31	2537	780
2009-10	-274	218	-714	-1043	-1840	-1929	-2075	-2757	-3591	82	-938	-483	2054	322

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EXHIBIT 8

FEDERAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING FEDERAL CONTRACTS AND NO FEDERAL SYSTEM ACQUISITIONS

M E D I U M H I G H L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	2890	3610	2711	2597	2176	3606	4480	4274	3005	5370	4438	4896	7046	4229
1991-92	2862	3580	2680	3556	3129	4637	5560	5327	4070	6485	5555	6012	8220	5453
1992-93	4134	4849	3949	3865	3351	4608	5506	5267	3998	6440	5598	6055	8188	5442
1993-94	4081	4791	3892	3783	3274	4513	5379	5110	3855	6354	5441	5897	8124	5362
1994-95	4061	4772	3867	3749	3216	4430	5287	4963	3734	6271	5448	5903	8066	5373
1995-96	4590	5298	4380	4249	3958	4336	5158	4807	3602	6407	5244	5702	7960	5555
1996-97	4885	5587	4657	4516	4207	4568	5369	5029	3818	6663	5446	5903	8167	5785
1997-98	4759	5453	4514	4363	4033	4362	5127	4796	3601	6492	5302	5759	7953	5556
1998-99	4589	5262	4323	4169	3816	4117	4861	4520	3332	6256	4823	5279	7440	5114
1999-00	4149	4763	3827	3697	3329	3595	4311	3987	2830	5762	4570	5026	7357	4976
2000-01	4036	4636	3702	3564	3176	3442	4143	3853	2678	5625	4424	4881	7141	4853
2001-02	4050	4630	3697	3557	3163	3400	4100	3813	2640	5602	4409	4867	7056	4855
2002-03	3946	4512	3579	3431	3025	3235	3915	3620	2455	5445	3927	4384	6583	4313
2003-04	3418	3965	3033	2872	2462	2670	3329	2967	1841	4852	3708	4164	6379	3992
2004-05	3249	3794	2862	2690	2257	2438	3066	2685	1556	4624	3489	3945	6175	3935
2005-06	3047	3592	2660	2480	2020	1998	2579	2202	1107	4223	3016	3475	5887	3583
2006-07	2718	3257	2325	2136	1648	1762	2311	1925	847	3997	2800	3259	5610	3396
2007-08	2549	3083	2151	1952	1445	1598	2115	1721	654	3857	2671	3155	5472	3285
2008-09	2134	2663	1731	1522	989	1659	2150	1722	670	3649	2476	2933	5269	3360
2009-10	2209	2734	1802	1581	1023	1274	1724	1233	199	3251	2092	2549	4908	3015

SEPTEMBER 28, 1989

EXHIBIT 9

FEDERAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING FEDERAL CONTRACTS AND NO FEDERAL SYSTEM ACQUISITIONS

M E D I U M L O W L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	3426	4165	3265	3201	2848	4186	5171	5109	3785	6036	5077	5534	7620	4991
1991-92	3631	4380	3480	4386	4016	5429	6506	6379	5082	7371	6409	6868	9007	6390
1992-93	5053	5773	4873	4823	4386	5555	6619	6495	5182	7480	6594	7039	9119	6511
1993-94	5130	5848	4948	4877	4461	5625	6657	6497	5188	7521	6592	7051	9213	6567
1994-95	5213	5933	5030	4945	4525	5662	6680	6470	5170	7518	6683	7174	9269	6636
1995-96	5245	5969	5065	4973	4541	5658	6673	6451	5166	7509	6596	7142	9304	6654
1996-97	5636	6362	5459	5360	4923	6028	7042	6819	5525	7886	6914	7524	9687	6971
1997-98	5584	6301	5397	5287	4839	5918	6912	6703	5418	7807	6858	7467	9559	6817
1998-99	5478	6197	5294	5176	4714	5776	6761	6548	5264	7667	6471	7080	9173	6488
1999-00	5108	5824	4921	4792	4327	5368	6334	6141	4882	7267	6309	6918	9178	6427
2000-01	5064	5781	4878	4742	4266	5297	6259	6074	4794	7206	6236	6846	9034	6369
2001-02	5392	6105	5201	5065	4849	5293	6241	6064	4786	7487	6257	6866	8980	6407
2002-03	5349	6060	5157	5016	4784	5211	6142	5978	4702	7417	5895	6505	8600	5982
2003-04	4936	5612	4702	4588	4328	4741	5665	5484	4225	6938	5775	6384	8486	5800
2004-05	4856	5529	4612	4493	4220	4617	5521	5332	4066	6815	5657	6266	8374	5790
2005-06	4734	5419	4496	4373	4080	4355	5235	5019	3778	6560	5306	5904	8161	5573
2006-07	4561	5173	4237	4125	3836	4218	5082	4871	3637	6435	5188	5787	7976	5477
2007-08	4503	5103	4167	4050	3754	4436	5284	5074	3845	6663	5422	6048	8208	5467
2008-09	4171	4760	3824	3703	3390	4601	5440	5225	4004	6562	5328	5931	8101	5891
2009-10	4598	5177	4241	4113	3786	4333	5146	4896	3686	6274	5049	5652	7839	5638

SEPTEMBER 28, 1989

EXHIBIT 10

FEDERAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING FEDERAL CONTRACTS AND NO FEDERAL SYSTEM ACQUISITIONS

L O W L O A D S

1930 WATER LEVEL	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
PEAK IN MEGAWATTS														
1990-91	4012	4767	3867	3803	3466	4874	5907	5942	4603	6774	5827	6267	8362	5648
1991-92	4235	4972	4068	4994	4669	6180	7300	7275	5931	8106	7153	7687	9805	7031
1992-93	5612	6341	5437	5405	5017	6298	7423	7396	6031	8197	7286	7819	9889	7116
1993-94	5693	6419	5516	5475	5122	6423	7567	7513	6154	8327	7383	8016	10145	7228
1994-95	5864	6599	5695	5642	5280	6574	7726	7620	6263	8440	7540	8190	10280	7384
1995-96	5963	6695	5792	5735	5368	6662	7810	7710	6369	8520	7576	8223	10347	7473
1996-97	6434	7184	6281	6222	5857	7161	8324	8198	6844	9000	7993	8640	10758	7864
1997-98	6443	7176	6273	6207	5837	7132	8285	8170	6820	8991	7966	8613	10694	7762
1998-99	6387	7122	6219	6149	5772	7065	8219	8099	6747	8921	7648	8295	10372	7485
1999-00	6065	6799	5895	5816	5441	6734	7886	7778	6441	8592	7589	8236	10398	7473
2000-01	6061	6804	5900	5817	5436	6733	7883	7782	6426	8595	7582	8223	10343	7461
2001-02	6432	7172	6268	6188	6076	6798	7942	7850	6493	8941	7666	8307	10369	7546
2002-03	6435	7174	6270	6187	6072	6788	7922	7842	6482	8937	7348	7989	10066	7189
2003-04	6069	6807	5904	5814	5696	6389	7524	7419	6071	8541	7288	7931	10009	7062
2004-05	6032	6771	5867	5773	5649	6330	7452	7357	6000	8496	7245	7887	9966	7103
2005-06	5959	6711	5808	5703	5567	6137	7256	7173	5815	8326	7026	7673	9843	6976
2006-07	5883	6595	5696	5618	5473	6071	7181	7114	5756	8275	6976	7623	9721	6936
2007-08	5852	6563	5665	5585	5436	6096	7199	7131	5812	8339	7043	7690	9754	6985
2008-09	5594	6302	5404	5322	5167	6610	7715	7650	6296	8550	7257	7904	9973	7471
2009-10	6076	6783	5885	5802	5639	6482	7586	7451	6118	8381	7073	7720	9785	7292

SEPTEMBER 28, 1989

SECTION IX

REGIONAL EXHIBITS

EXHIBIT 11

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O A D S

OPERATING LEVEL

	MEGAWATTS		1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	18482	18556	18681	18835	18938	19131	19299	19515	19751	19979
2	SYSTEM TOTAL LOADS	2/	19398	19430	19513	19655	19745	19933	20088	20304	20540	20769
3	EXPORTS	3/	725	707	690	697	720	706	693	707	809	827
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		19207	19263	19372	19532	19658	19838	19993	20222	20561	20807
6	TOTAL LOADS		20124	20137	20203	20352	20465	20639	20782	21011	21350	21596
RESOURCES												
7	MAIN HYDRO	5/	11580	11579	11579	11580	11580	11580	11592	11592	11592	11593
8	INDEPENDENT HYDRO	5/	886	885	886	887	886	886	897	898	897	899
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12466	12464	12465	12467	12466	12466	12489	12490	12489	12492
11	SMALL THERMAL & MISC	7/	45	44	43	45	45	45	53	55	55	56
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	41	41	41	41	41	41	41	42	42	42
14	COGENERATION	10/	121	121	118	121	112	103	103	103	103	103
15	IMPORTS	11/	1328	1173	1155	1221	1169	1169	1191	1141	1108	1189
16	CENTRALIA		1113	1044	1112	1089	1112	1045	1113	1043	1112	1089
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		559	552	551	571	552	558	571	559	551	572
19	COLSTRIP 1 & 2		334	337	334	335	334	339	354	355	354	360
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		215	216	215	205	205	215	215	216	216	196
22	COLSTRIP 3		437	418	438	399	438	419	451	412	451	433
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		359	384	351	385	359	384	351	384	359	384
25	FED PLANNED ACQUIS	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	238	246	248	247	247	247	254	257	257	258
27	TOTAL RESOURCES		19601	19385	19416	19471	19425	19376	19531	19402	19442	19519
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19590	19374	19405	19460	19414	19365	19520	19391	19431	19508
34	FIRM SURPLUS/DEFICIT		383	111	33	-72	-244	-473	-473	-831	-1130	-1299
35	TOTAL SURPLUS/DEFICIT		-534	-763	-798	-892	-1051	-1274	-1262	-1620	-1919	-2088

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O A D S

	MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	20211	20443	20679	20942	21257	21553	21844	22130	22451	22817
2	SYSTEM TOTAL LOADS	2/	21000	21232	21468	21731	22047	22343	22634	22920	23241	23607
3	EXPORTS	3/	825	823	882	1062	1039	1017	931	900	895	881
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		21036	21266	21561	22004	22297	22571	22775	23031	23346	23699
6	TOTAL LOADS		21826	22055	22351	22793	23086	23360	23565	23821	24136	24488
RESOURCES												
7	MAIN HYDRO	5/	11594	11590	11592	11593	11593	11595	11596	11597	11598	11600
8	INDEPENDENT HYDRO	5/	900	897	896	897	898	901	901	902	903	904
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12494	12487	12488	12490	12491	12496	12497	12499	12501	12504
11	SMALL THERMAL & MISC	7/	54	54	54	55	56	57	58	59	59	61
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	42	43	43	43	43	43	43	43	43	43
14	COGENERATION	10/	103	103	103	102	84	66	66	66	66	66
15	IMPORTS	11/	1135	1152	1151	1085	1069	1100	1042	1041	1050	1027
16	CENTRALIA		1113	1045	1113	1084	1112	1089	1112	1113	1112	1112
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		551	571	564	552	551	571	551	558	558	558
19	COLSTRIP 1 & 2		358	353	353	359	356	359	360	366	368	371
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		216	216	215	216	196	216	216	216	216	196
22	COLSTRIP 3		453	410	450	432	452	415	455	436	438	439
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		351	384	359	384	351	384	359	346	359	359
25	FED PLANNED ACQUIS	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	258	257	256	257	257	258	258	259	259	260
27	TOTAL RESOURCES		19473	19420	19494	19404	19363	19399	19362	19347	19374	19341
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19462	19409	19483	19393	19352	19388	19351	19336	19363	19330
34	FIRM SURPLUS/DEFICIT		-1574	-1857	-2078	-2611	-2945	-3183	-3424	-3695	-3983	-4369
35	TOTAL SURPLUS/DEFICIT		-2364	-2646	-2868	-3401	-3734	-3972	-4214	-4485	-4773	-5159

EXHIBIT 12

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

H I G H L O A D S

OPERATING LEVEL

	MEGAWATTS		1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	19940	20507	21082	21685	22284	22823	23329	23869	24440	25012
2	SYSTEM TOTAL LOADS	2/	20940	21512	22090	22697	23298	23841	24351	24894	25468	26044
3	EXPORTS	3/	559	541	522	529	552	538	525	539	640	827
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		20500	21049	21604	22215	22836	23362	23855	24408	25080	25840
6	TOTAL LOADS		21499	22053	22612	23226	23851	24380	24876	25433	26108	26872
RESOURCES												
7	MAIN HYDRO	5/	11584	11585	11586	11588	11589	11591	11603	11604	11606	11608
8	INDEPENDENT HYDRO	5/	890	891	893	896	895	897	909	912	911	913
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12474	12476	12479	12484	12484	12488	12512	12516	12517	12521
11	SMALL THERMAL & MISC	7/	49	49	48	52	53	54	61	65	66	68
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	41	41	41	41	41	41	41	42	42	42
14	COGENERATION	10/	121	121	118	121	112	103	103	103	103	103
15	IMPORTS	11/	1394	1241	1228	1295	1246	1249	1273	1224	1194	1231
16	CENTRALIA		1113	1044	1112	1089	1112	1045	1113	1043	1112	1089
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		559	552	551	571	552	558	571	559	551	572
19	COLSTRIP 1 & 2		341	347	345	349	350	357	374	376	377	386
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		215	216	215	205	205	215	215	216	215	196
22	COLSTRIP 3		443	424	446	408	448	430	463	424	466	448
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		359	384	351	384	359	384	351	384	359	384
25	FED PLANNED ACQUIS	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	239	248	250	249	250	251	258	262	263	264
27	TOTAL RESOURCES		19693	19488	19529	19593	19557	19520	19680	19559	19610	19649
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19682	19477	19518	19582	19546	19509	19669	19548	19599	19638
34	FIRM SURPLUS/DEFICIT		-818	-1572	-2086	-2633	-3290	-3853	-4186	-4860	-5481	-6202
35	TOTAL SURPLUS/DEFICIT		-1817	-2576	-3094	-3644	-4305	-4871	-5208	-5885	-6510	-7234

EXHIBIT 12 (Continued)

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

H I G H L O A D S

	MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	25590	26094	26706	27361	28094	28813	29512	30211	30948	31739
2	SYSTEM TOTAL LOADS	2/	26626	27107	27722	28381	29118	29841	30543	31246	31986	32781
3	EXPORTS	3/	825	823	882	1062	1039	1017	931	900	895	881
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		26416	26917	27588	28423	29133	29830	30444	31112	31843	32621
6	TOTAL LOADS		27451	27931	28605	29443	30157	30858	31475	32147	32881	33663
RESOURCES												
7	MAIN HYDRO	5/	11610	11608	11610	11613	11615	11618	11620	11624	11626	11629
8	INDEPENDENT HYDRO	5/	916	915	915	917	920	924	925	928	930	933
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12526	12523	12525	12530	12535	12542	12545	12552	12556	12562
11	SMALL THERMAL & MISC	7/	67	68	70	71	73	76	78	80	82	84
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	42	43	43	43	43	43	43	43	43	43
14	COGENERATION	10/	103	103	103	102	84	66	66	66	66	66
15	IMPORTS	11/	1181	1202	1203	1141	1129	1164	1111	1113	1127	1108
16	CENTRALIA		1112	1045	1113	1084	1112	1089	1112	1112	1113	1113
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		551	571	564	552	551	571	551	558	558	558
19	COLSTRIP 1 & 2		385	382	384	393	392	399	401	411	415	420
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		216	216	216	216	196	216	216	216	216	196
22	COLSTRIP 3		471	428	470	453	475	438	482	464	466	469
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		351	384	359	384	351	384	359	346	359	359
25	FED PLANNED ACQUIS	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	265	264	264	266	266	268	269	270	271	272
27	TOTAL RESOURCES		19615	19574	19659	19580	19552	19601	19578	19576	19617	19595
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19604	19563	19648	19569	19541	19590	19567	19565	19606	19584
34	FIRM SURPLUS/DEFICIT		-6812	-7354	-7940	-8854	-9592	-10241	-10877	-11547	-12237	-13037
35	TOTAL SURPLUS/DEFICIT		-7847	-8368	-8957	-9875	-10616	-11268	-11908	-12582	-13276	-14079

EXHIBIT 13

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M H I G H L O A D S

	MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	18868	19181	19467	19807	20128	20447	20767	21089	21437	21780
2	SYSTEM TOTAL LOADS	2/	19799	20109	20382	20722	21037	21349	21669	21991	22340	22683
3	EXPORTS	3/	559	541	522	529	552	538	525	539	640	827
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		19428	19723	19989	20337	20681	20985	21292	21628	22077	22607
6	TOTAL LOADS		20359	20650	20904	21251	21589	21888	22195	22531	22980	23510
RESOURCES												
7	MAIN HYDRO	5/	11581	11581	11582	11582	11583	11584	11596	11596	11596	11598
8	INDEPENDENT HYDRO	5/	887	887	887	890	889	889	901	902	900	903
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12468	12468	12469	12472	12472	12473	12497	12498	12496	12501
11	SMALL THERMAL & MISC	7/	46	46	44	47	47	48	55	58	59	60
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	41	41	41	41	41	41	41	42	42	42
14	COGENERATION	10/	121	121	118	121	112	103	103	103	103	103
15	IMPORTS	11/	1385	1230	1214	1279	1228	1228	1250	1199	1167	1202
16	CENTRALIA		1113	1044	1112	1089	1112	1045	1113	1043	1112	1089
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		559	552	551	571	552	558	571	559	551	572
19	COLSTRIP 1 & 2		336	340	337	340	339	345	360	362	361	368
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		215	216	216	205	205	215	215	215	215	196
22	COLSTRIP 3		439	420	440	402	441	422	455	416	456	438
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		359	384	351	384	359	384	351	384	359	384
25	FED PLANNED ACQUIS.	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	238	246	248	247	248	248	255	259	259	260
27	TOTAL RESOURCES		19665	19453	19486	19543	19501	19455	19611	19483	19525	19560
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19654	19442	19475	19532	19490	19444	19600	19472	19514	19549
34	FIRM SURPLUS/DEFICIT		226	-281	-514	-805	-1191	-1541	-1692	-2156	-2563	-3058
35	TOTAL SURPLUS/DEFICIT		-705	-1208	-1429	-1719	-2099	-2444	-2595	-3059	-3467	-3961

EXHIBIT 13 (Continued)

SHEET 2 OF 2

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M H I G H L O A D S

	MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	22117	22402	22747	23136	23577	23997	24420	24848	25315	25822
2	SYSTEM TOTAL LOADS	2/	23021	23292	23637	24026	24467	24888	25311	25739	26206	26713
3	EXPORTS	3/	825	823	882	1062	1039	1017	931	900	895	881
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		22943	23226	23629	24199	24616	25015	25351	25749	26210	26703
6	TOTAL LOADS		23846	24116	24519	25089	25506	25905	26242	26640	27101	27594
RESOURCES												
7	MAIN HYDRO	5/	11599	11596	11597	11599	11600	11602	11603	11605	11607	11609
8	INDEPENDENT HYDRO	5/	905	902	902	903	905	908	908	910	912	913
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12504	12498	12499	12502	12505	12510	12511	12515	12519	12522
11	SMALL THERMAL & MISC	7/	58	58	59	60	61	63	64	65	66	68
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	42	43	43	43	43	43	43	43	43	43
14	COGENERATION	10/	103	103	103	102	84	66	66	66	66	66
15	IMPORTS	11/	1150	1167	1167	1103	1087	1119	1063	1063	1074	1052
16	CENTRALIA		1112	1045	1113	1084	1112	1089	1113	1112	1112	1113
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		551	571	564	553	551	571	551	558	558	558
19	COLSTRIP 1 & 2		367	362	362	369	367	372	372	380	383	386
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		216	215	216	216	196	216	216	216	216	196
22	COLSTRIP 3		459	416	456	438	459	422	463	445	447	448
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		351	384	359	384	351	384	359	346	359	359
25	FED PLANNED ACQUIS.	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	260	259	259	260	260	261	261	262	263	264
27	TOTAL RESOURCES		19518	19466	19545	19459	19421	19461	19427	19416	19451	19420
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19507	19455	19534	19448	19410	19450	19416	19405	19440	19409
34	FIRM SURPLUS/DEFICIT		-3436	-3771	-4095	-4751	-5206	-5565	-5935	-6344	-6770	-7294
35	TOTAL SURPLUS/DEFICIT		-4339	-4661	-4985	-5641	-6096	-6455	-6826	-7235	-7661	-8185

EXHIBIT 14

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O W L O A D S

	MEGAWATTS		OPERATING LEVEL 1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	17531	17531	17571	17667	17734	17756	17778	17907	18052	18182
2	SYSTEM TOTAL LOADS	2/	18395	18349	18352	18427	18466	18456	18447	18575	18721	18850
3	EXPORTS	3/	725	707	690	697	720	706	693	707	809	995
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		18257	18239	18261	18364	18454	18463	18471	18614	18861	19177
6	TOTAL LOADS		19120	19056	19043	19125	19187	19163	19141	19283	19530	19846
RESOURCES												
7	MAIN HYDRO	5/	11577	11577	11577	11576	11576	11577	11588	11587	11587	11588
8	INDEPENDENT HYDRO	5/	883	882	882	883	882	882	894	894	892	894
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12460	12459	12459	12459	12458	12459	12482	12481	12479	12482
11	SMALL THERMAL & MISC	7/	43	42	41	42	42	42	49	51	51	52
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	41	41	41	41	41	41	41	42	42	42
14	COGENERATION	10/	121	121	118	121	112	103	103	103	103	103
15	IMPORTS	11/	1321	1166	1147	1212	1159	1158	1179	1129	1094	1129
16	CENTRALIA		1113	1044	1112	1089	1113	1045	1113	1043	1112	1089
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		559	552	551	571	552	558	571	559	551	572
19	COLSTRIP 1 & 2		330	333	329	330	328	332	347	347	346	351
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		215	216	215	205	205	216	215	216	215	196
22	COLSTRIP 3		435	415	435	396	434	415	446	407	446	427
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		359	384	351	384	359	384	351	384	359	384
25	FED PLANNED ACQUIS	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	238	245	247	246	246	246	252	255	255	255
27	TOTAL RESOURCES		19580	19363	19391	19441	19394	19344	19494	19362	19398	19427
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19569	19352	19380	19430	19383	19333	19483	19351	19387	19416
34	FIRM SURPLUS/DEFICIT		1312	1113	1119	1066	929	870	1012	737	526	239
35	TOTAL SURPLUS/DEFICIT		449	296	337	305	196	170	342	68	-143	-430

EXHIBIT 14 (Continued)

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O W L O A D S

MEGAWATTS		OPERATING LEVEL 2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS											
1 SYSTEM FIRM LOADS	1/	18322	18466	18618	18790	19000	19209	19416	19623	19858	20128
2 SYSTEM TOTAL LOADS	2/	18991	19135	19287	19460	19669	19878	20085	20292	20528	20797
3 EXPORTS	3/	993	991	1050	1230	1208	1185	1100	900	895	881
4 FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5 FIRM LOADS		19315	19458	19668	20021	20208	20395	20516	20523	20754	21009
6 TOTAL LOADS		19984	20127	20337	20690	20877	21064	21185	21193	21423	21679
RESOURCES											
7 MAIN HYDRO	5/	11589	11584	11585	11586	11586	11587	11588	11589	11590	11591
8 INDEPENDENT HYDRO	5/	893	890	889	890	891	893	893	893	893	895
9 SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO		12482	12474	12474	12476	12477	12480	12481	12482	12483	12486
11 SMALL THERMAL & MISC	7/	50	49	49	50	50	51	51	52	52	53
12 COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13 RENEWABLES	9/	42	43	43	43	43	43	43	43	43	43
14 COGENERATION	10/	103	103	103	102	84	66	66	66	66	66
15 IMPORTS	11/	1075	1093	1092	1026	1010	1041	982	1018	1026	1001
16 CENTRALIA		1112	1045	1113	1084	1112	1089	1113	1112	1113	1113
17 TROJAN		782	782	782	782	782	782	782	782	782	782
18 JIM BRIDGER		551	571	564	552	551	571	551	558	558	558
19 COLSTRIP 1 & 2		349	342	342	347	344	347	346	352	353	355
20 BOARDMAN		397	397	397	397	397	397	397	397	397	397
21 VALMY		216	216	215	216	196	216	216	216	216	196
22 COLSTRIP 3		447	405	443	425	444	407	446	428	428	429
23 WNP 2		711	711	711	711	711	711	711	711	711	711
24 COLSTRIP 4		351	384	359	384	351	384	359	346	359	359
25 FED PLANNED ACQUIS	12/	0	0	0	0	0	0	0	0	0	0
26 PURPA RESOURCES	13/	256	254	254	254	254	255	255	255	256	256
27 TOTAL RESOURCES		19379	19324	19396	19304	19261	19295	19254	19273	19298	19260
28 HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29 LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30 BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31 DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22 HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33 NET RESOURCES		19368	19313	19385	19293	19250	19284	19243	19262	19287	19249
34 FIRM SURPLUS/DEFICIT		53	-145	-284	-728	-958	-1111	-1273	-1261	-1467	-1760
35 TOTAL SURPLUS/DEFICIT		-616	-814	-952	-1397	-1627	-1780	-1942	-1931	-2136	-2430

EXHIBIT 15

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

L O W L O A D S

OPERATING LEVEL

	MEGAWATTS		1990-91 AVG	1991-92 AVG	1992-93 AVG	1993-94 AVG	1994-95 AVG	1995-96 AVG	1996-97 AVG	1997-98 AVG	1998-99 AVG	1999- 0 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	16539	16333	16299	16202	16027	15910	15713	15708	15721	15720
2	SYSTEM TOTAL LOADS	2/	17306	17039	17000	16874	16644	16503	16253	16246	16259	16258
3	EXPORTS	3/	725	707	690	697	720	706	693	707	809	995
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		17265	17041	16989	16900	16747	16617	16407	16415	16530	16716
6	TOTAL LOADS		18031	17747	17690	17571	17364	17209	16946	16953	17068	17254
RESOURCES												
7	MAIN HYDRO	5/	11575	11574	11573	11573	11572	11572	11583	11582	11582	11582
8	INDEPENDENT HYDRO	5/	880	879	880	880	877	878	889	888	886	886
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12455	12453	12453	12453	12449	12450	12472	12470	12468	12468
11	SMALL THERMAL & MISC	7/	41	40	38	39	39	38	45	47	46	46
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	41	41	41	41	41	41	41	42	42	42
14	COGENERATION	10/	121	121	118	121	112	103	103	103	103	103
15	IMPORTS	11/	1315	1158	1138	1201	1147	1145	1165	1113	1077	1111
16	CENTRALIA		1113	1044	1112	1089	1113	1045	1112	1043	1112	1089
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		559	552	551	571	552	558	571	559	551	571
19	COLSTRIP 1 & 2		326	328	323	324	321	324	339	338	336	341
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		216	216	216	205	205	216	215	216	216	196
22	COLSTRIP 3		432	412	431	392	429	410	441	402	439	421
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		359	384	351	384	359	384	351	384	359	384
25	FED PLANNED ACQUIS.	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	237	244	246	244	244	245	250	253	253	253
27	TOTAL RESOURCES		19560	19338	19363	19409	19356	19304	19450	19315	19347	19370
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19549	19327	19352	19398	19345	19293	19439	19304	19336	19359
34	FIRM SURPLUS/DEFICIT		2284	2286	2363	2498	2598	2676	3032	2889	2806	2643
35	TOTAL SURPLUS/DEFICIT		1518	1580	1662	1827	1981	2084	2493	2351	2268	2105

EXHIBIT 15 (Continued)

SUMMARY OF LOADS AND RESOURCES OF PACIFIC NORTHWEST REGION
BPA AREA UNDER THE PNW ELECTRIC POWER PLANNING AND CONSERVATION ACT

L O W L O A D S

OPERATING LEVEL

	MEGAWATTS		2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
LOADS												
1	SYSTEM FIRM LOADS	1/	15729	15742	15759	15798	15867	15927	15988	16047	16131	16239
2	SYSTEM TOTAL LOADS	2/	16267	16280	16297	16336	16405	16465	16526	16585	16669	16777
3	EXPORTS	3/	993	991	1050	1230	1208	1185	1100	1057	895	881
4	FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
5	FIRM LOADS		16722	16734	16809	17029	17075	17112	17088	17104	17026	17120
6	TOTAL LOADS		17260	17272	17347	17567	17613	17650	17626	17642	17564	17658
RESOURCES												
7	MAIN HYDRO	5/	11582	11577	11577	11578	11578	11578	11578	11579	11579	11579
8	INDEPENDENT HYDRO	5/	887	883	882	881	882	883	882	883	883	883
9	SUS. PKNG. ADJUSTMENT	6/	0	0	0	0	0	0	0	0	0	0
10	TOTAL HYDRO		12469	12460	12459	12459	12460	12461	12460	12462	12462	12462
11	SMALL THERMAL & MISC	7/	45	43	43	43	43	43	43	43	44	44
12	COMBUSTION TURBINES	8/	455	455	455	455	455	455	455	455	455	455
13	RENEWABLES	9/	42	43	43	43	43	43	43	43	43	43
14	COGENERATION	10/	103	103	103	102	84	66	66	66	66	66
15	IMPORTS	11/	1056	1073	1070	1003	985	1015	955	953	968	969
16	CENTRALIA		1112	1045	1113	1084	1112	1089	1113	1112	1112	1113
17	TROJAN		782	782	782	782	782	782	782	782	782	782
18	JIM BRIDGER		551	571	564	552	551	571	551	558	558	558
19	COLSTRIP 1 & 2		337	330	329	333	329	331	330	334	335	335
20	BOARDMAN		397	397	397	397	397	397	397	397	397	397
21	VALMY		216	216	216	216	196	216	216	216	216	196
22	COLSTRIP 3		440	397	434	416	434	398	435	417	417	417
23	WNP 2		711	711	711	711	711	711	711	711	711	711
24	COLSTRIP 4		351	384	359	384	351	384	359	346	359	359
25	FED PLANNED ACQUIS.	12/	0	0	0	0	0	0	0	0	0	0
26	PURPA RESOURCES	13/	253	251	250	251	250	251	251	251	251	251
27	TOTAL RESOURCES		19320	19261	19328	19231	19183	19213	19167	19146	19176	19158
28	HYD,SM THRM & MISC RES	14/	0	0	0	0	0	0	0	0	0	0
29	LARGE THERMAL RESERVES	15/	0	0	0	0	0	0	0	0	0	0
30	BPA SPINNING RESERVES	16/	0	0	0	0	0	0	0	0	0	0
31	DSI RESERVES	17/	0	0	0	0	0	0	0	0	0	0
22	HYDRO MAINTENANCE	18/	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
33	NET RESOURCES		19309	19250	19317	19220	19172	19202	19156	19135	19165	19147
34	FIRM SURPLUS/DEFICIT		2587	2516	2508	2191	2097	2090	2068	2031	2139	2027
35	TOTAL SURPLUS/DEFICIT		2049	1978	1970	1653	1559	1552	1530	1493	1601	1489

REGIONAL FOOTNOTES

For Exhibits 11 through 15

1/ Firm loads for the region include the sum of the estimated firm loads of Federal agencies, public agencies, DSIs, IOUs, and associated transmission losses. Peak loads represent non-coincidental capacity demands adjusted to account for Federal system diversity.

2/ Total loads for the region include system firm loads, plus BPA's nonfirm loads, which include industrial first-quartile loads, associated transmission losses, and Utah Power Company's interruptible load.

3/ Exports from the region by Northwest utilities include BPA's contracts with Northern California public agencies; BPA's surplus firm sales to the cities of Burbank, Glendale and Pasedena, and to Southern California Edison through OY 1999-2000; BPA's capacity sales to the cities of Burbank, Glendale and Pasedena, and to Southern California Edison beginning OY 1999-2000; BPA's contract with BC Hydro for Canadian Entitlement beginning April 1, 1998; Northwest-Southwest intertie losses; Pacific Power and Light's transfer to its Northern California load and its contracts with Pacific Gas and Electric, Southern California Edison, Sacramento Municipal Utility District, and Utah Power Company; Portland General Electric's contracts with Pacific Gas and Electric, Portland General Exchange, Southern California Edison, and Western Area Power Administration (WAPA); Seattle City Light's contract with Pacific Gas and Electric; Tacoma City Light's contract with WAPA; and Washington Water Power's contracts with Pacific Gas and Electric and Southern California Edison.

Also included in exports are resources owned by utilities outside the region. These include the Basin Electric to WAPA transfer; Longview Fibre to WAPA; and 14.2 percent of Boardman to San Diego Gas and Electric.

4/ Federal diversity is a percentage reduction applied to the Federal system non-coincidental peak utility allocation requirements. This is due to the fact that all peaking electrical loads do not occur simultaneously throughout the region.

5/ Hydro resources are the sum of all utilities' mainstem and independent hydro projects for Pacific Northwest regional utilities, except for Utah Power Company.

6/ Sustained peaking adjustment is a percentage reduction applied to the Federal hydro system to meet a capacity load of 50-hours per week. This adjustment also includes reductions for Federal hydro maintenance, spinning reserves, and forced outage reserves.

7/ Small thermal and miscellaneous resources include Bonners Ferry's Diesel No. 1, Diesel No. 2, and No Name; City of Idaho Falls' Diesel; Portland General Electric's Summit plants; Puget Sound Power and Light's Crystal Mountain and Shuffleton; Montana Power Company's portion of Corette and Bird in the region; and Seattle City Light's Boundary.

8/ Combustion turbines include Idaho's Wood River; Portland General Electric's Bethel and Beaver; Puget Sound Power and Light's Whidbey Island, Whitehorn, Fredrickson, and Fredonia units; and Washington Water Power's Northeast units.

9/ Renewables include Emerald County PUD's Short Mountain; and Washington Water Power's Kettle Falls.

10/ Cogeneration includes Clark's Great Western Malting; Eugene Water and Electric Board's WEYCO Energy Center and Willamette Steam Plant; Seattle City Light's Metro Westpoint; and Tacoma's Steam Plant No. 2.

Longview Fibre is sold outside the region to WAPA.

11/ Imports include return energy to BPA from the cities of Glendale, Pasadena, and Burbank, and from Southern California Edison when their surplus firm sales convert to capacity/energy exchanges beginning in OY 1999-2000; Southern California Edison's contract with Portland General Electric; Pacific Power and Light's transfers from Pacific Power and Light's Wyoming Division; BC Hydro and Pacific Gas and Electric's contracts with Seattle City Light; Utah Power Company's intracompany transfer; and Pacific Gas and Electric, Southern California Edison, and BC Hydro's contracts with Washington Water Power.

Basin Electric to WAPA is an import transfer through the region.

12/ Federal planned acquisitions are BPA's budgeted conservation and resource acquisitions. BPA currently has no new acquisition programs over those budgeted for FY 1990 and 1991.

13/ Resources under the Public Utility Regulatory Policies Act (PURPA) are those that have been declared as firm resources by BPA customers under Exhibit I of their power sales contracts.

14/ Hydro, small thermal and miscellaneous resources, and combustion turbine reserve requirements are estimated at 5 percent of the capacity of these resources for all utilities in the region.

15/ Large thermal reserves requirements are estimated at 15 percent of the total capacity of the Pacific Power and Light thermal import into the region plus the large thermal resources owned by utilities in the region.

16/ Federal spinning reserves equal the reserve generating capacity maintained to provide a regulating margin for the automatic generation and frequency control of power generation.

17/ Direct service industry reserve requirements are estimated at two-thirds of the industrial firm load, or the sum of the reserve requirements for Federal hydro, small thermal and miscellaneous resources, combustion turbines and large thermal, whichever is smaller.

18/ Hydro maintenance is the sum of individual Federal system, public agencies, and IOUs hydro maintenance, based on the average of the 1983-84 through 1988-89 schedules submitted to the Northwest Power Pool.

EXHIBIT 16

REGIONAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING REGIONAL CONTRACTS AND NO RESOURCE ACQUISITIONS

M E D I U M L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	7859	8628	7687	7087	6349	8226	8533	7572	6489	7901	6630	6667	8722	9167
1991-92	7568	8536	7595	6837	6492	8009	8367	7461	6451	7356	6283	6312	8845	8677
1992-93	7467	8262	7321	6922	6321	7828	8191	7169	6031	7084	6458	6491	8690	8122
1993-94	7191	7990	7049	6877	6066	7560	8102	7080	6000	7092	5813	5842	8389	7673
1994-95	6963	7774	6833	6416	5873	7244	7725	6760	5564	7181	5981	6018	7775	7688
1995-96	6932	7769	6828	6600	5915	6986	7342	6497	5377	6970	5230	5258	7811	8208
1996-97	6872	7670	6730	6498	5769	6841	7179	6213	5045	6713	5298	5332	7671	7868
1997-98	6578	7395	6454	6041	5467	6502	6811	5809	4679	6167	5323	5352	7488	6906
1998-99	6222	7015	6075	5566	5022	6024	6305	5260	4116	5686	4095	4133	6309	6375
1999-00	5403	6182	5244	4958	3897	5150	5506	4498	3446	4935	3725	3754	6948	6398
2000-01	5110	5912	4974	4483	3693	4910	5133	4133	3015	4815	3347	3382	6207	5715
2001-02	4917	5732	4795	4492	3460	4638	4820	3903	2731	4367	3074	3103	5576	5858
2002-03	4681	5445	4510	3813	3127	4271	4430	3428	2351	3998	2782	2822	4626	5085
2003-04	3589	4530	3594	2843	2139	3258	3398	2279	1271	2925	2348	2377	4692	4136
2004-05	3385	4175	3239	2669	1635	2684	2884	1742	666	2471	1811	1848	4266	3788
2005-06	3052	3834	2898	2532	1311	2318	2363	1276	225	2076	966	995	4499	4067
2006-07	2706	3518	2582	1998	1135	2078	2087	968	-68	2036	550	590	3271	3485
2007-08	2554	3385	2449	2050	733	1610	1583	464	-511	1615	152	206	3170	3619
2008-09	2313	3104	2168	1755	380	1637	1660	-106	-1194	1137	-118	327	2534	3075
2009-10	2252	3041	2105	1672	148	1348	1474	-808	-1897	541	-676	-231	1924	2729

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EXHIBIT 17

REGIONAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING REGIONAL CONTRACTS AND NO RESOURCE ACQUISITIONS

H I G H L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	6565	7248	6307	5661	4950	6840	6487	5116	4094	6298	4986	5023	7232	7258
1991-92	5742	6613	5674	4857	4488	5967	5639	4214	3298	5108	4056	4085	6818	6272
1992-93	5117	5832	4896	4429	3743	5131	4746	3250	2266	4281	3703	3737	6175	5244
1993-94	4447	5150	4216	3946	2979	4274	3978	2410	1492	3630	2414	2443	5263	4208
1994-95	3536	4267	3332	2865	2107	3297	3043	1358	468	2958	1911	1949	4070	3692
1995-96	3047	3809	2874	2581	1600	2460	2038	619	-148	2335	797	826	3776	3885
1996-97	2647	3360	2425	2115	1048	1870	1380	-235	-1037	1599	409	445	3215	3159
1997-98	1982	2730	1795	1288	337	1068	497	-1173	-1914	608	12	41	2648	1840
1998-99	1269	1990	1055	439	-527	119	-528	-2281	-3013	-341	-1656	-1615	1064	917
1999-00	59	761	-175	-577	-2071	-1517	-2147	-3891	-4491	-1814	-2758	-2728	1000	520
2000-01	-625	96	-840	-1456	-2732	-2270	-3087	-4794	-5455	-2392	-3570	-3533	-137	-536
2001-02	-1097	-367	-1302	-1746	-3303	-2942	-3854	-5502	-6216	-3243	-4223	-4194	-1111	-718
2002-03	-1734	-1054	-1990	-2840	-4099	-3830	-4823	-6636	-7209	-4145	-5017	-4974	-2525	-1931
2003-04	-3246	-2402	-3338	-4256	-5584	-5404	-6477	-8434	-8888	-5759	-5968	-5939	-2931	-3337
2004-05	-3887	-3196	-4132	-4885	-6599	-6553	-7629	-9686	-10199	-6812	-7073	-7034	-3876	-4161
2005-06	-4696	-4019	-4955	-5524	-7480	-7546	-8844	-10821	-11280	-7768	-8449	-8420	-4129	-4341
2006-07	-5487	-4789	-5725	-6529	-8186	-8381	-9780	-11789	-12210	-8365	-9395	-9351	-5840	-5385
2007-08	-6085	-5373	-6309	-6944	-9106	-9437	-10934	-12992	-13297	-9366	-10346	-10291	-6445	-5722
2008-09	-6790	-6122	-7058	-7725	-10002	-9833	-11310	-14223	-14658	-10402	-11144	-10698	-7561	-6721
2009-10	-7278	-6614	-7550	-8254	-10734	-10580	-11998	-15681	-16097	-11629	-12304	-11858	-8719	-7587

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EXHIBIT 18

REGIONAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING REGIONAL CONTRACTS AND
NO RESOURCE ACQUISITIONS

M E D I U M H I G H L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	7605	8288	7347	6728	6113	8123	7911	6926	5834	7847	6484	6521	8645	8618
1991-92	7074	7944	7003	6220	5972	7605	7442	6435	5421	7010	5876	5904	8527	7916
1992-93	6772	7487	6546	6122	5590	7171	6986	5917	4826	6570	5893	5927	8230	7220
1993-94	6387	7090	6149	5932	5149	6674	6616	5516	4474	6289	4957	4985	7645	6494
1994-95	5780	6509	5569	5162	4623	6085	6117	4893	3878	5996	4817	4855	6789	6307
1995-96	5613	6366	5428	5207	4475	5647	5531	4414	3488	5580	3901	3930	6673	6666
1996-97	5386	6082	5146	4917	4120	5275	5114	3913	2946	5145	3798	3833	6375	6187
1997-98	4965	5697	4762	4345	3690	4787	4575	3326	2405	4450	3682	3711	6067	5107
1998-99	4492	5199	4264	3746	3104	4149	3889	2582	1658	3811	2305	2344	4756	4446
1999-00	3526	4223	3288	2987	1848	2840	2629	1352	533	2658	1511	1540	4976	4317
2000-01	3105	3825	2889	2379	1492	2428	2063	827	-53	2407	1008	1043	4124	3530
2001-02	2852	3584	2648	2322	1183	2057	1632	496	-436	1884	666	694	3434	3617
2002-03	2521	3203	2267	1545	739	1563	1093	-201	-1024	1339	211	252	2332	2702
2003-04	1296	2147	1211	430	-412	362	-150	-1562	-2297	93	-387	-358	2252	1612
2004-05	957	1655	719	113	-1078	-395	-871	-2311	-3112	-534	-1086	-1049	1679	1130
2005-06	489	1176	240	-168	-1559	-939	-1597	-2985	-3751	-1097	-2090	-2061	1769	1275
2006-07	17	725	-211	-841	-1893	-1359	-2080	-3529	-4272	-1332	-2692	-2651	373	531
2007-08	-289	435	-501	-953	-2477	-2034	-2817	-4277	-4938	-1951	-3277	-3223	103	508
2008-09	-684	-3	-939	-1412	-3012	-2157	-2906	-5094	-5870	-2633	-3740	-3295	-706	-202
2009-10	-901	-223	-1159	-1657	-3426	-2622	-3292	-6036	-6805	-3423	-4483	-4038	-1480	-706

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EXHIBIT 19

REGIONAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING REGIONAL CONTRACTS AND NO RESOURCE ACQUISITIONS

M E D I U M L O W L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	8879	9580	8639	8083	7626	9572	9527	8909	7735	9496	8064	8100	10100	10288
1991-92	8723	9625	8684	7946	7856	9431	9485	8815	7725	9049	7820	7849	10331	9899
1992-93	8710	9430	8489	8117	7766	9317	9370	8663	7488	8929	8145	8180	10321	9481
1993-94	8599	9308	8367	8209	7626	9152	9345	8597	7448	8938	7509	7538	10035	9033
1994-95	8237	8973	8028	7681	7367	8848	9140	8311	7163	8914	7634	7712	9459	9074
1995-96	8039	8806	7862	7706	7261	8711	8891	8237	7163	8877	7047	7161	9679	9465
1996-97	8102	8818	7874	7719	7241	8710	8880	8069	6949	8727	7216	7400	9700	9218
1997-98	7898	8637	7693	7358	7047	8489	8633	7806	6718	8305	7357	7536	9629	8363
1998-99	7648	8359	7414	6989	6716	8137	8263	7408	6303	7957	6259	6446	8568	7941
1999-00	6919	7613	6669	6475	5733	7135	7342	6529	5504	7100	5746	5924	9046	8056
2000-01	6740	7454	6509	6115	5655	7038	7120	6297	5212	7098	5479	5662	8410	7476
2001-02	6647	7374	6429	6224	5502	6888	6941	6198	5064	6745	5325	5502	7890	7720
2002-03	6514	7190	6245	5650	5287	6652	6686	5853	4801	6485	5137	5325	7034	7037
2003-04	5513	6361	5417	4767	4401	5752	5772	4870	3878	5559	4844	5022	7234	6213
2004-05	5432	6129	5186	4720	4038	5335	5426	4490	3431	5244	4442	4626	6932	5982
2005-06	5215	5898	4956	4699	3849	5112	5056	4138	3102	4950	3695	3873	7261	6342
2006-07	4950	5666	4726	4252	3768	4983	4894	3971	2945	5035	3395	3585	6143	5863
2007-08	4924	5658	4718	4432	3507	4918	4799	3849	2880	4986	3365	3569	6415	6103
2008-09	4766	5460	4520	4223	3253	4991	4916	3432	2355	4644	3223	3818	5899	5929
2009-10	5067	5759	4819	4507	3400	4800	4827	2885	1809	4190	2798	3392	5415	5698

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EXHIBIT 20

REGIONAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

20 YEAR MONTHLY SUMMARY

ASSUMING EXISTING REGIONAL CONTRACTS AND
NO RESOURCE ACQUISITIONS

L O W L O A D S

1930 WATER LEVEL

PEAK IN MEGAWATTS

	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN
1990-91	9883	10595	9655	9106	8716	10743	10786	10456	9240	10865	9414	9452	11402	11506
1991-92	9865	10756	9811	9103	9124	10814	10963	10585	9413	10567	9302	9420	11812	11224
1992-93	9929	10656	9712	9370	9148	10835	11011	10590	9327	10564	9736	9858	11892	10887
1993-94	9938	10655	9710	9596	9171	10867	11227	10788	9555	10799	9294	9512	11887	10615
1994-95	9782	10531	9586	9287	9140	10821	11307	10785	9543	11018	9650	9892	11501	10859
1995-96	9770	10537	9593	9492	9234	10910	11308	10981	9793	11200	9262	9497	11868	11436
1996-97	10029	10762	9818	9724	9456	11178	11592	11056	9818	11257	9629	9869	12008	11358
1997-98	9981	10729	9784	9518	9433	11150	11558	11011	9796	11018	9948	10183	12097	10654
1998-99	9879	10598	9654	9302	9274	10990	11398	10830	9590	10853	9022	9265	11196	10385
1999-00	9297	10001	9057	8942	8463	10180	10690	10166	8991	10175	8677	8912	11837	10649
2000-01	9265	9989	9044	8734	8557	10275	10681	10142	8905	10350	8577	8818	11351	10217
2001-02	9317	10054	9109	8993	8571	10312	10710	10252	8967	10181	8598	8834	10989	10614
2002-03	9334	10021	9076	8576	8530	10272	10670	10141	8921	10111	8593	8839	10296	10087
2003-04	8487	9341	8396	7852	7819	9573	9976	9367	8190	9357	8466	8702	10648	9414
2004-05	8549	9250	8306	7951	7621	9342	9835	9243	7997	9259	8270	8511	10534	9353
2005-06	8504	9194	8249	8112	7637	9348	9718	9120	7890	9159	7700	7935	11030	9869
2006-07	8390	9109	8164	7813	7728	9427	9784	9199	7971	9453	7599	7844	10093	9562
2007-08	8509	9245	8299	8145	7639	9311	9662	9046	7894	9370	7525	7760	10279	9965
2008-09	8536	9231	8285	8125	7595	9791	10193	9155	7864	9478	7821	8472	10209	9964
2009-10	9001	9694	8748	8581	7934	9768	10290	8897	7599	9265	7626	8277	9938	9932

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SECTION X

GLOSSARY

GLOSSARY

Average Megawatts - A unit of electrical consumption or production over a year. It is equivalent to the energy produced by the continuous use of one megawatt of capacity served over a period of one year. (Equivalent to 8.76 gigawatt hours, 8,760 megawatt hours, or 8,7600,000 kilowatt hours.)

Biomass - Any organic matter which is available on a renewable basis including forest residues, agricultural crops and waste, wood and wood wastes, animal wastes, livestock operation residue, aquatic plants, and municipal wastes.

Boiling Water Reactor (BWR) - A nuclear power plant in which steam from the reactor is fed directly into the steam turbine.

Bonneville Power Administration (BPA) - BPA is a power marketing agency, responsible for acquiring and delivering sufficient power to meet its contractual obligations to serve the electrical needs of its customers. BPA does not own generating resources.

Calendar Year - Calendar year (CY) is the 12-month period January 1 through December 31. For example, CY 1991 is January 1, 1991 through December 31, 1991.

Capacity - The maximum power that an electrical system or machine such as a hydro powered or thermal powerd generating plant can produce under specified conditions.

Capacity Factor - The ratio of the average load on a machine or piece of equipment over a given period to the maximum power rating of the machine or equipment.

Cogeneration - The simultaneous production of electricity and useful heat energy from a fuel source. Often, this is accomplished by the recovery of waste energy caused by various industrial and commercial operations. This is typically used for industrial processes or space heating applications.

Conservation - Any reduction in electrical power consumption as a result of increases in the efficiency of energy use, production, or distribution.

Critical Period - That portion of the historical streamflow record during which the recorded streamflows, combined with all available reservoir storage, produced the least amount of energy.

Dedicated Resources - Generating resources owned by a utility and used to serve its firm load. These resources are declared for a rolling 7-year period in Exhibit I of the utilities power sales contracts with BPA.

Direct Service Industries (DSI) - A group of industrial customers that purchase electric power directly from BPA. Most DSIs are aluminum and other primary metal smelting plants.

Diversity - An adjustment applied to peak loads to reflect the fact that all peaking electrical demands do not occur simultaneously across the region.

Energy Load - The demand for power averaged over a specified period of time.

Federal Columbia River Power System (FCRPS) - The FCRPS consists of 30 Federal hydroelectric projects constructed and operated by the U.S. Army Corps of Engineers (COE) and the U.S. Bureau of Reclamation (USBR), plus BPA's transmission facilities.

Federal System - The Federal system is a combination of BPA's customer loads and contractual obligations, and resources from which BPA acquires the power it sells. The resources include plants operated by the U.S. Army Corps of Engineeers (COE), U.S. Bureau of Reclamation (USBR) and hydroelectric projects owned by the city of Idaho Falls and WPPSS. BPA markets the thermal generation from WNP-2, operated by WPPSS and 30 percent of the output of Portland General Electric's Trojan nuclear power plant.

50-Hour Peak Capacity - The amount of capacity that can be sustained for 10 hours a day during peak-load hours for a five-day week.

Firm Capacity - Maximum on-peak electrical energy which is considered assurable to the customer to meet all contractual peak load requirements over a defined period.

Firm Energy - Electric power which is considered assurable to the customer to meet all contractual energy load requirements over a defined period.

Firm Energy Load Carrying Capability (FELCC) - The amount of electrical energy load that a hydro system could serve on a firm basis under critical-period streamflows.

Fiscal Year - In this study, fiscal year (FY) is the 12 month period October 1 to September 30. For example FY 1990-91 is October 1, 1990 to September 30, 1991.

Forced Outage Reserve - Capacity that is held in reserve, for use in case a generating unit malfunctions.

Forced Energy Sale (Spill) - Electrical energy that cannot be accepted into the system and must either be sold or spilled due to constraints and limitations of hydro projects.

Historical Streamflow Record - The unregulated streamflow database of the 50-years from July 1928 to June 1978.

Hydroregulation - A study simulating operation of the Pacific Northwest electric power system that incorporates the historical streamflow record, monthly loads, thermal and other non-hydro resources, hydroelectric plant data for each project, and the constraints limiting each project's operation.

Interruptible Loads - Loads that can be interrupted in the event of a power deficiency on the supplying system.

Megawatts - A unit of electrical power equal to one million watts or one thousand killowatts.

Model Conservation Standards (MCS) - A set of energy efficient building standards for new electrically heated residential and commercial and residential buildings. It also includes standards for residential and commercial buildings that have been changed to electric space heating.

Nondedicated Resources - Resources brought into service after June 1980 by BPA customers who choose not to use them to serve their own firm loads.

Nonfirm Energy - Electrical power produced by the hydro system that is available with water conditions better than those of the critical period without appreciably jeopardizing reservoir refill. It is available in varying amounts depending upon season and weather conditions.

Obligation - Capacity and energy the Federal system is required to provide to public agencies and IOUs under their power sales contracts with BPA.

Operating Year - For this study, operating year (OY) is the 12-month period July 1 to June 30. For example, OY 1990-91 is July 1, 1990 to June 30, 1991.

Peak Load - The maximum demand for power during a specified period of time.

PURPA Resources - Resources declared by utilities according to the Public Utility Regulatory Policies Act of 1978 (Public Law 95-617).

Region - The geographic area defined by the Pacific Northwest Electric Power Planning and Conservation Act. It includes Oregon, Washington, Idaho, Montana west of the Continental Divide, portions of Nevada, Utah, and Wyoming that lie within the Columbia River drainage basin; and any rural electric cooperative customer not in the geographic area described above but served by BPA on the effective date of the Northwest Power Planning Act.

Resource Acquisitions - Conservation or generating resources acquired in order to bring the region into loads and resources balance.

Secondary Energy Loads - Loads that are served with nonfirm energy whenever it is available.

Spinning Reserves - Reserve generating capacity which is maintained for immediate response to load variations. This provides a regulating margin for controlling the automatic generation and frequency of power in the Federal system.

Surplus Firm Capacity - The maximum amount of assured electrical power above the firm peak loads served by the power system.

Surplus Firm Energy - The amount of assured electrical energy above the firm energy loads served by the power system.

Sustained Peak - The peaking capacity necessary to sustain a load for a given period of time.

Water Budget - A part of the Pacific Northwest Power Planning Council's Fish and Wildlife Program which calls for a quantity of water to be released in order to assist in the downstream migration of juvenile salmon and steelhead.