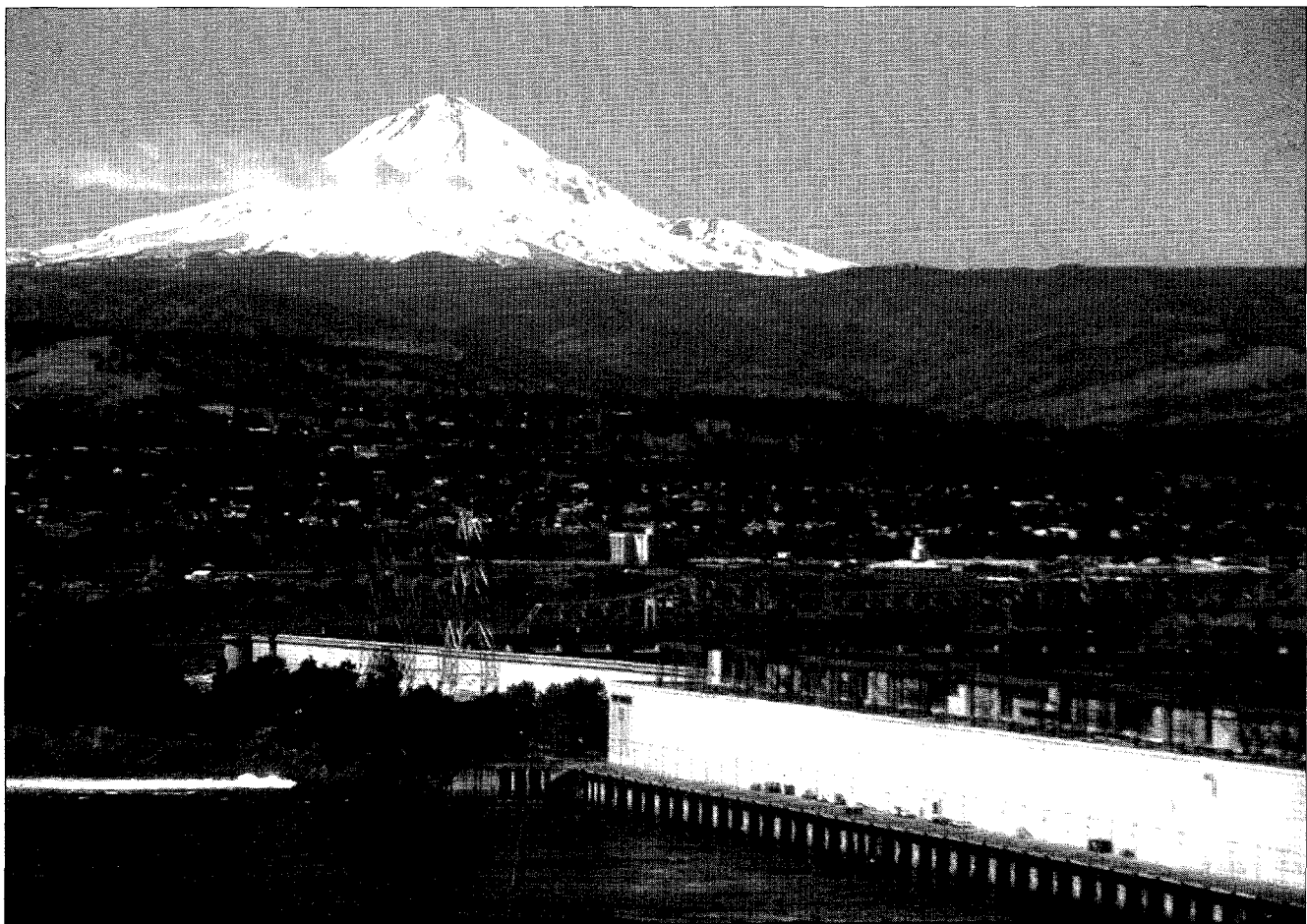


1996 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

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1996 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

THE WHITE BOOK

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BONNEVILLE POWER ADMINISTRATION
December 1996

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Preparation of the annual Pacific Northwest loads and resources study is a complex, multidisciplinary effort. The managers of BPA's Production Planning Group wish to acknowledge the team—BPA staff and others—whose diligence and dedication result in a reliable, high quality document.

Marketing Analysis Group

Forecasting and Analysis

Production Planning Group

Long-Term Planning

Pacific Northwest Utilities Conference Committee

Loads and Resources Data Collection

1996 Pacific Northwest Loads and Resources Study

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I. INTRODUCTION

Description of the White Book

The Pacific Northwest Loads and Resources Study (White Book) is published annually by BPA and establishes the planning basis for supplying electricity to customers. It serves a dual purpose.

First, the White Book presents projections of regional and Federal system load and resource capabilities, along with relevant definitions and explanations.

Second, the White Book serves as a benchmark for annual BPA determinations made pursuant to the 1981 regional power sales contracts. Specifically, BPA uses the information in the White Book for determining the notice required when customers request to increase or decrease the amount of power purchased from BPA.

Aside from these purposes, the White Book is used for input to BPA's resource planning process. The White Book compiles information obtained from several formalized resource planning reports and data submittals, including those from the Northwest Power Planning Council (Council) and the Pacific Northwest Utilities Conference Committee (PNUCC).

The White Book is not an operational planning guide. Operation of the Federal Columbia River Power System (FCRPS) is based on a set of criteria different from that used for resource planning decisions. Operational planning is dependent upon real-time or near-term knowledge of system conditions, including expectations of river flows and runoff, market opportunities, availability of reservoir storage, energy exchanges, and other factors affecting the dy-

namics of operating a power system. In contrast, the information in the White Book is based upon a different and less variable set of assumptions regarding loads, hydro capabilities, and contractual obligations.

The Administrator's Record of Decision (ROD) for the 1996 White Book is contained in Section IX, page 121.

The 1996 White Book 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. Data detailing Pacific Northwest non-utility generating (NUG) resources is also available upon request. This analysis updates the 1995 Pacific Northwest Loads and Resources Study, published in December 1995.

The load forecast is derived by using regional economic planning models to predict the loads that will be placed on electric utilities in the region. It incorporates information on forecasted loads (derived from current power sales contracts and exchange agreements) and resource capabilities obtained from public agency utility customers and investor-owned utility (IOU) customers through utilities' annual data submittals to the PNUCC, BPA's Firm Resource Exhibit (FRE Exhibit I) submittals, and analysis of the Federal hydroelectric power system.

In this loads and resources study, resource availability is compared with a medium forecast of electricity consumption. The forecasted future electricity demands—firm loads—are subtracted from

the projected capability of existing and "contracted for" 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, which BPA may use or market to increase revenues. Conversely, if firm loads exceed available resources, there is a deficit of energy and/or capacity, and BPA would add conservation, contract purchases, or generating resources as needed to meet its firm loads.

This document analyzes 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 power system, which includes loads and resources in addition to the Federal system.

The loads and resources analysis in this study simulates the operation of the power system under the Pacific Northwest Coordination Agreement (PNCA) produced by the Pacific Northwest Coordinating Group.

This study presents the Federal system and regional analyses for the medium load forecast. This analysis projects the yearly average energy consumption and resource availability for Operating Years (OY)¹ 1997-98 through 2006-07. The study shows the Federal system's and the region's monthly estimated maximum electricity demand, monthly energy demand, and monthly maximum generating capacity—capacity—for OY 1997-98, 2001-02, and 2006-07. The Federal system and regional monthly capacity surplus/

deficit projections are summarized for 10 operating years.

To demonstrate the monthly energy variability resulting from implementing the National Marine Fisheries Service (NMFS) 1995 Biological Opinion, dated March 2, 1995, this analysis includes the monthly Federal system and regional firm energy surpluses and deficits for OYs 1998 through 2007 for each of the 50 historical water years on record. These are found in Section VIII, Exhibits 9 through 18, pages 71 through 81, and Exhibits 27 through 36, pages 109 through 119.

This monthly variability in surpluses and deficits created by the 1995 NMFS Biological Opinion, coupled with changes in the regional power marketing environment, requires that a calculation of annual average energy be adjusted to more accurately reflect today's Pacific Northwest electrical power system capabilities.

The Federal system analysis is presented in Section IV, beginning on page 16. The analysis for the Pacific Northwest region is presented in Section VI, page 36.

The glossary of terms and a list of acronyms are included in Section X, page 129.

Additional copies of this summary, along with copies of the 1996 Pacific Northwest Loads and Resources Study Technical Appendix (available March 1997) can be obtained from BPA's Public Involvement Office, toll-free, 1-800-622-4520. BPA will not publish a 1996 Non-Utility Generation Supplement. However, BPA is continuing to compile Pacific Northwest non-utility generation information.

¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

II. BACKGROUND

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), enacted in December 1980. 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. In addition, 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 are included in BPA planning for resources to meet its load.

The 1995 NMFS Biological Opinion

The 1995 NMFS Biological Opinion changed the focus of hydro system operation for fish passage to monthly flow-based targets from storage-based targets. This change emphasized monthly flows at hydro projects, thereby limiting the ability of the hydro system to shift and shape flows in any one month to meet firm system energy needs.

Implementing the 1995 NMFS Biological Opinion created significant surpluses or deficits in any given month under any given water condition. This monthly diversity demonstrates that a single annual average of energy—whether based on 8, 12, or 42 months—no longer represents the availability to the system of firm hydro power,

or surpluses and deficits, used in loads and resources planning.

This year's study continues to move away from traditional critical water planning by managing resource availability risks. This document presents the Federal system and regional firm surpluses and deficits for OYs 1998 through 2007 for each of the 50 historical water conditions on record (1929 through 1978 water conditions) in Exhibits 9 through 18, pages 71 through 81, for the Federal system and Exhibits 27 through 36, pages 109 through 119, for the region. The information presented in these tables shows the monthly variability of the surpluses and deficits over the 50 water conditions.

Traditional annual energy loads and resources studies have been produced using a specific set of assumptions and serve as the base case for calculating the load-resource balance in Sections IV and VI. For the future, there is potential to expand loads and resources studies to probabilistically capture the variability of the hydro system and resource risk management.

Load Forecasting

This loads and resources analysis used BPA's medium case load forecast from the 1996 Final Rate Filing for all but aluminum and non-aluminum direct service industries (DSIs). The DSI loads were updated in December 1996 to reflect BPA's new signed industrial contracts. Loads for each of the following customer groups were estimated separately: non-generating public

agencies, generating public agencies, aluminum DSIs, non-aluminum DSIs, IOUs, Federal agencies, and the U. S. Bureau of Reclamation (USBR). In general, BPA's load forecasts are designed to respond to and reflect factors such as employment, electricity prices, aluminum prices, smelter production costs, and planned conservation actions.

The forecast of conservation savings reflects the shift of financial responsibility for conservation, and hence savings, from BPA-funded programs to utility-funded programs and also includes the addition of a customer-funded conservation category

for savings based on the results of the Council's 1995 conservation survey. This loads and resources analysis assumes that all conservation savings from BPA programs, conservation reinvention, and additional conservation are subtracted from the regional loads during the load forecasting process (prior to the loads and resources analysis). Conservation reductions to the load forecast are shown in Table 1, page 5.

Though not part of the load forecasting process, this study reflects diversification for the public agencies from BPA's Load Commitment Exercise as discussed on page 14.

Table 1

**Conservation Savings
Cumulative From FY 1995**

Energy in Average Megawatts

FISCAL YEAR¹	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BPA Programmatic Conservation										
Residential	8.3	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Commercial	37.3	43.0	47.4	51.8	51.8	51.8	51.8	51.8	51.8	51.8
Industrial	14.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
Additional Conservation & Conservation Reinvention										
Conservation Transfers	0.0	0.0	0.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Billing Credits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Competitive Acquisitions	10.8	14.5	18.2	21.9	21.9	21.9	21.9	21.9	21.9	21.9
Power Plants	20.4	26.7	33.0	39.3	39.3	39.3	39.3	39.3	39.3	39.3
Assumed Market Transformation	5.5	9.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
MCS & Improved Building Codes	41.0	51.0	61.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0
Adjustments for New Codes & Standards	25.0	31.0	37.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
SUB-TOTAL	102.7	132.7	162.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7
Customer-Funded Conservation	67.7	85.6	103.5	121.4	121.4	121.4	121.4	121.4	121.4	121.4
TOTAL LOAD REDUCTION FOR CONSERVATION SAVINGS	236.2	291.3	343.6	401.9	401.9	401.9	401.9	401.9	401.9	401.9

¹ BPA's Fiscal Year is October 1 through September 30. For example, FY 1998 is October 1, 1997, through September 30, 1998.

Pacific Northwest Hydro and Thermal Resources

Hydro Resources

Energy Capability. This study uses 1937 water conditions (the 12-month period from August 1936 through July 1937) to estimate the firm hydro capability in a historical sequence of low water conditions. The critical period represents the period of adverse water conditions during which the hydro system produced the maximum amount of firm energy by drafting the reservoirs from maximum required content to minimum required content.

Capacity. The monthly instantaneous 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 1936-37 water reservoir levels. BPA assumes 1936-37 water levels to estimate the regional hydro capacity because that year approximates a peaking capability that is consistent with the reliability criteria set forth in the Pacific Northwest Coordination Agreement.

The monthly instantaneous capacity is limited to 10 times the project's average monthly energy production because, at low or minimum water discharge, a plant may not be allowed to release enough water to achieve maximum capacity. The region's hydro projects have constraints and storage limitations within any water condition.

BPA's planning projections reduce the estimated instantaneous hydro capacity to reflect a Federal sustained peaking level of 50 hours per week. This level provides estimated firm hydro capacity that can be maintained each day and continued for weeks at a time. This definition of firm ca-

pacity provides a better measure of resource peak capability. The hydro generation also is adjusted to allow for scheduled hydro maintenance, spinning reserves, and forced outage reserves.

Multiple-Use Planning. 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. In addition, constraints also are in place to protect and enhance resident and anadromous fish populations. These non-power uses place operating requirements on the reservoirs and may reduce or increase hydroelectric power production. BPA's resource planning takes into account all presently known nonpower operating requirements in assessing regional hydro system capability.

The United States Army Corps of Engineers (COE), the USBR, and BPA have jointly prepared the System Operation Review (SOR) Environmental Impact Statement (EIS) (DOE/EIS-0170, November 1995) on the operation of the Columbia River hydropower system. This EIS will allow the three Federal agencies to make decisions on (1) adopting a System Operating Strategy (SOS), (2) renewing the Pacific Northwest Coordination Agreement, (3) renegotiating five Canadian Entitlement allocation agreements, and (4) developing a means to periodically review and update the SOS.

The Council, BPA, and other Pacific Northwest entities will continue to evaluate new ways to enhance fisheries and wildlife. Future proposals could include additional amendments to the Council's Columbia River Basin Fish and Wildlife Program, recommendations arising from the SOR, and/or implementation of additional programs in support of the Endangered Spe-

cies Act. The impacts of future proposals are unknown. These proposals, however, most likely will increase non-power requirements on the hydro system and change operating flexibility, change the monthly shape of streamflows, and change the availability of sustained Federal capacity. Future studies will incorporate any known impacts.

Thermal Resources

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.

Analysis of Federal System Firm Loads and Resources

BPA is a power and transmission marketing agency, responsible for acquiring and delivering sufficient power to serve the firm electric load needs of its customers. BPA does not own generating resources. BPA's customer loads and contractual obligations, combined with the Federal and non-Federal resources from which BPA acquires the power it sells, are collectively called the Federal system. BPA owns and operates the primary transmission grid—more than 14,700 circuit miles of power lines—in the Pacific Northwest.

The Federal system loads are made up of BPA's sales to other Federal agencies, its regional public agencies, and other contractual obligations to deliver power. This study also includes firm DSI contracts signed through December 31, 1996.

The hydro resources of the Federal system include 30 dams owned and operated by the USBR and the COE, plus

hydroelectric projects owned by the city of Idaho Falls, Washington Public Power Supply System (WPPSS), and Lewis County Public Utility District (PUD). BPA has the exclusive right to sell power generated by USBR and COE hydroelectric projects. BPA also markets the thermal generation from the WNP-2 nuclear plant, operated by WPPSS.

The Federal system analysis is shown in Section IV, beginning on page 16.

Analysis of Regional Firm Loads and Resources

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

The regional analysis is presented in Section VI, beginning on page 36.

Canadian Treaty Downstream Benefits

Obligations under the Columbia River Treaty will change during the study period. This treaty between the United States and Canada enhanced the use of storage in the Columbia River Basin. The treaty and treaty projects provide downstream benefits by increasing the firm power generating capability of U.S. hydro projects. Under the terms of the agreement, the downstream power benefits are shared equally between

the two countries as determined by a joint Annual Operating Plan.

Canadian Entitlement to Columbia Storage Power Exchange (CSPE) Through March 31, 2003

Canada agreed to sell its share of the downstream power benefits, called the Canadian Entitlement, for 30-year periods beginning with the completion of each of the three Canadian Treaty Projects (Mica, Duncan, and Arrow). The Canadian Entitlement was sold to the Columbia Storage Power Exchange (CSPE), a Pacific Northwest corporation that was formed to sell the Canadian benefits to participating Pacific Northwest utilities. The Canadian Entitlement sale to CSPE begins to expire April 1, 1998, 30 years after the completion of the first Treaty Project, and fully expires March 31, 2003.

Canadian Entitlement to Canada, Beginning April 1, 1998

A portion of the Canadian share of downstream power benefits will begin to return to Canada April 1, 1998, 30 years after the first Treaty Project was completed. All remaining Canadian downstream power benefits will revert to Canada by April 1, 2003, 30 years after the third Treaty Project was completed. This analysis assumes Canadian Entitlement deliveries to Canada under the long-standing Canadian Entitlement agreement between British Columbia and the United States. Last year's analysis showed the contract under the basic principles of a Memorandum of Agreement between British Columbia and the United States that BPA subsequently chose not to ratify. The Canadian Entitlement Canada delivery starting April 1, 1998, is included in each participating utility's loads and resources balance. BPA delivers the total Canadian Entitlement, shown in Table 2, page 9, and it is included as a Federal export.

Table 2

**Canadian Entitlement to Canada
Energy and Capacity Obligations Beginning April 1, 1998**

Energy in Average Megawatts

OPERATING YEAR ¹	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Investor-Owned Utilities	2	25	53	47	47	65	93	92	83	81
Public Agencies	2	13	32	29	29	39	53	53	61	63
Federal System	12	96	215	193	193	262	371	370	368	365
Other Entities	1	3	7	7	7	9	13	13	13	13
TOTAL ENERGY OBLIGATION	17	137	307	276	276	375	530	528	525	522

January Capacity in Megawatts

OPERATING YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Investor-Owned Utilities	0	25	136	135	135	135	247	247	219	219
Public Agencies	0	13	85	84	84	84	152	152	180	180
Federal System	0	96	561	556	556	556	1,013	1,013	1,013	1,013
Other Entities	0	3	20	19	19	19	35	35	35	35
TOTAL CAPACITY OBLIGATION	0	137	802	794	794	794	1,447	1,447	1,447	1,447

¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

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 10-year study period. These uncertainties include:

- ◆ Changes and uncertainties regarding deregulation in the electrical power industry;
- ◆ BPA's future marketing efforts and/or revised resources acquisition, including conservation;
- ◆ Possible decreases in BPA's public agency load obligations, particularly after the power sales contracts expire in 2001;
- ◆ Deviation from the forecasted rate of load growth;

- ◆ Failure of existing or contracted generating resources to operate at anticipated times and levels; and
- ◆ Changes in existing hydro system operation in response to programs developed to address the Endangered Species Act or other environmental considerations.

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

Contractual Uncertainty

Given the changes in the wholesale electric utility industry that have taken place over the last several years and the resulting reductions in public agency and DSI firm requirements served by BPA, the extent of Federal obligations to these customers after the current contracts expire

appears more uncertain than it has in the past. This study assumes that the following contracts, though they are subject to change as noted, will extend throughout the 10-year study period. What occurs when these contracts expire, which will be at varying times during the 10-year study period, may affect the Federal system and regional loads and resources balances:

- ◆ BPA's power sales contracts with its public agency and IOU customers expire June 30, 2001, and with its DSI customers on September 30, 2001. Renegotiation of these contracts may result in new or different Federal obligations.

- ◆ The Pacific Northwest Coordination Agreement will expire June 30, 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 may be different from the existing agreement.

III. CHANGES IN THE 1996 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

This section describes the major changes in the assumptions of the 1996 Pacific Northwest Loads and Resources Study compared to the 1995 study. Other changes are reflected in the data for each utility contained in the 1996 Pacific Northwest Loads and Resources Study Technical Appendix.

Firm Load Changes

The 1996 White Book analysis uses load projections that incorporate the following changes since last year's analysis:

- ◆ **1996 BPA Load Forecast:** This analysis uses the 1996 BPA medium load forecast of Federal agencies, public agencies, and investor-owned utilities that was used in BPA's 1996 Final Rate Filing
- ◆ **New DSI Power Sales Contracts:** This study includes BPA's new DSI power sales contracts and DSI block sales agreements signed through December 31, 1996. The new DSI contracts continue through September 30, 2001. In OY 2002 and through the remainder of the study period, the DSI load continues at the OY 2002 level.

Firm Resource Changes

The 1996 White Book analysis reflects the following resource changes compared to last year's study:

- ◆ **The 1995 NMFS Biological Opinion From the 1996 Final Rate Filing Hydro Regulation Study:** The hydroregulation study used in this analysis incorporates the streamflow requirements of the 1995 NMFS Biological Opinion, which was incorporated in the 1996 Final Rate Filing

Figure 1, page 12, shows the monthly variation of the NMFS Biological Opinion on the Federal system hydro energy capability for OY 1996-97 assuming 1937 water conditions.

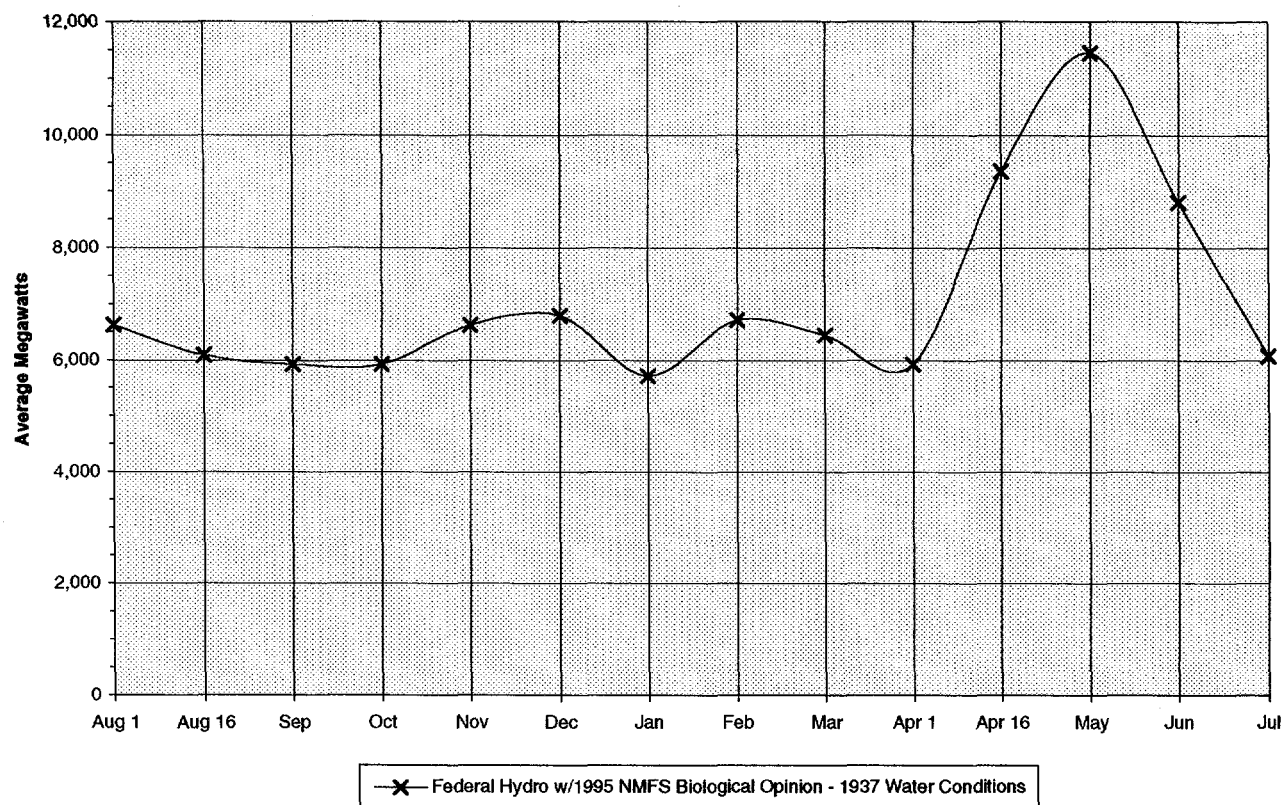
Firm Contract Changes

The 1996 White Book analysis uses the following contract changes versus last year's study:

Exports: The 1996 White Book analysis includes the following new Federal exports: BPA to Azusa, energy sale; BPA to Azusa, power sale; BPA to Banning, energy sale; BPA to Banning, power sale; BPA to BART, power sale; BPA to Colton, energy sale; BPA to Colton, power sale; BPA to New Energy Ventures, power sale; and BPA to San Diego, power sale. BPA's power sale and capacity/energy exchange agreements with the cities of Burbank, Glendale, and Pasadena and to the Southern California Edison Company (SCE)

Figure 1

**Federal Firm Hydro Energy
Monthly Variability for OY 1996-97**



are shown in power sales mode through the study horizon. BPA to SCE option capacity is shown through OY 2002.

- ◆ **Contracts Out:** This analysis has the following new or updated BPA intra-regional contracts out: BPA to Big Bend Electric Cooperative, power sale; BPA to Central Electric Cooperative, power sale; BPA to Clark Public Utility, power sale; BPA to the city of Ashland, power sale; BPA to the city of Idaho Falls, power sale; BPA to the city of Monmouth, power sale; BPA to Columbia Basin

Electric Cooperative, power sale; BPA to Columbia River PUD, power sale; BPA to Columbia Rural Electric Cooperative, power sale; BPA to Flathead Electric Cooperative, power sale; BPA to Harney Electric Cooperative, power sale; BPA to Inland Power and Light, power sale; BPA to Kootenai Electric Cooperative, power sale; BPA to Midstate Electric Cooperative, power sale; BPA to the city of Milton Freewater, power sale; BPA to Modern Electric Cooperative, power sale; BPA to Nespelem Valley

sale; BPA to Nespelem Valley Electric Cooperative, power sale; BPA to Pacific Power and Light, power sale; BPA to Port Angeles City Light, power sale; BPA to Ravalli County Electric Cooperative, power sale; BPA to Springfield Utility Board, power sale; BPA to Surprise Valley Electric Corporation, power sale; BPA to TPU, power sale; BPA to Unity Light and Power Company, power sale; BPA to Umatilla Electric Cooperative, power sale; BPA to Vigilante Electric Cooperative, power sale; and BPA to Wasco Electric Cooperative, power sale.

- ◆ **Imports:** This analysis includes the following new contracts: Azusa to BPA, return energy; Banning to

BPA, return energy; and Colton to BPA, return energy. Exchange energy from the cities of Burbank, Glendale, and Pasadena and from SCE to BPA are zero through the study horizon because the corresponding BPA export contracts are assumed to be in power sale mode. SCE to BPA, option energy is included through OY 2002. Supplemental energy from the cities of Burbank, Glendale, and Pasadena and from SCE to BPA are assumed to be contracted firm resource options and are not included in the study.

- ◆ **Contracts In:** This analysis has the following new BPA intra-regional contracts in: BPA to unspecified entities, power sale.

Public Agency Power Sales Contract Diversification

To maintain BPA revenues and improve its public utility customers' satisfaction with their BPA business relationship, the agency offered these customers a series of amendments to their 1981 power sales contract that would provide them with 5 years of rate certainty and limited access to the opportunities and risks of diversifying their power supply. Three forms of amendatory agreements were offered wherein customers could elect to either keep their total requirements service on BPA or add specific amounts of firm resources dedicated to serve a portion of requirements load and reduce their requirements service on BPA. BPA also negotiated new requirements power sales contracts with different terms and

conditions with those customers who wished to have a larger portion of their firm power load served by firm non-Federal resources than was available under the amendatory agreements. Finally, some customers elected to continue with their 1981 contracts unamended. All of the agreements—the amendatory agreements, the new contracts, and the unamended 1981 utility power sales contracts—expire September 30, 2001. In exchange for this rate certainty and market access, these customers are required to provide revenue certainty to BPA by making load commitments through September 30, 2001.

This study reflects load diversification for the public agencies from BPA's Load Commitment Exercise as a resource called Public Agency Diversification in each utility's load-resource balance, which reduces each utility's power sales contract purchase from BPA.

Table 3

Public Agency Power Sales Contract Diversification

Average Megawatts

OPERATING YEAR ¹	1998	1999	2000	2001	2002 ²	2003 ²	2004 ²	2005 ²	2006 ²	2007 ²
Clark Public Utility	135	242	257	269	269	269	269	269	269	269
Cowlitz County PUD	104	104	104	104	104	104	104	104	104	104
Douglas County PUD	0	0	0	0	0	0	0	0	0	0
EWEB	0	0	0	0	0	0	0	0	0	0
Grant County PUD	5	5	5	5	5	5	5	5	5	5
Gray's Harbor PUD	13	13	13	13	13	13	13	13	13	13
Okanogan PUD	5	5	5	5	5	5	5	5	5	5
Pend Oreille PUD	0	0	0	0	0	0	0	0	0	0
Seattle City Light	44	43	47	45	45	45	45	45	45	45
Snohomish County PUD	177	210	248	262	262	262	262	262	262	262
Springfield Utility Board	69	45	44	22	22	22	22	22	22	22
Tacoma Public Utilities	60	63	65	63	63	63	63	63	63	63
Non-Generating Public Agencies	307	352	380	405	405	405	405	405	405	405
TOTAL PUBLIC AGENCY DIVERSIFICATION	918	1,083	1,169	1,194	1,194	1,194	1,194	1,194	1,194	1,194

¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

²Public agency power sales contract load diversification is assumed to continue at the OY 2001 level for OYs 2002-07. For OY 2002 and beyond, however, BPA's projected public agency load diversification levels are highly uncertain because BPA's firm contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

Firm Resource Exhibit (FRE) Changes

The 1996 White Book analysis assumes all 1995 FRE resource changes approved by BPA. These include Canby Utility Board, Clark Public Utilities, EWEB, Seattle City Light, Springfield Utility Board, and Snohomish County PUD.

Because information concerning the amount, size, supplier, and type of resource was not available at the time of this publication, the following FRE resource changes were accepted but not included in this analysis: Emerald County PUD, Inland Power and Light Company, and Forest Grove Light and Power Department.

IV. FEDERAL SYSTEM ANALYSIS

This study provides base case assumptions from which scenarios encompassing a wide range of uncertainties about BPA's future may be evaluated. It incorporates only load forecast uncertainty and capacity availability under extreme weather conditions.

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

- ◆ Capacity surplus/deficit values do not reflect potential nighttime return problems on the Federal system;
- ◆ The region experiences medium load growth;
- ◆ The Pacific Northwest Coordination Agreement, which expires June 30, 2003, is replaced with a like agreement;
- ◆ BPA's power sales contracts with Pacific Northwest Federal and public agencies and IOUs, which expire June 30, 2001, and with its DSI customers, which expire September 30, 2001, are renewed with like agreements;
- ◆ Public agency load diversity is assumed to remain the same from OY 2001 through the end of the study period;
- ◆ All existing Federal contractual arrangements not included under Pacific Northwest power sales contracts expire and are not renewed;
- ◆ Federal surplus firm power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, and Pasadena and with SCE are shown in power sales mode throughout the study period;
- ◆ BPA purchases option energy from SCE through OY 2002;
- ◆ SCE purchases option capacity from BPA through OY 2002;
- ◆ BPA's surplus firm power sale to the M-S-R Public Power Agency (M-S-R), whose members include the Modesto Irrigation District and the cities of Santa Clara and Redding, California, remains a power sale through October 31, 2009, then converts to a capacity/energy exchange until it expires;
- ◆ BPA's surplus firm power sale to Puget Sound Power and Light terminates and converts to a seasonal power exchange beginning in OY 2001-02, per the terms of the contract;
- ◆ Sustained capacity limits are 50 hours per week;
- ◆ BPA serves all of the Pacific Northwest public agencies' net firm load requirements not served by their dedicated resources;
- ◆ Extreme weather adjustments are assumed for capacity in the months of November through February. These adjustments vary monthly from 1,400 to 1,900 peak megawatts under the medium load forecast; and
- ◆ The IOUs do not make new long-term BPA purchases.

Federal Firm Energy Loads

The Federal system firm loads include BPA's firm DSI load,¹ sales to Federal agencies, current obligations to regional public agencies and IOUs under their power sales contracts, less public agency diversification from BPA's Load Commitment Exercise, which reduced BPA's power sales contract obligations. The Federal system firm energy loads under the medium load forecast for OY 1997-98

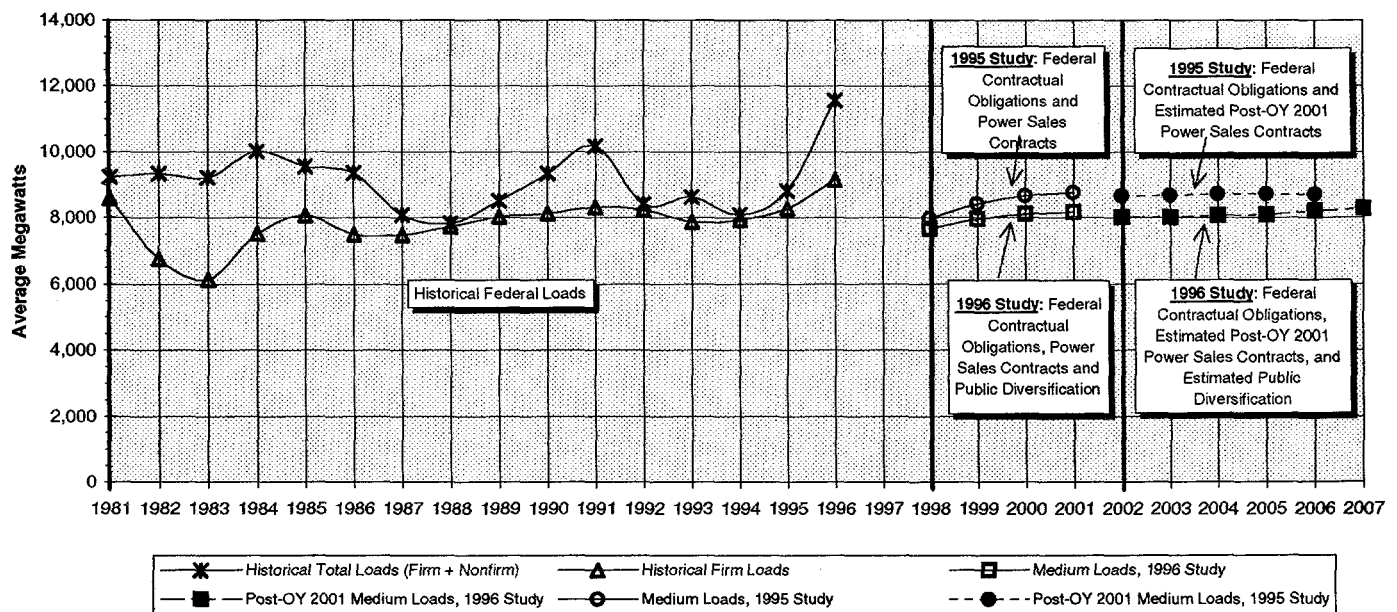
¹ This study includes the Federal DSI firm loads through OY 2001, per contracts signed through December 31, 1996. In OY 2002 and through the remainder of the study period, the Federal DSI load continues at OY 2001 levels.

through 2006-07 are shown in Figure 2, below. The methods and assumptions used to complete this year's load forecast are discussed under Load Forecasting, page 3.

The Federal loads include all intra-regional contracts made within the Pacific Northwest, called contracts out, and inter-regional contracts or exports of firm surplus power to Southwest utilities. The Federal firm energy loads under the medium load forecast are presented on line 15 of Exhibit 1, page 47, and monthly for the medium load forecast for OY 1997-98, 2001-02, and 2006-07 assuming 1937 water conditions in Exhibits 2 through 4, pages 51 through 57.

Figure 2

Federal Firm Energy Load Projections^{2, 3} - 1996 BPA Forecast Medium Loads



² The components of BPA's historical loads are: (1) total loads, which include both firm and nonfirm sales of electrical energy, and (2) firm loads, which include only BPA's firm electrical energy sales. BPA's future loads depicted in Figure 2, above, include only firm electrical energy obligations.

³ After OY 2001, the Federal firm energy load projections assume that BPA's power sales contracts are renewed with like agreements and that public agency load diversification remains at the OY 2001 level through the remainder of the study period. For OY 2002 and beyond, however, these projections are highly uncertain because BPA's firm contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

Federal Firm Peak Loads

Figure 3, page 19, shows the Federal firm peak loads for OY 1997-98, 2001-02, and 2006-07 under the medium load forecast. The figure shows the expected 1-hour monthly demand under the 1996 BPA load forecast, and includes extreme weather adjustments. Extreme weather conditions were assumed for the months of November through February and estimate a 5-percent probability that the actual peak load will be exceeded. The extreme weather adjustment includes possible increased obligations on BPA by the public agencies during extreme weather conditions. In the remaining months of March through October, the peak loads estimate normal weather conditions with a

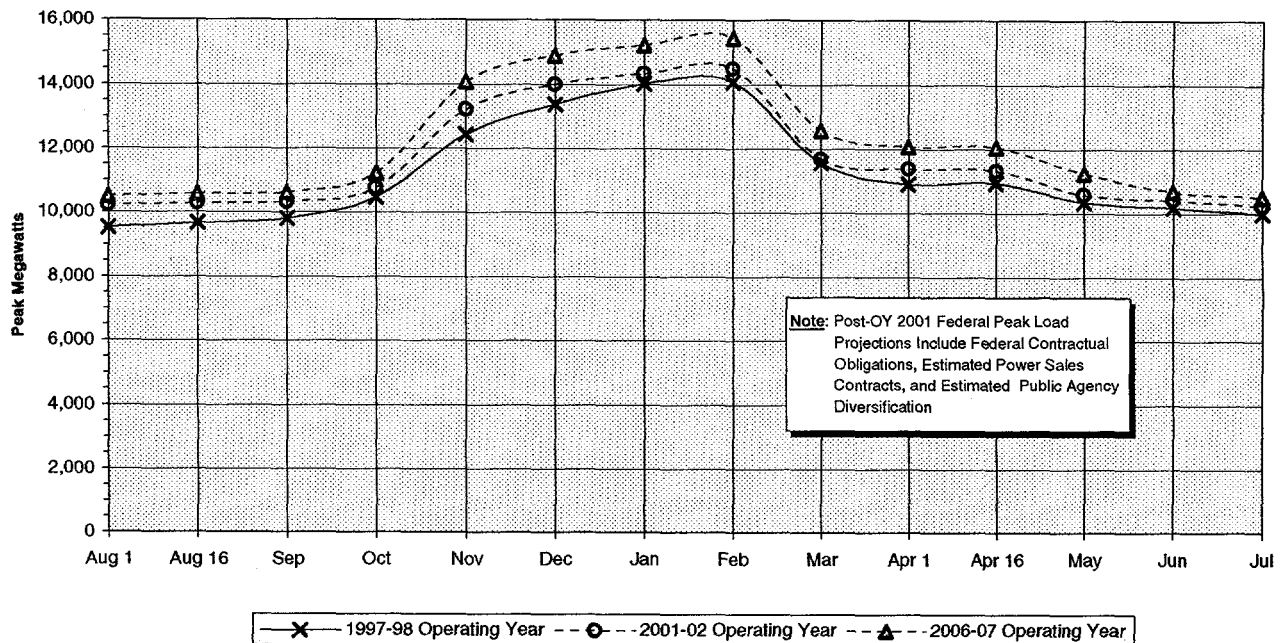
50-percent probability that the actual peak load will be exceeded. The peak load projections are reduced by a diversity component to address the fact that all peak electrical demands do not occur simultaneously throughout the region.

This study assumes that public agencies will purchase capacity from BPA under their power sales contracts to meet peak loads not served by their own resources.

The monthly Federal firm peak loads are presented on line 15, and the monthly extreme weather obligations are presented on lines 44 and 47 of Exhibits 6 through 8, pages 61 through 67, for the medium load forecast for OY 1997-98, 2001-02, and 2006-07, assuming Federal obligations under 1937 water conditions.

Figure 3

**Federal Monthly Firm Peak Load Projections ¹
Under Extreme Weather Conditions ² for OY 1997-98, 2001-02, and 2006-07**
Medium Loads



¹ After OY 2001, BPA's public and DSI firm peak load projections assume that BPA's power sales contracts are renewed with like agreements and that public agency load diversification remains at the OY 2001 level through the remainder of the study period. For OY 2002 and beyond, however, these projections are highly uncertain because BPA's firm contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

² Extreme weather conditions in November, December, January, and February assume a 5-percent probability that the peak load will be exceeded.

Existing Federal Firm Resources

The Federal system hydro resources from which BPA markets power are shown in Table 4, page 20. In addition, BPA markets power purchased from non-Federally owned resources. BPA's capacity/energy exchange contracts provide energy to BPA as payment for the capacity BPA delivers.

The non-Federally owned resources, return energy associated with BPA's existing capacity/energy exchanges, contractual resources, and other BPA hydro-related contracts are shown in Table 5, page 21.

Combined, these resources represent BPA's available firm resources. A detailed listing of all Federal generating resources is contained in the 1996 Pacific Northwest Loads and Resources Technical Appendix (available March 1997).

Table 4
Federal System Hydroelectric Projects

PROJECT	Initial Year of Service	Number of Units	Name-plate Rating (MW)	Instantaneous Generating Capacity ¹ (peak MW)	Firm Energy ² (aMW)
U.S. BUREAU OF RECLAMATION HYDROELECTRIC PROJECTS					
Grand Coulee	1941	27	6,187.5	6,313	1,770
Grand Coulee Pump Gen.	1973	6	314.0	314	0
Hungry Horse	1952	4	392.0	357	76
Palisades	1957	4	142.2	122	66
Anderson Ranch	1950	2	27.0	36	16
Minidoka	1909	7	13.4	13	8
Roza	1958	1	11.3	4	6
Black Canyon	1925	2	8.0	9	8
Chandler	1956	2	12.0	10	9
TOTAL U.S. BUREAU OF RECLAMATION PROJECTS		55	7,107.4	7,178	1,959
U.S. ARMY CORPS OF ENGINEERS HYDROELECTRIC PROJECTS					
Chief Joseph	1955	27	2,069.0	2,543	1,112
John Day	1968	16	2,160.0	2,484	889
The Dalles	1957	22	1,780.0	2,074	522
Bonneville	1938	18	1,050.0	1,147	399
McNary	1953	14	980.0	1,127	649
Lower Granite	1975	6	810.0	930	220
Lower Monumental	1969	6	810.0	922	213
Little Goose	1970	6	810.0	928	205
Ice Harbor	1961	6	603.0	693	153
Libby	1975	5	525.0	566	169
Dworshak	1974	3	400.0	440	169
Lookout Point	1954	3	120.0	67	35
Detroit	1953	2	100.0	96	41
Green Peter	1967	2	80.0	79	28
Lost Creek	1975	2	49.0	18	30
Albeni Falls	1955	3	42.6	36	28
Hills Creek	1962	2	30.0	30	18
Cougar	1964	2	25.0	25	16
Foster	1968	2	20.0	22	12
Big Cliff	1954	1	18.0	21	11
Dexter	1955	1	15.0	17	9
TOTAL CORPS OF ENGINEERS PROJECTS		149	12,496.6	14,265	4,928
HYDRO EFFICIENCY IMPROVEMENTS³		0	0	0	45
TOTAL USBR AND COE PROJECTS		204	19,604.0	21,443	6,932

¹ Maximum generation under optimum conditions assuming January 1936-37 water conditions. Does not reflect reduction to the peaking capacity of the hydro system due to the drafting of reservoirs and other project constraints.

² Firm energy from a 12-month annual average assuming 1936-37 water conditions.

³ Contracted hydro efficiency improvements are being completed on various hydroelectric projects. These efficiency improvements were not included in this year's hydro regulation.

Table 5

Non-Federally Owned BPA Resources and Contracts
Capacity based on January 1998

PROJECT	Type	Operator	Date in Service	OY 1997-98 Capacity (peak MW)	OY 1997-98 Firm Energy (aMW)
EXISTING NON-FEDERALLY OWNED BPA RESOURCES					
WNP-2	Nuclear	WPPSS	1984	1,170 ¹	842 ¹
Packwood Lake	Hydro	WPPSS	1964	30	9
Idaho Falls Bulb Projects	Hydro	City of Idaho Falls	1982	18	19
Cowlitz Falls	Hydro	Lewis County PUD	1994	13 ²	26
Big Creek Hydro Unit	Hydro	Mission Valley	1981	1	0
James River Wauna	Cogen	Clatskanie PUD; EWEB	1996	32	29
TOTAL NON-FEDERALLY OWNED BPA RESOURCES				1,264	916
Firm Contracts					
Canadian Entitlement for CSPE				110	50
Canadian Entitlement for Canada				0	5
Restoration, Columbia River Treaty with Canada				0	-26
Pacific Southwest Imports				282	180
Eastern Imports				285	155
Pacific Northwest Purchase				69	293
Non-Utility Generation				1	14
TOTAL BPA FIRM CONTRACTED RESOURCES				747	671
TOTAL NON-FEDERALLY OWNED BPA RESOURCE CONTRACTS				2,011	1,587

¹ Efficiency improvements will increase WNP-2 energy capability to 878 average megawatts when completed in OY 2001.

² Operational capacity is 70 MW, but is restricted in January.

Table 6, page 22, summarizes the Federal system firm energy resources and contracts available to meet Federal firm loads for OY 1997-98. Federal system firm energy

resources are comprised as follows: 82 percent from hydroelectric power, 10 percent from one nuclear power plant, and 8 percent from BPA's firm contracts.

Table 6

**Federal¹ Firm Resources for OY 1997-98²
Based on 1936-37 Water Conditions**

Capacity based on January 1998

PROJECT TYPE	Sustained Peak Capacity (MW)	Generating Peaking Capacity % of Total	Firm Energy (aMW) 12-Month Average	Firm Energy % of Total
Hydro	13,901	88	7,037	82
Nuclear	1,170	8	842	10
Firm Contracts	669	4	671	8
TOTAL FEDERAL RESOURCES	15,740	100	8,550	100

¹ Includes Federally and non-Federally owned projects.

² Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

Federal Firm Energy Surplus/ Deficit Projections

This analysis includes all operating requirements currently adopted by the hydroelectric project owners and the firm planning assumptions for assured resource capability in PNCA and from the 1995 NMFS Biological Opinion used in BPA's 1996 Final Rate Filing.

The Federal firm energy surplus/deficit projections under the medium load forecast for OY 1997-98 through 2006-07 are presented in Table 7, page 23, and graphically shown in Figure 4, page 23. Under the

medium forecast, the Federal system is energy surplus over the study period.

The components of the 10-year critical period average Federal energy loads and resources balances under the medium load scenario are presented in Exhibit 1, line 42, page 47.

To show the monthly variability of the loads and resources study, the monthly Federal system energy components assuming medium loads under 1937 water conditions for OY 1997-98, 2001-02, and 2006-07 are shown in Exhibits 2 through 4, pages 51 through 57.

Table 7

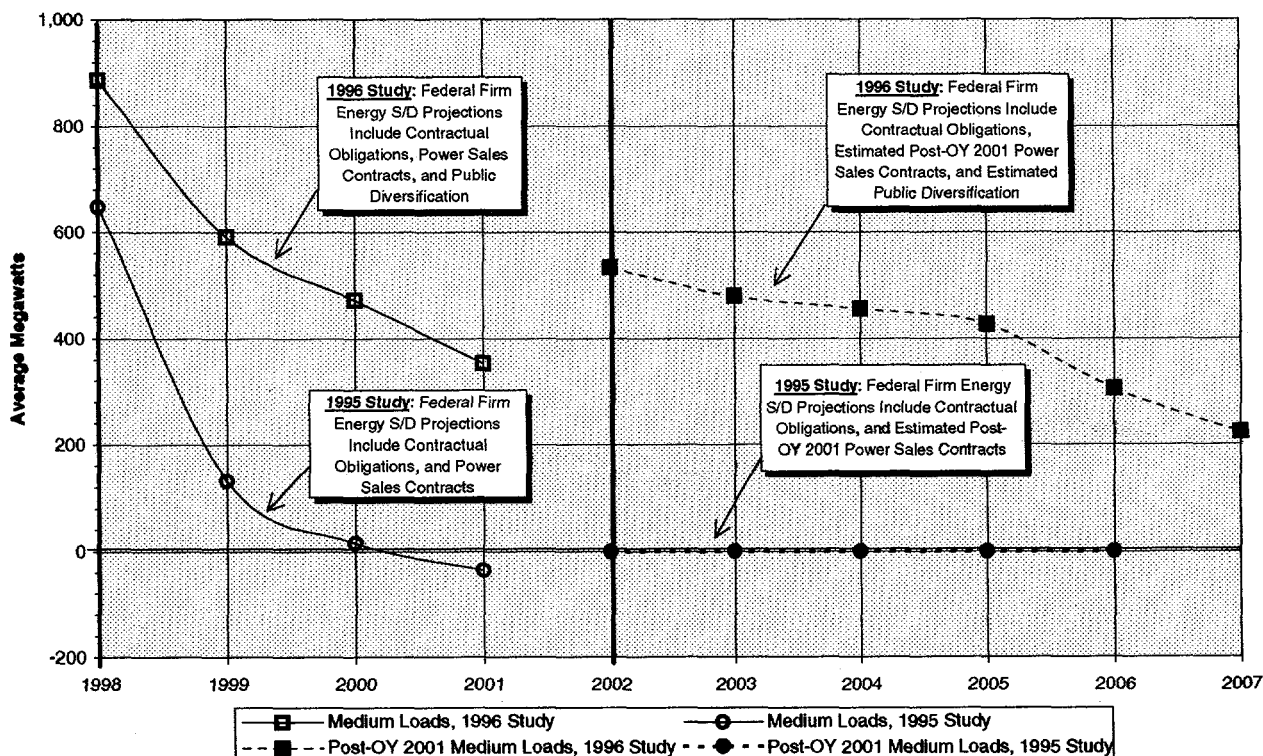
**Federal Firm Energy Surplus/Deficit Projections
Assuming Existing Loads, Resources, and Contracts
Under 1936-37 Water Conditions**

Energy In Average Megawatts

Medium Load Scenario	OPERATING YEAR ¹									
	1998	1999	2000	2001	2002 ²	2003 ²	2004 ²	2005 ²	2006 ²	2007 ²
	886	590	472	352	533	479	455	426	304	223

Figure 4

Federal Firm Annual Energy Surplus/Deficit Projections²



¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

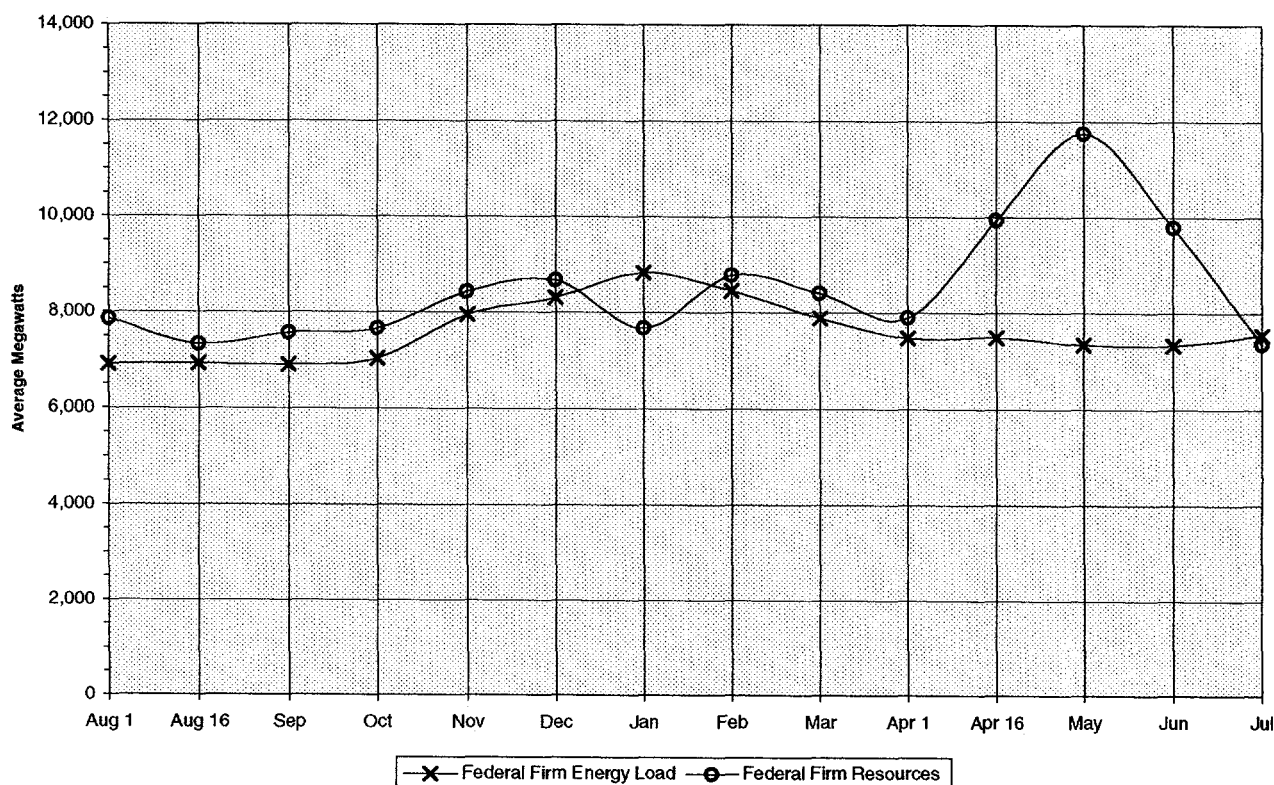
² After OY 2001, BPA's firm energy surplus/deficit projections include BPA's firm public agency and DSI load requirements assuming that BPA's power sales contracts are renewed with like agreements and that public agency load diversification remains at the OY 2001 level through the remainder of the study period. For OY 2002 and beyond, however, these projections are highly uncertain because BPA's firm contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

Figure 5, below, shows the monthly Federal system firm energy loads and resources for OY 1997-98. This figure illustrates the timing of Federal system monthly surpluses and deficits in any operating year created by incorporating the 1995 NMFS Biological Opinion.

Federal resources are generally lower during the January through March time-frame due to the reservoirs storing water for later release in the spring to assist fish passage.

Figure 5

Federal Monthly Firm Energy Loads and Resources for OY 1997-98¹
Assuming 1936-37 Water Conditions
 Medium Load Forecast



¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

V. RESOURCE PLANNING ALTERNATIVES

BPA's Resource Strategy

As previously discussed, Federal hydro system operations have changed due to the 1995 NMFS Biological Opinion. In response to these changes, BPA has changed its traditional least cost resource planning approach by adopting a new resource strategy. For the immediate future, BPA's resource strategy is to rely on available power purchases, off-system storage, or exchanges to serve any incremental power needs should loads exceed resources within a month. Although BPA has planned for the possibility that additional resources might be needed to meet firm loads, that possibility is remote for the foreseeable future. Information on this resource strategy is contained in BPA's Interim Resource Strategy (September 1995). In contrast, the White Book analysis differs from BPA's resource strategy because provisions of the current utility power sales contract do not allow BPA to count "uncommitted" purchase power as a resource available to serve firm load. The following alternatives are being considered as possible means of meeting BPA's future load commitments:

Probabilistic Analysis. The hydro system generation varies greatly from one year to another, mainly due to the weather in the Pacific Northwest and Canada. In most years, there is an abundance of water so that hydro generation along with Pacific Northwest thermal resources and contracts can meet all regional energy needs; in other years, lack of water could create shortfalls

in some months. Implementing the stream-flow requirements of the 1995 NMFS Biological Opinion changed the shape and ability of the hydro system to meet energy needs in all months.

The region also has experienced a shift in emphasis in power marketing from being supply-driven to being price-driven. The market changes are dictating changes in resource risk management. One way to manage resource risks is to use probabilistic analyses. Using probabilistic methods in planning allows utilities to evaluate and manage resource risks by using market supply and reducing resource costs, thus helping to provide competitive prices in today's power market.

Use the Resource Contingency Program (RCP) Option Resources. This alternative would include the RCP resource options where BPA has contracted rights for the output of three combustion turbines, which carry a combined 854 average megawatts (911 peak megawatts). These resources can potentially be available within 3 years. Prior to acquiring the output from these projects, BPA must first conduct an administrative hearing and obtain determinations from the Council and the Administrator that the resource is needed and consistent with the Council's Plan. The RCP resources are shown in line 1, Table 8, page 27.

Pacific Southwest Contractual Resource Options.

BPA has long-term firm power sale and capacity/energy exchange contracts with five Southwest utilities: Southern California

Edison (SCE); the M-S-R Public Power Agency (M-S-R) whose members include the Modesto Irrigation District and the cities of Santa Clara and Redding, California; and the cities of Burbank, Glendale, and Pasadena, California.

The above contracts contain provisions, throughout their duration, for complete or partial termination of energy deliveries if that energy is needed to serve BPA's firm requirements.

The Southwest utilities contracts allow BPA to terminate surplus firm energy deliveries and convert these contracts to capacity/energy exchange contracts 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 of its energy delivery obligations and make those resources available to BPA for meeting firm energy requirements. Energy may be acquired from the following categories:

- ◆ 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 converts them to exchanges, provisions within the contracts, except the city of

Burbank's, allow for later reversion to surplus energy sales, depending on the availability of Federal surplus firm energy and certain other conditions.

This study assumes that these contracts retain their power sale status throughout their terms (expiration dates range from OY 2007-08 to 2012-13). Should BPA terminate these sales and convert them to capacity/energy exchanges, exchange energy would become available to BPA as a firm resource. The additional resources resulting from early conversion of these surplus firm power sales to capacity/energy exchanges are shown in Table 8, lines 2 and 3, page 27.

Supplemental Energy. If BPA terminates Southwest sales and converts them to capacity/energy exchange contracts, BPA may elect to purchase supplemental energy in that same operating year. The amount of additional resources that would become available upon early conversion of these contracts and purchase of supplemental energy is shown in Table 8, line 4.

Non-Treaty Storage. On July 9, 1990, BC Hydro and BPA signed an agreement increasing United States-Canadian coordination of the Columbia River system. This agreement cooperatively manages 4.5 million acre-feet of non-treaty hydro storage through June 30, 2003. Studies on the increased coordination indicate a possible increase of 300 average megawatts in firm energy for the combined Canadian and Pacific Northwest systems. Fifty percent of the benefit, 150 average megawatts, is available to the United States. The Federal system share is 115 average megawatts. This energy, however, is not as valuable as a firm resource because non-treaty storage has a lower refill priority than primary storage reservoirs. Therefore, BPA intends to use the non-treaty storage as a resource

which will increase flexibility in operating the hydro system when needed. Since this energy may not be available in every year, BPA needs to use probability methods for its inclusion as a firm resource, but has not done so for this loads and resources study. However, it may be included as a firm resource in future studies. The Federal system share of non-treaty storage energy is shown in Table 8, line 5, below.

Make Commitments for Short-Term Power Purchases or Options on Power Purchases. This alternative would allow BPA to meet operational and planning deficits on the Federal system by acquiring short-term power or securing options to purchase power for those deficit months at the index market price.

Table 8

Alternate Federal Contractual Resources

Energy In Average Megawatts

OPERATING YEAR ¹	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1. Resource Contingency Program (RCP) Resources ²	0	0	0	854	854	854	854	854	854	854
2. Termination of PSW Surplus Power Sales	236	236	236	236	236	236	236	236	236	236
3. Exchange Energy from PSW	72	71	70	69	68	66	65	64	63	63
4. Supplemental Energy from PSW	39	40	42	43	44	45	46	47	49	49
5. Non-Treaty Storage	115	115	115	115	115	105	0	0	0	0
TOTAL CONTRACTUAL OPTIONS	462	462	463	1,317	1,317	1,306	1,201	1,201	1,202	1,202

¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

² These resources are assumed to be available by August 2000. Resource potential is 854 average megawatts.

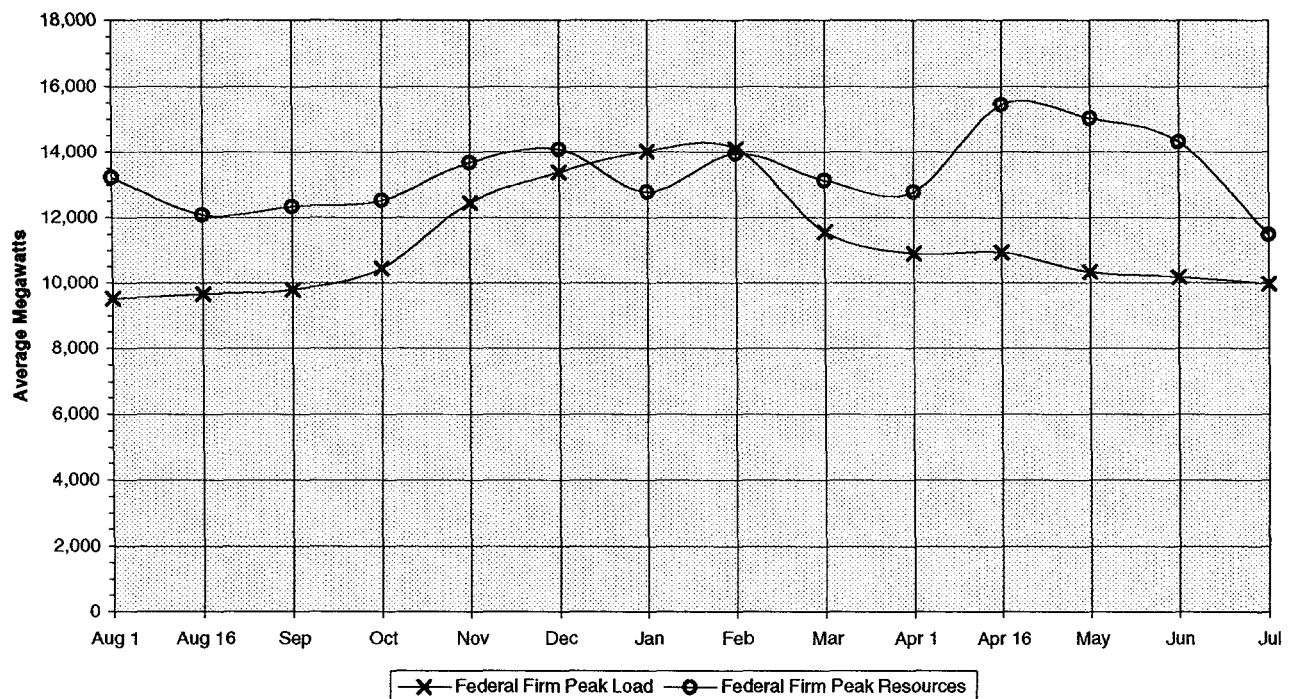
Federal Firm Capacity Surplus/ Deficit Projections

Figure 6, below, shows the monthly Federal system peak loads and resources for OY 1997-98 under 1937 water conditions assuming extreme weather conditions dur-

ing the months of November through February. This figure illustrates the timing and magnitude of the Federal system capacity surpluses and deficits in any operating year and impacts created during extreme winter weather.

Figure 6

Federal Monthly Capacity Loads and Resources Under Extreme Weather Conditions¹ for OY 1997-98²



¹ Extreme weather conditions in November, December, January, and February assume a 5-percent probability that the peak load will be exceeded.

² Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

The study assumes that there are no nighttime return problems from future capacity sales. Nighttime return problems can occur when replacement energy from capacity sales, combined with minimum hydro generation, the output from other Federal resources, and other Federal contract returns are greater than BPA's nighttime load. The following factors contribute to nighttime return problems:

- ◆ Low Federal system loads;
- ◆ Additional nonpower hydro requirements that dictate minimum streamflows; and
- ◆ The inability of WPPSS's WNP-2 nuclear resource to cycle from day to night.

These requirements restrict the ability to accept nighttime return energy, even though there is surplus generating capability during the daytime. These constraints are common in summer and fall, when BPA's nighttime loads are low. BPA's future Federal surplus capacity transactions may include provisions to:

- ◆ Limit return energy to a percentage of contract demand;
- ◆ Defer energy returns to a time more favorable to system operations; or
- ◆ Request cash payment in lieu of return energy.

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; and
- ◆ Navigation and recreation constraints, including restrictions on the rate of rise or fall of tailwater and forebay elevations.

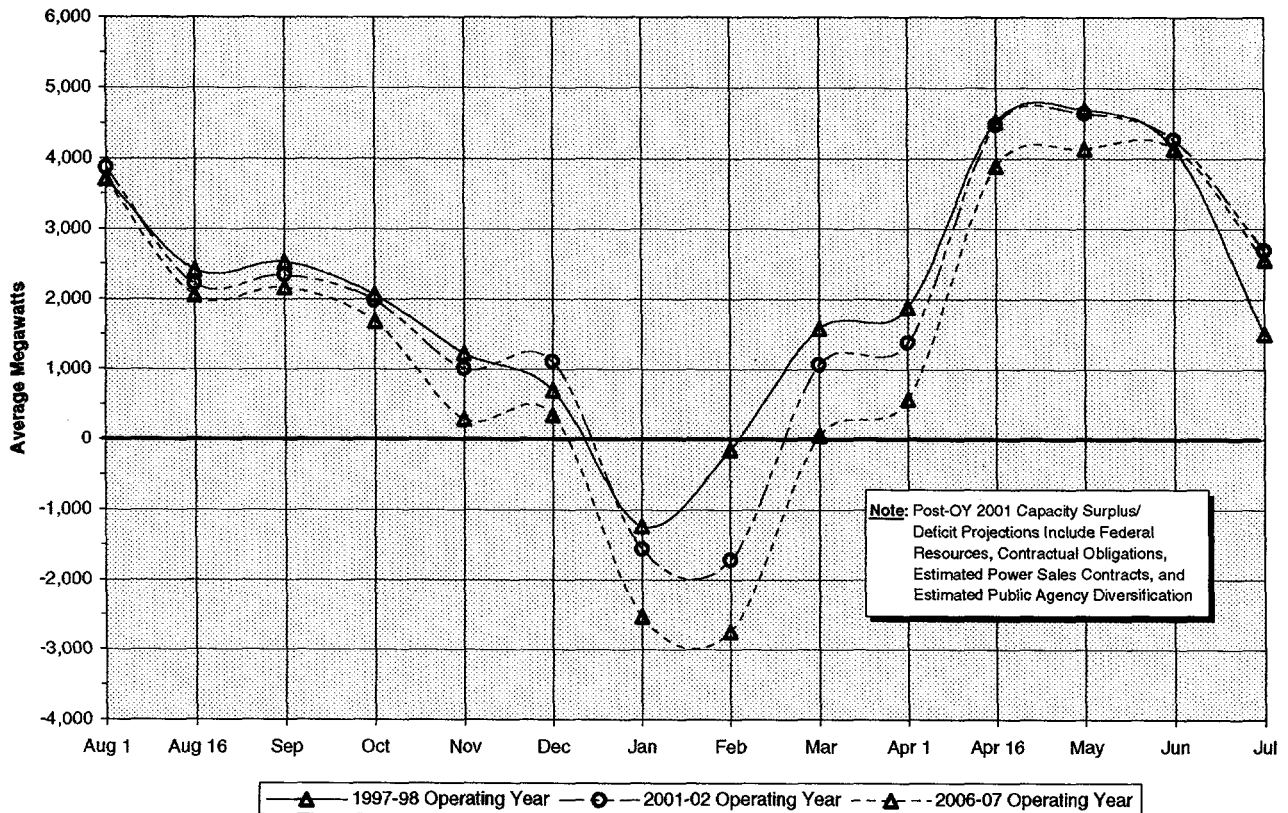
As BPA acquires future resources, the added capacity will increase capacity available to the Federal system.

Figure 7, page 30, shows the Federal firm capacity surplus/deficit projections under the medium load forecast for OY 1997-98, 2001-02, and 2006-07. This analysis incorporates all operating requirements currently adopted by the hydroelectric project owners and the firm planning assumptions from the 1995 NMFS Biological Opinion.

A 10-year summary of Federal capacity surplus/deficit projections under the medium load forecast, assuming extreme weather conditions, is presented in Exhibit 5, page 59. The monthly variability of the Federal system capacity components that comprise the loads and resources study, and assuming medium loads for extreme weather under 1937 water conditions for OY 1997-98, 2001-02, and 2006-07, are shown on line 48 in Exhibits 6 through 8, pages 61 through 67.

Figure 7

**Federal Monthly Capacity Surplus/Deficit Projections¹
Under Extreme Weather Conditions²**



¹ After OY 2001, BPA's Federal system capacity surplus/deficit projections include BPA's firm public agency and DSI load requirements assuming that BPA's power sales contracts are renewed with like agreements and that public agency load diversification remains at the OY 2001 level through the remainder of the study period. For OY 2002 and beyond, however, these projections are highly uncertain because BPA's firm contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

² Extreme weather conditions in November, December, January, and February assume a 5-percent probability that the peak load will be exceeded.

Federal Loads and Resources Comparison—Energy

Table 9 page 33, shows changes in the energy analysis of the 1996 Pacific Northwest Loads and Resources Study compared to the 1995 Study for OY 1997-98 through 2005-06. The table lists the Federal firm energy surplus/deficit projections for the 1995 study and changes since last year to obtain the current firm energy surplus under the medium load forecast. For "Load Changes," Table 9, line 2, positive values indicate load increases and negative values show load decreases. Similarly, for "Resource Changes," Table 9, line 3, positive values indicate additional resource availability and negative values show decreases in resource availability. Federal planned resource acquisitions for which BPA has not yet contracted are not included as firm resources. In this analysis, BPA considered its Pacific Southwest contracts in power sales mode through the study horizon. This is a change from last year's study, but consistent with prior White Book studies.

Additionally, the projections for OY 2002 and beyond are highly uncertain because BPA's firm contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

Changes were based on the following updates in loads, contracts, and resources:

DSI Federal Firm Loads

This study assumes the new DSI power sales contracts and block sales signed through December 31, 1996. The DSI loads are generally higher compared to last year's study. In OY 2002 and through the remainder of the study, the Federal DSI loads are assumed to continue at OY 2002 levels. This is a change from last year's

study, which reduced the DSI loads in OY 2002 and beyond from forecasted projections to show a zero Federal system loads and resources balance.

Public Agencies' Power Sales Contract Purchases

The small and non-generating public agencies' energy purchases and generating public agencies' purchases are lower than last year's study due to the reduction of BPA's obligation to the public agencies through BPA's Load Commitment Exercise, which was signed on May 13, 1996.

Exports

The 1996 White Book analysis includes the following new Federal exports: BPA to Azusa, energy sale; BPA to Azusa, power sale; BPA to Banning, energy sale; BPA to Banning, power sale; BPA to BART, power sale; BPA to Colton, energy sale; BPA to Colton, power sale; BPA to New Energy Ventures, power sale; and BPA to San Diego, power sale. This analysis assumes that BPA's power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, and Pasadena and with SCE are in power sales mode through the study horizon. Last year's analysis assumed these contracts in capacity/energy exchange mode through the study horizon. This change nets an increase in exports when compared to the 1995 White Book analysis.

Contracts Out

Federal contracts out are higher in all years due to new intra-regional contracts signed since last year's analysis. These include BPA to Big Bend Electric Cooperative, power sale; BPA to Central Electric Cooperative, power sale; BPA to Clark Public Utility, power sale; BPA to the city of Ashland, power sale; BPA to the

city of Idaho Falls, power sale; BPA to the city of Monmouth, power sale; BPA to Columbia Basin Electric Cooperative, power sale; BPA to Columbia River PUD, power sale; BPA to Columbia Rural Electric Cooperative, power sale; BPA to Flathead Electric Cooperative, power sale; BPA to Harney Electric Cooperative, power sale; BPA to Inland Power and Light, power sale; BPA to Kootenai Electric Cooperative, power sale; BPA to Midstate Electric Cooperative, power sale; BPA to the city of Milton Freewater, power sale; BPA to Modern Electric Cooperative, power sale; BPA to Nespelem Valley Electric Cooperative, power sale; BPA to Pacific Power and Light, power sale; BPA to Port Angeles City Light, power sale; BPA to Ravalli County Electric Cooperative, power sale; BPA to Springfield Utility Board, power sale; BPA to Surprise Valley Electric Corporation, power sale; BPA to TPU, power sale; BPA to Unity Light and Power Company, power sale; BPA to Umatilla Electric Cooperative, power sale; BPA to Vigilante Electric Cooperative, power sale; and BPA to Wasco Electric Cooperative, power sale.

Regulated Hydro

This year's study assumes the 12-month annual average, consistent with PNCA monthly assured capability for Federal resources, using 1937 water conditions under the 1995 NMFS Biological Opinion when analyzing the Federal system firm hydro capability. This hydroregulation is consistent with BPA's 1996 Final Rate Filing and produces slightly less energy than the 1995 analysis over the study horizon.

Independent Hydro

Independent hydro generation is generally the same between the two analyses.

Imports

This analysis includes several new contracts or contract changes that increase BPA's imports versus last year's study. The 1996 study includes the following new contracts: Azusa to BPA, return energy; Banning to BPA, return energy; and Colton to BPA, return energy. This analysis assumes that BPA's power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, Pasadena, Modesto, Santa Clara, and Redding, and with SCE, are in power sales mode; therefore, it includes no exchange energy from those utilities through the end of the study period. This is a change from the 1995 analysis. In addition, this study considers supplemental energy from the cities of the Burbank, Glendale, and Pasadena and from SCE as contracted firm resource options available to meet firm loads. Last year's study counted this supplemental energy as firm Federal resources. This change nets a decrease in imports when compared to the 1995 White Book analysis.

Renewable Resources

BPA under a contract agreement purchased the output of the James River Wauna cogeneration plant. This is a new resource versus the 1995 White Book study.

Table 9

Federal Firm Energy Surplus/Deficit Projections
Difference Between the 1996 Final White Book and the 1995 White Book ^{1/}
Under 1937 Water Conditions

Energy in Average Megawatts

Operating Year ^{2/}		1998	1999	2000	2001	2002 ^{3/}	2003 ^{3/}	2004 ^{3/}	2005 ^{3/}	2006 ^{3/}
1. 1995 White Book Federal Firm Surplus/Deficit		648	132	15	-36	0	0	0	0	0
2. Firm Load Changes for the 1996 Final White Book										
(+ Indicates Load Increase - Indicates Load Decrease)										
a) DSI Loads as of 12/31/96 ^{4/}		105	84	82	82	99	190	316	350	477
b) Small & Non-Gen Public Purchases		-568	-805	-845	-878	-779	-783	-790	-800	-805
c) Exports ^{5/}		304	379	397	374	377	287	193	191	191
d) Contracts Out		63	149	148	147	-43	-56	-57	-58	-58
e) Generating Public Agencies Purchases		-214	-274	-350	-316	-317	-312	-312	-310	-308
f) Miscellaneous		-1	-1	0	-1	0	0	0	2	1
Total Load Change		-311	-468	-568	-590	-663	-674	-650	-625	-502
3. Resource Changes for the 1996 Final White Book										
(+ Indicates Resource Increase - Indicates Resource Decrease)										
a) Regulated Hydro (1937 12-Month Average)		-129	-67	-57	-142	-142	-142	-142	-142	-142
b) Independent Hydro (1937 12-Month Average)		0	0	0	0	0	0	0	0	0
c) Canadian Entitlement for Canada		0	0	0	-7	-6	0	0	0	0
d) Imports ^{6/}		26	27	-83	-83	-12	-84	-84	-87	-87
e) Contracts In		2	1	2	1	2	2	2	2	2
f) Renewable Resources		29	29	29	29	29	29	29	29	29
g) Miscellaneous		-1	0	-2	0	-1	0	0	-1	0
Total Resource Changes		-73	-10	-111	-202	-130	-195	-195	-199	-198
4. 1996 Final White Book Federal Firm Surplus/Deficit		886	590	472	352	533	479	455	426	304
(Line 1 - Line 2 + line 3)										

¹ The 1995 and 1996 White Book analyses both assume a 12-month annual average under 1937 water conditions.

² Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

³ After OY 2001, BPA's public agency and DSI firm requirements shown on lines 2a, 2b, and 2c assume that BPA's power sales contracts are renewed with like agreements and that public agency load diversification remains at the OY 2001 level through the remainder of the study period. In OY 2002 and beyond, however, these projected requirements are highly uncertain because BPA's firm contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

⁴ The DSI loads include contracts signed through December 31, 1996.

⁵ Exports: power sales-capacity/energy exchange contracts with the cities of Burbank, Glendale, Pasadena, Modesto, Santa Clara, and Redding and with SCE are assumed to be in power sales mode through the study horizon.

⁶ Imports include: option energy from SCE through OY 2002. Supplemental energy from the cities of Burbank, Glendale, and Pasadena and from SCE are considered to be BPA resource options.

Federal Loads and Resources Comparison—Capacity

Table 10, page 35, shows changes in the capacity analysis of the 1996 Pacific Northwest Loads and Resources Study compared to the 1995 Study for OY 1997-98. The table lists the Federal system firm 50-hours-per-week capacity surplus/deficit projections for the 1995 study and changes since last year to obtain the current firm 50-hours-per-week capacity surplus/deficit projections under the medium load forecast. For "Load Changes," Table 10, line 2, positive values indicate load increases and negative values show load decreases. Similarly, for "Resource Changes," Table 10, line 3, positive values indicate additional resource availability and negative values show decreases in resource availability.

Changes were based on those previously discussed in "Federal System Loads and Resources Comparison-Energy," pages 31 and 32, plus the following changes, which pertain only to the capacity analysis.

Federal System Diversity

The decreases in the obligation of the Federal system to the public agencies and IOUs under their power sales contracts decreased Federal system diversity impacts.

Extreme Weather Adjustment

The extreme weather adjustments changed slightly compared to the 1995 study mainly due to decreases in BPA's obligation to public agencies under their power sales contracts.

Sustained Peaking Adjustment

The 50-hours-per-week sustained peaking adjustment in this year's analysis decreased the regional capacity surplus in the hydro regulation versus the 1995 study. This is due to changes in the shaping of the hydro system due to Columbia River Flow Augmentation (CRFA). By storing in the months of January through April 15, the availability of sustained peaking diminished dramatically in some months.

Hydro Reserves/Large Thermal Reserves/ Spinning Reserves

The change in reserves is due to variations in hydro and thermal capabilities.

Table 10

Federal Firm Capacity Surplus/Deficit Projections
Difference Between the 1996 Final White Book and the 1995 White Book ^{1/}
For Operating Year 1997-98 Under 1937 Water Conditions
Peak in Megawatts

Operating Year ^{2/} 1997-98	Aug 1	Aug 2	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 2	May	Jun	Jul
1. 1995 White Book Federal Firm Capacity Surplus/Deficit	2,432	2,352	2,674	1,383	1,59	1,288	-2,212	-2,283	727	1,295	1,597	4,941	5,189	1,444
2. Firm Load Changes for the 1996 Final White Book														
(+ Indicates Load Increase - Indicates Load Decrease)														
a) DSI Loads 12/31/96 ^{3/}	141	141	319	93	94	93	95	94	94	94	94	93	93	92
b) Small & Non-Gen Public Purchase	-672	-672	-504	-791	-786	-967	-936	-940	-839	-827	-886	-747	-593	-535
c) Exports ^{4/}	177	177	177	36	290	289	489	489	490	473	474	479	221	221
d) Contracts Out	148	148	150	122	-127	-126	-166	-165	-165	-16	-16	216	214	212
e) Gen Public Agencies Purchase	-52	110	-16	-227	-217	-248	-127	-80	167	-106	-33	-294	-35	-91
f) Federal Diversity	75	54	48	107	113	93	86	83	84	95	94	99	54	54
g) Federal Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0
h) Federal Extreme Weather Adj.	0	0	0	0	-132	-129	-149	-187	0	0	0	0	0	0
i) Miscellaneous	0	0	1	2	2	3	1	1	1	-1	-1	-1	0	0
Total Load Change	-183	-42	175	-658	-763	-992	-707	-705	-168	-288	-274	-155	-46	-47
3. Resource Changes for the 1996 Final White Book														
(+ Indicates Resource Increase - Indicates Resource Decrease)														
a) Regulated Hydro (1937 12-Month Avg.)	419	115	356	389	1,049	1,338	1,233	1,067	672	203	-162	-457	223	571
b) Independent Hydro (1937 12-Month Avg.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c) Sustained Peaking Adjustment	709	-108	-337	-368	-1,644	-2,918	-1,170	186	-244	-191	2,842	0	-1,366	-541
d) Canadian Entitlement for Canada	0	0	0	0	0	0	0	0	0	-5	-5	-5	-5	-5
e) Imports ^{5/}	0	0	0	0	7	7	237	237	273	274	1	0	0	0
f) Contracts In	0	0	0	0	0	0	0	0	0	0	0	0	0	0
g) Renewable Resources	27	27	27	28	29	21	32	31	31	30	30	27	27	27
h) Hydro Reserves	-22	-7	-19	-21	-54	-68	-63	-55	-35	-12	7	21	-13	-30
i) Large Thermal Reserves	1	1	1	0	1	0	1	1	0	0	0	0	0	0
j) Spinning Reserves	-27	0	0	0	16	40	0	-29	-10	0	-65	11	38	0
m) Miscellaneous	-1	-1	-2	-1	-2	0	-1	-1	1	-2	-1	-1	-1	0
Total Resource Changes	1,106	27	26	27	-598	-1,580	269	1,437	688	297	2,647	-404	-1,097	22
1996 Final White Book	3,721	2,421	2,525	2,068	1,224	700	-1,236	-141	1,583	1,880	4,518	4,692	4,138	1,513
Federal Firm Capacity Surplus/Deficit (Line 1 - Line 2 + Line 3)														

¹ The 1995 and 1996 White Book analyses both assume 1937 water conditions.

² Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

³ DSI loads include contracts signed through December 31, 1996.

⁴ Exports: power sales-capacity/energy exchange contracts with the cities of Burbank, Glendale, Pasadena, Modesto, Santa Clara, and Redding and with SCE are assumed to be in the power sales mode through the study horizon.

⁵ Imports include: Option energy from SCE through OY 2002. Supplemental energy from the cities of Burbank, Glendale, and Pasadena and from SCE are considered to be BPA resource options and are not included in this study.

VI. REGIONAL ANALYSIS

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

- ◆ Capacity surplus/deficit values do not reflect potential nighttime return problems on regional entities;
- ◆ The region experiences medium load growth;
- ◆ The Pacific Northwest Coordination Agreement, which expires June 30, 2003, is replaced with a like agreement;
- ◆ Federal surplus firm power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, and Pasadena and with SCE are shown in power sales mode throughout the study period;
- ◆ BPA purchases option energy from SCE through OY 2002;
- ◆ SCE purchases option capacity from BPA through OY 2002;
- ◆ BPA's surplus firm power sale to the M-S-R Public Power Agency (M-S-R), whose members include the Modesto Irrigation District and the cities of Santa Clara and Redding, California, remains a power sale through October 31, 2009, then converts to a capacity/energy exchange until it expires;
- ◆ Sustained capacity limits are 50 hours per week; and
- ◆ Extreme weather adjustments are assumed for capacity in the months of November through February. These adjustments vary monthly from 3,700 to 4,300 peak megawatts under the medium load forecast.

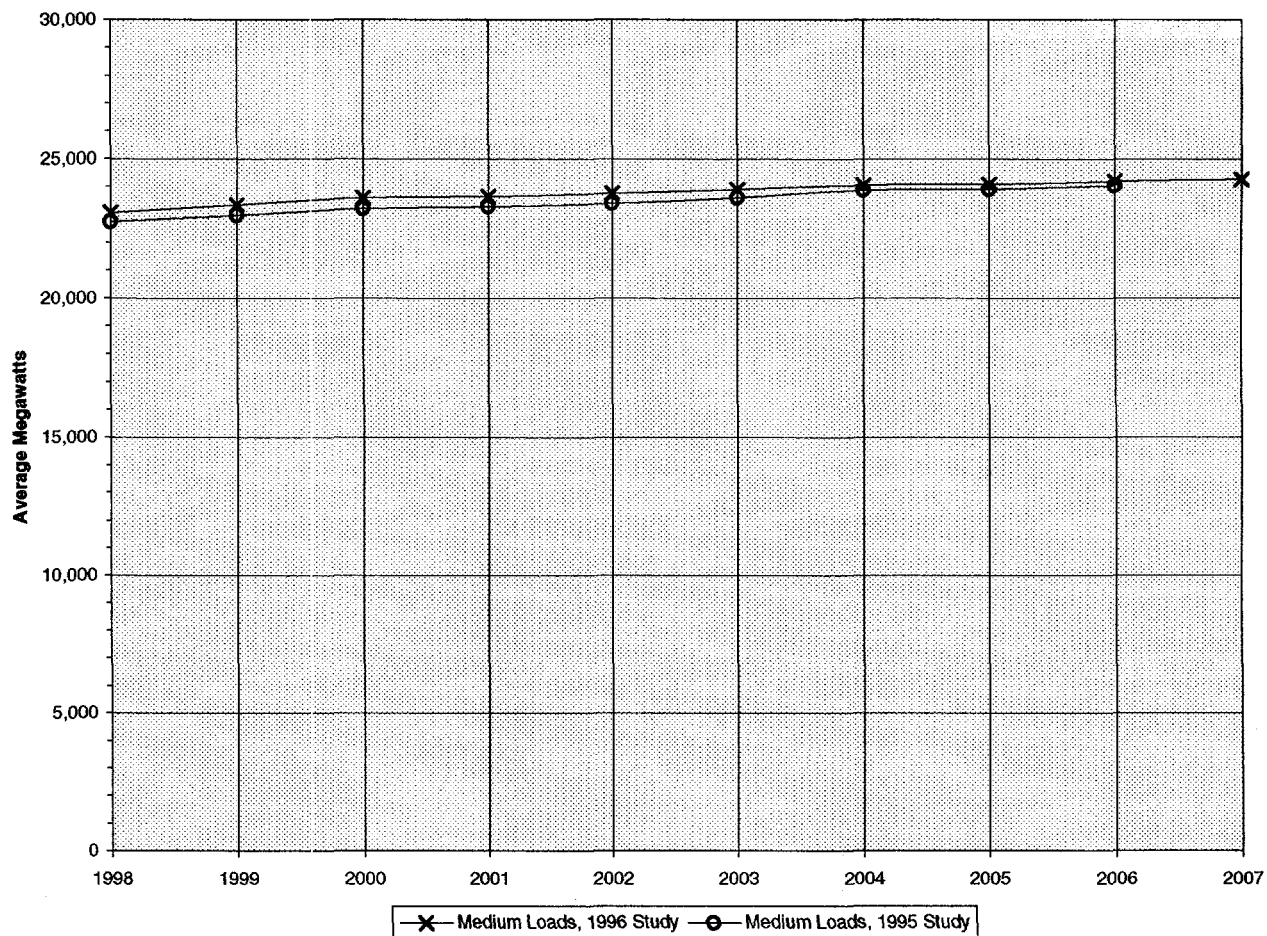
This analysis includes current operating requirements adopted by the hydroelectric project owners, and incorporates the 1995 NMFS Biological Opinion used for BPA's 1996 Final Rate Filing.

Regional Firm Energy Loads

Regional firm energy loads for OY 1997-98 through 2006-07 based on BPA's 1996 medium load forecast are shown in Figure 8, page 37. The load projections also include all intra-regional contracts made by Pacific Northwest utilities and the Federal system. The regional firm energy load for the medium load forecast is presented on line 4 in Exhibit 19, page 85, and the monthly firm loads for OY 1997-98, 2001-02, and 2006-07 under the medium load forecast are presented in Exhibits 20 through 22, pages 89 through 95.

Figure 8

Regional Firm Annual Energy Loads 1996 BPA Forecast



Regional Firm Peak Loads

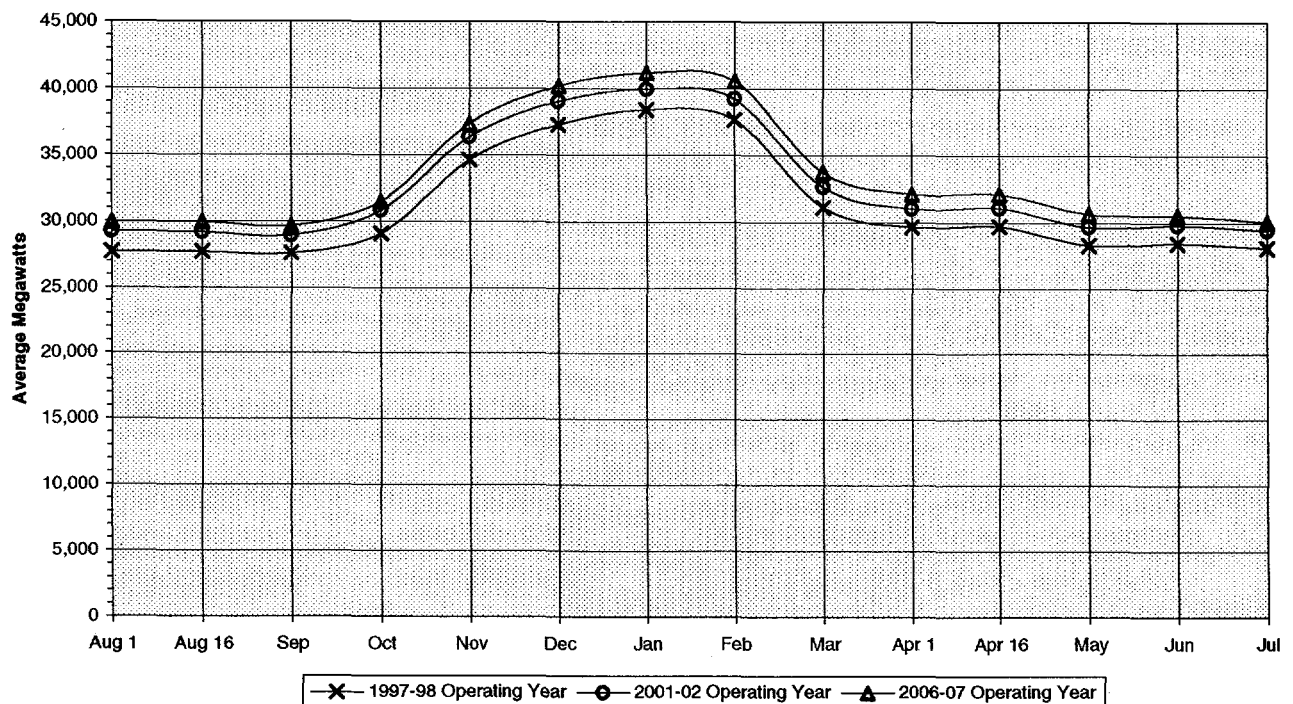
Figure 9, below, illustrates the regional firm peak loads under the medium load forecast for OY 1997-98, 2001-02, and 2006-07. The figures show the expected 1-hour monthly demand under the 1996 BPA load forecast and include extreme weather adjustments for capacity. Extreme weather conditions were assumed for the months of November through February and estimate a 5-percent probability that the forecasted peak load will be exceeded. In the months of March through October, the peak loads estimate normal weather conditions with a

50-percent probability that the forecasted peak load will be exceeded. The projected regional peak loads include all intra-regional contracts made by Pacific Northwest utilities, including the Federal system. The peak load projections are decreased by a diversity factor due to the fact that all peak electrical demands do not occur simultaneously throughout the region.

The monthly regional firm peak loads are presented on line 4 and the extreme weather adjustments to the regional peak loads are presented on line 34 of Exhibits 24 through 26, pages 99 through 105, for the medium load forecast.

Figure 9

Regional Firm Peak Loads for OY 1997-98, 2001-02, and 2006-07 Under Extreme Weather Conditions¹ Medium Loads



¹ Extreme weather conditions in November, December, January, and February assume a 5-percent probability that the peak load will be exceeded.

Regional Firm Resources

Table 11, below, summarizes the regional system resources for OY 1997-98. Hydro-electric 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

investor-owned utilities in the region. These thermal resources are composed primarily of IOU-owned coal, gas, and oil-fired projects and WPPSS's WNP-2 nuclear plant. A detailed listing of all regional generating resources is contained in the 1996 Pacific Northwest Loads and Resources Technical Appendix (available March 1997).

Table 11

Regional Firm Resources for OY 1997-98¹ Based on 1936-37 Water Conditions

Capacity based on January 1998

PROJECT TYPE	Sustained Peak Capacity (MW)	Generating Peak Capacity % of Total	Firm Energy (aMW) 12-Month Average	Firm Energy % of Total
Hydro	24,600	68	12,083	58
Coal	4,465	12	3,939	19
Nuclear	1,170	3	842	4
Imports	3,184	8	1,776	9
Combustion Turbines	1,670	4	721	3
Non-Utility Generation	1,145	3	1,025	5
Miscellaneous	585	2	445	2
TOTAL RESOURCES	36,819	100	20,831	100

¹Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

Regional Firm Energy Surplus/ Deficit Projections

This study includes all operating requirements currently adopted by the hydroelectric project owners and the firm planning assumptions from the 1995 NMFS Biological Opinion.

The regional firm energy surplus/deficit projections for the medium load forecast for OY 1997-98 through 2006-07 assuming 1936-37 water conditions are presented in

Table 12, below, and depicted graphically in Figure 10, page 41. The region experiences firm energy deficits in all study years under the medium load forecast.

The components of the regional energy loads and resources balances for the medium load scenario are presented on line 35 in Exhibit 19, page 85. Monthly regional firm energy loads under the medium load forecast for OY 1997-98, 2001-02, and 2006-07 are presented in Exhibits 20 through 22, on pages 89 through 95.

Table 12

Regional Firm Energy Surplus/Deficit Projections Assuming Existing Loads, Resources, and Contracts

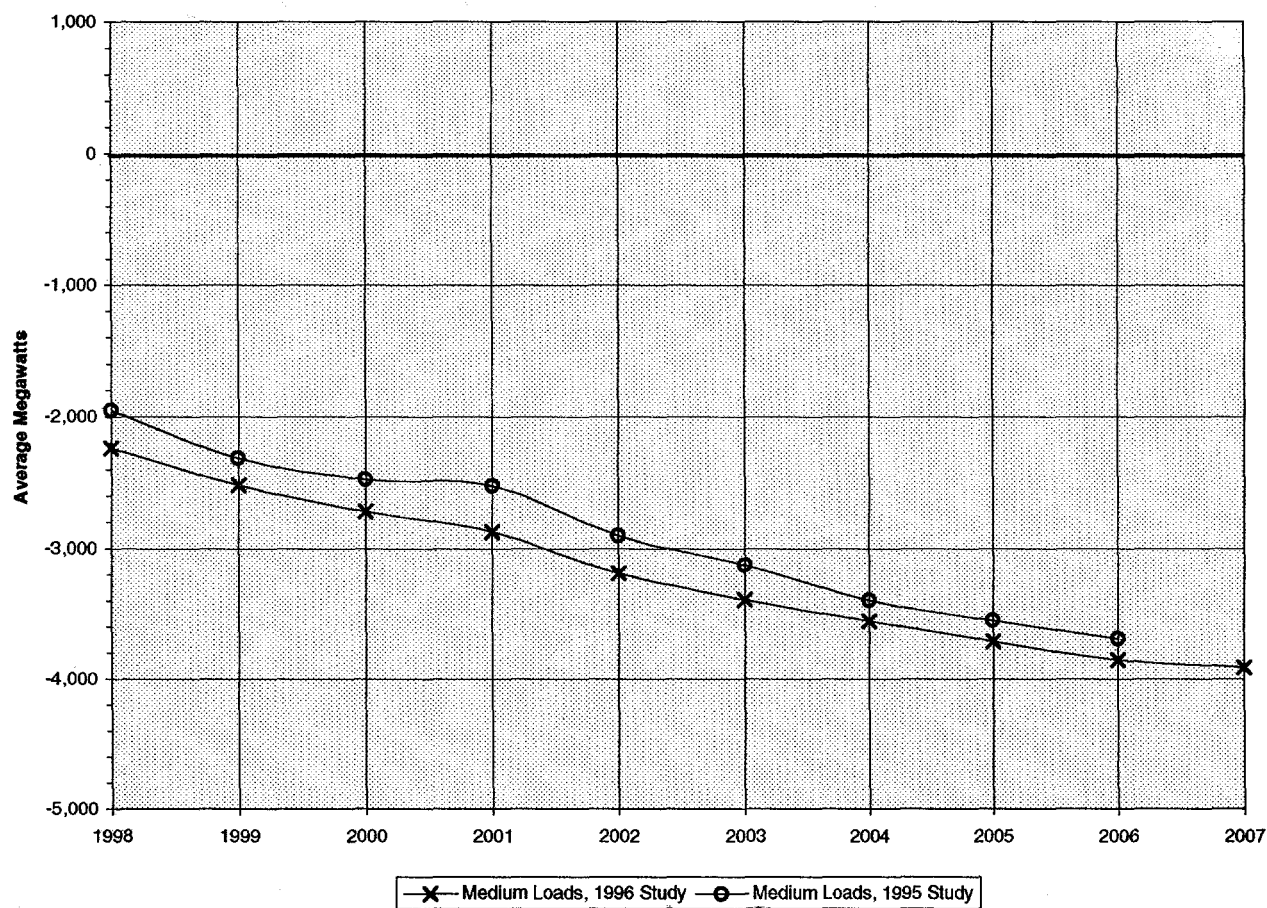
Energy In Average Megawatts

Medium Load Scenario	OPERATING YEAR ¹									
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	-2,236	-2,518	-2,719	-2,876	-3,191	-3,393	-3,559	-3,712	-3,855	-3,912

¹Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

Figure 10

Regional Firm Annual Energy Surplus/Deficit Projections



Regional Firm Capacity Surplus/Deficit Projections

Figure 11, page 42, shows the region's firm 50-hours-per-week capacity surplus/deficit projections under the medium load forecast for OY 1997-98, 2001-02, and 2006-07. This analysis incorporates all operating restrictions currently adopted by the hydroelectric project owners and the firm planning assumptions from the 1995 NMFS Biological Opinion.

The regional firm capacity surpluses/deficits incorporate the regional assumptions on page 36.

It is important to note that the capacity surplus values do not reflect potential nighttime return problems on the region's system. Peaking replacement energy from capacity sales is returned at night, when the output of the hydro system and other regional resources could be greater than the region's nighttime load. The following factors contribute to nighttime overgeneration:

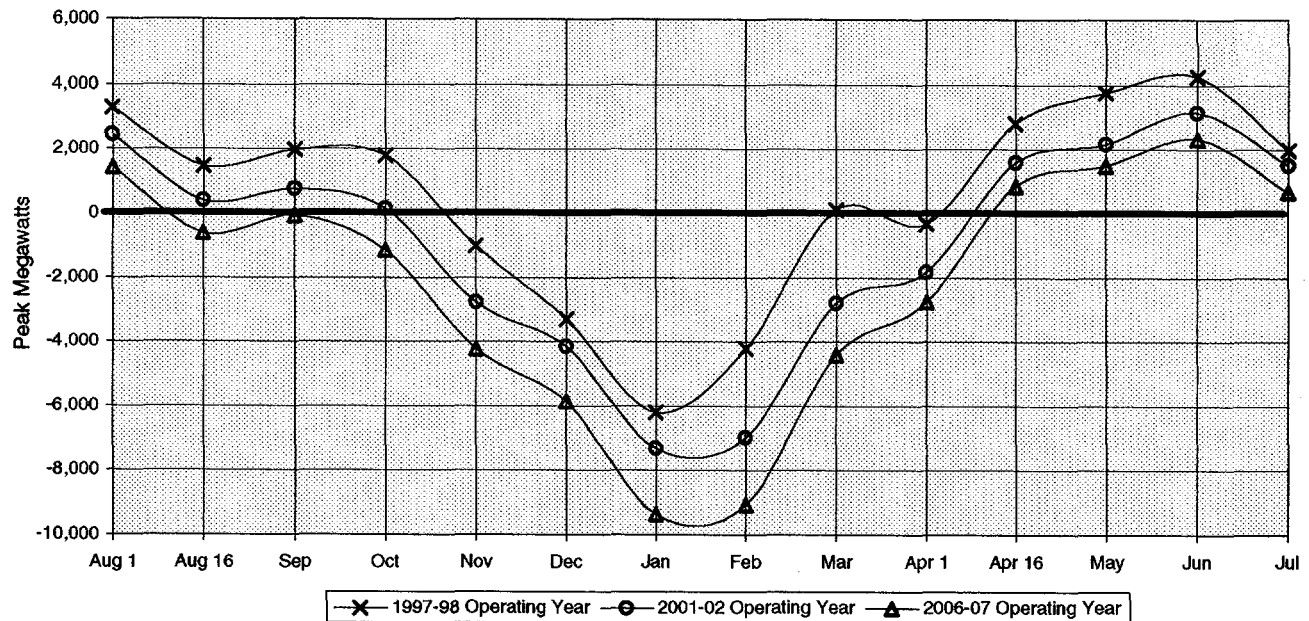
- ◆ Low regional system loads;
- ◆ Nonpower hydro requirements that dictate minimum streamflows; and
- ◆ The inability of the region's thermal resources to cycle from day to night.

These requirements restrict the ability to accept nighttime return energy, even though there is surplus generating capability during the daytime. These requirements are common in summer and fall, when the region's nighttime loads are low. Depending on water availability and economic conditions, return energy from these contracts could create low-priced forced energy sales and may reduce the region's ability to meet firm loads.

A 10-year summary of regional firm capacity surplus/deficit projections for the medium load forecast is shown in Exhibit 23, page 97. Monthly firm capacity surpluses/deficits under the medium forecast for OY 1997-98, 2001-02, and 2006-07 are presented in Exhibits 24 through 26 on pages 99 through 105.

Figure 11

**Regional Monthly Firm Capacity Surplus/Deficit Projections
Under Extreme Weather Conditions¹**



¹Extreme weather conditions in the months of November, December, January, and February assume a 5-percent probability that the peak load will be exceeded.

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SECTION VII

FEDERAL SYSTEM EXHIBITS

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EXHIBIT 1
FEDERAL ANNUAL ENERGY ANALYSIS
UNDER 1937 WATER CONDITIONS
FOR 10 OPERATING YEARS

EXHIBIT 1

SHEET 1 OF 2

TABLE 2: FEDERAL SYSTEM

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

MEGAWATTS	LOADS	M E D I U M L O A D S												1996 FINAL WHITEBOOK:		RUN DATE:	
		OPERATING YEAR												12/31/96		12/31/96	
		1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07						
		AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG						
1	FEDERAL AGENCIES	146	147	148	149	150	151	152	152	152	154						
2	FEDERAL & GEN PUBLIC LOSSES	168	169	169	171	172	173	174	175	175	176						
3	USBR	67	68	68	68	68	68	68	68	68	68						
4	DSI ALUMINUM FIRM	1568	1716	1779	1854	1867	1867	1867	1867	1867	1867						
5	DSI NON-ALUM FIRM	308	305	305	305	305	305	305	305	305	305						
6	DSI FIRM LOSSES	53	57	59	60	60	60	60	60	60	61						
7	SM & NON GEN PUB PURCH	2265	2269	2269	2257	2375	2401	2423	2439	2466	2488						
8	FIRM SYSTEM LOAD	4576	4730	4797	4864	4997	5025	5048	5067	5095	5119						
TRANSFERS OUT																	
9	EXPORTS	433	616	804	773	774	762	823	805	802	799						
10	CONTRACTS OUT	972	987	983	761	438	406	406	400	400	400						
11	CSPE TO WEST GROUP UTIL	236	178	102	98	94	61	0	0	0	0						
12	GEN PUB AGEN PSC PURCH	1448	1441	1418	1664	1700	1753	1786	1817	1904	1963						
13	IOU PSC PURCHASE	0	0	0	0	0	0	0	0	0	0						
14	FED DIVERSITY	0	0	0	0	0	0	0	0	0	0						
15	FIRM LOADS	7664	7952	8103	8161	8003	8008	8064	8089	8201	8282						
NON-FIRM LOADS																	
16	DSI ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0						
17	DSI NON-ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0						
18	TOP QUARTILE LOSSES	0	0	0	0	0	0	0	0	0	0						
19	TOTAL LOADS	7664	7952	8103	8161	8003	8008	8064	8089	8201	8282						
HYDRO RESOURCES																	
20	REGULATED HYDRO	6628	6683	6725	6642	6642	6642	6642	6642	6642	6642						
21	INDEPENDENT HYDRO	380	380	380	380	380	380	380	380	380	380						
22	SUS. PKNG. ADJUSTMENT	0	0	0	0	0	0	0	0	0	0						
23	CAN. ENT. NON-FED(CSPE)	50	38	23	22	21	14	0	0	0	0						
24	CAN. ENT. NON-FED(CNDA)	5	41	92	83	83	112	159	158	157	157						
25	RESTORATION	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26						
26	TOTAL HYDRO	7037	7116	7194	7101	7100	7122	7155	7154	7153	7153						

SHEET 2 OF 2

TABLE 2: FEDERAL SYSTEM (CONTINUED)

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

MEGAWATTS	M E D I U M L O A D S										1996 FINAL WHITEBOOK:	
	OPERATING YEAR										RUN DATE:	
	1997-98 AVG	1998-99 AVG	1999-00 AVG	2000-01 AVG	2001-02 AVG	2002-03 AVG	2003-04 AVG	2004-05 AVG	2005-06 AVG	2006-07 AVG	12/31/96	12/31/96
OTHER RESOURCES												
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	29	29	29	29	29	29	29	29	29	29	29	29
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	335	306	269	269	269	197	197	194	185	185	185	185
32 CONTRACTS IN	293	235	224	221	245	245	245	245	245	245	245	245
33 LARGE THERMAL	842	842	845	878	878	878	878	878	878	878	878	878
34 NON-UTILITY GENERATION	14	15	15	15	15	15	15	15	15	15	15	15
35 RESOURCE ACQUISITIONS	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	8550	8542	8576	8513	8536	8487	8519	8515	8505	8505	8505	8505
RESERVES & MAINTENANCE												
37 HYD, SM THERM & MISC RES	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES	0	0	0	0	0	0	0	0	0	0	0	0
40 FEDERAL HYDRO MAINT	0	0	0	0	0	0	0	0	0	0	0	0
41 NET RESOURCES	8550	8542	8576	8513	8536	8487	8519	8515	8505	8505	8505	8505
SURPLUS/DEFICITS												
42 FIRM SURPLUS/DEFICIT	886	590	472	352	533	479	455	426	304	223	223	223
43 TOTAL SURPLUS/DEFICIT	886	590	472	352	533	479	455	426	304	223	223	223
44 EXTREME WEATHER ADJ.	0	0	0	0	0	0	0	0	0	0	0	0
45 FIRM S/D W/EXT WEATHER ADJ.	886	590	472	352	533	479	455	426	304	223	223	223
46 TOTAL S/D W/EXT WTHR. ADJ.	886	590	472	352	533	479	455	426	304	223	223	223
47 POSS FED EXT WTHR. OBLG	0	0	0	0	0	0	0	0	0	0	0	0
48 FIRM S/D W/EXT WTHR. OBLG	886	590	472	352	533	479	455	426	304	223	223	223
49 TOTAL S/D W/EXT WTHR. OBLG	886	590	472	352	533	479	455	426	304	223	223	223

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.

A. BPA TO BURBANK, PS & C/N/X

B. BPA TO GLENDALE, PS & C/N/X

C. BPA TO M-S-R, PS & C/N/X

D. BPA TO PASADENA, PS & C/N/X

E. BPA TO SCE, PS & C/N/X

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2002.

3. SCE TO BPA, OPTION ENERGY IS INCLUDED THROUGH OY 2002.

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2002.

5. BPA TO NEW NRG VENT. POWER SALE HAS N.E.V. OPTION TO PURCHASE UP TO AN ADDITIONAL 200 AMW

WHICH CAN BE EXERCISED BEFORE DECEMBER 31, 1998.

6. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

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EXHIBITS 2 - 4
FEDERAL MONTHLY FIRM ENERGY
SURPLUS/DEFICIT PROJECTIONS
UNDER MEDIUM LOADS FOR 1937 WATER
CONDITIONS

EXHIBIT 2

SHEET 1 OF 2

TABLE 2: FEDERAL SYSTEM

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

		M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96			
		1997-98 OPERATING YEAR															
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	
LOADS	1 FEDERAL AGENCIES	144	144	137	140	149	165	159	159	152	140	140	135	133	143	146	
	2 FEDERAL & GEN PUBLIC LOSSES	136	136	140	170	199	224	215	196	167	154	154	140	136	139	168	
	3 USBR	161	161	109	42	2	2	2	2	4	50	50	117	151	168	67	
	4 DSI ALUMINUM FIRM	1342	1342	1488	1599	1599	1599	1599	1599	1599	1599	1599	1599	1599	1599	1568	
	5 DSI NON-ALUM FIRM	311	311	332	305	305	305	305	305	305	305	305	305	305	305	308	
	6 DSI FIRM LOSSES	43	43	47	51	55	59	59	59	55	53	53	51	52	49	53	
	7 SM & NON GEN PUB PURCH	2242	2240	2058	1979	2304	2505	2647	2477	2238	2182	2171	2113	2169	2277	2265	
	8 FIRM SYSTEM LOAD	4379	4377	4311	4286	4613	4859	4986	4797	4520	4483	4472	4460	4545	4680	4576	
TRANSFERS OUT	9 EXPORTS	369	369	371	289	257	224	426	413	414	460	497	631	673	646	433	
	10 CONTRACTS OUT	711	711	749	931	1237	1329	1271	1200	1049	866	866	750	764	805	972	
	11 CSPE TO WEST GROUP UTIL	246	246	246	246	246	246	246	246	246	216	216	216	216	216	236	
	12 GEN PUB AGEN PSC PURCH	1206	1229	1219	1287	1598	1657	1908	1799	1653	1447	1437	1278	1130	1187	1448	
	13 IOU PSC PURCHASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	14 FED DIVERSITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	15 FIRM LOADS	6911	6932	6896	7039	7951	8314	8837	8454	7882	7471	7487	7335	7328	7534	7664	
	NON-FIRM LOADS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HYDRO RESOURCES	16 DSI ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	17 DSI NON-ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	18 TOP QUARTILE LOSSES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	19 TOTAL LOADS	6911	6932	6896	7039	7951	8314	8837	8454	7882	7471	7487	7335	7328	7534	7664	
	20 REGULATED HYDRO	6180	5655	5551	5533	6295	6539	5515	6496	6142	5472	8827	10737	8047	5619	6628	
	21 INDEPENDENT HYDRO	410	408	345	371	297	226	168	189	267	420	499	685	720	425	380	
	22 SUS. PKNG. ADJUSTMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	23 CAN. ENT. NON-FED(CSPE)	52	52	52	52	52	52	52	52	52	45	45	45	45	45	50	
24 CAN. ENT. NON-FED(CNDA)	0	0	0	0	0	0	0	0	0	15	15	15	15	15	5		
25 RESTORATION	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	
26 TOTAL HYDRO	6616	6089	5922	5930	6618	6791	5709	6711	6435	5926	9360	11456	8801	6078	7037		

EXHIBIT 2 (continued)

SHEET 2 OF 2

TABLE 2: FEDERAL SYSTEM (CONTINUED)

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96							
1997-98 OPERATING YEAR																			

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.

A. BPA TO BURBANK, PS & C/N/X

B. BPA TO GLENDALE, PS & C/N/X

C. BPA TO M-S-R, PS & C/N/X

D. BPA TO PASADENA, PS & C/N/X

E. BPA TO SCE, PS & C/N/X

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2002.

3. SCE TO BPA, OPTION ENERGY IS INCLUDED THROUGH OY 2002.

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2002.

5. BPA TO NEW NRG VENT, POWER SALE HAS N.E.V. OPTION TO PURCHASE UP TO AN ADDITIONAL 200 AMW WHICH CAN BE EXERCISED BEFORE DECEMBER 31, 1998.

6. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

TABLE 2: FEDERAL SYSTEM

SHEET 1 OF 2

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96															
M E D I U M L O A D S															
2001- 2 OPERATING YEAR															
1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
LOADS															
1 FEDERAL AGENCIES	148	148	140	144	152	169	163	164	156	143	143	138	136	146	150
2 FEDERAL & GEN PUBLIC LOSSES	139	139	141	175	206	231	221	198	172	159	159	143	139	142	172
3 USBR	162	162	109	41	2	2	2	2	4	50	50	117	152	169	68
4 DSI ALUMINUM FIRM	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867
5 DSI NON-ALUM FIRM	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305
6 DSI FIRM LOSSES	54	54	54	58	63	67	67	67	63	61	61	59	59	54	60
7 SM & NON GEN PUB PURCH	2200	2198	2020	2043	2364	2562	2698	2531	2291	2228	2219	2446	2501	2620	2375
8 FIRM SYSTEM LOAD	4875	4873	4636	4633	4959	5203	5323	5134	4858	4813	4804	5075	5159	5303	4997
TRANSFERS OUT															
9 EXPORTS	2/	809	814	782	751	717	720	707	707	704	741	825	875	855	774
10 CONTRACTS OUT	3/	282	310	153	799	854	827	784	449	452	452	100	118	134	438
11 CSPE TO WEST GROUP UTIL	4/	95	95	95	95	95	95	95	95	92	92	92	92	92	94
12 GEN PUB AGEN PSC PURCH	5/	1432	1445	1608	1905	1991	2150	2076	1916	1768	1664	1449	1328	1353	1700
13 IOU PSC PURCHASE	6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS	7493	7504	7320	7271	8509	8860	9115	8797	8025	7829	7753	7541	7571	7737	8003
NON-FIRM LOADS															
16 DSI ALUM NON-FIRM	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 DSI NON-ALUM NON-FIRM	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 TOP QUARTILE LOSSES	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 TOTAL LOADS	7493	7504	7320	7271	8509	8860	9115	8797	8025	7829	7753	7541	7571	7737	8003
HYDRO RESOURCES															
20 REGULATED HYDRO	6357	5411	5870	5545	6554	6945	4798	5067	5908	5737	9588	11000	8339	6128	6642
21 INDEPENDENT HYDRO	410	408	345	371	297	226	168	189	267	420	499	685	720	425	380
22 SUS. PKNG. ADJUSTMENT	9/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 CAN. ENT. NON-FED(CSPE)	10/	21	21	21	21	21	21	21	21	21	21	21	21	21	21
24 CAN. ENT. NON-FED(CNDA)	11/	83	83	83	83	83	83	83	83	83	83	83	83	83	83
25 RESTORATION	12/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
26 TOTAL HYDRO	6845	5897	6293	5994	6929	7249	5044	5334	6253	6235	10165	11763	9137	6631	7100

EXHIBIT 3 (continued)

SHEET 2 OF 2

TABLE 2: FEDERAL SYSTEM (CONTINUED)

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96															
MEDIUM LOADS															
2001-2 OPERATING YEAR															
1937 WATER YEAR															
ENERGY IN AVERAGE MEGAWATTS															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
OTHER RESOURCES															
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	13/	27	27	28	29	31	32	31	31	30	30	27	27	27	29
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	14/	110	164	206	279	348	465	563	474	475	169	75	93	125	269
32 CONTRACTS IN	15/	150	401	401	251	251	251	251	250	250	250	78	251	150	245
33 LARGE THERMAL	16/	1054	1054	1054	1054	1054	1054	1054	1054	1054	1054	0	527	1054	878
34 NON-UTILITY GENERATION	17/	12	13	13	16	19	19	18	16	12	11	15	15	13	15
35 RESOURCE ACQUISITIONS	18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	8198	7250	7952	7696	8558	8952	6865	7251	8079	8056	10625	11958	10051	8000	8536
RESERVES & MAINTENANCE															
37 HYD, SM THRM & MISC RES	19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES	20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES	21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FEDERAL HYDRO MAINT	22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NET RESOURCES	8198	7250	7952	7696	8558	8952	6865	7251	8079	8056	10625	11958	10051	8000	8536
SURPLUS/DEFICITS															
42 FIRM SURPLUS/DEFICIT	705	-254	632	425	49	92	-2250	-1546	54	227	2872	4417	2479	263	533
43 TOTAL SURPLUS/DEFICIT	705	-254	632	425	49	92	-2250	-1546	54	227	2872	4417	2479	263	533
44 EXTREME WEATHER ADJ.	23/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 FIRM S/D W/EXT WEATHER ADJ.	705	-254	632	425	49	92	-2250	-1546	54	227	2872	4417	2479	263	533
46 TOTAL S/D W/EXT WTHR. ADJ.	705	-254	632	425	49	92	-2250	-1546	54	227	2872	4417	2479	263	533
47 POSS FED EXT WTHR. OBLG 24/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48 FIRM S/D W/EXT WTHR. OBLIG	705	-254	632	425	49	92	-2250	-1546	54	227	2872	4417	2479	263	533
49 TOTAL S/D W/EXT WTHR. OBLIG	705	-254	632	425	49	92	-2250	-1546	54	227	2872	4417	2479	263	533

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.

A. BPA TO BURBANK, PS & C/N/X

B. BPA TO BURBANK, PS & C/N/X

C. BPA TO GLENDALÉ, PS & C/N/X

D. BPA TO PASADENA, PS & C/N/X

E. BPA TO SCE, PS & C/N/X

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE QY 2002.

3. SCE TO BPA, OPTION ENERGY IS INCLUDED THROUGH QY 2002.

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH QY 2002.

5. BPA TO NEH, NRG VENT, POWER SALE HAS N.E.V. OPTION TO PURCHASE UP TO AN ADDITIONAL 200 AMW WHICH CAN BE EXERCISED BEFORE DECEMBER 31, 1998.

6. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

EXHIBIT 4

SHEET 1 OF 2

TABLE 2: FEDERAL SYSTEM

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS												M E D I U M L O A D S 2006- 7 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96											
												AUG 1-15 16-31	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	APR 16-30	MAY	JUN	JUL	AUG 12 MO AVG									
LOADS																																			
1	FEDERAL AGENCIES											152	152	144	148	157	175	168	169	160	148	142	140	151	154										
2	FEDERAL & GEN PUBLIC LOSSES											143	143	145	178	210	235	226	202	176	162	147	143	144	176										
3	USBR											162	162	109	42	2	2	2	2	4	50	118	152	170	68										
4	DSI ALUMINUM FIRM											1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867	1867										
5	DSI NON-ALUM FIRM											305	305	305	305	305	305	305	305	305	305	305	305	305	305										
6	DSI FIRM LOSSES											55	55	54	59	63	67	67	67	63	61	59	54	61	61										
7	SM & NON GEN PUB PURCH											2358	2356	2180	2153	2463	2645	2782	2627	2393	2334	2563	2624	2737	2488										
8	FIRM SYSTEM LOAD											5042	5040	4804	4752	5067	5296	5417	5239	4968	4932	5201	5290	5428	5119										
TRANSFERS OUT																																			
9	EXPORTS											844	844	848	826	794	761	764	750	750	747	811	852	844	799										
10	CONTRACTS OUT											3/	88	117	153	800	854	827	784	449	452	75	93	109	400										
11	CSPE TO WEST GROUP UTIL											4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
12	GEN PUB AGEN PSC PURCH											5/	1678	1711	1866	2180	2270	2427	2357	2207	1982	1925	1587	1599	1963										
13	IOU PSC PURCHASE											6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
14	FED DIVERSITY											7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
15	FIRM LOADS											7652	7669	7480	7597	8840	9181	9435	9131	8374	8113	8051	7822	7980	8282										
NON-FIRM LOADS																																			
16	DSI ALUM NON-FIRM											8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
17	DSI NON-ALUM NON-FIRM											8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
18	TOP QUARTILE LOSSES											8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
19	TOTAL LOADS											7652	7669	7480	7597	8840	9181	9435	9131	8374	8113	8051	7822	7980	8282										
HYDRO RESOURCES																																			
20	REGULATED HYDRO											6357	5411	5870	5545	6554	6945	4798	5067	5908	5737	9588	11000	8339	6128	6642									
21	INDEPENDENT HYDRO											410	408	345	371	297	226	168	189	267	420	499	685	720	425	380									
22	SUS. PKNG. ADJUSTMENT											9/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
23	CAN. ENT. NON-FED(CSPE)											10/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
24	CAN. ENT. NON-FED(CNDA)											11/	157	157	157	157	157	157	157	157	157	157	157	157	157	157									
25	RESTORATION											12/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26								
26	TOTAL HYDRO											6898	5950	6346	6047	6982	7302	5097	5387	6306	6288	10218	11816	9190	6684	7153									

EXHIBIT 4 (continued)

SHEET 2 OF 2

TABLE 2: FEDERAL SYSTEM (CONTINUED)

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS	M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96		
	2006-7 OPERATING YEAR														
	AUG 1-15 16-31	AUG 1-15 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	APR 1-15 16-30	MAY	JUN	JUL	12 MO AVG
OTHER RESOURCES															
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	13/	27	27	28	29	31	32	31	31	30	30	27	27	27	29
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	104	104	158	206	257	311	285	241	189	190	169	75	93	125	185
32 CONTRACTS IN	15/	150	401	401	251	251	251	251	250	251	251	78	251	150	245
33 LARGE THERMAL	16/	1054	1054	1054	1054	1054	1054	1054	1054	1054	1054	0	527	1054	848
34 NON-UTILITY GENERATION	17/	12	13	13	16	19	19	18	16	12	11	15	15	13	15
35 RESOURCE ACQUISITIONS	18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	8245	7297	7999	7749	8589	8968	6738	6982	7847	7825	10679	12011	10104	8053	8505
RESERVES & MAINTENANCE															
37 HYD, SM THRM & MISC RES	19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES	20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES	21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FEDERAL HYDRO MAINT	22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NET RESOURCES	8245	7297	7999	7749	8589	8968	6738	6982	7847	7825	10679	12011	10104	8053	8505
SURPLUS/DEFICITS															
42 FIRM SURPLUS/DEFICIT	593	-372	519	152	-251	-213	-2697	-2148	-527	-288	2628	4210	2282	73	223
43 TOTAL SURPLUS/DEFICIT	593	-372	519	152	-251	-213	-2697	-2148	-527	-288	2628	4210	2282	73	223
44 EXTREME WEATHER ADJ.	23/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 FIRM S/D W/EXT WEATHER ADJ.	593	-372	519	152	-251	-213	-2697	-2148	-527	-288	2628	4210	2282	73	223
46 TOTAL S/D W/EXT WTHR. ADJ.	593	-372	519	152	-251	-213	-2697	-2148	-527	-288	2628	4210	2282	73	223
47 POSS FED EXT WTHR. OBLG 24/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48 FIRM S/D W/EXT WTHR. OBLIG	593	-372	519	152	-251	-213	-2697	-2148	-527	-288	2628	4210	2282	73	223
49 TOTAL S/D W/EXT WTHR. OBLIG	593	-372	519	152	-251	-213	-2697	-2148	-527	-288	2628	4210	2282	73	223

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.

A. BPA TO BURBANK, PS & C/N/X
B. BPA TO GLENDALE, PS & C/N/X
C. BPA TO M-S-R, PS & C/N/X
D. BPA TO PASADENA, PS & C/N/X
E. BPA TO SCE, PS & C/N/X

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE QY 2002.

3. SCE TO BPA, OPTION ENERGY IS INCLUDED THROUGH QY 2002.

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH QY 2002.

5. BPA TO NEW, NRG VENT, POWER SALE HAS N.E.V. OPTION TO PURCHASE UP TO AN ADDITIONAL 200 AMW WHICH CAN BE EXERCISED BEFORE DECEMBER 31, 1998.

6. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.
A. BGP TO BPA, SUPPLEMENTAL ENERGY
B. SCE TO BPA, SUPPLEMENTAL ENERGY

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EXHIBIT 5
FEDERAL MONTHLY 50-HOUR CAPACITY
SURPLUS/DEFICIT PROJECTIONS
UNDER MEDIUM LOADS
FOR 1937 WATER CONDITIONS

EXHIBIT 5

TABLE F-1: FEDERAL 50-HOUR SUSTAINED PEAKING
BASE CASE: EXISTING FEDERAL CONTRACTS

FEDERAL SYSTEM FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT														
INCLUDING EXTREME WEATHER ADJUSTMENTS DURING NOVEMBER THROUGH FEBRUARY														
10 YEAR MONTHLY SUMMARY														
ASSUMING NO NIGHTTIME RETURN CONSTRAINTS, EXISTING FEDERAL CONTRACTS, AND NO NEW RESOURCE ACQUISITIONS														
M E D I U M L O A D S														
1937 WATER YEAR	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
PEAK IN MEGAWATTS														
1997-98	3721	2421	2525	2068	1224	700	-1236	-141	1583	1880	4518	4692	4138	1513
1998-99	2426	2377	2373	1373	625	1177	-1549	-877	1092	1744	4192	4348	4526	1016
1999-00	3419	1720	1866	1086	529	552	-1926	-2015	637	1190	4021	4255	5030	1254
2000-01	3575	1921	2075	1251	884	978	-1697	-1854	764	1220	4243	4424	4059	2290
2001-02	3872	2218	2346	1981	1012	1107	-1563	-1722	1065	1380	4476	4632	4264	2687
2002-03	4196	2542	2663	2176	951	1031	-1655	-1978	932	877	4239	4416	4310	2769
2003-04	3997	2342	2460	1992	729	792	-2100	-2280	637	833	4194	4378	4302	2750
2004-05	3950	2295	2407	1932	656	706	-2183	-2372	422	871	4183	4406	4342	2794
2005-06	3929	2270	2383	1905	367	418	-2453	-2657	276	501	3958	4200	4204	2625
2006-07	3711	2052	2161	1678	287	347	-2525	-2741	59	576	3890	4135	4149	2568

1996 FINAL WHITEBOOK: 12/31/96
RUN DATE: 12/31/96

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.

A. BPA TO BURBANK, PS & C/N/X

B. BPA TO GLENDALE, PS & C/N/X

C. BPA TO M-S-R, PS & C/N/X

D. BPA TO PASADENA, PS & C/N/X

E. BPA TO SCE, PS & C/N/X

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2002.

3. SCE TO BPA, OPTION ENERGY IS INCLUDED THROUGH OY 2002.

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2002.

5. BPA TO NEW NRG VENT, POWER SALE HAS N.E.V. OPTION TO PURCHASE UP TO AN ADDITIONAL 200 AMW WHICH CAN BE EXERCISED BEFORE DECEMBER 31, 1998.

6. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

EXHIBITS 6 - 8
FEDERAL MONTHLY CAPACITY ANALYSIS
UNDER MEDIUM LOADS FOR 1937 WATER
CONDITIONS

TABLE 2: FEDERAL SYSTEM

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

		M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96	
1937 WATER YEAR PEAK IN MEGAWATTS		1997-98 OPERATING YEAR													
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
LOADS															
1	FEDERAL AGENCIES	193	193	184	194	202	232	216	223	212	197	197	187	188	189
2	FEDERAL & GEN PUBLIC LOSSES	199	199	233	293	339	378	384	361	309	278	278	241	207	200
3	USBR	199	199	157	76	7	4	4	3	9	99	99	169	197	204
4	DSI ALUMINUM FIRM	1362	1362	1511	1623	1623	1623	1623	1623	1623	1623	1623	1623	1623	1623
5	DSI NON-ALUM FIRM	345	345	369	339	339	339	339	339	339	339	339	339	339	339
6	DSI FIRM LOSSES	50	50	56	63	69	72	77	75	71	67	67	64	59	57
7	SM & NON GEN PUB PURCH	3219	3219	3201	3290	3661	3907	4085	4185	3755	3638	3639	3446	3269	3238
8	FIRM SYSTEM LOAD	5567	5567	5711	5878	6240	6555	6728	6809	6318	6241	6242	6069	5882	5850
TRANSFERS OUT															
9	EXPORTS	1085	1085	1085	929	516	516	716	716	716	826	878	1120	1377	1377
10	CONTRACTS OUT	2369	2369	2418	2760	3135	3301	3246	3173	2897	2519	2519	2403	2413	2451
11	CSPE TO WEST GROUP UTIL	472	472	472	472	472	472	472	472	472	416	416	416	416	416
12	GEN PUB AGEN PSC PURCH	982	1143	1099	1423	1638	1761	1972	2081	2118	1780	1752	1287	1062	824
13	IOU PSC PURCHASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	FED DIVERSITY	-966	-987	-989	-1012	-945	-704	-726	-735	-976	-883	-880	-958	-982	-951
15	FIRM LOADS	9509	9649	9795	10451	11057	11902	12408	12516	11545	10899	10927	10337	10168	9967
NON-FIRM LOADS															
16	DSI ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	DSI NON-ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	TOP QUARTILE LOSSES	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	TOTAL LOADS	9509	9649	9795	10451	11057	11902	12408	12516	11545	10899	10927	10337	10168	9967
HYDRO RESOURCES															
20	REGULATED HYDRO	19196	18908	19611	19738	20732	20849	20904	20945	20376	19388	18560	18178	19000	19179
21	INDEPENDENT HYDRO	709	721	703	718	693	651	615	741	801	819	818	847	849	726
22	SUS. PKNG. ADJUSTMENT	-3379	-4808	-5323	-5394	-5246	-5782	-7728	-6167	-6504	-5814	-1169	-1200	-2866	-5678
23	CAN. ENT. NON-FED(CSPE)	110	110	110	110	110	110	110	110	110	96	96	96	96	96
24	CAN. ENT. NON-FED(CNDA)	0	0	0	0	0	0	0	0	0	33	33	33	33	33
25	RESTORATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	TOTAL HYDRO	16636	14931	15101	15172	16289	15828	13901	15629	14783	14522	18338	17954	17112	14356

TABLE 2: FEDERAL SYSTEM (CONTINUED)

SHEET 2 OF 2

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR PEAK IN MEGAWATTS	M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96			
	1997-98 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96			
	AUG 1-15 16-31	AUG 1-15 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	APR 1-15 16-30	MAY	JUN	JUL		
OTHER RESOURCES																
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	13/	27	27	28	29	21	32	31	31	30	30	27	27	27	27	27
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	14/	88	213	330	390	444	567	523	531	534	165	75	93	109	93	109
32 CONTRACTS IN	15/	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69
33 LARGE THERMAL	16/	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170
34 NON-UTILITY GENERATION	17/	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1
35 RESOURCE ACQUISITIONS	18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	17990	16285	16580	16769	17947	17532	15740	17423	16585	16326	18603	18126	17302	15732		
RESERVES & MAINTENANCE																
37 HYD, SM THRM & MISC RES	19/	-996	-1017	-1024	-1073	-1076	-1077	-1086	-1060	-1012	-970	-953	-994	-997		
38 LARGE THERMAL RESERVES	20/	-175	-175	-175	-175	-175	-175	-175	-175	-175	0	0	0	0	0	0
39 SPINNING RESERVES	21/	-325	-296	-299	-326	-337	-302	-329	-307	-297	-383	-387	-366	-295		
40 FEDERAL HYDRO MAINT	22/	-3263	-2761	-2770	-2752	-2705	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785		
41 NET RESOURCES	13230	12070	12321	12519	13667	14077	12778	13949	13128	12780	15445	15030	14306	11480		
SURPLUS/DEFICITS																
42 FIRM SURPLUS/DEFICIT	3721	2421	2525	2068	2610	2175	371	1433	1583	1880	4518	4692	4138	1513		
43 TOTAL SURPLUS/DEFICIT	3721	2421	2525	2068	2610	2175	371	1433	1583	1880	4518	4692	4138	1513		
44 EXTREME WEATHER ADJ.	23/	0	0	0	-4	-5	-4	-5	0	0	0	0	0	0	0	0
45 FIRM S/D W/EXT WEATHER ADJ.	3721	2421	2525	2068	2606	2170	367	1428	1583	1880	4518	4692	4138	1513		
46 TOTAL S/D W/EXT WTHR. ADJ.	3721	2421	2525	2068	2606	2170	367	1428	1583	1880	4518	4692	4138	1513		
47 POSS FED EXT WTHR. OBLIG 24/	0	0	0	0	-1382	-1471	-1602	-1569	0	0	0	0	0	0	0	0
48 FIRM S/D W/EXT WTHR. OBLIG	3721	2421	2525	2068	1224	700	-1236	-141	1583	1880	4518	4692	4138	1513		
49 TOTAL S/D W/EXT WTHR. OBLIG	3721	2421	2525	2068	1224	700	-1236	-141	1583	1880	4518	4692	4138	1513		

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.

A. BPA TO BURBANK, PS & C/N/X

B. BPA TO GLENDALE, PS & C/N/X

C. BPA TO M-S-R, PS & C/N/X

D. BPA TO PASADENA, PS & C/N/X

E. BPA TO SCE, PS & C/N/X

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2002.

3. SCE TO BPA, OPTION ENERGY IS INCLUDED THROUGH OY 2002.

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2002.

5. BPA TO NEW NRG VENT, POWER SALE HAS N.E.V. OPTION TO PURCHASE UP TO AN ADDITIONAL 200 AMW WHICH CAN BE EXERCISED BEFORE DECEMBER 31, 1998.

6. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

TABLE 2: FEDERAL SYSTEM

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96																
M E D I U M L O A D S																
2001- 2 OPERATING YEAR																
1937 WATER YEAR PEAK IN MEGAWATTS		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	
LOADS																
1	FEDERAL AGENCIES	198	198	188	199	207	238	222	229	218	202	202	192	193	194	
2	FEDERAL & GEN PUBLIC LOSSES	193	193	219	288	337	376	380	348	304	273	273	233	200	194	
3	USBR	200	200	157	76	7	4	4	3	9	100	100	170	198	205	
4	DSI ALUMINUM FIRM	1895	1895	1895	1895	1895	1895	1895	1895	1895	1895	1895	1895	1895	1895	
5	DSI NON-ALUM FIRM	339	339	339	339	339	339	339	339	339	339	339	339	339	339	
6	DSI FIRM LOSSES	62	62	65	72	78	83	87	85	80	76	76	74	67	62	
7	SM & NON GEN PUB PURCH	3220	3220	3211	3440	3794	4039	4212	4332	3902	3775	3776	3878	3687	3660	
8	FIRM SYSTEM LOAD	6107	6107	6074	6309	6657	6974	7139	7231	6747	6660	6661	6781	6579	6549	
TRANSFERS OUT																
9	EXPORTS	2012	2012	2012	1969	1547	1547	1547	1547	1547	1547	1598	1778	2063	2077	
10	CONTRACTS OUT	1400	1400	1433	1265	2110	2164	2138	2094	1561	1554	1554	1202	1220	1236	
11	CSPE TO WEST GROUP UTIL	186	186	186	186	186	186	186	186	186	166	166	166	166	166	
12	GEN PUB AGEN PSC PURCH	1353	1433	1470	1908	2159	2255	2310	2404	2511	2280	2143	1515	1249	1023	
13	IOU PSC PURCHASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	FED DIVERSITY	-851	-862	-872	-874	-879	-648	-661	-672	-868	-825	-811	-862	-873	-842	
15	FIRM LOADS	10207	10276	10303	10763	11780	12478	12659	12791	11684	11381	11310	10580	10405	10210	
NON-FIRM LOADS																
16	DSI ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	DSI NON-ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	TOP QUARTILE LOSSES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	TOTAL LOADS	10207	10276	10303	10763	11780	12478	12659	12791	11684	11381	11310	10580	10405	10210	
HYDRO RESOURCES																
20	REGULATED HYDRO	19230	18859	19611	19730	20737	20915	20783	20796	20322	19496	18779	18291	19000	19264	
21	INDEPENDENT HYDRO	709	721	703	718	693	651	615	741	801	819	818	847	849	726	
22	SUS. PKNG. ADJUSTMENT	-2976	-4762	-5323	-5387	-4601	-4719	-7613	-7224	-6846	-5917	-1100	-1200	-2573	-4693	
23	CAN. ENT. NON-FED(CSPE)	42	42	42	42	42	42	42	42	42	37	37	37	37	37	
24	CAN. ENT. NON-FED(CNDA)	238	238	238	238	238	238	238	238	238	238	238	238	238	238	
25	RESTORATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26	TOTAL HYDRO	17243	15098	15271	15341	17109	17127	14065	14593	14557	14673	18772	18213	17551	15572	

EXHIBIT 7 (continued)

SHEET 2 OF 2

TABLE 2: FEDERAL SYSTEM (CONTINUED)

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR PEAK IN MEGAWATTS	MEDIUM LOADS												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96		
	2001-2 OPERATING YEAR												APR 1-15	APR 16-30	MAY
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY			
OTHER RESOURCES															
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	13/	27	27	28	29	21	32	31	31	30	30	27	27	27	27
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	14/	110	139	153	213	267	471	427	435	438	165	75	93	109	109
32 CONTRACTS IN	15/	300	300	300	300	0	0	0	0	0	0	0	0	0	300
33 LARGE THERMAL	16/	1170	1170	1170	1170	1170	1170	1170	1170	1170	0	0	0	0	1170
34 NON-UTILITY GENERATION	17/	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35 RESOURCE ACQUISITIONS	18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	18851	16706	16908	16993	18522	18586	15739	16222	16194	16312	18968	18316	17672	17179	
RESERVES & MAINTENANCE															
37 HYD. SM THRM & MISC RES	19/	-998	-980	-1017	-1024	-1073	-1079	-1078	-1058	-1017	-981	-958	-994	-1001	
38 LARGE THERMAL RESERVES	20/	-175	-175	-175	-175	-175	-175	-175	-175	-175	0	0	0	-175	
39 SPINNING RESERVES	21/	-336	-206	-297	-299	-342	-364	-302	-297	-297	-397	-389	-373	-321	
40 FEDERAL HYDRO MAINT	22/	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1915	-2061	-1805	-1756	-1635	-2785	
41 NET RESOURCES	14079	12494	12649	12744	14226	15101	12783	12786	12749	12761	15786	15212	14669	12897	
SURPLUS/DEFICITS															
42 FIRM SURPLUS/DEFICIT	3872	2218	2346	1981	2446	2623	124	-5	1065	1380	4476	4632	4264	2687	
43 TOTAL SURPLUS/DEFICIT	3872	2218	2346	1981	2446	2623	124	-5	1065	1380	4476	4632	4264	2687	
44 EXTREME WEATHER ADJ.	23/	0	0	0	-4	-5	-5	-5	0	0	0	0	0	0	
45 FIRM S/D W/EXT WEATHER ADJ.	3872	2218	2346	1981	2442	2618	119	-10	1065	1380	4476	4632	4264	2687	
46 TOTAL S/D W/EXT WTHR. ADJ.	3872	2218	2346	1981	2442	2618	119	-10	1065	1380	4476	4632	4264	2687	
47 POSS FED EXT WTHR. OBLG 24/	0	0	0	0	-1430	-1511	-1682	-1712	0	0	0	0	0	0	
48 FIRM S/D W/EXT WTHR. OBLIG	3872	2218	2346	1981	1012	1107	-1563	-1722	1065	1380	4476	4632	4264	2687	
49 TOTAL S/D W/EXT WTHR. OBLIG	3872	2218	2346	1981	1012	1107	-1563	-1722	1065	1380	4476	4632	4264	2687	

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.

A. BPA TO BURBANK, PS & C/N/X

B. BPA TO GLENDALE, PS & C/N/X

C. BPA TO M-S-R, PS & C/N/X

D. BPA TO PASADENA, PS & C/N/X

E. BPA TO SCE, PS & C/N/X

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2002.

3. SCE TO BPA, OPTION ENERGY IS INCLUDED THROUGH OY 2002.

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2002.

5. BPA TO NEW NRG VENT, POWER SALE HAS N.E.V. OPTION TO PURCHASE UP TO AN ADDITIONAL 200 AMW

6. WHICH CAN BE EXERCISED BEFORE DECEMBER 31, 1998.

THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

TABLE 2: FEDERAL SYSTEM

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

		M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96	
1937 WATER YEAR PEAK IN MEGAWATTS		2006-7 OPERATING YEAR													
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
LOADS															
1 FEDERAL AGENCIES		204	204	194	205	213	246	228	237	224	208	208	198	198	200
2 FEDERAL & GEN PUBLIC LOSSES		195	195	222	293	341	361	386	353	309	277	277	239	203	197
3 USBR		200	200	158	77	7	4	4	3	9	100	100	170	199	205
4 DSI ALUMINUM FIRM		1895	1895	1895	1895	1896	1895	1895	1895	1895	1895	1895	1895	1895	1895
5 DSI ALUMINUM FIRM		339	339	339	339	339	339	339	339	339	339	339	339	339	339
6 DSI NON-ALUM FIRM		63	63	64	71	78	83	87	85	80	76	76	74	67	62
7 DSI FIRM LOSSES		3450	3450	3460	3620	3950	4171	4351	4493	4071	3955	3956	4065	3868	3831
8 SM & NON GEN PUB PURCH	1/	6346	6346	6332	6500	6824	7119	7290	7405	6927	6850	6851	6980	6769	6729
8 FIRM SYSTEM LOAD															
TRANSFERS OUT															
9 EXPORTS		2154	2154	2154	2139	1994	1994	1994	1994	1994	1994	1994	2154	2154	2154
10 CONTRACTS OUT	2/	1116	1116	1145	1181	2026	2080	2054	2010	1477	1480	1480	1103	1121	1137
11 CSPE TO WEST GROUP UTIL	4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 GEN PUB AGEN PSC PURCH	5/	1757	1842	1886	2313	2574	2662	2791	2911	3090	2599	2580	1900	1536	1339
13 IOU PSC PURCHASE	6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	7/	-874	-885	-898	-913	-910	-668	-687	-700	-917	-852	-850	-901	-900	-872
15 FIRM LOADS		10500	10573	10619	11219	12507	13187	13442	13620	12571	12071	12055	11236	10679	10488
NON-FIRM LOADS															
16 DSI ALUM NON-FIRM	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 DSI NON-ALUM NON-FIRM	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 TOP QUARTILE LOSSES	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 TOTAL LOADS		10500	10573	10619	11219	12507	13187	13442	13620	12571	12071	12055	11236	10679	10488
HYDRO RESOURCES															
20 REGULATED HYDRO		19230	18859	19611	19730	20737	20915	20783	20796	20322	19496	18779	18291	19000	19264
21 INDEPENDENT HYDRO		709	721	703	718	693	651	615	741	801	819	818	847	849	726
22 SUS. PKNG. ADJUSTMENT	9/	-2976	-4762	-5323	-5387	-4601	-4719	-7613	-7224	-6846	-5917	-1100	-1200	-2573	-4693
23 CAN. ENT. NON-FED(CSPE)	10/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 CAN. ENT. NON-FED(CNDA)	11/	434	434	434	434	434	434	434	434	434	434	434	434	434	434
25 RESTORATION	12/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 TOTAL HYDRO		17397	15252	15425	15495	17263	17281	14219	14747	14711	14832	18931	18372	17710	15731

TABLE 2: FEDERAL SYSTEM (CONTINUED)

SHEET 2 OF 2

SUMMARY OF FEDERAL SYSTEM LOADS AND RESOURCES IN THE PACIFIC NORTHWEST REGION
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96																	
M E D I U M L O A D S																	
2006- 7 OPERATING YEAR																	
1937 WATER YEAR PEAK IN MEGAWATTS																	
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL			
OTHER RESOURCES																	
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
29 RENEWABLES	13/	27	27	28	29	21	32	31	31	30	30	27	27	27			
30 COGENERATION																	
31 IMPORTS																	
32 CONTRACTS IN	14/	88	117	153	206	260	234	190	162	165	165	75	93	109			
33 LARGE THERMAL	15/	300	300	300	0	0	0	0	0	0	0	0	0	300			
34 NON-UTILITY GENERATION	16/	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	0	0	1170			
35 RESOURCE ACQUISITIONS	17/	1	1	1	1	1	1	1	1	1	1	1	1	1			
36 TOTAL RESOURCES	18/	0	0	0	0	0	0	0	0	0	0	0	0	0			
RESERVES & MAINTENANCE																	
37 HYD,SM THERM & MISC RES	19/	-998	-980	-1024	-1073	-1079	-1071	-1078	-1058	-1017	-981	-958	-994	-1001			
38 LARGE THERMAL RESERVES	20/	-175	-175	-175	-175	-175	-175	-175	-175	-175	0	0	0	-175			
39 SPINNING RESERVES	21/	-336	-296	-299	-342	-364	-302	-300	-297	-297	-397	-389	-373	-321			
40 FEDERAL HYDRO MAINT	22/	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1756	-1635	-2785			
41 NET RESOURCES		14211	12626	12781	12898	14373	15248	12700	12630	12647	15945	15371	14828	13056			
SURPLUS/DEFICITS																	
42 FIRM SURPLUS/DEFICIT		3711	2052	2161	1678	1866	2062	-742	-917	59	576	3890	4135	4149	2568		
43 TOTAL SURPLUS/DEFICIT		3711	2052	2161	1678	1866	2062	-742	-917	59	576	3890	4135	4149	2568		
44 EXTREME WEATHER ADJ.	23/	0	0	0	0	-4	-5	-5	-5	0	0	0	0	0			
45 FIRM S/D W/EXT WEATHER ADJ.		3711	2052	2161	1678	1862	2057	-747	-922	59	576	3890	4135	4149	2568		
46 TOTAL S/D W/EXT WTHR. ADJ.		3711	2052	2161	1678	1862	2057	-747	-922	59	576	3890	4135	4149	2568		
47 POSS FED EXT WTHR. OBLG 24/		0	0	0	0	-1575	-1710	-1779	-1818	0	0	0	0	0			
48 FIRM S/D W/EXT WTHR. OBLIG		3711	2052	2161	1678	287	347	-2525	-2741	59	576	3890	4135	4149	2568		
49 TOTAL S/D W/EXT WTHR. OBLIG		3711	2052	2161	1678	287	347	-2525	-2741	59	576	3890	4135	4149	2568		

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.

A. BPA TO BURBANK, PS & C/N/X

B. BPA TO GLENDALE, PS & C/N/X

C. BPA TO M-S-R, PS & C/N/X

D. BPA TO PASADENA, PS & C/N/X

E. BPA TO SCE, PS & C/N/X

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2002.

3. SCE TO BPA, OPTION ENERGY IS INCLUDED THROUGH OY 2002.

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2002.

5. BPA TO NEW NRG VENT, POWER SALE HAS N.E.V. OPTION TO PURCHASE UP TO AN ADDITIONAL 200 AMW WHICH CAN BE EXERCISED BEFORE DECEMBER 31, 1998.

6. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

FEDERAL SYSTEM FOOTNOTES

For Exhibits 1 through 8

1. BPA's small and nongenerating public agencies' purchases are requirements 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 requirement not served by its own dedicated resources. These contracts actually expire June 30, 2001; however, they are assumed to remain in effect through the study period.
2. BPA's exports include: BPA to Anaheim, capacity sale and capacity/energy exchange; BPA to Azusa, seasonal exchange, exchange energy, energy sale and power sale; BPA to Banning, energy sale and power sale; BPA to BART, power sale; BPA to Burbank, power sale; BPA to Colton, energy sale and power sale; BPA to Glendale, power sale; BPA to Imperial, diversity exchange; BPA to M-S-R, power sale; BPA to New Energy Ventures, power sale; BPA to Palo Alto, capacity sale and seasonal energy; BPA to Pasadena, capacity/energy exchange and power sale; BPA to Riverside, capacity/energy exchange, capacity sale and diversity exchange; BPA to SDG&E power exchange and power sale; BPA to SMUD, power exchange; BPA to SCE, power sale, environmental storage, and option capacity; BPA to Vernon, seasonal exchange; BPA to BC Hydro for Canadian Entitlement beginning April 1, 1998; and BPA's Northwest-Southwest Intertie losses. This analysis assumes that BPA's power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, Pasadena, Modesto, Santa Clara and Redding and with SCE are in power sales mode throughout the study period.
3. BPA's contracts out include Canadian Entitlement capacity and supplemental capacity to Pacific Northwest public agencies and IOUs, which expire March 31, 2003; BPA to Big Bend Electric Cooperative, power sale; BPA to Central Electric Cooperative, power sale; BPA to Clark Public Utility, Packwood Lake and power sale; BPA to the city of Ashland, power sale; BPA to the city of Idaho Falls, power sale; BPA to the city of Monmouth, power sale; BPA to Columbia Basin Electric Cooperative, power sale; BPA to Columbia River PUD, power sale; BPA to Columbia Rural Electric Cooperative, power sale; BPA to Cowlitz County PUD, power sale; BPA to EWEB, power sale; BPA to Flathead Electric Cooperative, power sale; BPA to Harney Electric Cooperative, power sale; BPA to IPC, for Harney and Wells; BPA to Inland Power and Light, power sale; BPA to Kootnai Electric Cooperative, power sale; BPA to Lewis County PUD, Packwood Lake and power sale; BPA to Lower Valley, power sale; BPA to Mason County PUD #3, power sale; BPA to Midstate Electric Cooperative, power sale; BPA to the city of Milton-Freewater, power sale; BPA to Modern Electric Cooperative, power sale; BPA to MPC, capacity/energy exchange; BPA to Nespelem Valley Electric Cooperative, power sale; BPA to PP&L, capacity sale, power sale, Southern Idaho exchange and WNP-3 settlement; BPA to PGE, capacity sale, power sale and WNP-3 settlement; BPA to Port Angeles City Light, power sale; BPA to PSP&L, Baker head loss, power sale, power exchange and WNP-3 settlement; BPA to Ravalli County Electric Cooperative, power sale; BPA to Springfield Utility Board, power sale; BPA to Surprise Valley Electric Corporation, power sale; BPA to TPU,

power sale; BPA to Unity Light and Power Company, power sale; BPA to Umatilla Electric Cooperative, power sale; BPA to Vigilante Electric Cooperative, power sale; BPA to Wasco Electric Cooperative, power sale; BPA to West Oregon Cooperative, power sale; and BPA to WWP, capacity sale, deferred power exchange, three power sales and WNP-3 settlement.

4. Columbia Storage Power Exchange (CSPE) is the sale of the Canadian share of downstream benefits under the Columbia River Treaty with Canada to a group of Northwest utilities, expiring April 1, 2003.
5. BPA's generating 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 requirement not served by its own dedicated resources. These contracts actually expire June 30, 2001; however, they are assumed to remain in effect through the study period.
6. Currently, there are no investor-owned utility power sales contract purchases through the 10-year study period.
7. 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.
8. This study uses new DSI contracts which do not contain non-firm loads and are zero through the 10-year study period.
9. 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, forced outage reserves, and summer flow augmentation on the Lower Snake River and John Day hydro projects.
10. Canadian Entitlement Return non-Federal to the Columbia River Storage Exchange (CSPE) reflects the public agencies' and IOUs' obligation of Canadian Entitlement allocation to the Northwest entities of the CSPE, which expires March 31, 2003.
11. Canadian Entitlement Return non-Federal to Canada reflects the Federal system, public agencies', and IOUs' obligation of Canadian Entitlement allocation to Canada, which begins April 1, 1998.
12. Restoration adjusts for 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 that lost generation from Canadian storage.
13. Federal renewable resources includes James River Wauna.
14. BPA's imports include: Anaheim to BPA, exchange energy; Azusa to BPA, seasonal exchange and return energy; Banning to BPA, return energy; Burbank to BPA, exchange energy; Colton to BPA, return energy; Glendale to BPA, exchange energy; Imperial to BPA, exchange energy and seasonal exchange; Pasadena to BPA, two exchange energy contracts and a seasonal exchange; Riverside to BPA; two exchange energy contracts and a seasonal exchange; SMUD to BPA, deferred energy return; SDG&E to BPA, exchange energy and deferred energy return; Sierra to BPA, for Harney and Wells; SCE to BPA, exchange energy, supplemental energy, option energy, and environmental storage; Vernon to BPA, seasonal exchange; Basin Electric to BPA, power sale; BC Hydro to BPA, for PGE ICP; PP&L (Wyoming) to BPA, Southern

Idaho transfer; PowerEx to BPA, replacement energy; and Trans Alta to BPA, power sale. This analysis assumes that BPA's power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, Pasadena, Modesto, Santa Clara, and Redding and with SCE are in power sales mode, so exchange and supplemental energy with these utilities are zero through the study horizon.

15. Federal contracts include: MPC to BPA, exchange energy and power sale; Other Entities to BPA, power sale; PP&L to BPA, WNP-3 settlement; PGE to BPA, WNP-3 settlement; PSP&L to BPA, power sale, seasonal power exchange, and WNP-3 settlement; and WWP to BPA, deferred power exchange and WNP-3 settlement.
16. Federal large thermal includes the generation from WNP-2, operated by WPPSS.
17. Non-utility generation (NUG) resources include generation provided to BPA by Independent power producers and resources included under the Public Utility Regulatory Policies Act (PURPA).
18. Resource acquisitions are resources BPA has identified and contracted for future purchase. When new Federal resource acquisitions are contracted for and/or on-line, they will be included in the loads and resources balance.
19. Hydro, small thermal and miscellaneous resources, and combustion turbine reserve requirements are estimated at 5 percent of the Federal capacity of these resources.
20. Large thermal reserve requirements are estimated at 15 percent of the WNP-2 nuclear project.
21. Federal spinning reserve is the reserve generating capacity maintained to provide a regulating margin for the automatic generation and frequency control of power generation.
22. Hydro maintenance is the sum of all Federal hydro project maintenance based on the mean of the 1983-84 through 1988-89 schedules submitted to the Northwest Power Pool.
23. Extreme weather adjustment for BPA's directly served loads.
24. Possible Federal extreme weather adjustment is the possible load on BPA by public agencies customers having the right to place this obligation on BPA in the months of November through February.

EXHIBITS 9-18
FEDERAL MONTHLY ENERGY SURPLUS/DEFICIT
PROJECTIONS UNDER 50 HISTORICAL WATER
CONDITIONS

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD

1996 FINAL WHITEBOOK: 12/31/96

	ENERGY IN AVERAGE MEGAWATTS												OPERATING TEAM												MONTH											
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG	AUG 1-15	AUG 16-30	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG						
1929 FEDERAL ENERGY S/D	1139	297	993	845	-110	631	-196	943	851	1857	3738	2501	3202	-436	1062	1943	1943	1943	1943	1943	1943	1943	1943	1943	1943	1943	1943	1943	1943	1943						
1930 FEDERAL ENERGY S/D	-33	-116	281	935	548	387	-1812	1138	623	2107	4466	3051	2549	-211	885	1944	1944	1944	1944	1944	1944	1944	1944	1944	1944	1944	1944	1944	1944	1944						
1931 FEDERAL ENERGY S/D	-233	-330	368	783	496	1156	-1898	-255	273	1774	2522	4268	3065	310	869	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945	1945						
1932 FEDERAL ENERGY S/D	83	-509	609	670	276	-38	-1731	-1359	2161	10305	7041	6655	6084	3757	2129	1946	1946	1946	1946	1946	1946	1946	1946	1946	1946	1946	1946	1946	1946	1946						
1933 FEDERAL ENERGY S/D	785	1009	1206	1178	653	1828	3890	4794	3481	4200	2798	4216	9976	7215	3569	1947	1947	1947	1947	1947	1947	1947	1947	1947	1947	1947	1947	1947	1947	1947						
1934 FEDERAL ENERGY S/D	4235	4083	2489	2317	2759	5930	10200	7610	7675	10629	8318	7532	2866	34	5253	1948	1948	1948	1948	1948	1948	1948	1948	1948	1948	1948	1948	1948	1948	1948						
1935 FEDERAL ENERGY S/D	336	-47	278	415	-35	1531	3002	4058	3443	6185	3072	3499	4112	4115	2440	1949	1949	1949	1949	1949	1949	1949	1949	1949	1949	1949	1949	1949	1949	1949						
1936 FEDERAL ENERGY S/D	2160	-220	692	379	69	645	-1265	-228	1487	4034	8125	8554	4942	1337	1972	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950						
1937 FEDERAL ENERGY S/D	948	400	672	625	476	361	-1159	322	528	425	2444	4414	2463	-183	886	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951						
1938 FEDERAL ENERGY S/D	1925	-84	730	691	439	244	4324	2474	5187	5865	5982	7906	5596	3625	3086	1952	1952	1952	1952	1952	1952	1952	1952	1952	1952	1952	1952	1952	1952	1952						
1939 FEDERAL ENERGY S/D	614	687	660	913	82	765	-1024	1660	3123	5564	4485	5067	3462	1001	1740	1953	1953	1953	1953	1953	1953	1953	1953	1953	1953	1953	1953	1953	1953	1953						
1940 FEDERAL ENERGY S/D	715	99	630	901	364	715	410	1703	4335	5550	4594	4269	3396	292	1876	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954	1954						
1941 FEDERAL ENERGY S/D	-115	-348	645	955	332	736	-216	1038	1082	2824	3983	4136	3677	-865	1214	1955	1955	1955	1955	1955	1955	1955	1955	1955	1955	1955	1955	1955	1955	1955						
1942 FEDERAL ENERGY S/D	1851	-337	668	920	601	3240	2582	2086	2163	2391	3482	4491	7219	4614	2462	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956						
1943 FEDERAL ENERGY S/D	1943	1103	1107	1030	23	1675	3766	4706	5543	10337	8431	7568	5797	3939	3953	1957	1957	1957	1957	1957	1957	1957	1957	1957	1957	1957	1957	1957	1957	1957						
1944 FEDERAL ENERGY S/D	4370	1328	954	882	-47	839	-499	627	844	1408	3698	3282	2146	-651	1148	1958	1958	1958	1958	1958	1958	1958	1958	1958	1958	1958	1958	1958	1958	1958						
1945 FEDERAL ENERGY S/D	-305	-472	823	657	91	141	-1481	435	-142	842	2043	4535	5510	2810	1130	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959						
1946 FEDERAL ENERGY S/D	300	262	475	580	148	1219	2898	4090	5447	6579	6604	8416	6033	3857	3336	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960						
1947 FEDERAL ENERGY S/D	2953	283	1511	1087	822	4496	5558	6965	5927	6618	4824	6551	6183	3098	4128	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961						
1948 FEDERAL ENERGY S/D	1209	551	1158	3939	2331	2496	5396	5122	5524	4982	5532	9297	12372	6073	4987	1962	1962	1962	1962	1962	1962	1962	1962	1962	1962	1962	1962	1962	1962	1962						
1949 FEDERAL ENERGY S/D	4543	4673	2563	1475	357	938	1900	1898	7859	7460	8211	7532	5489	1484	3661	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963						
1950 FEDERAL ENERGY S/D	-166	-133	-241	537	-163	1400	3533	6170	6847	8093	6062	6619	10243	5066	3912	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964						
1951 FEDERAL ENERGY S/D	3887	3505	2274	2390	2873	5321	6781	9449	6256	9263	7592	8639	5305	4037	5454	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965						
1952 FEDERAL ENERGY S/D	1951	3402	2112	3276	1108	5043	4581	4658	3715	9311	7819	9526	6265	380	4577	1966	1966	1966	1966	1966	1966	1966	1966	1966	1966	1966	1966	1966	1966	1966						
1953 FEDERAL ENERGY S/D	1216	877	610	769	152	617	2287	4658	3785	3813	4055	6237	8098	3996	5016	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967						
1954 FEDERAL ENERGY S/D	4451	2146	1351	1240	746	1981	3682	7012	4970	6939	4796	7013	9390	6006	4380	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968						
1955 FEDERAL ENERGY S/D	5897	4891	5362	2118	1653	1955	2654	1440	-321	3965	4861	3885	8561	7299	3701	1969	1969	1969	1969	1969	1969	1969	1969	1969	1969	1969	1969	1969	1969	1969						
1956 FEDERAL ENERGY S/D	4575	3386	1715	2203	2027	5425	7175	6759	7768	8721	8751	9926	10286	4639	5890	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970						
1957 FEDERAL ENERGY S/D	4937	2938	1507	1550	341	2563	2119	4051	4686	10773	3669	8977	9204	1869	4009	1971	1971	1971	1971	1971	1971	1971	1971	1971	1971	1971	1971	1971	1971	1971						
1958 FEDERAL ENERGY S/D	1957	537	471	991	77	1179	2703	3859	4421	6050	5080	8713	7063	1826	3255	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972						
1959 FEDERAL ENERGY S/D	892	463	796	1187	1440	3457	6584	7128	6061	7304	4735	6059	8956	4051	4368	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973						
1960 FEDERAL ENERGY S/D	5199	1396	4648	5065	1179	3806	4206	4450	4566	11726	5888	5206	5094	3380	4684	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974						
1961 FEDERAL ENERGY S/D	1943	-110	655	882	686	895	3112	7420	5598	9022	3863	5967	9664	3289	3789	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975						
1962 FEDERAL ENERGY S/D	1943	670	681	2001	154	840	2804	2436	1313	9154	7455	5493	5584	3289	2747	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976						
1963 FEDERAL ENERGY S/D	1768	225	954	1200	1564	3417	3859	5486	1920	4276	4687	4308	5412	3829	3186	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977						
1964 FEDERAL ENERGY S/D	1641	961	1680	751	236	890	2382	3945	1161	8000	3403	4541	7925	5811	3177	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978	1978						
1965 FEDERAL ENERGY S/D	5487	3225	2157	2457	1045	5562	8128	9209	5668	7127	8623	7983	7909	3442	5483	1979	1979	1979	1979	1979	1979	1979	1979	1979	1979	1979	1979	1979	1979	1979						
1966 FEDERAL ENERGY S/D	3613	2219	1559	1872	1168	1870	3884	2847	1849	8305	4509	5400	4197	2551	3043	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980						
1967 FEDERAL ENERGY S/D	1048	26	987	872	65	2051	4683	6457	5276	5047	2151	4819	9080	5372	3663	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981						
1968 FEDERAL ENERGY S/D	5300	3173	1586	1430	891	1838	3078	6211	4629	2741	4721	4202	4957	3610	3367	1982	1982	1982	1982	1982	1982	1982	1982	1982	1982	1982	1982	1982	1982	1982						
1969 FEDERAL ENERGY S/D	3189	1974	3216	2494	2105	2797	6823	7198	6444	9933	7411	8895	7380	4072	5223	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983						
1970 FEDERAL ENERGY S/D	952	144	736	1420	254	1164	3609	2967	2815	4605	3160	5147	7842	2735	2735	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984						
1971 FEDERAL ENERGY S/D	338	637	368	710	35	2116	6390	9464	6530	8675	6814	9987	9427	5218	4873	1985	1985	1985	1985	1985	1985	198														

EXHIBIT 10

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS	1998-99 OPERATING YEAR												1996 FINAL WHITEBOOK:				12/31/96			
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG	12/31/96	12/31/96	12/31/96	12/31/96	
1929 FEDERAL ENERGY S/D	992	111	292	356	-522	-250	-1011	334	-432	2033	4452	2879	3116	-673	657					
1930 FEDERAL ENERGY S/D	-1549	-799	208	457	-269	273	-2447	-293	-115	3929	4261	4525	2399	-927	561					
1931 FEDERAL ENERGY S/D	-733	-881	377	326	-326	406	-2263	-129	-719	2092	2190	4066	3248	343	555					
1932 FEDERAL ENERGY S/D	-143	-483	378	1	-950	-1367	-2103	-1718	2520	9341	6723	6733	5830	2952	1666					
1933 FEDERAL ENERGY S/D	1511	1257	583	619	50	973	3537	4474	3750	3964	2454	3874	9822	6869	3262					
1934 FEDERAL ENERGY S/D	4085	4055	1785	1829	2062	5214	9835	7462	7390	10244	7987	7442	3050	-378	4906					
1935 FEDERAL ENERGY S/D	-695	-1028	297	118	-194	804	2676	3675	3025	4818	3427	3595	3906	3828	2083					
1936 FEDERAL ENERGY S/D	2040	-610	105	1	-313	-72	-1520	-415	1163	2302	8795	8333	4921	1384	1654					
1937 FEDERAL ENERGY S/D	58	-342	284	368	-184	164	-2245	-155	-300	536	2300	5009	3183	-318	590					
1938 FEDERAL ENERGY S/D	-672	-1098	370	375	-596	-721	3453	2209	4906	5432	5508	7659	5336	3203	2565					
1939 FEDERAL ENERGY S/D	202	-16	432	230	-392	-274	-799	1325	2618	5502	4126	4914	4071	-301	1394					
1940 FEDERAL ENERGY S/D	849	-506	329	355	-141	-273	96	1864	3879	5135	4504	4159	3896	-189	1577					
1941 FEDERAL ENERGY S/D	-1350	-831	402	384	-86	-34	-1109	80	1370	2553	4562	3914	3896	-939	862					
1942 FEDERAL ENERGY S/D	-967	-563	794	389	-661	2179	2055	1475	2100	1813	3176	4326	5490	4302	2015					
1943 FEDERAL ENERGY S/D	2222	830	331	257	-417	983	3632	3906	5367	10586	8452	7332	6963	3672	3589					
1944 FEDERAL ENERGY S/D	4214	1131	216	363	-457	-15	-1077	-149	-866	3231	3399	4109	3038	-583	881					
1945 FEDERAL ENERGY S/D	-1177	-826	131	135	-863	-682	-1964	-937	-573	909	2384	3715	5198	2645	621					
1946 FEDERAL ENERGY S/D	255	43	394	150	-490	388	2813	3719	5490	6389	6207	8210	5774	3630	3044					
1947 FEDERAL ENERGY S/D	2572	76	885	599	-44	3514	5226	6609	5980	7144	4581	6348	5927	2760	3749					
1948 FEDERAL ENERGY S/D	1187	-106	738	3476	1633	1801	5068	5022	5229	5235	5205	9072	12114	5808	4643					
1949 FEDERAL ENERGY S/D	4395	4471	1859	986	-341	308	2014	1629	7563	7085	7803	7296	5231	1217	3303					
1950 FEDERAL ENERGY S/D	-382	-1210	-416	172	-733	-38	3187	6436	6911	7699	5721	6098	9974	5105	3551					
1951 FEDERAL ENERGY S/D	3741	3764	1607	1901	2155	4600	6231	9025	6655	8876	7235	8456	5075	3729	5103					
1952 FEDERAL ENERGY S/D	4799	3248	1434	2788	389	2025	4251	5780	3336	8942	7760	9295	6032	2922	4219					
1953 FEDERAL ENERGY S/D	1241	68	252	233	-286	103	2076	4196	3554	2829	4031	6002	7843	3730	2649					
1954 FEDERAL ENERGY S/D	4699	1960	642	752	49	1291	3385	6786	4737	6847	4529	6874	9227	5566	4027					
1955 FEDERAL ENERGY S/D	5755	4705	4722	1630	953	1190	2371	1781	-511	3138	3861	3766	8641	6944	3351					
1956 FEDERAL ENERGY S/D	4433	3356	1007	1714	1268	4444	6826	6441	7668	9350	8466	9725	10014	4285	5516					
1957 FEDERAL ENERGY S/D	4934	2769	798	1062	-357	1588	1789	3784	4668	10805	3349	9112	8582	1708	3639					
1958 FEDERAL ENERGY S/D	506	-469	309	258	-441	348	2365	5533	4548	5677	780	8444	6797	1472	2905					
1959 FEDERAL ENERGY S/D	627	6	360	731	672	2478	6231	6766	5946	7893	4567	5882	8734	3678	4002					
1960 FEDERAL ENERGY S/D	5000	1424	3968	4579	2481	3049	3896	4693	4399	11352	5497	4970	4837	3610	4343					
1961 FEDERAL ENERGY S/D	1813	-712	200	441	-64	223	2777	7131	5359	8639	3123	6201	9414	3145	3438					
1962 FEDERAL ENERGY S/D	924	484	95	713	-371	90	2474	2416	873	9234	6876	5258	5281	3062	2387					
1963 FEDERAL ENERGY S/D	1816	39	273	1404	952	2645	3528	5826	1651	3374	4646	4167	5204	3442	2836					
1964 FEDERAL ENERGY S/D	1615	769	1026	233	129	-9	2058	3708	923	7629	2858	4379	9400	5588	2823					
1965 FEDERAL ENERGY S/D	5344	3198	1573	2017	346	4877	7809	9025	5767	6509	8443	7747	7648	3270	5144					
1966 FEDERAL ENERGY S/D	3479	2033	850	1383	451	1122	3782	2737	1784	7834	4475	5159	3866	2201	2687					
1967 FEDERAL ENERGY S/D	1073	-391	332	327	-292	1082	4328	6106	5056	5349	2093	4615	8519	5721	3321					
1968 FEDERAL ENERGY S/D	5153	2987	880	940	194	1191	2766	6248	4476	1766	4468	4178	6495	3374	3011					
1969 FEDERAL ENERGY S/D	3203	1573	2520	2005	1406	2123	6481	6894	6309	9929	7067	8731	7122	3725	4850					
1970 FEDERAL ENERGY S/D	927	-497	429	838	-444	515	3565	2972	2503	4229	2529	5491	7073	2173	2392					
1971 FEDERAL ENERGY S/D	0	-307	145	362	-275	376	6058	9514	6936	8299	6111	9710	9168	5148	4516					
1972 FEDERAL ENERGY S/D	4835	4363	1343	1048	-16	1082	5430	7980	11759	9784	6149	8821	10413	7964	5699					
1973 FEDERAL ENERGY S/D	5341	5634	1438	1307	-237	1577	3040	195	767	2620	4846	2700	1465	-927	1712					
1974 FEDERAL ENERGY S/D	-966	-1893	231	331	-41	3761	9625	9922	8553	9163	8093	8778	11033	7963	5613					
1975 FEDERAL ENERGY S/D	4714	4854	1676	300	-489	776	3723	4767	5512	4782	4162	6114	7934	6773	3862					
1976 FEDERAL ENERGY S/D	2528	1473	814	1352	1352	5104	6959	7158	6614	9803	5841	8502	5068	5408	4846					
1977 FEDERAL ENERGY S/D	5362	4981	5985	960	-455	193	-211	-814	-800	3104	4520	2772	1767	-1721	1388					
1978 FEDERAL ENERGY S/D	-1682	-1340	-278	-122	-1186	-235	615	3501	5884	7570	4240	5599	3877	-3132	2082					

EXHIBIT 11

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		1999-00 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96			
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	
1929	FEDERAL ENERGY S/D	785	-215	238	427	-584	-266	-304	-1867	-683	1977	3798	4142	3065	-995	529	
1930	FEDERAL ENERGY S/D	-2252	-1624	19	352	174	-195	-1834	-655	-658	334	4479	5182	2788	-1116	395	
1931	FEDERAL ENERGY S/D	-1384	-1699	36	156	-58	-439	-2114	-1940	-979	1611	3658	4542	2776	-43	256	
1932	FEDERAL ENERGY S/D	-1365	-1081	259	140	-323	-1018	-2284	-1960	1483	9395	7098	6355	5777	3553	1584	
1933	FEDERAL ENERGY S/D	112	631	411	623	86	952	1671	2307	4156	4590	3612	5029	9229	7015	2996	
1934	FEDERAL ENERGY S/D	3711	3889	1731	1803	2003	5081	9609	5471	7040	10387	8782	7802	2677	-369	4686	
1935	FEDERAL ENERGY S/D	-625	-1454	-39	-26	-503	895	986	3553	3911	4412	3025	3537	3846	3805	1887	
1936	FEDERAL ENERGY S/D	-1825	-980	17	13	-428	-171	-2122	-1750	1892	2040	8103	7898	4910	1653	1451	
1937	FEDERAL ENERGY S/D	632	-444	116	162	-203	-153	-2114	-1666	-553	192	3660	4974	3968	-885	472	
1938	FEDERAL ENERGY S/D	-1162	-1862	114	246	-605	-729	1953	1962	5783	5314	5474	7632	5322	3440	2417	
1939	FEDERAL ENERGY S/D	-259	-267	136	157	-522	-441	-1855	608	3232	5420	4054	5247	4296	-759	1214	
1940	FEDERAL ENERGY S/D	-92	-781	262	282	-60	-185	-1230	664	5182	4368	4522	3931	4334	-397	1397	
1941	FEDERAL ENERGY S/D	-1567	-1358	272	281	52	-324	-1826	250	1117	1136	4951	4676	3249	-1304	669	
1942	FEDERAL ENERGY S/D	-1501	-816	-27	341	-575	2205	-1959	1651	1645	1593	3768	4864	5515	3382	1874	
1943	FEDERAL ENERGY S/D	1325	459	237	527	-612	963	1749	4221	5800	10169	8122	7286	6952	3709	3406	
1944	FEDERAL ENERGY S/D	4023	805	210	349	-558	-250	-572	-1681	-678	3150	4372	3932	2624	-1167	699	
1945	FEDERAL ENERGY S/D	-2136	-1312	-215	216	-693	-664	-2028	-1034	-669	272	1171	3828	5159	2682	465	
1946	FEDERAL ENERGY S/D	-223	-419	258	8	-594	373	1270	2834	5785	6329	6801	8655	5304	3493	2803	
1947	FEDERAL ENERGY S/D	1868	-250	834	575	-112	3391	4021	3977	6371	7045	5659	7524	4947	3182	3489	
1948	FEDERAL ENERGY S/D	926	-299	724	3447	1574	1467	4482	1865	5448	5294	6385	10081	11956	5324	4377	
1949	FEDERAL ENERGY S/D	4026	4430	1806	961	-398	-51	726	903	8215	6912	7963	7216	5187	1265	3377	
1950	FEDERAL ENERGY S/D	-729	-1446	-408	124	-773	731	960	4915	7868	7788	6363	6357	9940	4826	3377	
1951	FEDERAL ENERGY S/D	3533	3158	1348	1876	-772	4467	5051	6343	7724	9686	8009	8369	4978	4023	4873	
1952	FEDERAL ENERGY S/D	4466	2924	1480	2760	332	1932	2706	3380	5010	9438	8011	9273	6000	2954	4021	
1953	FEDERAL ENERGY S/D	1036	-145	55	343	-398	-122	286	5039	3761	2689	3977	5966	7827	3811	2529	
1954	FEDERAL ENERGY S/D	3835	1616	591	727	-9	956	2956	4083	4717	6464	5567	8060	8779	5855	3788	
1955	FEDERAL ENERGY S/D	5329	4370	6445	1605	897	857	1067	-871	840	4220	3614	4217	8364	7422	3151	
1956	FEDERAL ENERGY S/D	4061	3220	950	1695	1208	4328	6017	3660	7920	9188	9271	10099	9623	4624	5249	
1957	FEDERAL ENERGY S/D	4554	2614	748	1036	-414	1486	395	881	5316	10819	4525	9504	8229	2271	3392	
1958	FEDERAL ENERGY S/D	394	-591	52	356	-625	569	112	3741	5144	6040	5575	9254	5858	1980	2679	
1959	FEDERAL ENERGY S/D	272	-268	237	854	616	2368	5280	4075	6216	7578	5233	7335	8138	4007	3793	
1960	FEDERAL ENERGY S/D	4775	1101	3909	4541	2423	2715	2640	1984	5461	11678	6139	4913	4785	3550	4064	
1961	FEDERAL ENERGY S/D	2427	-772	199	411	-75	-114	2510	4289	5424	8608	3503	7956	8837	3266	3299	
1962	FEDERAL ENERGY S/D	622	158	-6	834	-608	182	368	1469	2250	9175	6909	5234	5301	3087	2212	
1963	FEDERAL ENERGY S/D	1613	-287	217	1382	895	2311	2204	3693	2868	4056	4629	4194	4765	3736	2606	
1964	FEDERAL ENERGY S/D	2581	443	974	254	-535	-124	653	1137	2388	8307	3698	4555	9556	5717	2674	
1965	FEDERAL ENERGY S/D	4900	2884	1390	1942	290	4547	6632	6620	6993	7459	8563	7719	7611	3128	4898	
1966	FEDERAL ENERGY S/D	3860	2073	800	1358	395	786	2478	1218	2629	7913	4443	4964	4457	2298	2544	
1967	FEDERAL ENERGY S/D	816	-745	297	481	-414	1063	4123	3610	4762	4688	2221	5999	8441	5653	3125	
1968	FEDERAL ENERGY S/D	4773	2661	829	916	136	857	1325	3686	5402	3123	4021	3902	5162	3247	2729	
1969	FEDERAL ENERGY S/D	3932	2050	2582	2073	1348	1789	5611	4175	6404	9844	8420	9623	5997	3995	4643	
1970	FEDERAL ENERGY S/D	626	-372	106	900	-501	177	2108	2203	3333	4061	3635	5274	6789	2248	2318	
1971	FEDERAL ENERGY S/D	-188	-153	173	138	-508	1135	3982	7992	7368	8463	7463	9701	9134	5098	4334	
1972	FEDERAL ENERGY S/D	4461	4198	1291	1024	-73	1018	5235	5928	12000	9700	4579	9861	9571	7730	5421	
1973	FEDERAL ENERGY S/D	4832	5293	1384	1279	-296	1465	978	1266	915	-132	3808	3411	3809	-1500	1634	
1974	FEDERAL ENERGY S/D	-1761	-1513	-41	259	-279	3696	7848	8397	9121	8856	8291	8988	10797	7781	5292	
1975	FEDERAL ENERGY S/D	4378	4698	1627	486	-141	815	1500	3521	6868	4478	3767	6074	7895	6810	3676	
1976	FEDERAL ENERGY S/D	2148	1309	763	1327	1295	5082	5730	4279	7005	9969	7577	9284	5017	4769	4588	
1977	FEDERAL ENERGY S/D	5156	4655	5718	1137	-555	-4	-651	-1890	-7069	3148	3377	4451	1627	-1552	1273	
1978	FEDERAL ENERGY S/D	-1613	-1199	-231	86	-728	-459	18	2153	5652	7447	4235	5394	3837	3171	1944	

EXHIBIT 12

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS	2000-1 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96			
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG	12 MO AVG
1929 FEDERAL ENERGY S/D	982	-194	829	329	-585	-323	-1416	-1108	-660	2667	3282	2380	2938	-292	455	
1930 FEDERAL ENERGY S/D	-1124	-980	368	153	60	234	-1718	-651	-972	1046	3754	4153	1106	-272	343	
1931 FEDERAL ENERGY S/D	-1208	-840	57	305	86	141	-2167	-1936	-983	2469	2679	4477	970	-38	205	
1932 FEDERAL ENERGY S/D	-874	-658	435	20	-175	-1362	-2224	-1885	3003	9162	5786	6783	5753	3030	1682	
1933 FEDERAL ENERGY S/D	1330	952	951	295	21	713	3502	1737	3556	4277	2536	4469	9633	6723	3012	
1934 FEDERAL ENERGY S/D	3746	4141	2319	1800	2196	5003	9318	6915	7544	9852	7186	7239	1427	282	4709	
1935 FEDERAL ENERGY S/D	-610	-1008	310	-208	-137	565	2390	2764	2772	4677	2575	3727	4273	3655	1911	
1936 FEDERAL ENERGY S/D	2395	-844	582	-155	-311	-75	-2097	-1938	1154	2551	8258	8103	4362	1265	1423	
1937 FEDERAL ENERGY S/D	624	-335	573	-13	-98	-60	-2403	-1697	-182	130	2694	4282	2339	-57	352	
1938 FEDERAL ENERGY S/D	-1290	-897	352	81	-504	119	1099	1321	5419	5492	6012	7390	5720	3491	2429	
1939 FEDERAL ENERGY S/D	1520	-120	646	8	-578	-388	-2003	377	3281	5191	4252	5133	2371	626	1200	
1940 FEDERAL ENERGY S/D	851	-607	575	233	-105	-255	-1567	753	5220	4863	4376	3711	2149	469	1311	
1941 FEDERAL ENERGY S/D	-1353	-1015	594	279	5	-215	-1836	297	1241	1085	2926	3698	3880	-668	674	
1942 FEDERAL ENERGY S/D	-1982	-1067	453	295	-284	1901	1929	1617	1743	1206	2704	3869	5511	3805	1773	
1943 FEDERAL ENERGY S/D	3581	2071	886	244	-399	350	1619	3691	5571	9931	7902	7119	7168	4154	3512	
1944 FEDERAL ENERGY S/D	4359	932	799	262	-544	-229	-1297	-1663	-414	2701	3181	3497	1660	-491	597	
1945 FEDERAL ENERGY S/D	-1198	-1029	372	160	-312	-1053	-2010	2055	-655	275	1895	4122	4116	2461	510	
1946 FEDERAL ENERGY S/D	-587	-349	520	121	-271	638	883	2055	5608	6942	6667	8347	5716	3547	2792	
1947 FEDERAL ENERGY S/D	1731	-229	1427	571	85	2993	5367	4597	5723	6128	4792	6629	5776	2815	3500	
1948 FEDERAL ENERGY S/D	1035	-194	1266	3444	1768	888	5020	2816	5286	4538	5172	9535	12030	5436	4398	
1949 FEDERAL ENERGY S/D	4043	4220	2393	958	-201	-189	-318	1545	7459	6866	7847	7090	5225	1349	3067	
1950 FEDERAL ENERGY S/D	-550	-1363	3	1873	-1004	227	2326	3966	7584	8057	5537	5864	10041	5226	3327	
1951 FEDERAL ENERGY S/D	3397	3586	1938	1473	2292	3993	6052	6514	6834	8801	6475	8303	4993	4583	4876	
1952 FEDERAL ENERGY S/D	4578	2945	2069	2757	529	1496	3182	3136	4103	8764	8051	9034	6362	3262	4008	
1953 FEDERAL ENERGY S/D	1002	-1	563	21	-303	-49	-612	4202	4003	3131	2705	5678	8262	3904	2427	
1954 FEDERAL ENERGY S/D	4656	1985	1185	724	188	322	3329	5340	4763	6116	4593	7240	8517	6420	3892	
1955 FEDERAL ENERGY S/D	5398	4392	5171	1601	1090	273	1845	-891	188	3720	3666	3860	8122	7283	3094	
1956 FEDERAL ENERGY S/D	4088	3280	1541	1691	1401	3892	6788	4121	7401	8802	8982	9759	9718	4153	5254	
1957 FEDERAL ENERGY S/D	4754	2702	1341	1034	-215	1025	1518	784	4775	10712	3390	9646	8112	1566	3364	
1958 FEDERAL ENERGY S/D	502	-595	592	130	-577	-195	2236	2769	4617	6171	4914	8699	6659	1627	2680	
1959 FEDERAL ENERGY S/D	149	-156	4451	823	812	1679	6117	4783	5745	7364	4815	6482	8439	3481	3769	
1960 FEDERAL ENERGY S/D	4865	1291	4451	4532	2615	2130	3204	1940	5135	11559	4600	4753	5430	3516	4072	
1961 FEDERAL ENERGY S/D	1891	-764	734	367	290	-429	2696	5390	5485	8263	3060	6448	9191	2822	3268	
1962 FEDERAL ENERGY S/D	758	179	576	579	-408	-237	853	642	1775	9553	7234	5103	5103	2839	2138	
1963 FEDERAL ENERGY S/D	2038	-27	810	1377	1091	1690	2967	3819	2156	3314	3948	3848	5668	3735	2650	
1964 FEDERAL ENERGY S/D	1518	464	1566	149	-232	-363	1207	1066	1950	8446	3385	4154	9890	4658	2579	
1965 FEDERAL ENERGY S/D	4809	2937	2168	1939	486	3934	7341	6526	6333	6449	7709	7798	8093	2978	4879	
1966 FEDERAL ENERGY S/D	3902	2094	1394	1355	591	182	3619	1487	2152	7654	4224	4314	3635	2621	2524	
1967 FEDERAL ENERGY S/D	855	-685	867	261	-436	488	4258	5379	5093	4572	1870	4432	9429	3621	3076	
1968 FEDERAL ENERGY S/D	7799	2882	1420	913	333	258	2710	3673	4966	2605	4452	3344	4873	3062	2733	
1969 FEDERAL ENERGY S/D	3707	2071	3159	2070	1542	1231	6471	4700	5869	9720	7524	9055	6870	3447	4644	
1970 FEDERAL ENERGY S/D	838	-242	678	887	-305	949	5027	2449	6239	4181	2331	4898	7420	2014	2192	
1971 FEDERAL ENERGY S/D	-72	-145	391	49	-543	949	1703	7160	3747	9425	6137	9582	9406	5207	4303	
1972 FEDERAL ENERGY S/D	4500	4219	1883	1021	125	552	5370	7023	12279	9452	3850	9240	9640	7322	5456	
1973 FEDERAL ENERGY S/D	4924	5321	1979	1276	-98	933	1356	7329	966	-193	4353	2449	1822	626	1554	
1974 FEDERAL ENERGY S/D	-1311	-1359	160	86	-155	3135	9246	7581	8592	9285	8570	8410	11037	7731	5294	
1975 FEDERAL ENERGY S/D	4423	4940	2216	404	-236	1828	3202	3202	6047	4760	3983	5937	8368	5655	3606	
1976 FEDERAL ENERGY S/D	2465	1600	1168	1326	1675	4995	6396	4519	6280	9757	6663	8837	4882	5255	4631	
1977 FEDERAL ENERGY S/D	5185	4676	5949	1448	-514	35	-1153	-1881	-565	3107	3343	2706	1342	1358	1181	
1978 FEDERAL ENERGY S/D	-1111	-1153	-71	-47	-477	-446	-254	869	5418	7517	4469	5228	4483	3012	1879	

EXHIBIT 13

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS	2001- 2 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96			
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	
1929 FEDERAL ENERGY S/D	1063	-113	888	767	-438	-171	-1263	-957	-424	2764	3460	2535	3078	28	636	
1930 FEDERAL ENERGY S/D	-1043	-899	427	591	207	386	-1565	-500	-436	1143	3932	4308	1246	48	523	
1931 FEDERAL ENERGY S/D	-1127	-759	116	743	233	293	-2014	-1785	-747	2566	2857	4632	1110	282	386	
1932 FEDERAL ENERGY S/D	-793	-377	494	458	-28	-1210	-2071	-1734	3239	9259	5964	6938	5893	3350	1863	
1933 FEDERAL ENERGY S/D	1411	1033	1010	733	168	865	3655	1888	3792	4374	2714	4624	7773	7043	3193	
1934 FEDERAL ENERGY S/D	3827	4222	2378	2238	2343	5155	9471	7066	7780	9949	7364	7394	1567	602	4890	
1935 FEDERAL ENERGY S/D	-529	-927	369	230	10	717	2543	2915	3008	4774	2753	3882	4413	3975	2091	
1936 FEDERAL ENERGY S/D	2476	-763	641	283	-164	77	-1944	-1787	1390	2648	8436	8258	4502	1585	1603	
1937 FEDERAL ENERGY S/D	705	-254	632	425	49	92	-2250	-1546	54	227	2872	4417	2479	263	533	
1938 FEDERAL ENERGY S/D	-1209	-816	411	519	-357	271	1252	-1472	5655	5589	6190	7545	5860	3811	2610	
1939 FEDERAL ENERGY S/D	601	-39	705	446	-431	-236	-1850	528	3517	5288	4430	5288	2511	946	1380	
1940 FEDERAL ENERGY S/D	932	-526	434	671	42	-103	-1414	904	5456	4960	4554	3866	2289	789	1491	
1941 FEDERAL ENERGY S/D	-1282	-934	653	717	152	-63	-1683	448	1477	1182	3104	3853	4020	-348	855	
1942 FEDERAL ENERGY S/D	-1901	-986	512	733	-137	2053	2082	1768	1979	1303	2882	4024	5651	4125	1953	
1943 FEDERAL ENERGY S/D	3662	2152	945	682	-252	502	1772	3842	5807	10028	8080	7274	7308	4474	3693	
1944 FEDERAL ENERGY S/D	4420	1013	858	700	-397	-77	-1144	-1512	-178	2798	3359	3652	1800	-171	777	
1945 FEDERAL ENERGY S/D	-1117	-948	431	598	-165	-901	-1857	-903	-419	372	2073	4277	4252	2781	690	
1946 FEDERAL ENERGY S/D	-506	-268	579	559	-124	790	1036	2206	5844	7039	6845	8502	5856	3867	2973	
1947 FEDERAL ENERGY S/D	1812	-148	1486	1009	232	3145	5320	4748	5959	6225	4970	6784	5916	3135	3680	
1948 FEDERAL ENERGY S/D	1136	-113	1325	3882	1915	1040	5173	2967	5522	4635	5350	9690	12170	5756	4579	
1949 FEDERAL ENERGY S/D	4124	4301	2452	1396	-54	-37	-165	1696	7695	6963	8025	7245	5365	1669	3247	
1950 FEDERAL ENERGY S/D	-469	-1282	62	291	-857	379	2479	4117	7820	8154	5715	6019	10181	5546	3508	
1951 FEDERAL ENERGY S/D	3478	3667	1997	2311	2439	4145	6205	6665	7070	8898	6653	8458	5133	4903	5056	
1952 FEDERAL ENERGY S/D	4659	3026	2128	3195	676	1648	3335	3287	4339	8861	8229	9189	6502	3582	4189	
1953 FEDERAL ENERGY S/D	1143	80	622	459	-156	103	-459	4353	4239	3228	2883	5833	8402	4224	2607	
1954 FEDERAL ENERGY S/D	4737	2066	1244	1162	335	474	3482	5491	4999	6213	4771	7395	8657	6740	4073	
1955 FEDERAL ENERGY S/D	5479	4473	5230	2039	1237	425	1998	-740	424	3817	3844	4015	8262	7603	3275	
1956 FEDERAL ENERGY S/D	4169	3361	1600	2129	1548	4044	6941	4272	7637	8899	9160	9914	9858	4473	5434	
1957 FEDERAL ENERGY S/D	4835	2783	1400	1472	-68	1177	1671	935	5011	10809	3568	9801	8252	1886	3545	
1958 FEDERAL ENERGY S/D	583	-314	651	568	-430	-43	2389	2920	4853	6268	5092	8854	6799	1947	2860	
1959 FEDERAL ENERGY S/D	230	-75	836	1261	959	1831	6270	4934	5981	7461	4993	6637	8579	3801	3949	
1960 FEDERAL ENERGY S/D	4946	1372	4510	4970	2762	2282	3357	2091	5371	11656	4778	4908	5570	3836	4253	
1961 FEDERAL ENERGY S/D	1972	-683	793	805	437	-277	2849	5541	5721	8360	3238	6603	9331	3142	3449	
1962 FEDERAL ENERGY S/D	839	260	635	1017	-261	-115	1006	793	2011	9650	7412	5258	5243	3159	2319	
1963 FEDERAL ENERGY S/D	2119	54	869	1815	1238	1842	3120	3970	2392	3411	4126	4003	5808	4055	2831	
1964 FEDERAL ENERGY S/D	1599	545	1625	587	-85	-211	1360	1217	2186	8543	3563	4309	10030	4978	2760	
1965 FEDERAL ENERGY S/D	4890	3018	2227	2377	633	4086	7494	6677	6569	6546	7887	7933	8233	3298	5060	
1966 FEDERAL ENERGY S/D	3983	2175	1453	1793	738	334	3772	1638	2388	7751	4402	4469	3775	2941	2705	
1967 FEDERAL ENERGY S/D	936	-584	926	699	-289	640	4411	5530	5329	4669	2048	4587	9769	3941	3256	
1968 FEDERAL ENERGY S/D	4880	2763	1479	1351	480	410	2863	3824	5202	2702	4630	3499	4983	3382	2913	
1969 FEDERAL ENERGY S/D	3388	2152	3218	2508	1689	1383	6624	4851	6105	9817	7702	9210	7010	3767	4825	
1970 FEDERAL ENERGY S/D	919	-161	737	1325	-158	-94	1856	2600	3485	4278	2509	5053	7560	2334	2373	
1971 FEDERAL ENERGY S/D	9	-64	450	487	-396	1101	5180	7311	6973	9522	6315	9737	7546	5527	4484	
1972 FEDERAL ENERGY S/D	4581	4300	1942	1459	272	704	5523	7174	12515	9549	4028	9395	9780	7642	5636	
1973 FEDERAL ENERGY S/D	5005	5402	2038	1714	49	1145	1509	1480	1202	-96	4531	2604	1962	-306	1735	
1974 FEDERAL ENERGY S/D	-1230	-1058	219	524	-8	3287	9399	7732	8828	9382	8748	8565	11177	8051	5475	
1975 FEDERAL ENERGY S/D	4504	5021	2275	842	-428	388	1981	3353	6283	4857	4161	6032	8508	6875	3787	
1976 FEDERAL ENERGY S/D	2546	1681	1227	1764	1822	5147	6549	4670	6516	9854	6841	8992	5022	5575	4812	
1977 FEDERAL ENERGY S/D	5266	4757	6008	1886	-367	187	-1000	-1730	-329	3204	3541	2861	1482	-1038	1362	
1978 FEDERAL ENERGY S/D	-1090	-1072	-12	391	-330	-294	-101	1020	5654	7614	4647	5383	4623	3332	2060	

EXHIBIT 14

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		2002- 3 OPERATING YEAR												1996 FINAL WHITEBOOK:				12/31/96	
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG			
1929	FEDERAL ENERGY S/D	1132	-44	954	683	-522	-251	-1286	-1191	-611	2518	3471	2538	3083	49	582			
1930	FEDERAL ENERGY S/D	-974	-830	493	507	123	306	-1588	-734	-623	897	3943	4311	1251	69	469			
1931	FEDERAL ENERGY S/D	-1058	-690	182	659	149	213	-2037	-2019	-934	2320	2868	4635	1115	303	332			
1932	FEDERAL ENERGY S/D	-724	-308	560	374	-112	-1290	-2094	-1968	3052	9013	5975	6941	5898	3371	1809			
1933	FEDERAL ENERGY S/D	1480	1102	1076	649	84	785	3632	1654	3605	4128	2725	4627	9778	7064	3139			
1934	FEDERAL ENERGY S/D	3896	4291	2444	2154	2259	5075	9448	6832	7593	9703	7375	7397	1572	623	4836			
1935	FEDERAL ENERGY S/D	-460	-858	435	146	-74	637	2520	2681	2821	4528	2764	3885	4418	3996	2038			
1936	FEDERAL ENERGY S/D	2545	-694	707	199	-248	-3	-1967	-2021	1203	2402	8447	8261	4507	1606	1549			
1937	FEDERAL ENERGY S/D	774	-185	698	341	35	12	-2273	-1780	-133	-19	2883	4420	2484	284	479			
1938	FEDERAL ENERGY S/D	-1140	-747	477	435	-441	191	1229	1238	5468	5343	6201	7548	5865	3832	2556			
1939	FEDERAL ENERGY S/D	670	30	771	362	-515	-316	-1873	294	3330	5042	4441	5291	2516	967	1326			
1940	FEDERAL ENERGY S/D	1001	-457	500	587	-42	-183	-1437	670	5269	4714	4565	3869	2294	810	1437			
1941	FEDERAL ENERGY S/D	-1213	-865	719	633	68	-143	-1706	214	1290	936	3115	3856	4025	-327	801			
1942	FEDERAL ENERGY S/D	-1832	-917	578	649	-221	1973	2059	1534	1792	1057	2893	4027	5656	4146	1899			
1943	FEDERAL ENERGY S/D	3731	2221	1011	598	-336	422	1749	3608	5620	9782	8091	7277	7313	4495	3639			
1944	FEDERAL ENERGY S/D	4489	1082	924	616	-481	-157	-1167	-1746	-365	2552	3370	3655	1805	-150	723			
1945	FEDERAL ENERGY S/D	-1048	-879	497	514	-249	-981	-1880	-1137	-606	126	2084	4280	4257	2802	636			
1946	FEDERAL ENERGY S/D	-437	-199	645	475	-208	710	1013	1972	5657	6793	6856	8505	5861	3888	2919			
1947	FEDERAL ENERGY S/D	1881	-79	1552	925	148	3065	5297	4514	5772	5979	4981	6787	5921	3156	3626			
1948	FEDERAL ENERGY S/D	1205	-44	1391	3798	1831	960	5150	2733	5335	4389	5361	9693	12175	5777	4525			
1949	FEDERAL ENERGY S/D	4193	4370	2518	1312	-138	-117	-188	1462	7508	6717	8036	7248	5370	1690	3194			
1950	FEDERAL ENERGY S/D	-400	-1213	128	207	-941	299	2456	3683	7633	7908	5726	6022	10186	5567	3454			
1951	FEDERAL ENERGY S/D	3547	3736	2063	2227	2355	4065	6182	6431	6883	8652	6664	8461	5138	4924	5002			
1952	FEDERAL ENERGY S/D	4728	3095	2194	3111	592	1568	3312	3053	4152	8615	8240	9192	6507	3603	4135			
1953	FEDERAL ENERGY S/D	1212	149	688	375	-240	23	-482	4119	4052	2982	2894	5836	8407	4245	2553			
1954	FEDERAL ENERGY S/D	4806	2135	1310	1078	251	394	3459	5257	4812	5967	4782	7398	8662	6761	4019			
1955	FEDERAL ENERGY S/D	5548	4542	5296	1955	1153	345	1975	-974	237	3571	3855	4018	8267	7624	3221			
1956	FEDERAL ENERGY S/D	4238	3430	1666	2045	1464	3964	6918	4038	7450	8653	9171	9917	9863	4494	5380			
1957	FEDERAL ENERGY S/D	4904	2852	1466	1388	-152	1097	1648	701	4824	10563	3579	9804	8257	1907	3491			
1958	FEDERAL ENERGY S/D	652	-245	717	484	-514	-123	2366	2686	4666	6022	5103	8857	6804	1968	2806			
1959	FEDERAL ENERGY S/D	299	-6	902	1177	875	1751	6247	4700	5794	7215	5004	6640	8584	3822	3896			
1960	FEDERAL ENERGY S/D	5015	1441	4576	4886	2678	2202	3334	1857	5184	11410	4789	4911	5575	3857	4199			
1961	FEDERAL ENERGY S/D	2041	-614	859	721	353	-357	2826	5307	5534	8114	3249	6606	9336	3163	3395			
1962	FEDERAL ENERGY S/D	908	329	701	933	-345	-195	983	559	1824	9404	7423	5261	5248	3180	2265			
1963	FEDERAL ENERGY S/D	2188	123	935	1731	1154	1762	3097	3736	2205	3165	4137	4006	5813	4076	2777			
1964	FEDERAL ENERGY S/D	1668	614	1691	503	-169	-291	1337	983	1999	8297	3574	4312	10035	4999	2706			
1965	FEDERAL ENERGY S/D	4959	3087	2293	2293	549	4006	7471	6443	6382	6300	7898	7956	3319	5006	5006			
1966	FEDERAL ENERGY S/D	4052	2244	1519	1709	654	254	3749	1404	2201	7505	4413	4472	3780	2962	2651			
1967	FEDERAL ENERGY S/D	1005	-515	1992	615	-373	560	4388	5296	5142	4423	2059	4590	9774	3962	3203			
1968	FEDERAL ENERGY S/D	4949	2832	1545	1267	396	330	2840	3590	5015	2456	4641	3502	4988	3403	2860			
1969	FEDERAL ENERGY S/D	3457	2221	3284	2424	1605	1303	6601	4617	5918	9571	7713	7015	5788	4771	2319			
1970	FEDERAL ENERGY S/D	988	-92	803	1241	-242	-174	1833	2366	3298	4032	2520	5056	7565	2355	2319			
1971	FEDERAL ENERGY S/D	78	5	516	403	-480	1021	5157	7077	6786	9276	6326	9740	9551	5448	4430			
1972	FEDERAL ENERGY S/D	4650	4369	2208	1375	188	624	5500	6940	12328	9303	4039	9398	9785	7683	5582			
1973	FEDERAL ENERGY S/D	5074	5471	2104	1630	-35	1065	1486	1246	1015	-342	4542	2607	1967	-285	1681			
1974	FEDERAL ENERGY S/D	-1161	-989	285	440	-92	3207	9376	7498	8641	9136	8759	8568	11182	8072	5421			
1975	FEDERAL ENERGY S/D	4573	5090	2341	758	-512	308	1958	3119	6096	4611	4172	6095	8513	6896	3733			
1976	FEDERAL ENERGY S/D	2615	1750	1293	1680	1738	5067	6526	4436	6329	9608	6852	8995	5027	5596	4758			
1977	FEDERAL ENERGY S/D	5335	4826	6074	1802	-451	107	-1023	-1964	-516	2958	3552	2864	1487	-1017	1308			
1978	FEDERAL ENERGY S/D	-1021	-1003	54	307	-414	-374	-124	786	5467	7368	4658	5386	4628	3353	2006			

EXHIBIT 15

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

1996 FINAL WHITEBOOK: 12/31/96																		
RUN DATE: 12/31/96																		
12 MO																		
AVG																		
ENERGY IN AVERAGE MEGAWATTS																		
2003-4 OPERATING YEAR																		
AUG 1-15																		
AUG 16-31																		
SEP																		
OCT																		
NOV																		
DEC																		
JAN																		
FEB																		
MAR																		
APR 1-15																		
APR 16-30																		
MAY																		
JUN																		
JUL																		
12 MO																		
AVG																		
1929	FEDERAL	ENERGY	S/D	1177	1	1003	729	-476	-201	-1438	-1274	-722	2457	3429	2496	3048	7	559
1930	FEDERAL	ENERGY	S/D	-929	-785	542	553	169	356	-1740	-817	-734	836	3901	4269	1216	27	446
1931	FEDERAL	ENERGY	S/D	-1013	-645	231	705	195	263	-2189	-2102	-1045	2259	2826	4593	1080	261	309
1932	FEDERAL	ENERGY	S/D	-679	-263	609	420	-66	-1240	-2246	-2051	2941	8952	5933	6899	5863	3329	1786
1933	FEDERAL	ENERGY	S/D	1525	1147	1125	695	130	835	3480	1571	3494	4067	2683	4585	9743	7022	3116
1934	FEDERAL	ENERGY	S/D	3941	4336	2493	2200	2305	5125	9296	6749	7482	9642	7333	7355	1537	581	4812
1935	FEDERAL	ENERGY	S/D	-415	-813	484	192	-28	687	2368	2598	2710	4467	2722	3843	4383	3954	2014
1936	FEDERAL	ENERGY	S/D	2590	-649	756	245	-202	47	-2119	-2104	1092	2341	8405	8219	4472	1564	1526
1937	FEDERAL	ENERGY	S/D	819	-140	747	387	11	62	-2425	-1863	-244	-80	2841	4378	2449	242	455
1938	FEDERAL	ENERGY	S/D	-1095	-702	526	481	-395	241	1077	1155	5357	5282	6159	7506	5830	3790	2532
1939	FEDERAL	ENERGY	S/D	715	75	820	408	-469	-266	-2025	211	3219	4981	4399	5249	2481	925	1303
1940	FEDERAL	ENERGY	S/D	1046	-412	549	633	4	-133	-1589	587	5158	4653	4523	3827	2259	768	1414
1941	FEDERAL	ENERGY	S/D	-1168	-820	768	679	114	-93	-1858	131	1179	875	3073	3814	3990	-369	778
1942	FEDERAL	ENERGY	S/D	-1787	-872	627	695	-175	2023	1907	1451	1681	996	2851	3985	5621	4104	1876
1943	FEDERAL	ENERGY	S/D	3776	2266	1060	644	-290	472	1597	3525	5509	9721	8049	7235	7278	4453	3616
1944	FEDERAL	ENERGY	S/D	4534	1127	973	662	-435	-107	-1319	-1829	-476	2491	3328	3613	1770	-192	700
1945	FEDERAL	ENERGY	S/D	-1003	-834	546	560	-203	-951	-2032	-1220	-717	65	2042	4238	4222	2760	613
1946	FEDERAL	ENERGY	S/D	-392	-154	694	521	-162	760	861	1889	5546	5918	4939	6745	5886	3114	2895
1947	FEDERAL	ENERGY	S/D	1926	-34	1601	971	194	3115	5145	4431	5661	4328	5319	9651	12140	5735	4501
1948	FEDERAL	ENERGY	S/D	1250	4415	2567	1358	-92	-67	-340	1379	7397	6656	7994	7206	5335	1648	3170
1949	FEDERAL	ENERGY	S/D	4238	-355	177	253	-895	349	2304	3800	7522	7847	5684	5980	10151	5525	3431
1950	FEDERAL	ENERGY	S/D	-355	-1168	177	253	-895	349	2304	3800	7522	7847	5684	5980	10151	5525	3431
1951	FEDERAL	ENERGY	S/D	3592	3781	2212	2273	2401	4115	6030	6348	6772	8591	6622	8419	5103	4882	4979
1952	FEDERAL	ENERGY	S/D	4773	3140	2243	3157	638	1618	3160	2970	4041	8554	8198	9150	6472	3561	4112
1953	FEDERAL	ENERGY	S/D	1257	194	737	421	-194	73	-634	4036	3941	2921	2852	5794	8372	4203	2530
1954	FEDERAL	ENERGY	S/D	4851	2180	1359	1124	297	444	3307	5174	4701	5906	4740	7356	8627	6719	3995
1955	FEDERAL	ENERGY	S/D	5593	4587	5345	2001	1199	395	1823	-1057	126	3510	3813	3976	8232	7582	3198
1956	FEDERAL	ENERGY	S/D	4283	3475	1715	2091	1510	4014	6766	3955	7339	8592	9129	9875	9828	4452	5357
1957	FEDERAL	ENERGY	S/D	4949	2897	1515	1434	-106	1147	1496	618	4713	10502	3537	9762	8222	1865	3467
1958	FEDERAL	ENERGY	S/D	697	-200	766	530	-468	-73	2214	2603	4555	5961	5041	8815	6769	1926	2783
1959	FEDERAL	ENERGY	S/D	344	39	951	1223	921	1801	6095	4617	5683	7154	4962	6598	8549	3780	3872
1960	FEDERAL	ENERGY	S/D	5060	1486	4625	4932	2724	2252	3182	1774	5073	11349	4747	4869	5540	3815	4176
1961	FEDERAL	ENERGY	S/D	2086	-569	908	777	399	-307	2674	5224	5423	8053	3207	6564	9301	3121	3372
1962	FEDERAL	ENERGY	S/D	953	374	750	979	-299	-145	831	476	1713	9343	7381	5219	5213	3138	2242
1963	FEDERAL	ENERGY	S/D	2233	168	984	1777	1200	1812	2945	3653	2094	3104	4095	3964	5778	4034	2753
1964	FEDERAL	ENERGY	S/D	1713	659	1740	549	-123	-241	1185	900	1888	8236	3532	4270	10000	4957	2683
1965	FEDERAL	ENERGY	S/D	5004	3132	2342	2339	595	4056	7319	6360	6271	6239	7856	7914	8203	3277	4983
1966	FEDERAL	ENERGY	S/D	4097	2289	1568	1755	700	304	3597	1321	2090	7444	4371	4430	3745	2920	2627
1967	FEDERAL	ENERGY	S/D	1050	-470	1041	661	-327	610	4236	5213	5031	4362	2017	4548	9739	3920	3179
1968	FEDERAL	ENERGY	S/D	4994	2877	1594	1313	442	380	2688	3507	4904	2395	4599	3460	4953	3361	2836
1969	FEDERAL	ENERGY	S/D	3502	2266	3333	2470	1651	1353	6449	4534	5807	9510	7671	9171	6980	3746	4747
1970	FEDERAL	ENERGY	S/D	1033	-47	852	1287	-196	124	1681	2283	3187	3971	2478	5014	7530	2313	2295
1971	FEDERAL	ENERGY	S/D	4695	4414	505	565	449	-434	1071	5005	6994	6675	9215	6284	9698	9516	5506
1972	FEDERAL	ENERGY	S/D	5119	5516	2057	1421	234	674	5348	6857	12217	9242	3997	9356	9750	7621	5559
1973	FEDERAL	ENERGY	S/D	-1116	-944	2153	1676	-46	1115	1334	1163	904	-403	4500	2565	1932	-327	1658
1974	FEDERAL	ENERGY	S/D	4618	5135	2390	804	-466	358	9224	7415	8530	9075	8717	8526	11147	8030	5397
1975	FEDERAL	ENERGY	S/D	2660	1795	1342	1726	1784	5117	6374	4353	6218	9547	6810	8953	4992	5554	4735
1976	FEDERAL	ENERGY	S/D	5380	4871	6123	1848	-405	157	-1175	-2047	-627	2897	3510	2822	1452	-1059	1285
1977	FEDERAL	ENERGY	S/D	-976	-958	103	353	-368	-324	-276	703	5356	7307	4616	5344	4593	3311	1982
1978	FEDERAL	ENERGY	S/D															

EXHIBIT 16

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		1996 FINAL WHITEBOOK: 12/31/96														
		2004- 5 OPERATING YEAR						RUN DATE: 12/31/96								
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
1929	FEDERAL ENERGY S/D	1136	-40	958	683	-525	-250	-1487	-1327	-809	2434	3417	2529	3082	23	529
1930	FEDERAL ENERGY S/D	-970	-826	497	507	120	307	-1789	-870	-821	813	3889	4302	1250	43	417
1931	FEDERAL ENERGY S/D	-1054	-686	186	659	146	214	-2238	-2155	-1132	2236	2814	4626	1114	277	279
1932	FEDERAL ENERGY S/D	-720	-304	564	374	-115	-1289	-2295	-2104	2854	8929	5921	6932	5897	3345	1756
1933	FEDERAL ENERGY S/D	1484	1106	1080	649	81	786	3431	1518	3407	9044	4044	2671	4618	9777	7038
1934	FEDERAL ENERGY S/D	3900	4295	2448	2154	2256	5076	9247	6696	7395	9619	7321	7388	1571	597	4783
1935	FEDERAL ENERGY S/D	-456	-854	439	146	-77	638	2319	2545	2623	4444	2318	8393	8252	4506	1985
1936	FEDERAL ENERGY S/D	2549	-690	711	199	-251	-2	-2168	-2157	1005	2318	8393	8252	4506	1580	1497
1937	FEDERAL ENERGY S/D	778	-181	702	341	-38	13	-2474	-1916	-331	-103	2829	4411	2483	3258	426
1938	FEDERAL ENERGY S/D	-1136	-743	481	435	-444	192	-2074	1102	5270	5259	6147	7539	5864	3806	2503
1939	FEDERAL ENERGY S/D	674	34	775	362	-518	-315	-2074	158	3132	4958	4387	5282	2515	941	1274
1940	FEDERAL ENERGY S/D	1005	-453	504	587	-45	-182	-1638	534	5071	4630	4511	3860	2293	784	1385
1941	FEDERAL ENERGY S/D	-1209	-861	723	633	65	-142	-1907	78	1092	852	3061	3847	4024	-353	749
1942	FEDERAL ENERGY S/D	-1828	-913	582	649	-224	1974	1858	1398	1594	973	2839	4018	5655	4120	1847
1943	FEDERAL ENERGY S/D	3735	2225	1015	598	-339	423	1548	3472	5422	9698	8037	7268	7312	4469	3586
1944	FEDERAL ENERGY S/D	4493	1086	928	616	-484	-156	-1368	-1882	-563	2468	3316	3646	1804	-176	671
1945	FEDERAL ENERGY S/D	-1044	-875	501	514	-252	-980	-2081	-1273	-804	42	2030	4271	4256	2776	584
1946	FEDERAL ENERGY S/D	-433	-195	649	475	-211	711	812	1836	5459	6709	6802	8496	5860	3862	2866
1947	FEDERAL ENERGY S/D	1885	-75	1556	925	145	3066	5096	4378	5574	5895	4927	6778	5920	3130	3574
1948	FEDERAL ENERGY S/D	1209	-40	1395	3798	1828	961	4949	2597	5137	4305	5307	9684	12174	5751	4472
1949	FEDERAL ENERGY S/D	4197	4374	2522	1312	-141	-116	-389	1326	7310	6633	7982	7239	5369	1664	3141
1950	FEDERAL ENERGY S/D	-396	-1209	132	207	-944	300	2255	3747	7435	7824	5672	6013	10185	5541	3402
1951	FEDERAL ENERGY S/D	3551	3740	2067	2227	2352	4066	5981	6295	6685	8568	6610	8452	5137	4898	4950
1952	FEDERAL ENERGY S/D	4732	3099	2198	3111	589	1569	3111	2917	3954	8531	8186	9183	6506	3577	4083
1953	FEDERAL ENERGY S/D	1216	153	692	375	-243	24	-683	3983	3854	2898	2840	5827	8406	4219	2501
1954	FEDERAL ENERGY S/D	4810	2139	1314	1078	248	395	3258	5121	4614	5883	4728	7389	8661	6735	3966
1955	FEDERAL ENERGY S/D	5552	4546	5300	1955	1150	346	1774	-1110	39	3487	3801	4009	8266	7598	3168
1956	FEDERAL ENERGY S/D	4242	3434	1670	2045	1461	3965	6717	3902	7252	8569	9117	9908	9826	4668	5328
1957	FEDERAL ENERGY S/D	4908	2856	1470	1388	-155	1098	1447	565	4626	10479	3525	9795	8256	1881	3438
1958	FEDERAL ENERGY S/D	656	-241	721	484	-517	-122	2165	2550	4468	5938	5049	8848	6803	1942	2754
1959	FEDERAL ENERGY S/D	303	-2	906	1177	872	1752	6046	4564	5596	7131	4950	6631	8583	3796	3843
1960	FEDERAL ENERGY S/D	5019	1445	4580	4886	2675	2203	3133	1721	4986	11326	4735	4902	5574	3831	4146
1961	FEDERAL ENERGY S/D	2045	-610	863	721	350	-356	2625	5171	5336	8030	3195	4597	9335	3337	3343
1962	FEDERAL ENERGY S/D	912	333	705	933	-348	-194	782	423	1626	9320	7369	5252	5247	3154	2212
1963	FEDERAL ENERGY S/D	2192	127	939	1731	1151	1763	2896	3600	2007	3081	4083	3997	5812	4050	2724
1964	FEDERAL ENERGY S/D	1672	618	1695	503	-172	-290	1136	847	1801	8213	3520	4303	10034	4973	2654
1965	FEDERAL ENERGY S/D	4963	3091	2297	2293	546	4007	7270	6307	6184	6216	7844	7947	8237	3293	4953
1966	FEDERAL ENERGY S/D	4056	2248	1523	1709	651	255	3548	1268	2003	7421	4359	4463	3779	2936	2598
1967	FEDERAL ENERGY S/D	1009	-511	996	615	-376	561	4187	5160	4944	4339	2005	4581	9773	3336	3150
1968	FEDERAL ENERGY S/D	4953	2836	1549	1267	393	331	2639	3454	4817	2372	4587	3493	4987	3377	2807
1969	FEDERAL ENERGY S/D	3461	2225	3288	2424	1602	1304	6400	4481	5720	9487	7659	9204	7014	3762	4718
1970	FEDERAL ENERGY S/D	992	-88	807	1241	-245	-173	1632	2230	3100	3948	2466	5047	7564	3329	2266
1971	FEDERAL ENERGY S/D	82	9	520	403	-483	1022	4956	6904	6588	9192	6272	9731	9550	5522	4377
1972	FEDERAL ENERGY S/D	4654	4373	2012	1375	185	625	5299	6804	12130	9219	3985	9389	9784	7637	5530
1973	FEDERAL ENERGY S/D	5078	5475	2108	1630	-38	1066	1285	1110	817	-426	4488	2598	1966	-311	1628
1974	FEDERAL ENERGY S/D	-1157	-985	289	440	-95	3208	9175	7362	8443	9052	8705	8559	11181	8046	5368
1975	FEDERAL ENERGY S/D	4577	5094	2345	758	-515	309	1757	2983	5898	4527	4118	6086	8512	6870	3680
1976	FEDERAL ENERGY S/D	2619	1754	1297	1680	1735	5068	6325	4300	6131	9524	6798	8986	5026	5570	4706
1977	FEDERAL ENERGY S/D	5339	4830	6078	1802	-454	108	-1224	-2100	-714	2874	3498	2855	1486	-1043	1256
1978	FEDERAL ENERGY S/D	-1017	-999	58	507	-417	-373	-325	650	5269	7284	4604	5377	4627	3327	1953

EXHIBIT 17

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		1996 FINAL WHITEBOOK: 12/31/96														
		RUN DATE: JUL 12 MO AVG														
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	
1929	FEDERAL ENERGY S/D	1041	-141	864	583	-664	-403	-1641	-1477	-867	2281	3286	2398	2950	-92	407
1930	FEDERAL ENERGY S/D	-1065	-927	403	407	-19	154	-1943	-1020	-879	660	3758	4171	1118	-72	294
1931	FEDERAL ENERGY S/D	-1149	-787	92	559	7	61	-2392	-2305	-1190	2083	2683	4495	982	162	157
1932	FEDERAL ENERGY S/D	-815	-405	470	274	-254	-1442	-2449	-2254	2796	8776	5790	6801	5765	3330	1634
1933	FEDERAL ENERGY S/D	1389	1005	986	549	-58	633	3277	1368	3349	3891	2540	4487	9645	6923	2964
1934	FEDERAL ENERGY S/D	3805	4194	2354	2054	2117	4923	9093	6546	7337	9466	7190	7257	1439	482	4661
1935	FEDERAL ENERGY S/D	-551	-955	345	46	-216	485	2165	2395	2565	4291	8262	8121	4285	3855	1863
1936	FEDERAL ENERGY S/D	2454	-791	617	99	-390	-155	-2322	-2307	947	2165	8262	8121	4374	1465	1375
1937	FEDERAL ENERGY S/D	683	-282	608	241	-177	-140	-2628	-2066	-389	-256	6016	4280	2351	143	304
1938	FEDERAL ENERGY S/D	-1231	-844	387	335	-583	39	874	952	5212	5106	6268	7408	5732	3691	2381
1939	FEDERAL ENERGY S/D	579	67	681	262	-657	-688	-2228	8	3074	4805	4256	5151	2383	826	1152
1940	FEDERAL ENERGY S/D	910	-554	410	487	-184	-335	-1792	384	5013	4477	4380	3729	2161	669	1262
1941	FEDERAL ENERGY S/D	-1304	-962	629	533	-74	-295	-2061	-72	1034	699	2930	3716	3892	-468	626
1942	FEDERAL ENERGY S/D	-1923	-1014	488	549	-363	1821	1704	1248	1536	820	2708	3887	5523	4005	1725
1943	FEDERAL ENERGY S/D	3640	2124	921	498	-478	270	1394	3322	5364	9545	7906	7137	7180	4354	3464
1944	FEDERAL ENERGY S/D	4398	985	834	516	-623	-309	1522	-2032	-621	2315	3185	3515	1672	-291	548
1945	FEDERAL ENERGY S/D	-1139	-976	407	414	-391	-1133	-2235	-1423	-862	-111	1899	4140	4124	2661	462
1946	FEDERAL ENERGY S/D	-528	-296	555	375	-350	558	658	1686	5401	6556	6671	8365	5728	3747	2744
1947	FEDERAL ENERGY S/D	1790	-176	1462	825	6	2913	4942	4228	5516	5742	4796	6647	5788	3015	3452
1948	FEDERAL ENERGY S/D	1114	-141	1301	3698	1689	808	4795	2447	5079	4152	5176	9553	12042	5636	4350
1949	FEDERAL ENERGY S/D	4102	4273	2428	1212	-280	-269	-543	1176	7252	6480	7851	7108	5237	1549	3019
1950	FEDERAL ENERGY S/D	-491	-1310	38	107	-1083	147	2101	3597	7377	7671	5541	5882	10053	5426	3279
1951	FEDERAL ENERGY S/D	3456	3639	1973	2127	2213	3913	5827	6145	6627	8415	6479	8321	5005	4783	4827
1952	FEDERAL ENERGY S/D	4637	2998	2104	3011	450	1416	2957	2767	3896	8378	8055	9052	6374	3462	3960
1953	FEDERAL ENERGY S/D	1121	52	598	275	-382	-129	-837	3833	3796	2745	2709	5696	8274	4104	2379
1954	FEDERAL ENERGY S/D	4715	2038	1220	978	109	242	3104	4971	4556	5730	4597	7258	8529	6620	3844
1955	FEDERAL ENERGY S/D	5457	4445	5206	1855	1011	193	1620	-1260	-19	3334	3670	3878	8134	7483	3046
1956	FEDERAL ENERGY S/D	4147	3333	1576	1945	1322	3812	6563	3752	7194	8416	8986	9777	9730	4353	5205
1957	FEDERAL ENERGY S/D	4813	2755	1376	1288	-294	945	1293	415	4568	10326	3394	9664	8124	1766	3316
1958	FEDERAL ENERGY S/D	561	-342	627	384	-656	-275	2011	2400	4410	5785	4918	8717	6671	1827	2631
1959	FEDERAL ENERGY S/D	208	-103	812	1077	733	1599	5892	4414	5538	6978	4819	6500	8451	3681	3721
1960	FEDERAL ENERGY S/D	4924	1344	4486	4786	2536	2050	2979	1571	4928	11173	4604	4771	5442	3716	4024
1961	FEDERAL ENERGY S/D	1950	-711	769	621	211	-509	2471	5021	5278	7877	3064	6466	9203	3022	3220
1962	FEDERAL ENERGY S/D	817	232	611	833	-487	-347	628	273	1568	9167	7238	5121	5115	3039	2090
1963	FEDERAL ENERGY S/D	2097	26	845	1631	1012	1610	2742	3450	1949	2928	3352	3866	5680	3935	2602
1964	FEDERAL ENERGY S/D	1577	517	1601	403	-311	-443	982	697	1743	8060	3389	4172	9902	4858	2531
1965	FEDERAL ENERGY S/D	4868	2990	2203	2193	407	3854	7116	6157	6126	6063	7713	7816	8105	3178	4831
1966	FEDERAL ENERGY S/D	3961	2147	1429	1609	512	102	3394	1118	1945	7268	4228	4332	3647	2821	2476
1967	FEDERAL ENERGY S/D	914	-612	902	515	-515	408	4033	5010	4886	4186	1874	4450	9641	3821	3028
1968	FEDERAL ENERGY S/D	4858	2735	1455	1167	254	178	2485	3304	4759	2219	4456	3362	4855	3262	2685
1969	FEDERAL ENERGY S/D	3366	2124	3194	2324	1463	1151	6246	4331	5662	9394	7528	9073	6882	3647	4596
1970	FEDERAL ENERGY S/D	897	-189	713	1141	-384	-326	1478	2080	3042	3795	2335	4916	7432	2214	2144
1971	FEDERAL ENERGY S/D	-13	92	426	303	-622	869	4802	6791	6530	9039	6141	9600	9418	5407	4255
1972	FEDERAL ENERGY S/D	4559	4272	1918	1275	66	472	5145	6654	12072	9066	3854	9258	9652	7522	5408
1973	FEDERAL ENERGY S/D	4983	5374	2014	1530	-177	913	1131	960	759	-579	4357	2467	1834	-426	1506
1974	FEDERAL ENERGY S/D	-1252	-1086	195	340	-234	3055	9021	7212	8385	8899	8574	8428	11049	7931	5246
1975	FEDERAL ENERGY S/D	4482	4993	2251	658	-654	156	1603	2833	5840	4374	7528	5955	8380	6755	3558
1976	FEDERAL ENERGY S/D	2524	1653	1203	1580	1596	4915	6171	4150	6073	9371	6667	8855	4894	5455	4583
1977	FEDERAL ENERGY S/D	5244	4729	5984	1702	-593	-45	-1378	-2250	-772	2721	3367	2724	1354	-1158	1133
1978	FEDERAL ENERGY S/D	-1112	-1100	-36	207	-556	-526	-479	500	5211	7131	4473	5246	4495	3212	1831

EXHIBIT 18

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS	2006-7 OPERATING YEAR												1996 FINAL WHITEBOOK:				12/31/96	
													RUN DATE:				12/31/96	
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG	12 MO AVG		
1929 FEDERAL ENERGY S/D	951	-231	775	494	-738	-476	-1710	-1559	-1005	2249	3216	2328	2881	-162		327		
1930 FEDERAL ENERGY S/D	-1155	-1017	314	318	-93	81	-2012	-1102	-1017	628	3688	4101	1049	-142		214		
1931 FEDERAL ENERGY S/D	-1239	-877	3	470	-67	-12	-2461	-2387	-1328	2051	2613	4425	913	92		77		
1932 FEDERAL ENERGY S/D	-905	-495	381	185	-328	-1515	-2518	-2336	-2658	8744	5720	6731	5696	3160		1554		
1933 FEDERAL ENERGY S/D	1299	915	897	460	-132	560	3208	1286	3211	3859	2470	4417	9576	6853		2884		
1934 FEDERAL ENERGY S/D	3715	4104	2265	1965	2043	4850	9024	6464	7199	9434	7120	7187	1370	612		4580		
1935 FEDERAL ENERGY S/D	-641	-1045	256	-43	-290	412	2096	2313	2427	4259	2509	3675	4216	3785		1782		
1936 FEDERAL ENERGY S/D	2364	-881	528	10	-464	-228	-2391	-2389	809	2133	8192	8051	4305	1395		1294		
1937 FEDERAL ENERGY S/D	593	-372	519	152	-251	-213	-2697	-2148	-527	-288	2628	4210	2282	73		223		
1938 FEDERAL ENERGY S/D	-1321	-934	298	246	-657	-34	805	870	5074	5074	5946	7338	5663	3621		2300		
1939 FEDERAL ENERGY S/D	489	-157	592	173	-731	-541	-2297	-74	2936	4773	4186	5081	2314	756		1071		
1940 FEDERAL ENERGY S/D	820	-644	321	398	-258	-408	-1861	302	4875	4445	4310	3659	2092	599		1182		
1941 FEDERAL ENERGY S/D	-1394	-1052	540	444	-148	-368	-2150	-154	896	667	2860	3646	3823	-538		546		
1942 FEDERAL ENERGY S/D	-2013	-1104	399	460	-437	1748	1635	1166	1398	788	2638	3817	5454	3935		1644		
1943 FEDERAL ENERGY S/D	3550	2034	832	409	-552	197	1325	3240	5226	9513	7836	7067	7111	4284		3384		
1944 FEDERAL ENERGY S/D	4308	895	745	627	-697	-382	-1591	-2114	-759	2283	3115	3445	1603	-361		468		
1945 FEDERAL ENERGY S/D	-1229	-1066	318	325	-465	-1206	-2394	-1505	-1000	-143	1829	4070	4055	2591		381		
1946 FEDERAL ENERGY S/D	-618	-386	466	286	-424	485	589	1604	5263	6524	6601	8295	5659	3677		2663		
1947 FEDERAL ENERGY S/D	1700	-266	1373	736	-68	2840	4873	2365	5378	5710	4726	6577	5719	2945		3371		
1948 FEDERAL ENERGY S/D	1024	-231	1212	3609	1615	735	4726	4346	4941	4120	5106	9483	11973	5566		4269		
1949 FEDERAL ENERGY S/D	4012	4183	2339	1123	-354	-342	-612	1194	7114	6448	7781	7038	5168	1479		2938		
1950 FEDERAL ENERGY S/D	-581	-1490	-51	18	-1157	74	2032	3515	7239	7639	5471	8512	9884	5356		3199		
1951 FEDERAL ENERGY S/D	3366	3549	1884	2038	2139	3840	5758	6063	6489	8383	6409	8251	4936	4713		4747		
1952 FEDERAL ENERGY S/D	4547	2908	2015	2922	376	1343	2888	2685	3758	8346	7985	8982	6305	3392		3880		
1953 FEDERAL ENERGY S/D	1031	-338	509	186	-456	-202	-906	3751	3658	2713	2639	5626	8205	4034		2298		
1954 FEDERAL ENERGY S/D	4625	1948	1131	889	35	169	3035	4889	4418	5698	4527	7188	8460	6550		3763		
1955 FEDERAL ENERGY S/D	5367	4355	5117	1766	937	120	1551	-1342	-157	3302	3600	3808	8065	7413		2966		
1956 FEDERAL ENERGY S/D	4057	3243	1487	1856	1248	3739	6494	3070	7056	8384	8916	9707	9661	4283		5125		
1957 FEDERAL ENERGY S/D	4723	2665	1287	1199	-368	872	1224	333	4430	10294	3324	9594	8055	1696		3235		
1958 FEDERAL ENERGY S/D	471	-432	538	295	-730	-348	1922	2318	4272	5253	4848	8647	6402	1757		2551		
1959 FEDERAL ENERGY S/D	118	-193	723	988	659	1526	5823	4332	5400	6946	4749	6430	8382	3611		3640		
1960 FEDERAL ENERGY S/D	4834	1294	4397	4697	2462	1977	2910	1489	4790	1141	4534	4701	5373	3646		3943		
1961 FEDERAL ENERGY S/D	1860	-801	680	532	137	-582	2402	4939	5140	7845	2994	6396	9134	2952		3140		
1962 FEDERAL ENERGY S/D	727	142	522	744	-561	-420	559	191	1430	9135	7168	5051	5046	2969		2010		
1963 FEDERAL ENERGY S/D	2007	-64	756	1542	938	1537	2673	3368	1811	2896	3882	3796	5611	3865		2521		
1964 FEDERAL ENERGY S/D	1487	427	1512	314	-385	516	913	615	1605	8028	3319	4102	9833	4788		2451		
1965 FEDERAL ENERGY S/D	4778	2900	2114	2104	333	3781	7047	6075	5988	6031	7643	7746	8036	3108		4751		
1966 FEDERAL ENERGY S/D	3871	2057	1340	1520	438	29	3325	1036	1807	7236	4158	4262	3578	2751		2395		
1967 FEDERAL ENERGY S/D	824	-702	813	426	-589	335	3964	4928	4748	4154	1804	4380	9572	3751		2947		
1968 FEDERAL ENERGY S/D	4768	2645	1366	1078	180	105	2416	3222	4621	2187	4386	3292	4786	3192		2604		
1969 FEDERAL ENERGY S/D	3276	2034	3105	2235	1389	1078	6177	4249	5524	9302	7458	9003	6813	3577		4515		
1970 FEDERAL ENERGY S/D	807	-279	624	1052	-458	-399	1409	1998	2904	3763	2265	4846	7363	2144		2063		
1971 FEDERAL ENERGY S/D	-103	-182	337	214	-696	796	4733	6709	6392	9007	6071	9530	9349	5337		4175		
1972 FEDERAL ENERGY S/D	4469	4182	1829	1186	-28	399	5076	6572	11934	9034	3784	9188	9583	7452		5327		
1973 FEDERAL ENERGY S/D	4893	5284	1925	1441	-251	840	1042	878	621	-611	4287	2397	1765	-496		1426		
1974 FEDERAL ENERGY S/D	-1342	-1176	106	251	-308	2982	8932	7130	8247	8867	8504	8358	10980	7861		5165		
1975 FEDERAL ENERGY S/D	4392	4993	2162	569	-728	83	1534	2251	5702	4342	3917	5885	8311	6685		3477		
1976 FEDERAL ENERGY S/D	2434	1563	1114	1491	1522	4842	6102	4068	5935	9339	6597	8785	4825	5385		4503		
1977 FEDERAL ENERGY S/D	5154	4639	5895	1613	-667	-118	-1447	-2332	-910	2689	3297	2654	1285	-1228		1053		
1978 FEDERAL ENERGY S/D	-1202	-1190	-125	118	-630	-599	-548	418	5073	7099	4403	5176	4426	3142		1750		

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SECTION VIII

PACIFIC NORTHWEST REGIONAL EXHIBITS

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EXHIBIT 19
REGIONAL CRITICAL PERIOD ENERGY ANALYSIS
FOR 10 OPERATING YEARS

EXHIBIT 19

SHEET 1 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

	M E D I U M L O A D S										1996 FINAL WHITEBOOK:	
	OPERATING YEAR										RUN DATE:	
	1997-98 AVG	1998-99 AVG	1999-00 AVG	2000-01 AVG	2001-02 AVG	2002-03 AVG	2003-04 AVG	2004-05 AVG	2005-06 AVG	2006-07 AVG	12/31/96	12/31/96
MEGAWATTS												
FIRM LOADS												
1/ SYSTEM FIRM LOADS	21468	21564	21672	21777	21892	22025	22168	22326	22511	22610		
2 EXPORTS	1587	1771	1916	1868	1870	1855	1885	1756	1689	1644		
3/ FED DIVERSITY	0	0	0	0	0	0	0	0	0	0		
4 FIRM LOADS	23055	23335	23587	23644	23762	23879	24053	24082	24200	24254		
NON-FIRM LOADS												
5 REGIONAL NON-FIRM LOADS	0	0	0	0	0	0	0	0	0	0		
6 TOTAL LOADS	23055	23335	23587	23644	23762	23879	24053	24082	24200	24254		
HYDRO RESOURCES												
7 REGULATED HYDRO	10992	11040	11130	11000	10986	10996	10996	10996	10996	10996		
8 INDEPENDENT HYDRO	1091	1090	1090	1089	1085	1084	1085	1084	1084	1084		
9 SUS. PKNG. ADJUSTMENT	0	0	0	0	0	0	0	0	0	0		
10 TOTAL HYDRO	12083	12131	12219	12089	12081	12080	12080	12080	12080	12080		
OTHER RESOURCES												
11 SMALL THERMAL & MISC	85	85	85	84	80	80	80	80	80	80		
12 COMBUSTION TURBINES	721	778	779	779	774	777	778	774	777	778		
13 RENEWABLES	74	75	75	75	75	75	75	75	75	75		
14 COGENERATION	287	287	287	287	287	287	287	266	251	251		
15 IMPORTS	1776	1675	1641	1642	1562	1518	1484	1380	1374	1378		
16 CENTRALIA	1273	1273	1273	1273	1231	1183	1253	1233	1268	1227		
17 JIM BRIDGER	616	616	610	610	596	629	600	629	594	629		
18 COLSTRIP 1 & 2	342	341	341	339	332	332	332	331	331	332		
19 BOARDMAN	386	386	386	386	386	386	386	386	386	386		
20 VALMY	195	194	195	195	195	195	194	195	195	195		
21 COLSTRIP 3	504	503	503	502	496	496	497	496	496	496		
22 MNP 2	842	842	845	878	878	878	878	878	878	878		
23 COLSTRIP 4	623	623	623	623	623	623	623	623	623	623		
24 FED RESOURCE ACQUIS	0	0	0	0	0	0	0	0	0	0		
25 NON-UTILITY GENERATION	1025	1019	1019	1018	985	960	960	957	949	946		
26 TOTAL RESOURCES	20831	20829	20881	20781	20583	20499	20507	20383	20357	20355		

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

MEGAWATTS	M E D I U M L O A D S											
	OPERATING YEAR											
	1997-98 AVG	1998-99 AVG	1999-00 AVG	2000-01 AVG	2001-02 AVG	2002-03 AVG	2003-04 AVG	2004-05 AVG	2005-06 AVG	2006-07 AVG	1996 FINAL WHITEBOOK: RUN DATE: 12/31/96	
RESERVES & MAINTENANCE												
27 HYD, SM THERM & MISC RES	0	0	0	0	0	0	0	0	0	0	0	0
28 LARGE THERMAL RESERVES	0	0	0	0	0	0	0	0	0	0	0	0
29 BPA SPINNING RESERVES	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12
31 NET RESOURCES	20819	20817	20868	20769	20571	20486	20495	20371	20345	20342		
SURPLUS/DEFICITS												
32 FIRM SURPLUS/DEFICIT	-2236	-2518	-2719	-2876	-3191	-3393	-3559	-3712	-3855	-3912		
33 TOTAL SURPLUS/DEFICIT	-2236	-2518	-2719	-2876	-3191	-3393	-3559	-3712	-3855	-3912		
34 EXTREME WEATHER ADJ.	0	0	0	0	0	0	0	0	0	0		
35 FIRM S/D W/EXT WEATHER ADJ.	-2236	-2518	-2719	-2876	-3191	-3393	-3559	-3712	-3855	-3912		
36 TOTAL S/D W/EXT WTHR. ADJ.	-2236	-2518	-2719	-2876	-3191	-3393	-3559	-3712	-3855	-3912		

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EXHIBITS 20 - 22
REGIONAL MONTHLY ENERGY ANALYSIS
FOR MEDIUM LOADS
USING 1937 WATER CONDITIONS

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1996 FINAL WHITEBOOK: 12/31/96															
RUN DATE: 12/31/96															
M E D I U M L O A D S															
1997-98 OPERATING YEAR															
1937 WATER YEAR															
ENERGY IN AVERAGE MEGAWATTS															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
FIRM LOADS															
1/ SYSTEM FIRM LOADS	20132	20132	19801	20270	22264	23809	24477	23407	22054	20778	20778	20160	20136	20326	21468
2/ EXPORTS	3/ 1847	1847	1804	1327	1272	1226	1404	1350	1375	1455	1479	1641	2149	2182	1587
3/ FED DIVERSITY	4/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/ FIRM LOADS	21979	21979	21605	21597	23536	25035	25881	24757	23429	22233	22257	21801	22285	22508	23055
NON-FIRM LOADS															
5/ REGIONAL NON-FIRM LOADS	2/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/ TOTAL LOADS	21979	21979	21605	21597	23536	25035	25881	24757	23429	22233	22257	21801	22285	22508	23055
HYDRO RESOURCES															
7/ REGULATED HYDRO	5/ 10208	9076	8989	9170	10367	11474	9154	10964	9977	9354	13816	16475	14247	9861	10992
8/ INDEPENDENT HYDRO	6/ 1059	1077	1009	996	925	980	801	815	962	1228	1282	1548	1576	1152	1091
9/ SUS. PKNG. ADJUSTMENT	7/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/ TOTAL HYDRO	11267	10153	9998	10166	11292	12454	9955	11779	10939	10582	15098	18023	15823	11013	12083
OTHER RESOURCES															
11/ SMALL THERMAL & MISC	8/ 101	102	87	87	94	91	92	91	87	95	99	73	28	96	85
12/ COMBUSTION TURBINES	9/ 586	586	586	586	865	866	867	868	833	833	833	540	395	822	721
13/ RENEWABLES	10/ 76	76	76	77	78	80	82	81	81	80	80	33	77	77	74
14/ COGENERATION	11/ 305	305	305	294	294	287	294	294	294	305	305	235	240	298	287
15/ IMPORTS	12/ 1534	1534	1251	1492	2033	2114	2274	2419	2036	1730	1343	1382	1559	1678	1776
16/ CENTRALIA	1300	1300	1300	1300	1300	1300	1300	1300	1300	819	1133	1300	1300	1300	1273
17/ JIM BRIDGER	642	642	642	642	643	643	642	643	622	482	461	518	642	642	616
18/ COLSTRIP 1 & 2	386	387	358	358	359	353	355	353	357	187	320	242	356	374	342
19/ BOARDMAN	403	403	403	403	403	403	403	403	403	403	349	221	403	403	386
20/ VALMY	211	211	211	211	211	211	211	211	169	116	101	161	211	211	195
21/ COLSTRIP 3	548	549	527	527	528	524	526	524	527	539	327	314	527	540	504
22/ WNP 2	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	0	0	505	1010	842
23/ COLSTRIP 4	657	657	657	657	657	657	657	657	657	656	394	381	657	657	623
24/ FED RESOURCE ACQUIS	13/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25/ NON-UTILITY GENERATION	14/ 1163	1163	1076	984	952	941	928	956	982	1111	1113	843	1152	1212	1025
26/ TOTAL RESOURCES	20189	19078	18487	18794	20719	21934	19596	21589	20297	18947	21956	24266	23876	20332	20831

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96															
M E D I U M L O A D S															
1997-98 OPERATING YEAR															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
1937 WATER YEAR															
ENERGY IN AVERAGE MEGAWATTS															
RESERVES & MAINTENANCE															
27 HYD. SM. THRM & MISC RES	15/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 LARGE THERMAL RESERVES	16/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 BPA SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE	18/	-31	-26	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES	20158	19052	18479	18785	20715	21934	19596	21589	20292	18940	21948	24246	23861	20282	20819
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT	-1821	-2927	-3126	-2812	-2821	-3101	-6285	-3168	-3137	-3293	-309	2446	1576	-2226	-2236
33 TOTAL SURPLUS/DEFICIT	-1821	-2927	-3126	-2812	-2821	-3101	-6285	-3168	-3137	-3293	-309	2446	1576	-2226	-2236
34 EXTREME WEATHER ADJ.	19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	-1821	-2927	-3126	-2812	-2821	-3101	-6285	-3168	-3137	-3293	-309	2446	1576	-2226	-2236
36 TOTAL S/D W/EXT WTHR. ADJ.	-1821	-2927	-3126	-2812	-2821	-3101	-6285	-3168	-3137	-3293	-309	2446	1576	-2226	-2236

EXHIBIT 21

SHEET 1 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS	M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96			
	2001- 2 OPERATING YEAR															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	
FIRM LOADS																
1/ SYSTEM FIRM LOADS	20516	20516	20021	20711	22712	24266	24938	23868	22507	21216	21216	20599	20575	20775	21892	
2 EXPORTS	2194	2194	2154	1787	1724	1677	1657	1602	1627	1657	1681	1792	2260	2295	1870	
3 FED DIVERSITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4 FIRM LOADS	22710	22710	22175	22498	24435	25943	26595	25470	24134	22873	22897	22391	22834	23069	23762	
NON-FIRM LOADS																
5 REGIONAL NON-FIRM LOADS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6 TOTAL LOADS	22710	22710	22175	22498	24435	25943	26595	25470	24134	22873	22897	22391	22834	23069	23762	
HYDRO RESOURCES																
7 REGULATED HYDRO	10205	8708	9490	9211	10836	11294	8615	9271	9878	9551	14874	16761	14564	10362	10996	
8 INDEPENDENT HYDRO	1053	1071	1003	990	920	974	796	809	956	1221	1276	1541	1570	1147	1085	
9 SUS. PRNG. ADJUSTMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10 TOTAL HYDRO	11258	9779	10493	10201	11756	12268	9411	10080	10834	10772	16150	18302	16134	11509	12081	
OTHER RESOURCES																
11 SMALL THERMAL & MISC	96	96	81	82	89	86	86	85	81	88	93	67	28	91	80	
12 COMBUSTION TURBINES	818	818	822	828	861	862	859	860	825	825	825	532	388	814	774	
13 RENEWABLES	77	77	77	78	79	81	82	81	81	80	80	33	77	77	75	
14 COGENERATION	305	305	305	294	294	287	294	294	294	305	305	235	240	298	287	
15 IMPORTS	1427	1427	1046	1233	1571	1887	2085	2190	1685	1514	1208	1188	1486	1589	1562	
16 CENTRALIA	1300	1300	1300	1300	1300	1300	1300	1300	824	651	1257	1300	1300	1300	1231	
17 JIM BRIDGER	642	642	642	642	642	642	642	642	559	450	225	482	642	642	596	
18 COLSTRIP 1 & 2	375	375	347	347	349	343	345	342	346	180	310	234	346	365	332	
19 BOARDMAN	403	403	403	403	403	403	403	403	403	403	349	221	403	403	386	
20 VALMY	202	202	202	202	202	202	202	202	150	128	202	202	202	211	195	
21 COLSTRIP 3	540	541	519	520	521	517	518	516	519	529	322	309	519	533	496	
22 HNP 2	1054	1054	1054	1054	1054	1054	1054	1054	1054	1054	0	0	527	1054	878	
23 COLSTRIP 4	657	657	657	657	657	657	657	657	657	656	394	381	657	656	623	
24 FED RESOURCE ACQUIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25 NON-UTILITY GENERATION	1158	1158	1071	974	941	931	858	885	911	1041	1042	795	1105	1149	985	
26 TOTAL RESOURCES	20312	18834	19018	18814	20718	21520	18796	19591	19223	18675	22762	24281	24054	20691	20583	

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1996 FINAL WHITEBOOK: 12/31/96															
RUN DATE: 12/31/96															
M E D I U M L O A D S															
2001- 2 OPERATING YEAR															
	AUG 1-15 16-31	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	APR 16-30	MAY	JUN	JUL	12 MO AVG
RESERVES & MAINTENANCE															
27 HYD.SM THERM & MISC RES	15/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 LARGE THERMAL RESERVES	16/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 BPA SPINNING RESERVES	17/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE	18/ -31	-26	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES	20281	18808	19009	18805	20714	21520	18796	19591	19218	18668	22754	24261	24039	20641	20571
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT	-2429	-3902	-3165	-3693	-3721	-4423	-7799	-5879	-4917	-4205	-143	1870	1205	-2429	-3191
33 TOTAL SURPLUS/DEFICIT	-2429	-3902	-3165	-3693	-3721	-4423	-7799	-5879	-4917	-4205	-143	1870	1205	-2429	-3191
34 EXTREME WEATHER ADJ.	19/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	-2429	-3902	-3165	-3693	-3721	-4423	-7799	-5879	-4917	-4205	-143	1870	1205	-2429	-3191
36 TOTAL S/D W/EXT WTHR. ADJ.	-2429	-3902	-3165	-3693	-3721	-4423	-7799	-5879	-4917	-4205	-143	1870	1205	-2429	-3191

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS	M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96			
	2006-7 OPERATING YEAR															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	
FIRM LOADS																
1/ SYSTEM FIRM LOADS	21173	21173	20678	21371	23383	24947	25727	24655	23273	21949	21949	21332	21311	21523	22610	
2 EXPORTS	2017	2017	1949	1560	1507	1471	1451	1399	1433	1469	1456	1520	1970	1992	1644	
3 FED DIVERSITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4 FIRM LOADS	23190	23190	22627	22931	24890	26418	27178	26054	24706	23418	23405	22852	23281	23515	24254	
NON-FIRM LOADS																
5 REGIONAL NON-FIRM LOADS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6 TOTAL LOADS	23190	23190	22627	22931	24890	26418	27178	26054	24706	23418	23405	22852	23281	23515	24254	
HYDRO RESOURCES																
7 REGULATED HYDRO	10199	8702	9490	9211	10836	11301	8623	9276	9878	9552	14874	16761	14565	10349	10996	
8 INDEPENDENT HYDRO	1040	1058	1002	990	919	981	803	817	955	1220	1276	1541	1570	1137	1084	
9 SUS. PKNG. ADJUSTMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10 TOTAL HYDRO	11239	9760	10492	10201	11755	12282	9426	10093	10833	10772	16150	18302	16135	11486	12080	
OTHER RESOURCES																
11 SMALL THERMAL & MISC	84	85	81	81	88	92	93	92	81	88	93	67	28	81	80	
12 COMBUSTION TURBINES	821	821	825	831	864	865	863	864	828	828	828	536	391	817	778	
13 RENEWABLES	77	77	77	78	79	81	82	81	81	80	80	33	77	77	75	
14 COGENERATION	269	269	269	258	258	251	258	258	258	269	269	200	204	262	251	
15 IMPORTS	1351	1351	982	1088	1564	1625	1678	1681	1339	1152	1131	1196	1388	1503	1378	
16 CENTRALIA	1300	1300	1300	1300	1300	1300	1300	1214	649	1027	1300	1300	1300	1300	1227	
17 JIM BRIDGER	642	642	642	642	642	642	642	642	565	482	642	642	642	642	629	
18 COLSTRIP 1 & 2	352	353	346	346	348	355	358	356	346	180	310	235	346	346	332	
19 BOARDMAN	403	403	403	403	403	403	403	403	403	403	349	221	403	403	386	
20 VALMY	202	202	202	202	202	202	202	202	150	128	203	202	202	202	195	
21 COLSTRIP 3	524	524	518	519	520	526	528	526	519	529	322	309	519	518	496	
22 WNP 2	1054	1054	1054	1054	1054	1054	1054	1054	1054	1054	0	0	527	1054	878	
23 COLSTRIP 4	657	657	657	657	657	657	657	657	657	657	394	381	657	657	623	
24 FED RESOURCE ACQUIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25 NON-UTILITY GENERATION	1082	1082	1002	905	871	861	847	874	893	1024	1025	779	1088	1130	946	
26 TOTAL RESOURCES	20057	18580	18849	18565	20604	21196	18390	18997	18656	18673	23096	24402	23907	20487	20355	

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96															
M E D I U M L O A D S															
2006- 7 OPERATING YEAR															
1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
RESERVES & MAINTENANCE															
27 HYD, SM THRM & MISC RES	15/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 LARGE THERMAL RESERVES	16/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 BPA SPINNING RESERVES	17/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE	18/ -31	-25	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES	20026	18554	18841	18556	20601	21196	18390	18997	18651	18665	23089	24382	23893	20437	20342
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT	-3164	-4636	-3786	-4376	-4290	-5221	-8788	-7057	-6055	-4752	-316	1530	612	-3078	-3912
33 TOTAL SURPLUS/DEFICIT	-3164	-4636	-3786	-4376	-4290	-5221	-8788	-7057	-6055	-4752	-316	1530	612	-3078	-3912
34 EXTREME WEATHER ADJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	-3164	-4636	-3786	-4376	-4290	-5221	-8788	-7057	-6055	-4752	-316	1530	612	-3078	-3912
36 TOTAL S/D W/EXT WTHR. ADJ.	-3164	-4636	-3786	-4376	-4290	-5221	-8788	-7057	-6055	-4752	-316	1530	612	-3078	-3912

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EXHIBIT 23
REGIONAL MONTHLY 50-HOUR CAPACITY
SURPLUS/DEFICIT PROJECTIONS UNDER MEDIUM
LOADS USING 1937 WATER CONDITIONS

TABLE R-1: REGIONAL 50-HOUR SUSTAINED PEAKING
BASE CASE: EXISTING REGIONAL CONTRACTS

REGIONAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT														
INCLUDING EXTREME WEATHER ADJUSTMENTS DURING NOVEMBER THROUGH FEBRUARY														
10 YEAR MONTHLY SUMMARY														
ASSUMING NO NIGHTTIME RETURN CONSTRAINTS, EXISTING REGIONAL CONTRACTS, AND NO NEW RESOURCE ACQUISITIONS														
M E D I U M L O A D S														
1937 WATER YEAR	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
PEAK IN MEGAWATTS	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	1996 FINAL	WHITEBOOK: RUN DATE:	12/31/96	12/31/96
	3283	1475	1974	1792	-1023	-3311	-6206	-4220	111	-318	2793	3755	4252	1986
	1991	1870	1428	553	-2180	-3035	-6213	-4959	-771	-809	2237	2937	4214	944
	2741	839	1284	321	-2516	-4060	-6951	-6505	-1768	-1388	1790	2410	4573	973
	2543	482	916	293	-2433	-4021	-7115	-6803	-1691	-1555	2067	2621	3306	1785
	2451	390	746	141	-2781	-4153	-7315	-6972	-2796	-1835	1587	2165	3140	1502
	2442	382	1007	135	-2550	-4443	-7588	-7808	-3159	-2876	1156	1935	2764	1161
	1806	-254	185	-514	-3217	-5114	-8773	-8398	-3554	-2742	995	1678	2686	920
	1618	-443	-22	-1291	-4319	-5679	-8966	-8620	-4279	-2346	1179	1808	2675	961
	1537	-522	197	-1147	-4210	-5840	-9084	-8668	-3928	-3022	909	1246	2405	1666
	1434	-626	-91	-1149	-4243	-5868	-9363	-9056	-4424	-2773	854	1487	2318	665

EXHIBITS 24 - 26
REGIONAL MONTHLY CAPACITY ANALYSIS
UNDER MEDIUM LOADS FOR 1937 WATER
CONDITIONS

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT												
1937 WATER YEAR PEAK IN MEGAWATTS	M E D I U M L O A D S											
	1997-98 OPERATING YEAR											
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY JUN JUL
1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96												
FIRM LOADS												
1/ SYSTEM FIRM LOADS	25697	25697	25664	27949	30159	32359	33144	32547	30228	28532	28532	26932 26144 25726
2/ EXPORTS	3007	3007	2955	2120	1705	1693	1898	1872	1848	2001	2053	2332 3294 3340
3/ FED DIVERSITY	-966	-987	-989	-1012	-945	-704	-726	-735	-976	-883	-880	-958 -982 -951
4/ FIRM LOADS	27738	27717	27630	29057	30919	33348	34316	33684	31100	29650	29705	28307 28455 28115
NON-FIRM LOADS												
5/ REGIONAL NON-FIRM LOADS	111	111	103	77	126	66	153	100	150	120	120	94 134 120
6/ TOTAL LOADS	27848	27828	27733	29134	31045	33414	34469	33784	31250	29770	29825	28400 28589 28235
HYDRO RESOURCES												
7/ REGULATED HYDRO	29793	28764	29943	30173	31048	31235	30631	30990	30274	29460	28376	28547 29717 29904
8/ INDEPENDENT HYDRO	1841	1826	1800	1792	1777	1748	1697	1809	1888	1921	1936	2008 2022 1995
9/ SUS. PKNG. ADJUSTMENT	-3379	-4808	-5323	-5394	-5246	-5782	-7728	-6167	-6504	-5814	-1169	-1200 -2866 -5678
10/ TOTAL HYDRO	28255	25782	26420	26571	27579	27201	24600	26632	25658	25567	29143	29355 28873 26121
OTHER RESOURCES												
11/ SMALL THERMAL & MISC	85	85	75	77	173	170	171	167	77	78	73	39 39 86
12/ COMBUSTION TURBINES	965	965	965	965	1667	1669	1670	1668	1212	1212	1212	558 670 1201
13/ RENEWABLES	79	79	79	80	81	73	85	84	84	83	83	33 80 80
14/ COGENERATION	340	340	340	329	329	309	329	329	329	340	340	340 340 320
15/ IMPORTS	1907	1907	1555	2193	3007	2966	3184	3207	2711	1893	1524	1910 2061 1963
16/ CENTRALIA	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340 1340 1340
17/ JIM BRIDGER	693	693	693	693	693	693	693	693	693	520	520	520 693 693
18/ COLSTRIP 1 & 2	408	408	389	394	403	397	399	392	394	198	386	197 400 412
19/ BOARDMAN	507	507	507	507	507	507	507	507	507	507	507	507 507 507
20/ VALMY	242	242	242	242	242	242	242	242	242	0	0	242 242 242
21/ COLSTRIP 3	570	570	557	560	566	562	564	559	560	561	555	560 565 572
22/ WNP 2	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	0 1170 1170
23/ COLSTRIP 4	720	720	720	720	720	720	720	720	720	720	720	720 720 720
24/ FED RESOURCE ACQUIS	13/	13/	13/	13/	13/	13/	13/	13/	13/	13/	13/	0 0 0
25/ NON-UTILITY GENERATION	14/	14/	14/	14/	14/	14/	14/	14/	14/	14/	14/	0 0 0
26/ TOTAL RESOURCES	38681	36208	36358	37057	39649	39177	36819	38883	36904	34870	37751	37228 37835 36867

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA
 SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
 UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

SHEET 2 OF 2

1996 FINAL WHITEBOOK: 12/31/96														
RUN DATE: 12/31/96														
M E D I U M L O A D S														
1997-98 OPERATING YEAR														
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
RESERVES & MAINTENANCE														
27 HYD. SM THERM & MISC RES	15/-1723	-1671	-1724	-1730	-1812	-1817	-1784	-1809	-1752	-1721	-1666	-1620	-1708	-1744
28 LARGE THERMAL RESERVES	16/-1007	-1007	-945	-970	-1008	-986	-989	-993	-1002	-768	-721	-800	-851	-1005
29 BPA SPINNING RESERVES	17/-325	-296	-297	-299	-326	-337	-302	-329	-307	-297	-383	-387	-366	-295
30 HYDRO MAINTENANCE	18/-4604	-4042	-3787	-3208	-2935	-2037	-1561	-2288	-2631	-2751	-2483	-2360	-2202	-3721
31 NET RESOURCES	31021	29192	29604	30849	33567	34000	32183	33464	31211	29332	32497	32062	32708	30101
SURPLUS/DEFICITS														
32 FIRM SURPLUS/DEFICIT	3283	1475	1974	1792	2648	652	-2133	-221	111	-318	2793	3755	4252	1986
33 TOTAL SURPLUS/DEFICIT	3172	1364	1871	1715	2522	586	-2286	-321	-39	-438	2672	3661	4118	1866
34 EXTREME WEATHER ADJ.	0	0	0	0	-3671	-3963	-4073	-3999	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	3283	1475	1974	1792	-1023	-3311	-6206	-4220	111	-318	2793	3755	4252	1986
36 TOTAL S/D W/EXT WTHR. ADJ.	3172	1364	1871	1715	-1149	-3377	-6359	-4320	-39	-438	2672	3661	4118	1866

EXHIBIT 25

SHEET 1 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR PEAK IN MEGAWATTS	M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96			
	2001-2 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96			
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL		
FIRM LOADS																
1 SYSTEM FIRM LOADS	1/ 26224	26224	26045	28576	30759	32980	33759	33179	30862	29154	29154	27554	26799	26333		
2 EXPORTS	3/ 3824	3824	3771	3113	2675	2664	2672	2644	2621	2666	2717	2932	3871	3924		
3 FED DIVERSITY	4/ -851	-862	-872	-874	-879	-648	-661	-672	-868	-825	-811	-862	-873	-842		
4 FIRM LOADS	29196	29186	28944	30814	32554	34996	35769	35152	32615	30995	31060	29624	29797	29415		
NON-FIRM LOADS																
5 REGIONAL NON-FIRM LOADS	2/ 110	110	103	77	130	61	155	100	153	120	120	90	146	119		
6 TOTAL LOADS	29306	29295	29047	30892	32684	35057	35924	35251	32768	31115	31180	29714	29943	29534		
HYDRO RESOURCES																
7 REGULATED HYDRO	5/ 29809	28890	29978	30240	31098	31312	31161	31015	30312	29475	28659	28639	29705	29825		
8 INDEPENDENT HYDRO	6/ 1860	1845	1822	1809	1795	1766	1717	1827	1906	1943	1956	2028	2043	1914		
9 SUS. PKNG. ADJUSTMENT	7/ -2976	-4762	-5323	-5387	-4601	-4719	-7613	-7224	-6846	-5917	-1100	-1200	-2573	-4693		
10 TOTAL HYDRO	28693	25973	26477	26662	28292	28359	25265	25618	25372	25501	29515	29467	29175	27046		
OTHER RESOURCES																
11 SMALL THERMAL & MISC	8/ 95	95	86	89	184	181	182	179	88	91	85	52	39	97		
12 COMBUSTION TURBINES	9/ 1197	1197	1201	1207	1663	1665	1662	1660	1204	1204	1204	550	663	1193		
13 RENEWABLES	10/ 80	80	80	81	82	74	86	85	85	84	84	34	81	81		
14 COGENERATION	11/ 340	340	340	329	329	309	329	329	329	340	340	340	340	320		
15 IMPORTS	12/ 1839	1839	1295	1928	2140	2688	2988	3009	2295	1699	1426	1474	1990	1876		
16 CENTRALIA	1340	1340	1340	1340	1340	1340	1340	1340	670	670	1340	1340	1340	1340		
17 JIM BRIDGER	693	693	693	693	692	693	692	692	519	520	173	520	693	693		
18 COLSTRIP 1 & 2	429	429	411	417	426	419	421	415	416	211	409	209	424	433		
19 BOARDMAN	507	507	507	507	507	507	507	507	507	507	507	507	507	507		
20 VALMY	242	242	242	242	242	242	242	242	242	121	242	242	242	242		
21 COLSTRIP 3	585	585	572	576	582	578	579	575	575	579	571	577	581	587		
22 WNP 2	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	720	720	720		
23 COLSTRIP 4	720	720	720	720	720	720	720	720	720	720	720	720	720	720		
24 FED RESOURCE ACQUIS	13/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0		
25 NON-UTILITY GENERATION	14/ 1394	1394	1302	1211	1167	1152	1079	1107	1142	1287	1283	867	1265	1388		
26 TOTAL RESOURCES	39324	36604	36436	37172	39536	40097	37262	37648	35334	34704	37899	36899	38059	37693		

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR PEAK IN MEGAWATTS	M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96	
	2001- 2 OPERATING YEAR													
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
RESERVES & MAINTENANCE														
27 HYD, SM THRM & MISC RES	15/-	-1736	-1690	-1739	-1747	-1815	-1821	-1809	-1808	-1753	-1720	-1678	-1624	-1706
28 LARGE THERMAL RESERVES	16/-	-998	-998	-922	-962	-909	-976	-978	-982	-832	-775	-695	-737	-841
29 BPA SPINNING RESERVES	17/-	-336	-296	-297	-299	-342	-364	-302	-300	-297	-297	-397	-389	-321
30 HYDRO MAINTENANCE	18/-	-4607	-4044	-3787	-3208	-2935	-2037	-1561	-2289	-2632	-2751	-2483	-2360	-2202
31 NET RESOURCES		31647	29575	29690	30955	33534	34899	32612	32269	29819	29160	32646	31789	32937
														30917
SURPLUS/DEFICITS														
32 FIRM SURPLUS/DEFICIT	2451	390	746	746	141	980	-97	-3158	-2882	-2796	-1835	1587	2165	3140
33 TOTAL SURPLUS/DEFICIT	2341	280	643	643	64	850	-159	-3313	-2982	-2949	-1955	1467	2075	2994
34 EXTREME WEATHER ADJ.	0	0	0	0	0	-3761	-4055	-4157	-4090	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	2451	390	746	746	141	-2781	-4153	-7315	-6972	-2796	-1835	1587	2165	3140
36 TOTAL S/D W/EXT WTHR. ADJ.	2341	280	643	643	64	-2911	-4214	-7470	-7072	-2949	-1955	1467	2075	2994

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES
UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

1937 WATER YEAR PEAK IN MEGAWATTS	M E D I U M L O A D S												1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96			
	2006-7 OPERATING YEAR															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL		
FIRM LOADS																
1 SYSTEM FIRM LOADS	1/ 27108	27108	26936	29508	31655	33907	34847	34287	31926	30184	30184	28578	27822	27302		
2 EXPORTS	3/ 3703	3703	3617	2889	2728	2751	2756	2729	2725	2752	2752	2922	3574	3622		
3 FED DIVERSITY	4/ -874	-885	-898	-913	-910	-668	-687	-700	-917	-852	-852	-901	-900	-872		
4 FIRM LOADS	29937	29926	29655	31483	33472	35990	36916	36316	33734	32084	32086	30599	30495	30052		
NON-FIRM LOADS																
5 REGIONAL NON-FIRM LOADS	2/ 109	109	102	92	127	45	154	141	153	120	120	90	145	122		
6 TOTAL LOADS	30046	30035	29757	31575	33599	36035	37070	36457	33887	32204	32206	30689	30640	30174		
HYDRO RESOURCES																
7 REGULATED HYDRO	5/ 29795	28876	29978	30240	31097	31321	31171	31024	30312	29475	28660	28640	29705	29811		
8 INDEPENDENT HYDRO	6/ 1843	1828	1821	1807	1794	1776	1727	1838	1908	1945	1957	2028	2044	1900		
9 SUS. PKNG. ADJUSTMENT	7/ -2976	-4762	-5323	-5387	-4601	-4719	-7613	-7224	-6846	-5917	-1100	-1200	-2573	-4693		
10 TOTAL HYDRO	28662	25942	26476	26660	28290	28378	25285	25638	25374	25503	29517	29468	29176	27018		
OTHER RESOURCES																
11 SMALL THERMAL & MISC	8/ 86	86	86	88	183	187	188	185	89	92	85	52	39	88		
12 COMBUSTION TURBINES	9/ 1200	1200	1204	1210	1666	1668	1666	1664	1207	1207	1207	554	666	1196		
13 RENEWABLES	10/ 81	81	81	82	83	75	86	85	85	84	84	34	81	81		
14 COGENERATION	11/ 295	295	295	284	284	264	284	284	284	295	295	295	295	275		
15 IMPORTS	12/ 1718	1718	1273	1401	1850	2136	2214	2224	1707	1316	1316	1714	1903	1776		
16 CENTRALIA	1340	1340	1340	1340	1340	1340	1340	1340	670	1340	1340	1340	1340	1340		
17 JIM BRIDGER	692	692	692	692	693	693	693	693	692	519	693	692	693	693		
18 COLSTRIP 1 & 2	411	411	411	416	424	431	433	428	417	212	410	210	425	416		
19 BOARDMAN	507	507	507	507	507	507	507	507	507	507	507	507	507	507		
20 VALMY	242	242	242	242	242	242	242	242	242	121	242	242	242	242		
21 COLSTRIP 3	572	572	572	575	581	586	587	583	576	580	571	578	581	575		
22 MNP 2	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	0	0	0	1170		
23 COLSTRIP 4	720	720	720	720	720	720	720	720	720	720	720	720	720	720		
24 FED RESOURCE ACQUIS	13/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0		
25 NON-UTILITY GENERATION	14/ 1319	1319	1231	1140	1094	1080	1066	1093	1122	1268	1264	849	1246	1369		
26 TOTAL RESOURCES	39015	36295	36301	36527	39127	39478	36481	36856	34862	34934	38251	37255	37913	37466		

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SUMMARY OF PACIFIC NORTHWEST REGIONAL LOADS AND RESOURCES UNDER THE PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT													
M E D I U M L O A D S													
2006-7 OPERATING YEAR													
1937 WATER YEAR PEAK IN MEGAWATTS	1996 FINAL WHITEBOOK: 12/31/96 RUN DATE: 12/31/96												
	AUG 1-15	AUG 16-31	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30
RESERVES & MAINTENANCE													
27 HYD, SM THERM & MISC RES	15/	-1731	-1684	-1735	-1743	-1811	-1819	-1819	-1809	-1809	-1752	-1719	-1678
28 LARGE THERMAL RESERVES	16/	-972	-972	-917	-942	-927	-957	-960	-964	-964	-871	-856	-754
29 BPA SPINNING RESERVES	17/	-336	-296	-297	-299	-342	-364	-302	-300	-300	-297	-297	-397
30 HYDRO MAINTENANCE	18/	-4605	-4042	-3787	-3208	-2935	-2037	-1561	-2289	-2289	-2632	-2751	-2483
31 NET RESOURCES		31371	29300	29564	30335	33112	34300	31848	31493	29310	29311	32940	32086
													32813
													30717
SURPLUS/DEFICITS													
32 FIRM SURPLUS/DEFICIT	1434	-626	-735	-193	-1241	-488	-1735	-5068	-4823	-4823	-4424	-2773	854
33 TOTAL SURPLUS/DEFICIT	1325												734
34 EXTREME WEATHER ADJ.	0	0	0	0	0	-3882	-4178	-4295	-4233	-4233	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	1434	-626	-735	-193	-1241	-488	-1735	-5068	-4823	-4823	-4424	-2773	854
36 TOTAL S/D W/EXT WTHR. ADJ.	1325												734
													1487
													1397
													2318
													2173
													665
													543

REGIONAL FOOTNOTES

For Exhibits 9 through 16

1. Firm loads for the region include the sum of the estimated firm loads of Federal agencies, public agencies, Direct Service Industries (DSIs), Investor-Owned Utilities (IOUs), and associated transmission losses. Peak loads represent non-coincidental capacity demands adjusted to account for Federal system diversity; they are based on the prediction of normal weather and have a 50-percent chance of being exceeded.
2. Total loads for the region include system firm loads plus Utah Power Company's interruptible load.
3. Regional exports include: BPA to Anaheim, capacity sale and capacity/energy exchange; BPA to Azusa, seasonal exchange, exchange energy, energy sale and power sale; BPA to Banning, energy sale and power sale; BPA to BART, power sale; BPA to Burbank, power sale; BPA to Colton, energy sale and power sale; BPA to Glendale, power sale; BPA to Imperial, diversity exchange; BPA to M-S-R, power sale; BPA to New Energy Ventures, power sale; BPA to Palo Alto, capacity sale and seasonal energy; BPA to Pasadena, capacity/energy exchange and power sale; BPA to Riverside, capacity/energy exchange, capacity sale and diversity exchange; BPA to SDG&E, power exchange and power sale; BPA to SMUD, power exchange; BPA to SCE, power sale, environmental storage, and option capacity; BPA to Vernon, seasonal exchange; BPA to BC Hydro for Canadian Entitlement beginning April 1, 1998; BPA's Northwest-Southwest Intertie losses; city of Idaho Falls to UPC, Gem State Hydro; IPC to Sierra Pacific, two power sales and for Harney and Wells; IPC to UAMPS, power sale; IPC to Azusa, Banning and Clinton, power sale; IPC to the city of Washington, Utah, power sale; MPC to LADWP, power sale; MPC to PP&L (east) power sale; PP&L to CDWR, power sale; PP&L to PG&E, power sale; PP&L to PP&L (Northern California), transfer to PP&L's Northern California load; PP&L to Redding, power sale; PP&L to SDG&E, power sale; PP&L to SMUD, power sale; PP&L to SCE, power sale; PP&L to WAPA, power sale; PGE to Burbank, power sale, PGE to Glendale, power sale and seasonal power exchange; PGE to Modesto, power sale; PGE to SCE, power sale and seasonal power exchange; PGE to WAPA, power sale; PSP&L to PG&E, seasonal power exchange; SCL to PG&E, seasonal power exchange; SCL to NCPA, seasonal power exchange; Snohomish County PUD to SMUD, power sale, TPU to WAPA, power sale; WWP to Modesto, capacity sale; and WWP to Riverside, power sale.

Also included in exports are resources purchased by utilities outside the region. These include Longview Fibre to WAPA, 14.2 percent of the Boardman coal plant sold to San Diego Gas and Electric and 10.2 percent of the Boardman coal plant sold to the City of Turlock, CA.

This analysis assumes that BPA's power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, Pasadena, Modesto, Santa Clara and Redding and with SCE are in power sales mode throughout the study period.

4. Federal diversity is a percentage reduction applied to the Federal system non-coincidental peak utility allocation requirements. This is because all peaking electrical loads do not occur simultaneously throughout the region.
5. Regulated hydro includes those hydro dams where the firm energy generation of the dam is affected by the release of stored water from upstream reservoirs. Regulated hydro generation is determined by completing a hydro regulation study of the Pacific Northwest hydro system.
6. Independent hydro includes those hydro dams where no reservoirs exist upstream to release stored water and the firm energy is based on fixed historical flows. Hydro independents are not changed as a part of the hydro regulation study.
7. 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, forced outage reserves, and summer flow augmentation on the Lower Snake River and John Day hydro projects.
8. Small thermal and miscellaneous resources include: IPC: Energy Management Systems; MPC: regional Bird and Corlette; PGE: Summit 1 and 2; PSP&L: Crystal Mountain and Shuffleton; SCL: Boundary; and TPU: Steam Plant 2.
9. Combustion turbines include: Clark: River Road (Cogentrix); IPC: Wood River; PGE: Bethel and Beaver; PSP&L: Whidbey Island, Whitehorn, Fredrickson, and Fredonia units 1 and 2; and WWP: Northeast units 1 and 2.
10. Renewables include: BPA: James River Wauna; Consumers: Coffin Butte; Emerald County PUD: Short Mountain; and WWP: Kettle Falls.
11. Cogeneration includes: EWEB: WEYCO Energy Center; Snohomish: County PUD Scott Paper; and PGE: Coyote Springs. Longview Fibre output is sold outside the region to WAPA.
12. Regional imports include: Anaheim to BPA, exchange energy; Azusa to BPA, seasonal exchange and return energy; Banning to BPA, return energy; Burbank to BPA, exchange energy; Colton to BPA, return energy; Glendale to BPA, exchange energy; Imperial to BPA, exchange energy and seasonal exchange; M-S-R to BPA, exchange energy; Pasadena to BPA, two exchange energy contracts and a seasonal exchange; Riverside to BPA; two exchange energy contracts and a seasonal exchange; SMUD to BPA, deferred energy return; SDG&E to BPA, exchange energy and deferred energy return; Sierra to BPA, for Harney and Wells; SCE to BPA, exchange energy, supplemental energy, option energy, and environmental storage; Vernon to BPA, seasonal exchange; Basin Electric to BPA, power sale; BC Hydro to BPA, for PGE ICP; PP&L (Wyoming) to BPA, Southern Idaho transfer; Trans Alta to BPA, power sale; PowerEx to BPA, replacement energy; PowerEx to EWEB, power sale; SCE to PP&L, power sale; Glendale to PGE, seasonal power exchange; SCE to PGE, seasonal power exchange; BC Hydro to PSP&L, power sale; PG&E to PSP&L, seasonal power exchange; BC Hydro to SCL, Ross replacement; PG&E to SCL, seasonal power exchange; and NCPA to SCL, seasonal power exchange.

In addition, imports includes the following intra-company transfers: PP&L (Wyoming) to PP&L and Utah Power Company.

This analysis assumes that BPA's power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, Pasadena, Modesto, Santa Clara, and

Redding and with SCE are in power sales mode, so exchange and supplemental energy with these utilities are zero through the study horizon.

13. Resource acquisitions are resources BPA has identified and contracted for future purchase. When new Federal resource acquisitions are contracted for and/or on-line, they will be included in the loads and resources balance.
14. Non-utility generation (NUG) resources include generation provided to utilities by independent power producers and resources included under the Public Utility Regulatory Policies Act (PURPA). This study included 180 Individual NUGs.
15. 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.
16. 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.
17. Federal spinning reserves equal the reserve generating capacity maintained to provide a regulating margin for the automatic generation and frequency control of power generation.
18. Hydro maintenance is the sum of individual Federal system, public agency, and IOU hydro project maintenance, based on the average of the 1983-84 through 1988-89 schedules submitted to the Northwest Power Pool.
19. Extreme weather adjustment is the sum of all utility load responses with Pacific Northwest cold weather, and has a 5 percent chance of being exceeded in the months of November through February.

EXHIBITS 27 - 36
REGIONAL ENERGY SURPLUS/DEFICIT
PROJECTIONS FOR 50 HISTORICAL WATER
CONDITIONS

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS	1997-98 OPERATING YEAR												1996 FINAL WHITEBOOK:				12/31/96
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12/31/96 AVG		
1929 REGIONAL ENERGY S/D	-1243	-2465	-2226	-1796	-2666	-3008	-4482	-2470	-2065	-1554	1637	-44	2323	-2309	-1713		
1930 REGIONAL ENERGY S/D	-2662	-3296	-3422	-2422	-2886	-3542	-7503	-1870	-2349	-1202	2871	370	498	-2330	-2300		
1931 REGIONAL ENERGY S/D	-3140	-3670	-3434	-2723	-2850	-3056	-7382	-3451	-2933	-2327	-442	1805	1045	-2346	-2510		
1932 REGIONAL ENERGY S/D	-2221	-3638	-3180	-2730	-2754	-3954	-7289	-5643	-89	9902	6463	5913	7099	3520	-321		
1933 REGIONAL ENERGY S/D	-2170	-2026	-2350	-1747	-919	-1165	1731	2967	1547	2413	1246	2649	11145	9072	1888		
1934 REGIONAL ENERGY S/D	3046	2869	-32	895	1863	4828	10183	6867	8245	11285	9224	7199	2035	-2466	4402		
1935 REGIONAL ENERGY S/D	-1936	-2560	-3321	-2829	-2566	-1582	668	2550	1447	4189	1253	1969	4283	4130	435		
1936 REGIONAL ENERGY S/D	-523	-3501	-2895	-2938	-2850	-3027	-6162	-3405	-1713	1485	7509	7991	5156	-541	-658		
1937 REGIONAL ENERGY S/D	-1821	-2927	-3126	-2812	-2821	-3101	-6285	-3168	-3137	-3293	-309	2446	1576	-2226	-2236		
1938 REGIONAL ENERGY S/D	-2181	-3340	-3144	-2561	-1711	-3116	2543	-60	3750	3968	5591	8235	6330	3342	1302		
1939 REGIONAL ENERGY S/D	-2194	-2645	-3081	-2165	-2569	-3242	-5209	-1398	848	4084	3472	3682	2631	-790	-828		
1940 REGIONAL ENERGY S/D	-1689	-2620	-3274	-2424	-2818	-2906	-3438	-588	3001	3930	3273	2594	1294	-2280	-783		
1941 REGIONAL ENERGY S/D	-2394	-3301	-2985	-2373	-2679	-2970	-4919	-2267	-2190	-1295	1514	1389	1367	-3139	-1959		
1942 REGIONAL ENERGY S/D	-4128	-3828	-2866	-2452	-2643	-246	-799	-645	-794	-1100	1622	2660	5737	4322	-79		
1943 REGIONAL ENERGY S/D	-1085	-2166	-2500	-2099	-2314	-1144	1568	3488	4487	10513	9074	7940	8682	4971	2604		
1944 REGIONAL ENERGY S/D	3234	1229	-2412	-2016	-2513	-2766	-4429	-2274	-2020	-2134	1328	246	-363	-2937	-1740		
1945 REGIONAL ENERGY S/D	-3444	-3957	-2619	-2718	-3283	-4306	-6622	-3811	-3247	-2796	-780	3505	5276	1707	-1817		
1946 REGIONAL ENERGY S/D	-2156	-3185	-3225	-2411	-2348	-1879	845	2508	4300	5287	6459	9357	7354	4090	1816		
1947 REGIONAL ENERGY S/D	829	-2684	-1672	-1532	-1016	3158	4123	5806	4876	6384	4987	6103	6843	2491	2828		
1948 REGIONAL ENERGY S/D	-1741	-2373	-2171	-3309	1336	-178	3954	3911	3884	3217	4690	9446	14554	6664	3884		
1949 REGIONAL ENERGY S/D	3374	3858	60	-905	-1817	-2637	-1683	-581	7110	6523	8667	8316	6325	467	2155		
1950 REGIONAL ENERGY S/D	-2234	-3517	-3497	-2468	-2463	-1698	1585	4511	6383	8007	6408	6729	12470	6731	2718		
1951 REGIONAL ENERGY S/D	2954	2556	-448	1050	2697	4821	5279	10519	6386	10187	8576	9903	6110	4316	5247		
1952 REGIONAL ENERGY S/D	3484	1791	-453	2249	-531	965	2722	4581	2216	8404	7895	10312	7368	2846	3588		
1953 REGIONAL ENERGY S/D	-1534	-2119	-2991	-2379	-2683	-2992	290	3556	1968	1510	2837	5737	9662	4662	1265		
1954 REGIONAL ENERGY S/D	3278	4230	-1827	-1308	-1088	-288	1848	5788	4278	5957	4001	7082	11190	7858	3346		
1955 REGIONAL ENERGY S/D	5164	4230	4268	7	415	-1085	-99	-1214	-3321	1382	3052	1932	9444	9195	2205		
1956 REGIONAL ENERGY S/D	3408	1735	-1246	918	1471	4336	5752	5766	7691	9356	10222	1979	13163	5385	5631		
1957 REGIONAL ENERGY S/D	4043	1240	-1399	-309	-1661	548	-618	2902	3621	10523	2422	9266	10785	626	2764		
1958 REGIONAL ENERGY S/D	-2205	-2564	-3235	-1899	-2519	-2154	754	4661	3014	4569	3799	9266	8199	364	1521		
1959 REGIONAL ENERGY S/D	-1682	-2243	-2889	-1505	-217	1597	4706	5840	5210	7245	5167	5941	10407	4455	3185		
1960 REGIONAL ENERGY S/D	4146	814	3526	5017	2707	1652	1532	3211	3787	12179	5869	4594	5929	3794	3870		
1961 REGIONAL ENERGY S/D	-265	-3207	-2770	-1999	-997	-2663	965	6612	4406	8670	3108	5520	11029	2568	2335		
1962 REGIONAL ENERGY S/D	-2123	-2332	-2962	-1485	-2419	-2566	250	228	-1606	8823	7816	4502	5832	2664	711		
1963 REGIONAL ENERGY S/D	-775	-2736	-2459	-158	389	1559	1507	4565	-116	2668	3436	3087	5783	3357	1568		
1964 REGIONAL ENERGY S/D	-1235	-2044	-1435	-2092	-1742	-2547	-27	2247	-1787	7082	2229	3506	11950	7222	1526		
1965 REGIONAL ENERGY S/D	4848	1662	-354	528	-818	4477	7138	9234	4481	6315	9622	8715	9340	3465	4794		
1966 REGIONAL ENERGY S/D	2319	178	-1285	-370	-812	-1278	1974	285	-621	7445	3277	4535	4602	2072	1309		
1967 REGIONAL ENERGY S/D	-1694	-2818	-2432	-2051	-2388	-275	3251	4900	3986	3961	1127	3934	11089	6168	2206		
1968 REGIONAL ENERGY S/D	4106	1128	-1584	-526	-852	-1048	1185	5226	4202	402	3137	2795	5691	3249	1894		
1969 REGIONAL ENERGY S/D	1466	57	1300	867	1141	543	4886	6137	5602	10721	8061	10726	8745	3796	4491		
1970 REGIONAL ENERGY S/D	-1720	-2531	-2800	-1291	-2199	-2271	2096	1061	564	2930	1284	4106	9004	1705	830		
1971 REGIONAL ENERGY S/D	-1715	-2677	-3160	-2345	-2301	-1234	4965	9518	5921	8765	6968	11977	11966	6812	3982		
1972 REGIONAL ENERGY S/D	4131	3201	-632	-726	-1054	-513	4940	7668	13885	12289	4942	11551	12814	9491	5809		
1973 REGIONAL ENERGY S/D	4803	5510	-335	-645	-1766	523	364	-1190	-1939	-1973	3928	-231	-2292	-139	-139		
1974 REGIONAL ENERGY S/D	-2722	-3396	-3165	-2378	-2337	-2708	9894	10365	8669	10147	9264	10665	14256	10642	5505		
1975 REGIONAL ENERGY S/D	4103	4234	-149	-1936	-2385	-831	2551	2407	4685	2939	3159	6002	9936	8797	3016		
1976 REGIONAL ENERGY S/D	867	-516	-1542	63	1720	4884	6706	6830	2308	10706	6571	9855	6358	6834	4769		
1977 REGIONAL ENERGY S/D	4907	4779	4942	-236	-2656	-2848	3961	2336	-2336	-2479	1321	-872	-1302	-4134	-954		
1978 REGIONAL ENERGY S/D	-4961	-3346	-3231	-2761	-3073	-3237	-3286	1564	4690	7956	3803	5415	3864	3415	424		

EXHIBIT 28

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		1998-99 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96			
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	
1929	REGIONAL ENERGY S/D	-1284	-2503	-3029	-2207	-3016	-3936	-5249	-2595	-4170	-983	2543	324	2150	-2635	-2123	
1930	REGIONAL ENERGY S/D	-4693	-4074	-3439	-2807	-3602	-3813	-7973	-3413	-3176	1662	2535	2123	200	-3078	-2605	
1931	REGIONAL ENERGY S/D	-3896	-4358	-3450	-3056	-3397	-3862	-7621	-3159	-4347	-1521	-890	1436	1219	-2395	-2830	
1932	REGIONAL ENERGY S/D	-2356	-3318	-3184	-3232	-4295	-5623	-7466	-6026	363	9193	6057	5893	6707	2435	-803	
1933	REGIONAL ENERGY S/D	-1276	-1300	-3021	-2261	-1521	-1949	1510	2786	1891	2427	783	2104	10872	8639	1614	
1934	REGIONAL ENERGY S/D	3013	3052	-825	484	1093	4237	9960	6814	7863	11092	8772	6971	2205	-2517	4104	
1935	REGIONAL ENERGY S/D	-3368	-3661	-3409	-3248	-2460	-2167	490	2290	859	3010	1575	1982	3862	3778	50	
1936	REGIONAL ENERGY S/D	-576	-3833	-3490	-3211	-3191	-3812	-6081	-3885	-2039	-567	8353	7889	5190	-418	-947	
1937	REGIONAL ENERGY S/D	-1936	-3380	-3454	-3007	-3244	-3611	-7307	-3987	-4157	-2964	-495	3008	2505	-2577	-2518	
1938	REGIONAL ENERGY S/D	-2617	-3827	-3202	-2949	-3107	-3979	1355	-339	3345	3945	4878	7776	5922	2785	733	
1939	REGIONAL ENERGY S/D	-2242	-3556	-3229	-2887	-3135	-3803	-4454	-1575	150	4062	3327	3414	3482	-2301	-1129	
1940	REGIONAL ENERGY S/D	-1923	-3459	-3359	-2920	-3158	-3858	-3626	-311	2352	3688	3132	2358	1877	-2331	-1021	
1941	REGIONAL ENERGY S/D	-4397	-4107	-3132	-2941	-3019	-3747	-5903	-2847	-2136	-1104	2150	998	1642	-3218	-2336	
1942	REGIONAL ENERGY S/D	-4302	-3966	-2757	-2950	-3746	-917	1367	-1236	-902	-1581	1202	2404	5177	3836	-565	
1943	REGIONAL ENERGY S/D	-506	-2341	-3419	-2932	-2807	-1705	1648	2632	4310	11170	9079	7527	8256	4628	2236	
1944	REGIONAL ENERGY S/D	3181	-1286	-3275	-2474	-3128	-3399	-4842	-2643	-4848	623	909	1215	838	-2801	-1970	
1945	REGIONAL ENERGY S/D	-4507	-4238	-3414	-3177	-4412	-5050	-7084	-4274	-3805	-2359	-272	2141	4805	1507	-2371	
1946	REGIONAL ENERGY S/D	-2208	-3324	-3244	-2799	-2914	-2430	-992	2260	4123	5411	5949	9167	6954	3794	1568	
1947	REGIONAL ENERGY S/D	481	-2154	-2365	-1945	-2022	-2202	3932	5592	4932	7467	4648	5737	6443	2048	2456	
1948	REGIONAL ENERGY S/D	-1690	-3014	-2578	-2931	564	-742	3769	4028	3466	3894	4250	9066	14157	6324	3559	
1949	REGIONAL ENERGY S/D	3333	3799	-736	-1319	-2587	-3109	-1261	-686	6690	6337	8125	7912	5924	125	1812	
1950	REGIONAL ENERGY S/D	-2282	-3628	-3643	-2865	-3046	-3601	1301	4967	6545	7792	5946	5949	12062	6773	2355	
1951	REGIONAL ENERGY S/D	2914	3102	-996	635	1898	4281	4879	10087	6927	9995	8094	9535	5745	3912	4914	
1952	REGIONAL ENERGY S/D	3569	1798	-1208	1835	-1331	-42	2534	4715	2100	8238	7863	9958	7009	2513	3235	
1953	REGIONAL ENERGY S/D	-1331	-3013	-3266	-2865	-3023	-3639	415	3190	1727	446	2818	5332	9265	4319	909	
1954	REGIONAL ENERGY S/D	3775	-36	-2642	-1720	-1857	-846	1705	5740	4102	6124	3589	6693	10866	7286	3004	
1955	REGIONAL ENERGY S/D	5131	4192	3571	405	-358	-1744	-220	-484	-3595	564	1737	1683	9447	8752	1871	
1956	REGIONAL ENERGY S/D	3373	1914	-2046	505	560	3380	5540	5585	7525	10335	9829	11618	12747	4932	5256	
1957	REGIONAL ENERGY S/D	4194	1223	-2209	-722	-2429	-402	-806	2793	3617	10855	1995	9657	9936	282	2404	
1958	REGIONAL ENERGY S/D	-2251	-3510	-3418	-2729	-3099	-2921	555	4542	3718	4416	3519	8807	7784	-98	1186	
1959	REGIONAL ENERGY S/D	-1788	-2809	-3318	-1841	-653	644	4601	5556	5016	8338	4931	5583	10044	3977	2829	
1960	REGIONAL ENERGY S/D	3994	-508	2778	1841	1936	1009	1372	3792	3543	11994	5343	4191	5330	3445	3551	
1961	REGIONAL ENERGY S/D	-283	-3707	-3285	-2354	-1847	-3194	771	6481	4190	8156	2298	5571	10634	2452	1887	
1962	REGIONAL ENERGY S/D	-2167	-2371	-3557	-1917	-2966	-3209	66	461	-2232	9163	7083	4099	5380	2415	366	
1963	REGIONAL ENERGY S/D	-544	-2774	-3240	-721	-263	891	1317	4829	-337	1835	3394	2988	5506	2812	1228	
1964	REGIONAL ENERGY S/D	-1106	-2096	-2161	-2545	-1689	-3395	-208	2188	-2130	6902	1467	3196	11469	6938	1187	
1965	REGIONAL ENERGY S/D	4812	1847	-995	178	-1590	3929	6963	9236	4610	5980	9361	8312	8936	3113	4474	
1966	REGIONAL ENERGY S/D	2302	140	-2072	-784	-1584	-1917	2070	398	-760	7134	3250	4110	4108	1616	966	
1967	REGIONAL ENERGY S/D	-1498	-3188	-3109	-2541	-2679	-1214	3030	4687	3810	4296	1111	3555	10363	6363	1885	
1968	REGIONAL ENERGY S/D	4066	1091	-2365	-957	-1624	-1544	1024	5542	4028	-714	2996	2599	5183	2932	1545	
1969	REGIONAL ENERGY S/D	1646	-259	519	448	368	7	4682	5989	5389	10989	7598	10409	8345	3342	4124	
1970	REGIONAL ENERGY S/D	-1824	-2903	-3055	-1861	-3002	-2774	2301	1335	114	2743	414	4456	7937	1363	502	
1971	REGIONAL ENERGY S/D	-1819	-3241	-3180	-2733	-2919	-3189	4858	9717	6439	8578	6042	11533	11562	6718	3632	
1972	REGIONAL ENERGY S/D	4100	3474	-1443	-1137	-1824	-1540	4751	7455	13554	11326	6439	10548	12818	9804	5471	
1973	REGIONAL ENERGY S/D	4856	5487	-1133	-1054	-2535	-444	1397	2449	-2117	-100	3063	-21	-1022	-2719	-454	
1974	REGIONAL ENERGY S/D	-4088	5774	-3223	-2762	-2641	2320	9637	10293	9143	10242	8805	9772	13925	10523	5131	
1975	REGIONAL ENERGY S/D	4070	4410	-947	-2713	-2851	-1803	2364	3404	4177	3051	2845	5534	9485	2691	8451	
1976	REGIONAL ENERGY S/D	834	-299	-2110	-353	707	4533	6317	7042	6384	10738	6105	9460	5954	6432	4421	
1977	REGIONAL ENERGY S/D	5072	4740	-1670	-3379	-3133	-3429	3865	-3767	-4544	-201	2006	-509	-1266	-4212	-1284	
1978	REGIONAL ENERGY S/D	-5288	-5036	-4016	-3391	-4179	-3696	-3213	1313	4347	7531	3322	5009	3470	3081	-84	

EXHIBIT 29

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		1999-0 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96				
														RUN DATE: 12/31/96				
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG		
1929	REGIONAL ENERGY S/D	-1374	-2834	-2806	-2126	-3158	-4369	-4251	-5725	-4788	-1206	1645	1676	2098	-3157	-2374		
1930	REGIONAL ENERGY S/D	-4578	-4512	-3505	-3099	-3315	-4240	-7466	-4259	-4013	-3494	2875	2487	954	-3397	-2930		
1931	REGIONAL ENERGY S/D	-4558	-5246	-3552	-3328	-3279	-4582	-7816	-5867	-4916	-2346	1082	1735	635	-2364	-3239		
1932	REGIONAL ENERGY S/D	-4153	-4312	-3182	-3332	-3181	-5184	-8072	-6413	-4461	9025	6468	5100	6641	3196	-1031		
1933	REGIONAL ENERGY S/D	-2640	-2300	-3036	-2233	-1513	-3142	-1201	-358	-2213	3171	2441	2926	10504	8750	1186		
1934	REGIONAL ENERGY S/D	-2691	-2947	-610	-425	-1038	-3928	-9419	-4145	-7202	10997	9573	6977	1731	-2490	3739		
1935	REGIONAL ENERGY S/D	-3101	-4528	-3536	-3463	-2915	-2204	-1994	-1882	-1825	-2308	960	1588	3791	3689	-293		
1936	REGIONAL ENERGY S/D	-674	-4226	-3362	-3329	-3327	-4440	-6819	-5351	-1357	-1119	7380	6851	5021	-114	-1296		
1937	REGIONAL ENERGY S/D	-2187	-3713	-3376	-3221	-3332	-4162	-7366	-5536	-4615	-3588	1334	2704	3390	-3038	-2719		
1938	REGIONAL ENERGY S/D	-3303	-4875	-3314	-3133	-3245	-4329	-627	-821	-3950	3797	4908	7584	5958	3046	-442		
1939	REGIONAL ENERGY S/D	-2375	-3783	-3379	-3031	-3508	-4273	-6101	-2765	-804	3313	3221	3567	3737	-2755	-1266		
1940	REGIONAL ENERGY S/D	-2579	-3777	-3469	-3135	-3242	-4049	-5632	-2046	-3940	2441	3027	1735	2546	-2769	-1380		
1941	REGIONAL ENERGY S/D	-4347	-4661	-3354	-3174	-3135	-4390	-6698	-2634	-2382	-2824	2568	1694	756	-3912	-2455		
1942	REGIONAL ENERGY S/D	-5028	-4209	-3375	-3148	-3207	-1075	-1688	-1220	-1775	-2044	1962	2603	5298	2553	-841		
1943	REGIONAL ENERGY S/D	-1541	-2736	-3256	-2568	-3056	-1908	-1129	-2788	-4292	10415	8788	7174	8325	4615	1903		
1944	REGIONAL ENERGY S/D	3113	-1616	-2982	-2512	-3270	-3866	-4308	-5018	-4777	361	2153	705	286	-3699	-2288		
1945	REGIONAL ENERGY S/D	-5657	-4800	-3606	-3084	-4143	-5187	-7392	-4555	-4142	-3377	-2037	1973	4759	1494	-2852		
1946	REGIONAL ENERGY S/D	-2461	-3746	-3240	-3083	-3054	-2627	-1321	-833	-4106	5310	6767	9493	6337	3494	1156		
1947	REGIONAL ENERGY S/D	-485	-3084	-2140	-1998	-2086	-1864	-2118	-2599	-5020	6819	5559	6814	5194	2563	2029		
1948	REGIONAL ENERGY S/D	-1849	-3308	-2299	-2866	-513	-1372	-2795	-1312	-3542	3746	5792	10240	14040	5703	3141		
1949	REGIONAL ENERGY S/D	3017	3843	517	1378	-2337	-3772	-3216	-1918	-7233	5944	8258	7487	5873	125	1489		
1950	REGIONAL ENERGY S/D	-2606	-4005	-3631	-3069	-3062	-2360	-1849	-3890	-7059	7402	6586	5905	11896	6364	2069		
1951	REGIONAL ENERGY S/D	2814	2419	-1043	580	1847	3928	3700	1864	8010	10649	8977	8964	5624	4239	4512		
1952	REGIONAL ENERGY S/D	3319	1469	-863	1775	-1381	-335	262	1864	3729	8813	8032	9566	6957	2493	2907		
1953	REGIONAL ENERGY S/D	-1415	-3234	-3285	-2728	-3229	-4174	-2228	-4190	1798	99	2695	4965	9244	4364	666		
1954	REGIONAL ENERGY S/D	2788	-394	2416	-1776	-1905	-1676	-938	-2905	-3484	5351	6716	7623	10372	7601	2832		
1955	REGIONAL ENERGY S/D	4754	3847	3747	-465	-405	-2370	-2188	-4122	-2755	2324	1419	2103	9368	9252	1528		
1956	REGIONAL ENERGY S/D	3061	1853	1816	492	513	3066	4706	2548	7248	9506	10130	11272	12320	5301	4827		
1957	REGIONAL ENERGY S/D	3867	1131	-1981	-780	-2479	-709	-2910	-1422	4300	10707	3457	9967	9514	1016	2008		
1958	REGIONAL ENERGY S/D	-2575	-3764	-3321	-2534	-3290	-2729	-2741	-2555	3756	4764	4456	9559	6586	533	818		
1959	REGIONAL ENERGY S/D	-1891	-3271	-3206	-1687	-700	-297	-3643	-2493	4826	7198	5164	6733	9338	4331	2472		
1960	REGIONAL ENERGY S/D	3868	-834	2980	4532	1882	384	-505	-121	4374	12341	6245	3900	5475	3229	3078		
1961	REGIONAL ENERGY S/D	873	-3757	-2928	-2407	-1830	-3826	227	3272	4174	7591	2287	7132	10033	2585	1661		
1962	REGIONAL ENERGY S/D	-2386	-2701	-3450	-1748	-3217	-3278	-3016	-1075	-540	8895	7064	3748	5390	2326	48		
1963	REGIONAL ENERGY S/D	-629	-3105	-3018	-774	-111	-264	-652	-2689	638	2471	3291	2575	4647	3069	845		
1964	REGIONAL ENERGY S/D	651	-2523	-1941	-2535	-2582	-3720	-2316	-1559	-315	7823	2650	3104	11649	7046	919		
1965	REGIONAL ENERGY S/D	4421	1539	-944	57	-1639	3507	5181	5697	6126	7201	9450	7955	8890	2935	4073		
1966	REGIONAL ENERGY S/D	3036	449	-1876	-841	-1632	-2546	137	1919	199	7884	3144	3564	4866	1685	708		
1967	REGIONAL ENERGY S/D	-1649	-3800	-2848	-2325	-2730	-1406	2567	2077	2881	3339	801	4822	10011	6212	1559		
1968	REGIONAL ENERGY S/D	3739	759	-2165	-1012	-1674	-2174	-1131	2590	4013	1580	2459	1923	5735	2688	1088		
1969	REGIONAL ENERGY S/D	2786	584	883	528	318	618	4258	2440	5080	10301	8664	10696	7072	3648	3789		
1970	REGIONAL ENERGY S/D	-1927	-3157	-3162	-1651	-3000	-3385	110	44	1029	2358	1918	3863	7575	1404	202		
1971	REGIONAL ENERGY S/D	-1925	-3504	-3290	-2887	-3100	-1864	2539	7137	6745	8611	7602	11024	11524	6595	3318		
1972	REGIONAL ENERGY S/D	3780	3370	-1217	-1193	-1874	-1793	4302	4711	13434	11055	4449	11327	12060	9494	5048		
1973	REGIONAL ENERGY S/D	4373	5134	-916	-1114	-2586	-760	-1640	-1642	-2372	-3790	1813	618	2496	-3453	-634		
1974	REGIONAL ENERGY S/D	-4974	-5039	-3272	-2984	-2999	-2067	7353	8342	9501	9673	9010	10058	13700	10253	4896		
1975	REGIONAL ENERGY S/D	3795	4305	-724	-2468	-2824	-1832	-874	1490	5439	2927	2334	5219	9485	8439	2369		
1976	REGIONAL ENERGY S/D	508	-398	-1885	-407	659	4436	4886	3503	6364	10304	7737	9775	5753	5635	3981		
1977	REGIONAL ENERGY S/D	4953	4410	5073	-1424	-3266	-3896	-4614	-5495	-5292	-292	540	1220	-1483	-4036	-1534		
1978	REGIONAL ENERGY S/D	-4976	-4685	-3649	-3145	-3463	-4183	-4208	-784	3789	7207	3266	4675	3423	3070	-339		

EXHIBIT 30

REGIONAL ENERGY ANALYSIS

FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS	REGIONAL ENERGY S/D	2000-1 OPERATING YEAR												1996 FINAL WHITEBOOK:				12/31/96			
		AUG		SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	APR	MAY	JUN	JUL	AUG	12 MO	12 MO	12 MO	12 MO	AVG
		1-15	16-31								1-15	16-30									
1929	REGIONAL ENERGY S/D	-1202	-2894	-2224	-2289	-3198	-4422	-5924	-4668	-4644	-172	1133	-295	2007	-2393	-2468					
1930	REGIONAL ENERGY S/D	-3551	-4055	-3446	-3279	-3296	-4087	-7174	-4196	-3895	-2381	2016	1698	-1461	-2449	-2964					
1931	REGIONAL ENERGY S/D	-3770	-3895	-3700	-3126	-3256	-4429	-7603	-5551	-4634	-1048	-80	1994	-1820	-2460	-3248					
1932	REGIONAL ENERGY S/D	-3464	-3560	-3195	-3495	-3219	-5581	-8166	-6324	953	8886	5068	5951	6700	2542	-864					
1933	REGIONAL ENERGY S/D	-1417	-1687	-2419	-2764	-1572	-2531	-1181	-1106	1554	2810	1047	2792	10851	8437	1233					
1934	REGIONAL ENERGY S/D	2639	3201	-37	394	1263	3901	8829	6019	7865	10532	7918	6751	116	-2156	3758					
1935	REGIONAL ENERGY S/D	-2959	-3657	-3503	-3676	-1973	-2660	-181	867	433	2765	488	2183	4421	3456	-193					
1936	REGIONAL ENERGY S/D	233	-4121	-2814	-3554	-3257	-4450	-6833	-5567	-2231	-319	7681	7511	4431	-608	-1303					
1937	REGIONAL ENERGY S/D	-2250	-3721	-2972	-3451	-3313	-4244	-7556	-5598	-3986	-3604	184	2147	1386	-2228	-2876					
1938	REGIONAL ENERGY S/D	-3376	-3950	-3530	-3247	-2837	-3104	-1878	-1593	-3959	3809	5731	7516	6531	3121	504					
1939	REGIONAL ENERGY S/D	-1941	-3592	-2822	-3221	-3352	-4325	-6392	-2975	1060	3908	3295	3818	1157	-1322	-1462					
1940	REGIONAL ENERGY S/D	-1862	-3114	-3410	-3039	-3230	-4057	-6174	-1808	4049	3307	2994	1873	-361	-2392	-1490					
1941	REGIONAL ENERGY S/D	-3775	-3843	-2978	-3053	-3203	-4444	-6576	-2615	-2213	-2924	231	772	1729	-2836	-2548					
1942	REGIONAL ENERGY S/D	-5564	-4581	-2983	-3183	-3370	-1460	-1780	-1223	-1480	-2501	670	1860	5295	3108	-934					
1943	REGIONAL ENERGY S/D	1717	-621	-2581	-2990	-2740	-2809	-1409	2157	4301	10257	8561	7314	8623	5262	2090					
1944	REGIONAL ENERGY S/D	3439	-1517	-2391	-2660	-3309	-3906	-5401	-4963	-4269	-178	751	505	-978	-2667	-2399					
1945	REGIONAL ENERGY S/D	-4422	-4481	-3016	-3187	-3653	-5789	-7423	-4546	-4014	-3316	-827	2760	3487	1246	-2555					
1946	REGIONAL ENERGY S/D	-2820	-3847	-3147	-2979	-2729	-2355	-1956	-143	4116	6208	6695	9421	6965	3646	1163					
1947	REGIONAL ENERGY S/D	-719	-3144	-1559	-2029	-1853	1255	3560	3484	4322	5611	4665	5974	6333	2113	2067					
1948	REGIONAL ENERGY S/D	-1768	-3246	-1787	-2836	-740	-2236	3417	824	3466	2870	4334	9781	14089	5836	3172					
1949	REGIONAL ENERGY S/D	2946	3479	53	-1407	-2402	-4023	-4767	-993	3460	5962	8270	7685	5991	317	1437					
1950	REGIONAL ENERGY S/D	-2654	-3968	-3824	-3173	-3103	-3035	-70	2635	6844	7874	5678	5620	12005	6884	2021					
1951	REGIONAL ENERGY S/D	2535	2920	-466	548	2076	3221	4791	6305	7026	9741	7206	9262	5727	4990	4555					
1952	REGIONAL ENERGY S/D	3367	1409	-289	1744	-1147	-1001	807	1560	2619	7907	8218	9580	7503	2971	2900					
1953	REGIONAL ENERGY S/D	-1476	-3116	-1815	-3191	-3216	-4215	-3586	3184	2299	822	1060	9884	9779	4525	533					
1954	REGIONAL ENERGY S/D	3719	119	-1828	-1805	-1674	-2417	1344	4514	3875	4931	3511	6818	10146	8378	2791					
1955	REGIONAL ENERGY S/D	4738	3788	4235	-494	-178	-3237	-1222	-4114	-3085	1306	1626	1952	9045	9104	1478					
1956	REGIONAL ENERGY S/D	2993	1842	-1255	422	743	2406	5197	3436	6724	9225	10168	11350	12485	4744	4864					
1957	REGIONAL ENERGY S/D	4027	1162	-1399	-809	-2242	-1407	-1457	-1522	3688	10643	2193	10422	9445	85	1985					
1958	REGIONAL ENERGY S/D	-2538	-3555	-2800	-2877	-3290	-3841	99	1257	3168	5035	3702	9166	7691	106	833					
1959	REGIONAL ENERGY S/D	-1862	-3305	-2748	-1789	-470	-689	4517	3672	4374	7004	4858	5948	9733	3703	2467					
1960	REGIONAL ENERGY S/D	3903	-678	3478	4494	2106	-470	158	-148	4100	12246	4518	4052	6355	3319	3120					
1961	REGIONAL ENERGY S/D	-108	-3871	-2424	-2493	-1375	-4321	375	4455	4180	7343	2263	5669	10449	2032	1613					
1962	REGIONAL ENERGY S/D	-2292	-2761	-2869	-2131	-3005	-3924	-2442	-2192	-1045	9346	7563	3940	5218	2044	-40					
1963	REGIONAL ENERGY S/D	-147	-2820	-2426	-806	-80	-648	282	2897	-187	1498	2824	2374	5913	3202	933					
1964	REGIONAL ENERGY S/D	-1135	-2586	-1363	-2709	-2202	-4108	-1655	-1625	-765	7830	2378	3020	12018	5763	802					
1965	REGIONAL ENERGY S/D	4242	1518	-128	27	1405	2397	6062	5596	5351	5833	8512	8437	9496	2784	4056					
1966	REGIONAL ENERGY S/D	2996	389	-1283	-869	-1398	-3419	1565	-1512	-307	6819	3109	3146	3848	2176	717					
1967	REGIONAL ENERGY S/D	-1693	-3775	-2295	-2659	-2800	-2265	2645	4121	3745	3463	518	3269	11338	3781	1511					
1968	REGIONAL ENERGY S/D	3677	699	-1592	-1038	-1439	-3068	664	2607	4019	572	2975	1605	5347	2503	1131					
1969	REGIONAL ENERGY S/D	1876	524	1432	499	549	1452	4574	3812	4503	10249	7711	10469	8118	2949	3803					
1970	REGIONAL ENERGY S/D	-1894	-3234	-2494	-1613	-2767	-4031	-556	420	1070	2610	260	3732	8477	1136	187					
1971	REGIONAL ENERGY S/D	-1906	-3644	-3253	-2996	-3178	-2143	3888	6013	6027	9905	6151	11230	11921	6764	3294					
1972	REGIONAL ENERGY S/D	3732	3310	-333	-1222	-1637	-2499	5949	14116	10821	3635	11080	12157	9051	5124	5124					
1973	REGIONAL ENERGY S/D	4391	5083	-333	-1144	-2348	-1478	-1214	-1521	-2145	-3788	2646	-289	-166	-2409	-740					
1974	REGIONAL ENERGY S/D	-4080	-4417	-3226	-3072	-2855	1247	8887	7373	9097	10329	9523	9485	13918	10219	4729					
1975	REGIONAL ENERGY S/D	3757	4537	-147	-2609	-3033	-2738	-519	1087	4476	3425	2815	5402	10097	8177	2288					
1976	REGIONAL ENERGY S/D	848	-69	-1537	-435	1125	4410	5113	4010	5459	10209	6865	9701	5754	6223	4063					
1977	REGIONAL ENERGY S/D	4895	4350	5103	-988	-3307	-3931	-5380	-5430	-4257	-269	717	-551	-1775	-3699	-1614					
1978	REGIONAL ENERGY S/D	-4452	-4709	-3666	-3324	-3179	-4225	-4689	-2554	3799	7209	3709	4743	4374	2912	-411					

EXHIBIT 31

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		2001-2 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96			
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	
1929 REGIONAL ENERGY S/D		-1384	-3077	-2418	-2531	-3607	-4601	-6168	-4950	-5576	-774	806	-573	1827	-2595	-2784	
1930 REGIONAL ENERGY S/D		-1373	-4237	-3639	-3521	-3704	-4285	-7417	-4477	-4827	-2983	1886	1421	1642	-2650	-3279	
1931 REGIONAL ENERGY S/D		-3950	-4076	-3893	-3368	-3664	-4607	-7847	-5833	-5565	-1650	-406	1716	-2000	-2661	-3564	
1932 REGIONAL ENERGY S/D		-3644	-3741	-3388	-3736	-3627	-5760	-8410	-6605	21	8281	4739	5673	6520	2341	-1179	
1933 REGIONAL ENERGY S/D		-1597	-1869	-2613	-3006	-1980	-2711	937	-1389	622	2207	718	2514	10671	8236	918	
1934 REGIONAL ENERGY S/D		2458	3016	2231	151	854	3721	8585	5735	6931	9927	7589	6474	-65	-2358	3441	
1935 REGIONAL ENERGY S/D		-3138	-3838	-3696	-3918	-2381	-2840	-424	585	-498	2163	159	1905	4241	3255	-508	
1936 REGIONAL ENERGY S/D		51	-4302	-3007	-3796	-3664	-4629	-7077	-5848	-3163	-920	7352	7233	4250	-809	-1618	
1937 REGIONAL ENERGY S/D		-2429	-3902	-3165	-3693	-3721	-4423	-7799	-5879	-4917	-4205	-143	1870	1205	-2429	-3191	
1938 REGIONAL ENERGY S/D		-3556	-4132	-3723	-3488	-3245	-3283	-2121	-1874	3028	3207	5402	7238	6351	2920	189	
1939 REGIONAL ENERGY S/D		-2123	-3774	-3015	-3463	-3760	-4504	-6635	-3256	129	3305	2945	3540	976	-1523	-1777	
1940 REGIONAL ENERGY S/D		-2041	-3295	-3603	-3281	-3637	-4236	-6417	-2090	3117	2705	2666	1596	-542	-2594	-1806	
1941 REGIONAL ENERGY S/D		-3954	-4024	-3171	-3295	-3610	-4622	-6820	-2897	-3144	-3526	-96	496	1550	-3037	-2862	
1942 REGIONAL ENERGY S/D		-5743	-4762	-3176	-3423	-3777	-1639	-2024	-1505	-2411	-3103	342	1582	5114	2906	-1249	
1943 REGIONAL ENERGY S/D		1534	-803	-2774	-3231	-3148	-2988	-1652	1876	3370	9652	8232	7036	8443	5060	1775	
1944 REGIONAL ENERGY S/D		3256	-1701	-2584	-2902	-3717	-4085	-5645	-5244	-5201	-779	624	228	-1157	-2868	-2715	
1945 REGIONAL ENERGY S/D		-4601	-4662	-3208	-3427	-4060	-5967	-7666	-4827	-4945	-3917	-1154	2483	3306	1044	-2869	
1946 REGIONAL ENERGY S/D		-3000	-4028	-3339	-3221	-3137	-2534	-2200	-425	3184	5604	6366	9143	6785	3444	848	
1947 REGIONAL ENERGY S/D		-900	-3325	-1752	-2272	-2261	1076	3316	3202	3389	5007	4335	5696	6153	1912	1751	
1948 REGIONAL ENERGY S/D		-1949	-3429	-1981	-2592	331	-2416	3173	541	2534	2267	4004	9504	13909	5634	2856	
1949 REGIONAL ENERGY S/D		2764	3294	-141	-1649	-2810	-4201	-5010	-1274	5528	5360	7941	7408	5811	115	1121	
1950 REGIONAL ENERGY S/D		-2834	-4150	-4017	-3415	-3511	-3215	-314	2354	5912	7269	5348	5342	11825	6682	1705	
1951 REGIONAL ENERGY S/D		2352	2735	-661	305	1667	3041	4549	6021	6092	9136	6877	8984	5547	4789	4240	
1952 REGIONAL ENERGY S/D		3185	1224	-484	1500	-1556	-1180	563	1277	1686	7304	7889	9303	7322	2770	2584	
1953 REGIONAL ENERGY S/D		-1457	-3298	-3008	-3433	-3623	-4393	-3830	2903	1367	221	732	4706	9599	4324	218	
1954 REGIONAL ENERGY S/D		3336	-66	-2021	-2046	-2082	-2596	1101	4232	2944	4328	3182	6540	9966	8176	2475	
1955 REGIONAL ENERGY S/D		4556	3604	4039	-737	-586	-3416	-1466	-4396	-4016	705	1299	1675	8865	8903	1162	
1956 REGIONAL ENERGY S/D		2812	1657	-1449	179	334	2227	4953	3153	5791	8620	9839	11072	12305	4543	4548	
1957 REGIONAL ENERGY S/D		3844	978	1592	-1051	-2650	-1586	-1701	-1804	2756	10041	1864	10145	9265	-116	1669	
1958 REGIONAL ENERGY S/D		-2718	-3736	-2993	-3119	-3698	-4020	-144	975	2236	4433	3373	8889	7511	-95	518	
1959 REGIONAL ENERGY S/D		-2042	-3486	-2941	-2031	-879	-869	4274	3388	3440	6399	4528	5670	9553	3502	2151	
1960 REGIONAL ENERGY S/D		3720	-863	3283	4251	1697	-650	784	431	3166	11641	4189	3774	6175	3118	2804	
1961 REGIONAL ENERGY S/D		-291	-4053	-2618	-2735	-1783	-4499	131	4173	3249	6739	1934	5391	10269	1830	1298	
1962 REGIONAL ENERGY S/D		-2472	-2943	-3062	-2373	-3413	-4103	-2686	-2474	-1976	8742	7234	3662	5038	1843	-355	
1963 REGIONAL ENERGY S/D		-328	-3002	-2619	-1049	-489	-828	38	2614	-1120	894	2495	2096	5732	3001	617	
1964 REGIONAL ENERGY S/D		-1315	-2768	-1556	-2950	-2609	-4287	-1898	-1907	-1697	7228	2050	2742	11838	5562	486	
1965 REGIONAL ENERGY S/D		4059	1333	-323	-216	-1813	2218	5819	5313	4417	5229	8183	8159	9316	2582	3740	
1966 REGIONAL ENERGY S/D		2813	204	-1478	-1112	-1806	-3598	1322	-1794	-1239	6216	2780	2868	3668	1974	401	
1967 REGIONAL ENERGY S/D		-1873	-3957	-2489	-2900	-3209	-2444	2402	3839	2812	2858	189	2992	11158	3580	1196	
1968 REGIONAL ENERGY S/D		3494	514	-1786	-1280	-1847	-3247	420	2325	3086	-31	2646	1327	5167	2301	815	
1969 REGIONAL ENERGY S/D		1693	339	1237	256	140	-1632	4330	3528	3569	9644	7582	10192	7937	2747	3486	
1970 REGIONAL ENERGY S/D		-2074	-3416	-2688	-1856	-3175	-4210	-799	138	138	2007	-69	3455	8297	935	-128	
1971 REGIONAL ENERGY S/D		-2087	-3826	-3446	-3238	-3586	-2322	3644	5730	5093	9301	5822	10952	11741	6563	2978	
1972 REGIONAL ENERGY S/D		3550	3125	-827	-1464	-2045	-2678	4139	5667	13182	10216	3305	10802	11977	8849	4808	
1973 REGIONAL ENERGY S/D		4209	4898	-527	-1386	-2756	-1657	-1457	-1802	-3077	-4390	2319	-565	-347	-2610	-1055	
1974 REGIONAL ENERGY S/D		-4259	-4598	-3419	-3313	-3263	1067	8644	7089	8163	9724	1914	9207	13738	10017	4413	
1975 REGIONAL ENERGY S/D		3575	4352	-342	-2851	-3440	-2917	762	806	3544	2825	2487	5124	9917	7975	1973	
1976 REGIONAL ENERGY S/D		665	-2156	-1732	-678	716	4230	4870	3727	4582	9605	6536	9423	5574	6022	3746	
1977 REGIONAL ENERGY S/D		4713	4164	4907	-1230	-3714	-4109	-5624	-5711	-5188	-870	390	-827	-1954	-3900	-1929	
1978 REGIONAL ENERGY S/D		-4632	-4891	-3859	-3565	-3587	-4404	-4933	-2835	2866	6605	3379	4465	4194	2711	-726	

EXHIBIT 32

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS	2002-3 OPERATING YEAR												1996 FINAL WHITEBOOK:			
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12/31/96 12 MO AVG	
1929 REGIONAL ENERGY S/D	-1515	-3208	-2387	-2640	-3585	-4827	-6280	-5784	-6055	-915	997	-794	1618	-2777	-2986	
1930 REGIONAL ENERGY S/D	-3862	-4368	-3608	-3629	-3682	-4492	-7529	-5312	-5305	-3125	1878	1199	-1850	-2833	-3482	
1931 REGIONAL ENERGY S/D	-4081	-4207	-3863	-3476	-3643	-4834	-7959	-6667	-6044	-1791	-215	1494	-2208	-2843	-3766	
1932 REGIONAL ENERGY S/D	-3775	-3872	-3357	-3845	-3605	-5987	-8522	-7440	-457	8140	4931	5452	6312	2158	-1382	
1933 REGIONAL ENERGY S/D	-1728	-2000	-2582	-3114	-1959	-2937	825	-2223	144	2066	910	2293	10463	8054	716	
1934 REGIONAL ENERGY S/D	2327	2885	-201	42	876	3495	8472	4901	6453	9786	7780	6252	-273	-2540	3239	
1935 REGIONAL ENERGY S/D	-3270	-3370	-3665	-4026	-2360	-3066	-537	-249	-977	2022	351	1684	4033	3072	-7820	
1936 REGIONAL ENERGY S/D	-81	-4434	-2977	-3904	-3643	-4856	-7189	-6682	-3642	-1061	7544	7012	4042	-992	-1821	
1937 REGIONAL ENERGY S/D	-2561	-4033	-3134	-3801	-3699	-4649	-7912	-6714	-5396	-4347	49	1648	997	-2611	-3393	
1938 REGIONAL ENERGY S/D	-3687	-4263	-3692	-3597	-3223	-3509	-2234	-2709	-2549	3066	5594	7017	6142	2737	-1979	
1939 REGIONAL ENERGY S/D	-2254	-3905	-2985	-3571	-3738	-4731	-6748	-6091	-350	3164	3157	3319	768	-1706	-1979	
1940 REGIONAL ENERGY S/D	-2173	-3426	-3573	-3389	-3616	-4463	-6529	-2924	-2639	2563	2858	1374	-750	-2776	-2008	
1941 REGIONAL ENERGY S/D	-4085	-4155	-3140	-3403	-3589	-4849	-6932	-3731	-3632	3667	95	274	1341	-3219	-3065	
1942 REGIONAL ENERGY S/D	-5874	-4893	-3145	-3531	-3756	-4849	-6932	-3731	-2890	-3244	534	1361	4906	2724	-1451	
1943 REGIONAL ENERGY S/D	1403	-935	-2744	-3340	-3127	-3214	-1765	1042	2891	9511	8424	6815	8234	4878	1573	
1944 REGIONAL ENERGY S/D	3125	-1833	-2554	-3010	-3696	-4312	-5757	-6078	-5679	-921	616	1366	-3050	-2917	-2917	
1945 REGIONAL ENERGY S/D	-4733	-4794	-3178	-3536	-4039	-6194	-7778	-5662	-5423	-4058	-962	2262	3098	862	-3072	
1946 REGIONAL ENERGY S/D	-1031	-3457	-1721	-2381	-3115	-2761	-2313	-1259	-2706	5463	6558	8922	6577	3262	646	
1947 REGIONAL ENERGY S/D	-2080	-3561	-1951	-2484	-353	-2642	-3061	-293	2056	2126	4196	9282	13701	5452	1549	
1948 REGIONAL ENERGY S/D	2633	3163	-110	-1757	-2788	-4428	-5122	-2109	5049	5218	8132	7186	5603	-67	919	
1949 REGIONAL ENERGY S/D	-2966	-4281	-3986	-3523	-3490	-3441	-426	1519	5433	7128	5540	5121	11617	6500	1503	
1950 REGIONAL ENERGY S/D	2221	2604	-630	1392	1688	2815	4437	5187	5613	8995	7069	8763	5338	4607	4038	
1951 REGIONAL ENERGY S/D	3054	1093	-454	1932	1535	1407	451	442	1208	7162	8080	9081	7311	4142	2381	
1952 REGIONAL ENERGY S/D	-1788	-3429	-2977	-3541	-3602	-4620	-3942	2068	889	79	924	4485	9391	4142	16	
1953 REGIONAL ENERGY S/D	3405	-197	-1991	-2155	-2040	-2823	-988	3398	2465	4187	3374	6319	9758	7994	2273	
1954 REGIONAL ENERGY S/D	4425	3473	4069	-846	-565	-3642	-1578	-3230	4494	563	1491	1453	8657	8721	960	
1955 REGIONAL ENERGY S/D	2681	1525	-1419	71	356	2000	4841	2318	5313	8479	10030	10851	12097	4361	4346	
1956 REGIONAL ENERGY S/D	3713	846	-1562	-1159	-2629	-1813	-1813	-2638	2278	9899	2056	9923	9057	-298	1467	
1957 REGIONAL ENERGY S/D	-2849	-3868	-2962	-3227	-3676	-4246	-257	141	1758	4291	3565	8667	7302	-278	316	
1958 REGIONAL ENERGY S/D	-2173	-3618	-2911	-2140	-857	-1096	4162	2554	2962	6258	4720	5448	9345	3319	1948	
1959 REGIONAL ENERGY S/D	3589	-394	3313	4142	1719	-877	-197	-1265	2688	11500	4381	3553	5966	2936	2601	
1960 REGIONAL ENERGY S/D	-422	-4184	-2587	-2843	-1761	-4726	19	3339	2771	6597	2126	5170	10061	1648	1096	
1961 REGIONAL ENERGY S/D	-2603	-3074	-3031	-2482	-3392	-4330	-2798	-3308	-2454	8600	7425	3441	4829	1661	-557	
1962 REGIONAL ENERGY S/D	-459	-3134	-2588	-1157	-467	-1054	-75	1780	-1598	753	2686	1875	5524	2818	415	
1963 REGIONAL ENERGY S/D	-1447	-2899	-1525	-3059	-2588	-4513	-2010	-2741	-2175	7087	2242	2521	11630	5379	284	
1964 REGIONAL ENERGY S/D	3927	1202	-292	-324	1792	1991	5706	4478	3939	5087	8374	7937	9108	2400	3537	
1965 REGIONAL ENERGY S/D	2681	73	-1448	-1220	-1785	-3824	1209	-2628	-1718	6075	2971	2646	3459	1792	199	
1966 REGIONAL ENERGY S/D	-2005	-4088	-2458	-3009	-3187	-2671	2289	3005	2334	2717	381	2770	10949	3397	994	
1967 REGIONAL ENERGY S/D	3362	383	-3755	-1388	-1826	-3474	308	1490	2608	-172	2838	1106	4958	2119	613	
1968 REGIONAL ENERGY S/D	1562	208	1267	148	161	-1858	4218	2694	3091	9503	7574	9970	7729	2565	3284	
1969 REGIONAL ENERGY S/D	-2205	-3547	-2657	-1964	-3154	-4437	-611	-696	-340	1866	1123	3233	8089	753	330	
1970 REGIONAL ENERGY S/D	-2218	-3957	-3416	-3346	-3564	-2549	3532	4895	4615	9159	6014	10731	11533	6380	2776	
1971 REGIONAL ENERGY S/D	3419	2994	-797	-1572	-2023	-2905	4026	4832	12704	10075	3497	10580	11769	8667	4606	
1972 REGIONAL ENERGY S/D	4077	4767	-497	-1495	-2735	-1884	-1570	-2637	-3555	-4531	2511	-787	-555	-2792	-1258	
1973 REGIONAL ENERGY S/D	-4391	-4767	-497	-1495	-2735	-1884	-1570	-2637	-3555	-4531	2511	-787	-555	-2792	-1258	
1974 REGIONAL ENERGY S/D	-4391	-4767	-497	-1495	-2735	-1884	-1570	-2637	-3555	-4531	2511	-787	-555	-2792	-1258	
1975 REGIONAL ENERGY S/D	-4391	-4767	-497	-1495	-2735	-1884	-1570	-2637	-3555	-4531	2511	-787	-555	-2792	-1258	
1976 REGIONAL ENERGY S/D	-4391	-4767	-497	-1495	-2735	-1884	-1570	-2637	-3555	-4531	2511	-787	-555	-2792	-1258	
1977 REGIONAL ENERGY S/D	-4391	-4767	-497	-1495	-2735	-1884	-1570	-2637	-3555	-4531	2511	-787	-555	-2792	-1258	
1978 REGIONAL ENERGY S/D	-4391	-4767	-497	-1495	-2735	-1884	-1570	-2637	-3555	-4531	2511	-787	-555	-2792	-1258	

EXHIBIT 33

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		2003- 4 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96											
		AUG 16-31												RUN DATE: JUL 12 MO											
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG									
1929 REGIONAL ENERGY S/D	-1745	-3436	-2774	-2884	-3764	-5007	-6691	-5620	-5996	-1135	729	-847	1510	-2954	-3152										
1930 REGIONAL ENERGY S/D	-4092	-4596	-3996	-3874	-3861	-4672	-7940	-5147	-5246	-3345	1610	1146	-1958	-3008	-3647										
1931 REGIONAL ENERGY S/D	-4311	-4436	-4250	-3721	-3822	-5014	-8370	-6503	-5985	-2011	-483	1441	-2316	-3016	-3931										
1932 REGIONAL ENERGY S/D	-4004	-4101	-3745	-4089	-3785	-6167	-8933	-7276	-398	7920	4662	5399	6204	1979	-1548										
1933 REGIONAL ENERGY S/D	-1958	-2229	-2969	-3358	-2138	-3118	-415	-2057	-203	1846	641	2240	10355	7874	550										
1934 REGIONAL ENERGY S/D	2097	2656	-588	-202	697	3247	8064	5070	6511	9566	7512	6199	-381	-2716	3074										
1935 REGIONAL ENERGY S/D	-3499	-4198	-4053	-4270	-2539	-3247	-947	-84	-918	1802	83	1630	3925	2893	-876										
1936 REGIONAL ENERGY S/D	-310	-4662	-3364	-4148	-3822	-5036	-7600	-6518	-3583	-1282	7275	6959	3934	-1170	-1986										
1937 REGIONAL ENERGY S/D	-2790	-4262	-3521	-4045	-3879	-4830	-8323	-6549	-5337	-4567	219	1595	889	-2788	-3559										
1938 REGIONAL ENERGY S/D	-3916	-4491	-4080	-3841	-3403	-3689	-2645	-2545	-2608	2846	5325	6964	6034	2558	-180										
1939 REGIONAL ENERGY S/D	-2483	-4133	-3372	-3816	-3918	-4911	-7159	-3927	-291	2944	2899	3266	660	-1883	-2145										
1940 REGIONAL ENERGY S/D	-2402	-3655	-3960	-3633	-3795	-4643	-6940	-2760	-2697	2343	2590	1321	-888	-2949	-2173										
1941 REGIONAL ENERGY S/D	-4315	-4383	-3528	-3647	-3768	-5029	-7343	-3567	-3564	-3887	-173	221	1233	-3391	-3230										
1942 REGIONAL ENERGY S/D	-6104	-5121	-3532	-3775	-3935	-2046	-2546	-2174	-2831	-3465	266	1308	4798	2544	-1617										
1943 REGIONAL ENERGY S/D	1174	-1163	-3131	-3131	-3306	-3395	-2175	1206	2950	9291	8155	6762	8126	4699	1407										
1944 REGIONAL ENERGY S/D	2895	-2061	-2941	-3254	-3875	-4492	-6168	-5914	-5365	-4279	1230	2209	2990	682	-3282										
1945 REGIONAL ENERGY S/D	-4962	-5022	-3565	-3780	-4218	-6374	-8189	-5498	-5265	-5243	6289	8868	6469	3082	480										
1946 REGIONAL ENERGY S/D	-3361	-4388	-3696	-3573	-3295	-2941	-2723	-1094	-2765	5243	4259	5422	5836	1549	1383										
1947 REGIONAL ENERGY S/D	-1260	-3685	-2109	-2625	-2419	-669	-2794	-2533	-2969	4645	3928	9229	13593	5273	2488										
1948 REGIONAL ENERGY S/D	-2309	-3789	-2338	-2240	173	-2823	-2651	-126	2115	1906	3928	7133	5495	-247	753										
1949 REGIONAL ENERGY S/D	2403	-2935	-498	-2002	-2968	-4608	-5533	-1944	5108	4998	7864	5067	11509	6321	1337										
1950 REGIONAL ENERGY S/D	-3195	-4509	-4374	-3767	-3669	-3622	-836	1684	5492	6908	5272	7133	51509	6321	1337										
1951 REGIONAL ENERGY S/D	1992	2376	1017	-48	1509	2634	4024	5354	5672	8775	6800	8710	5230	4427	3872										
1952 REGIONAL ENERGY S/D	2824	864	-841	1148	-1714	-1587	41	610	1267	6942	7812	9028	7006	2408	2216										
1953 REGIONAL ENERGY S/D	-2017	-3658	-3365	-3785	-3781	-4800	-4352	2233	948	-141	655	4432	9283	3962	-150										
1954 REGIONAL ENERGY S/D	3175	-426	-2378	-2399	-2239	-3003	578	3563	2524	3967	3105	6266	9650	7815	2107										
1955 REGIONAL ENERGY S/D	4196	3245	3682	1090	-744	-3823	-1988	5066	-4436	343	1222	1400	8549	8541	794										
1956 REGIONAL ENERGY S/D	2451	1297	-1806	-174	176	1820	4430	2485	5372	8259	9762	10798	11989	4181	4180										
1957 REGIONAL ENERGY S/D	3483	618	-1949	-1404	-2808	-1993	-2224	-2473	2337	9679	1788	9870	8949	-478	1301										
1958 REGIONAL ENERGY S/D	-3078	-4096	-3349	-3472	-3856	-4427	-667	306	1817	4071	3297	8614	7194	-456	150										
1959 REGIONAL ENERGY S/D	-2402	-3846	-3298	-2384	-1037	-1276	-3750	2722	3020	6038	4452	5395	9237	3140	1783										
1960 REGIONAL ENERGY S/D	3359	-1222	2926	3898	1539	1057	-609	1098	2746	11280	4112	3500	5858	2756	2435										
1961 REGIONAL ENERGY S/D	-852	-4412	-2974	-3088	-1941	-4906	-392	3504	2829	6377	1857	5117	9953	1468	930										
1962 REGIONAL ENERGY S/D	-2832	-3302	-3419	-2726	-3571	-4510	-3209	3143	-2396	8380	7157	3388	4721	1481	-723										
1963 REGIONAL ENERGY S/D	-688	-3362	-2976	-1402	-646	-1235	-485	1946	-1539	533	2418	1821	5416	2638	249										
1964 REGIONAL ENERGY S/D	-1676	-3127	-1913	-3303	-2767	-4694	-2421	-2576	-2116	6867	1974	2468	11522	5200	118										
1965 REGIONAL ENERGY S/D	3698	973	-679	-569	-1971	1811	5296	4645	3998	4867	8106	7884	9000	2220	3372										
1966 REGIONAL ENERGY S/D	2452	-155	-1835	-1465	-1964	-4005	799	-2463	-1659	5854	2703	2593	3351	1612	33										
1967 REGIONAL ENERGY S/D	-2334	-4316	-2845	-3253	-3366	-2851	1879	3170	2393	2497	112	2717	10841	3217	828										
1968 REGIONAL ENERGY S/D	3133	155	-2142	-1632	-2005	-3654	-103	1655	2667	-392	2570	1052	4850	1940	447										
1969 REGIONAL ENERGY S/D	1332	-20	880	-97	-18	-2039	3807	2862	3150	9283	7305	9917	7621	2385	3118										
1970 REGIONAL ENERGY S/D	-2435	-3775	-3044	-2208	-3333	-4617	-1322	-531	-282	1646	-145	3180	7981	573	-496										
1971 REGIONAL ENERGY S/D	-2447	-4185	-3803	-3590	-3744	-2729	3121	5063	4673	8939	5745	10678	11425	6200	2610										
1972 REGIONAL ENERGY S/D	3190	2766	-1184	-1817	-2202	-3085	3616	4998	12763	9855	3229	10527	11661	8487	4440										
1973 REGIONAL ENERGY S/D	3848	4538	-884	-1739	-2914	-2064	-1980	-2472	-3497	-4751	2243	-840	-663	-2969	-1423										
1974 REGIONAL ENERGY S/D	-4620	-4958	-3776	-3666	-3421	660	8120	6423	7743	9362	9117	8932	13422	9655	4045										
1975 REGIONAL ENERGY S/D	3214	3992	-699	-3204	-3598	-3324	-1285	136	3125	2461	2411	4849	9601	7614	1605										
1976 REGIONAL ENERGY S/D	305	-614	-2089	-1031	558	3823	4346	3059	4106	9243	6459	9149	5258	5659	3378										
1977 REGIONAL ENERGY S/D	4352	3806	4550	-1583	-3872	-4516	-6147	-6381	-5608	-1232	314	-1102	-2270	-4253	-2297										
1978 REGIONAL ENERGY S/D	-4992	-5250	-4215	-3918	-3745	-4811	-5456	-3505	2446	6243	3303	4191	3877	2349	-1095										

EXHIBIT 34

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		2004-5 OPERATING YEAR												1996 FINAL WHITEBOOK: 12/31/96						
														RUN DATE: 12/31/96						
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG				
1929 REGIONAL ENERGY S/D	-1942	-3631	-2937	-3214	-4262	-5222	-6823	-5738	-6555	-984	904	-651	1533	-2964	-3305					
1930 REGIONAL ENERGY S/D	-4284	-4787	-4419	-4204	-4359	-4887	-8072	-5266	-5805	-3194	1785	1342	-1936	-3018	-3800					
1931 REGIONAL ENERGY S/D	-4502	-4627	-4413	-4051	-4320	-5229	-8502	-5622	-6544	-308	1860	1637	-2294	-3026	-4084					
1932 REGIONAL ENERGY S/D	-4195	-4291	-3908	-4419	-4283	-6362	-9065	-7395	-957	8071	4838	5595	6226	1969	-1701					
1933 REGIONAL ENERGY S/D	-2150	-2421	-3132	-3688	-2636	-3331	-283	-2176	-356	1997	817	2436	10377	7864	397					
1934 REGIONAL ENERGY S/D	1902	2458	-751	-532	199	3101	7932	4951	5953	9717	7687	6395	-359	-2726	2920					
1935 REGIONAL ENERGY S/D	-3690	-4589	-4216	-4601	-3037	-3460	-1079	-202	-1477	1953	258	1827	3947	2883	-1029					
1936 REGIONAL ENERGY S/D	-509	-4853	-3527	-4479	-4320	-5251	-7732	-6637	-4142	-1130	7451	1755	3956	-1180	-2140					
1937 REGIONAL ENERGY S/D	-2981	-4453	-3684	-4375	-4377	-5044	-8455	-6668	-5896	-4416	-44	1791	911	-2798	-3712					
1938 REGIONAL ENERGY S/D	-4109	-4682	-4243	-4171	-3901	-3904	-2777	-2663	-2049	2997	5501	7160	6057	2548	-333					
1939 REGIONAL ENERGY S/D	-2680	-4324	-3535	-4146	-4416	-5126	-7290	-4045	-850	3095	3064	3402	682	-1893	-2298					
1940 REGIONAL ENERGY S/D	-2593	-3845	-4123	-3967	-4293	-4858	-7072	-2879	-2139	2494	2765	1517	-836	-2959	-2326					
1941 REGIONAL ENERGY S/D	-4506	-4574	-3691	-3977	-4266	-5244	-7475	-3686	-4123	-3736	2	417	1256	-3400	-3383					
1942 REGIONAL ENERGY S/D	-6294	-5312	-3695	-4105	-4433	-2259	-2678	-2293	-3390	-3313	4431	1504	4820	2534	-1769					
1943 REGIONAL ENERGY S/D	974	-1356	-3294	-3914	-3804	-3608	-2307	1087	2391	9442	8331	6958	8149	4689	1254					
1944 REGIONAL ENERGY S/D	2695	-2259	-3104	-3585	-4373	-4707	-6300	-6033	-6179	-990	523	150	-1451	-3232	-3236					
1945 REGIONAL ENERGY S/D	-5153	-5213	-3728	-4110	-4716	-6589	-8321	-5616	-5924	-4127	-1055	2405	3012	672	-3391					
1946 REGIONAL ENERGY S/D	-3553	-4579	-3859	-3903	-3793	-3155	-2854	-1213	-2206	5394	6465	9065	6491	3072	327					
1947 REGIONAL ENERGY S/D	-1454	-3876	-2272	-2955	-2917	-455	-2662	-2414	-2411	4796	4434	5618	5859	1540	1230					
1948 REGIONAL ENERGY S/D	-2503	-3984	-2501	1909	-325	-3036	-2519	-245	1556	2057	4103	9426	13615	5263	2335					
1949 REGIONAL ENERGY S/D	2206	2736	661	-2332	-3466	-4823	-5665	-2063	4549	5149	8039	7329	5517	-256	599					
1950 REGIONAL ENERGY S/D	-3387	-4701	-4537	-4097	-4167	-3835	-968	1565	4933	7059	5447	5264	11531	6311	1184					
1951 REGIONAL ENERGY S/D	1792	2176	-1180	-378	1011	2422	3892	5236	5113	8926	6976	8906	5252	4417	3719					
1952 REGIONAL ENERGY S/D	2628	666	-1004	818	-2212	-1801	-91	491	708	7093	7987	9224	7028	2398	2062					
1953 REGIONAL ENERGY S/D	-2211	-3849	-3528	-4115	-4279	-5015	-4684	2114	389	10	831	4628	9305	3952	-304					
1954 REGIONAL ENERGY S/D	2976	-624	-2541	-2729	-2737	-3218	-446	3444	1965	4118	3281	6462	9672	7805	1954					
1955 REGIONAL ENERGY S/D	3999	3048	3519	-1420	-1242	-4037	-2120	-5184	-4995	494	1398	1596	8571	8531	641					
1956 REGIONAL ENERGY S/D	2256	1099	-1969	-504	-322	1607	4299	2367	4813	8410	9937	10994	12011	4171	4026					
1957 REGIONAL ENERGY S/D	3283	421	-2112	-1734	-3306	-2207	-2356	-2592	1778	9830	1963	10066	8971	-488	1147					
1958 REGIONAL ENERGY S/D	-3270	-4287	-3512	-3802	-4354	-4641	-799	187	1258	4222	3472	8810	7217	-466	-3					
1959 REGIONAL ENERGY S/D	-2594	-4037	-3461	-2714	-1535	-1489	3618	2603	2462	6189	4627	5592	9259	3130	1630					
1960 REGIONAL ENERGY S/D	3159	-1421	2763	3568	1041	-1270	-741	1217	2187	11431	4288	3696	5881	2746	2282					
1961 REGIONAL ENERGY S/D	-851	-4604	-3137	-3418	-2439	-5121	-524	3385	2271	6528	2033	5313	9975	1458	776					
1962 REGIONAL ENERGY S/D	-3024	-3495	-3582	-3056	-4069	-4725	-3341	-3261	-2955	8531	7332	3584	4744	1471	-876					
1963 REGIONAL ENERGY S/D	-882	-3554	-3139	-1732	-1144	-1448	-616	1827	-2098	684	2593	2018	5438	2629	96					
1964 REGIONAL ENERGY S/D	-1869	-3319	-2076	-3633	-3265	-4908	-2553	-2695	-2675	7018	2149	2664	11544	5190	-35					
1965 REGIONAL ENERGY S/D	3498	775	-842	-899	-2469	1597	5164	4526	3439	5018	8281	8081	9022	2210	3218					
1966 REGIONAL ENERGY S/D	2252	-354	-1998	-1795	-2462	-4219	667	2582	-2218	6006	2878	2789	3374	1602	-121					
1967 REGIONAL ENERGY S/D	-2427	-4508	-3008	-3583	-3864	-3065	1747	3051	1834	2648	288	2913	10864	3208	675					
1968 REGIONAL ENERGY S/D	2933	-43	-2305	-1962	-2503	-3868	-234	1537	2108	-241	2745	1249	4872	1930	293					
1969 REGIONAL ENERGY S/D	1132	-219	717	-427	-516	-2252	3675	2743	2591	9434	7481	10113	7643	2375	2965					
1970 REGIONAL ENERGY S/D	-2628	-3967	-3207	-2538	-3831	-4831	-1454	-650	-840	1797	30	3376	8003	563	649					
1971 REGIONAL ENERGY S/D	-2642	-4377	-3966	-3921	-4242	-2943	2990	4944	4115	9090	5921	10874	11447	6191	2457					
1972 REGIONAL ENERGY S/D	2992	2567	-1347	-2147	-2700	-3299	3484	4879	12204	10006	3404	10724	11683	8477	4287					
1973 REGIONAL ENERGY S/D	3650	4339	-1047	-2069	-3412	-2278	-2112	-2591	-4055	-4600	2418	-644	-2978	-1577	-2978					
1974 REGIONAL ENERGY S/D	-4811	-5149	-3939	-3996	-3919	447	7988	6304	7184	9514	9293	9129	13444	9646	3893					
1975 REGIONAL ENERGY S/D	3017	3793	-862	-3534	-4096	-3538	-1417	17	2566	2613	2586	5046	9623	7604	1451					
1976 REGIONAL ENERGY S/D	104	-813	-2252	-1361	60	3610	4215	2940	3547	9394	6635	9345	5280	5650	3224					
1977 REGIONAL ENERGY S/D	4153	3610	4387	-1913	-4370	-4731	-6278	-6500	-6167	-1080	489	-906	-2248	-4263	-2450					
1978 REGIONAL ENERGY S/D	-5183	-5441	-4378	-4248	-4243	-5024	-5587	-3624	1888	6395	3478	4387	3900	2339	-1247					

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REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS		2005-6 OPERATING YEAR												1996 FINAL WHITEBOOK:			
		AUG	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	APR	APR	12 MO	12 MO	12 MO	12 MO
		1-15	16-31								1-15	16-30	MAY	JUN	JUL	AVG	AVG
1929	REGIONAL ENERGY S/D	-1949	-3639	-2706	-3107	-4130	-5356	-6956	-5896	-6160	-1454	589	-1293	1319	-3875	-3449	-3449
1930	REGIONAL ENERGY S/D	-4292	-4795	-3928	-4096	-4227	-5020	-8206	-5423	-5411	-3663	1469	701	-2149	-3929	-3944	-3944
1931	REGIONAL ENERGY S/D	-4510	-4635	-4182	-3944	-4188	-5363	-8635	-6779	-6779	-2330	1469	996	-2508	-3937	-4228	-4228
1932	REGIONAL ENERGY S/D	-4203	-4299	-3676	-4312	-4151	-6515	-9198	-7552	-563	7601	4522	4953	6012	1058	-1844	-1844
1933	REGIONAL ENERGY S/D	-2158	-2429	-2901	-3581	-2504	-3465	150	-2333	38	1527	501	1795	10164	6954	253	253
1934	REGIONAL ENERGY S/D	1894	2450	-520	-425	331	2968	7798	4793	6347	9247	7372	5754	572	3636	2777	2777
1935	REGIONAL ENERGY S/D	-3698	-4397	-3984	-4493	-2905	-3594	-1212	-360	-1082	1483	-58	1185	3733	1972	-1173	-1173
1936	REGIONAL ENERGY S/D	-517	-4861	-3296	-4371	-4188	-5384	-7865	-6794	-3747	-1600	7135	6514	3743	-2090	-2283	-2283
1937	REGIONAL ENERGY S/D	-2989	-4461	-3453	-4268	-4245	-5178	-8588	-6826	-5501	-4885	-360	1150	698	-3708	-3855	-3855
1938	REGIONAL ENERGY S/D	-4117	-4690	-4012	-4064	-3768	-6038	-2910	-2821	-2444	2527	5185	6519	5843	1637	-476	-476
1939	REGIONAL ENERGY S/D	-2687	-4332	-3304	-4038	-4284	-5259	-7424	-4203	-455	2625	2748	2821	469	-2803	-2442	-2442
1940	REGIONAL ENERGY S/D	-2601	-3853	-3892	-3856	-4161	-4991	-7206	-3036	-2533	2025	2449	876	-1049	-3869	-2470	-2470
1941	REGIONAL ENERGY S/D	-4514	-4582	-3460	-3870	-4134	-5378	-7608	-3843	-3728	-4206	-313	-224	1042	-4311	-3527	-3527
1942	REGIONAL ENERGY S/D	-6302	-5320	-3464	-3998	-4301	-2393	-2811	-2451	-2955	-3783	125	862	4607	1624	-1913	-1913
1943	REGIONAL ENERGY S/D	966	-1364	-3043	-3807	-3672	-3742	-2440	930	2786	8972	8015	6317	7935	3779	1110	1110
1944	REGIONAL ENERGY S/D	2687	-2267	-2873	-3477	-4241	-4840	-6433	-6191	-5784	-1459	207	-491	-1665	-4142	-3379	-3379
1945	REGIONAL ENERGY S/D	-5161	-5221	-3497	-4003	-4584	-6723	-8455	-5770	-5529	-4597	1371	1763	2799	-238	-3535	-3535
1946	REGIONAL ENERGY S/D	-3560	-4587	-3628	-3796	-3661	-3289	-2988	-1370	-2600	4924	6149	8423	6278	2162	183	183
1947	REGIONAL ENERGY S/D	-1462	-3884	-2041	-2848	-2785	322	2528	-2257	2805	4327	4118	4976	5645	629	1087	1087
1948	REGIONAL ENERGY S/D	-2511	-3991	-2270	-2017	-192	-3170	-2386	-402	1950	1587	3787	8784	13401	4352	2191	2191
1949	REGIONAL ENERGY S/D	2198	2728	-430	-2225	-3334	-4957	-5799	-2220	4944	4680	7724	6688	5304	-1167	456	456
1950	REGIONAL ENERGY S/D	-3395	-4709	-4306	-3990	-4035	-3969	-1101	1408	5328	6589	5131	4622	11318	5400	1040	1040
1951	REGIONAL ENERGY S/D	11785	2169	-949	-271	1143	2288	3759	5078	5508	8456	8264	8264	5039	3507	3575	3575
1952	REGIONAL ENERGY S/D	2620	658	-773	925	-2080	-1935	-224	333	1102	6624	7672	8583	6815	1488	1918	1918
1953	REGIONAL ENERGY S/D	-2219	-3857	-3297	-4008	-6147	-5149	-4618	1957	784	-459	515	3987	9092	3042	-447	-447
1954	REGIONAL ENERGY S/D	2968	-632	-2310	-2622	-2605	-3351	312	3287	2360	3648	2965	5821	9459	6894	1810	1810
1955	REGIONAL ENERGY S/D	3991	3040	3750	-1313	-1110	-4170	-2253	-5342	-4600	25	1082	955	8357	7621	497	497
1956	REGIONAL ENERGY S/D	2248	1091	-1738	-396	-190	1473	4165	2209	5207	7940	9622	10352	11798	3261	3883	3883
1957	REGIONAL ENERGY S/D	3275	413	-1881	-1626	-3174	-2341	-2489	-2749	2172	9361	1647	9425	8758	-1398	1004	1004
1958	REGIONAL ENERGY S/D	-3278	-4295	-3281	-3694	-4322	-4775	-933	30	1452	3753	3156	8169	7003	-1376	-147	-147
1959	REGIONAL ENERGY S/D	-2602	-4045	-3230	-2507	-1403	-1623	3484	2446	2856	5719	4311	4950	9045	2219	1486	1486
1960	REGIONAL ENERGY S/D	3151	-1429	2994	3675	1173	1404	-874	-1374	2582	10961	3972	3054	5667	1836	2138	2138
1961	REGIONAL ENERGY S/D	-859	-4612	-2906	-3311	-2307	-5255	-657	3227	2605	6059	1717	4671	9762	548	633	633
1962	REGIONAL ENERGY S/D	-3032	-3503	-3350	-2949	-3937	-4858	-3474	-3419	-2560	8062	7017	2942	4530	561	-1020	-1020
1963	REGIONAL ENERGY S/D	-1877	-3327	-1845	-3526	-3133	-5042	-2686	-2853	-2281	6548	1834	2022	11331	4279	-179	-179
1964	REGIONAL ENERGY S/D	3490	767	-611	-792	-2337	1464	5031	4369	3833	4549	7966	7439	8809	1300	3074	3074
1965	REGIONAL ENERGY S/D	2244	-361	-1767	-1688	-2330	-4352	533	-2740	-1823	5536	2563	2148	3160	692	-265	-265
1966	REGIONAL ENERGY S/D	-2435	-4516	-2777	-3476	-3732	-3199	1614	2894	2228	2178	-28	2272	10650	2297	531	531
1967	REGIONAL ENERGY S/D	2925	-51	-2074	-1355	-2371	-4002	-368	1379	2502	-711	2429	607	4659	1020	149	149
1968	REGIONAL ENERGY S/D	1124	-227	948	-320	-584	-2386	3542	2585	2955	8964	7165	9472	7430	1465	2821	2821
1969	REGIONAL ENERGY S/D	-2636	-3975	-2976	-2431	-3699	-4965	-1587	-807	-446	1327	-286	2735	7789	-347	-793	-793
1970	REGIONAL ENERGY S/D	-2649	-4385	-3735	-3813	-4110	-3077	-2856	-4786	-450	8621	5605	10233	11233	5280	2313	2313
1971	REGIONAL ENERGY S/D	2985	2559	-1116	-2039	-2568	-3433	3350	4722	12598	9536	3088	10282	11470	7567	4143	4143
1972	REGIONAL ENERGY S/D	3642	4331	-816	-1942	-3280	-2412	-2246	-2749	-3661	-5070	2103	-1285	-854	-3889	-1721	-1721
1973	REGIONAL ENERGY S/D	-4816	-5157	-3708	-3889	-3787	-313	7855	6147	7579	9044	8977	8487	13231	8755	3749	3749
1974	REGIONAL ENERGY S/D	3009	3785	-630	-3426	-3964	-3672	-1550	-140	2961	2143	2270	4404	9410	6693	1507	1507
1975	REGIONAL ENERGY S/D	97	-821	-2020	-1254	192	3476	4081	2783	3942	8925	6319	8704	5066	4739	3081	3081
1976	REGIONAL ENERGY S/D	4146	3602	4619	-1806	-4238	-4865	-6412	-6657	-5772	-1550	173	-1547	-2461	-5174	-2594	-2594
1977	REGIONAL ENERGY S/D	-5191	-5449	-4147	-4141	-4111	-5158	-5721	-3781	2282	5925	3162	3746	3686	1428	-1391	-1391

EXHIBIT 36

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT FOR THE 50 HISTORICAL WATER YEARS ON RECORD

ENERGY IN AVERAGE MEGAWATTS	1929	REGIONAL	ENERGY S/D	2006-7 OPERATING YEAR							1996 FINAL WHITEBOOK: 12/31/96			
				AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	APR	12/31/96
				1-15	16-31							1-15	16-30	12/31/96
1929 REGIONAL ENERGY S/D	-2125	-3813	-3038	-4216	-4176	-5398	-7156	-6127	-6713	-6713	-6713	-1321	633	-3245
1930 REGIONAL ENERGY S/D	-4467	-4970	-4260	-4205	-4273	-5063	-8406	-5655	-5964	-5964	-5964	-3530	1514	-3299
1931 REGIONAL ENERGY S/D	-4685	-4810	-4514	-4052	-4233	-5405	-8835	-7010	-6703	-6703	-6703	-2937	1591	-4000
1932 REGIONAL ENERGY S/D	-4379	-4474	-4009	-4420	-4196	-6558	-9398	-7783	-1116	-1116	-1116	7735	4566	-4284
1933 REGIONAL ENERGY S/D	-2334	-2604	-3234	-3690	-2550	-3507	-50	-2565	-515	-515	-515	1660	545	-1901
1934 REGIONAL ENERGY S/D	1719	2275	-852	-533	285	2925	7598	4562	5794	5794	5794	9381	7416	197
1935 REGIONAL ENERGY S/D	-3874	-4573	-4317	-4602	-2951	-3637	-1412	-591	-1636	-1636	-1636	1616	-14	2720
1936 REGIONAL ENERGY S/D	-692	-5037	-3628	-4480	-4233	-5427	-8065	-7026	-4300	-4300	-4300	1467	7179	-1230
1937 REGIONAL ENERGY S/D	-3164	-4836	-3786	-4376	-4290	-5221	-8788	-7057	-6055	-6055	-6055	-4752	-316	-2340
1938 REGIONAL ENERGY S/D	-4292	-4865	-4344	-4172	-3814	-4080	-3110	-3052	1891	1891	1891	2660	5229	-3912
1939 REGIONAL ENERGY S/D	-2863	-4508	-3636	-4147	-4329	-5302	-7624	-4434	1008	1008	1008	2758	2792	-533
1940 REGIONAL ENERGY S/D	-2777	-4029	-4224	-3965	-4206	-5034	-7406	-3267	1980	1980	1980	2158	2493	-2498
1941 REGIONAL ENERGY S/D	-4689	-4757	-3792	-3978	-4179	-5420	-7808	-4074	-4281	-4281	-4281	4073	-269	-3239
1942 REGIONAL ENERGY S/D	-6478	-5495	-3796	-4106	-4346	-2436	-3011	-2682	3549	3549	3549	3650	169	-3583
1943 REGIONAL ENERGY S/D	791	-1538	-3395	-3915	-3718	-3785	-2640	699	2233	2233	2233	9106	8059	-1970
1944 REGIONAL ENERGY S/D	2512	-2441	-3205	-3586	-4286	-4883	-6633	-6422	-6338	-6338	-6338	-1326	251	1054
1945 REGIONAL ENERGY S/D	-5336	-5396	-3829	-4111	-4629	-6765	-8655	-6005	-6082	-6082	-6082	-4464	-1327	-3436
1946 REGIONAL ENERGY S/D	-3736	-4762	-3960	-3905	-3706	-3331	-3188	-1601	2047	2047	2047	4054	1327	-3591
1947 REGIONAL ENERGY S/D	-1637	-4060	-2373	-2956	-2831	-279	-2328	2026	2252	2252	2252	4460	6193	127
1948 REGIONAL ENERGY S/D	-2686	-4166	-2602	-1908	-238	-3212	-2186	-633	1397	1397	1397	1720	4162	1030
1949 REGIONAL ENERGY S/D	2033	2553	-762	-2333	-3379	-4939	-5999	-2451	4391	4391	4391	4813	5755	2135
1950 REGIONAL ENERGY S/D	-3570	-4884	-4638	-4099	-4081	-4011	-1301	-1177	4774	4774	4774	6722	5175	400
1951 REGIONAL ENERGY S/D	1609	1993	-1282	-379	1098	2245	3558	4847	4955	4955	4955	8590	6704	984
1952 REGIONAL ENERGY S/D	2445	482	-1106	816	-2125	-1977	-4818	1725	549	549	549	326	559	3519
1953 REGIONAL ENERGY S/D	-2394	-4932	-3629	-4117	-4192	-5192	-4818	102	230	230	230	326	559	1862
1954 REGIONAL ENERGY S/D	2793	-807	-2642	-2730	-2651	-3394	-112	3055	1806	1806	1806	3781	3009	-504
1955 REGIONAL ENERGY S/D	3816	2866	3418	-1421	-1156	-4213	-2453	-5573	5153	5153	5153	158	1126	1753
1956 REGIONAL ENERGY S/D	2073	916	-2070	-505	-235	-1430	-3965	1978	4654	4654	4654	8074	9666	441
1957 REGIONAL ENERGY S/D	3100	239	-2213	-1735	-3219	-2384	-2689	-2980	1619	1619	1619	9494	1691	3826
1958 REGIONAL ENERGY S/D	-3453	-4271	-3614	-3803	-4267	-4817	-1133	-202	1099	1099	1099	3886	3200	-203
1959 REGIONAL ENERGY S/D	-2777	-4221	-3562	-2715	-1448	-1665	-3284	2215	2303	2303	2303	5852	4355	-1430
1960 REGIONAL ENERGY S/D	2976	-1504	2661	3566	1128	-1446	-1074	1605	2029	2029	2029	11094	4016	2082
1961 REGIONAL ENERGY S/D	-1034	-4786	-3239	-3419	-2352	-5297	-857	2996	2112	2112	2112	1761	1761	576
1962 REGIONAL ENERGY S/D	-3207	-3377	-3683	-3057	-3982	-4901	-3674	3650	3113	3113	3113	8195	7061	-1076
1963 REGIONAL ENERGY S/D	-1065	-3736	-3240	-1733	-1058	-1625	-950	1439	2257	2257	2257	348	2322	-104
1964 REGIONAL ENERGY S/D	-2032	-3502	-2177	-3634	-3178	-5085	-2886	-3084	2834	2834	2834	6681	1878	-235
1965 REGIONAL ENERGY S/D	3315	592	-944	-900	-2383	-1421	4831	4138	3280	3280	3280	6682	8010	3018
1966 REGIONAL ENERGY S/D	2069	-537	-2099	-1796	-2375	-4395	333	2971	2376	2376	2376	5669	2607	-321
1967 REGIONAL ENERGY S/D	-2610	-4691	-3110	-3584	-3778	-3241	1414	2663	1675	1675	1675	2312	16	475
1968 REGIONAL ENERGY S/D	2750	-226	-1940	-1964	-2417	-4044	-568	1148	1949	1949	1949	578	2474	93
1969 REGIONAL ENERGY S/D	949	-402	615	-428	-429	-2429	3342	2034	2432	2432	2432	9097	7209	2765
1970 REGIONAL ENERGY S/D	-2811	-4150	-3309	-2540	-3744	-5008	-1787	1039	999	999	999	1460	-242	-850
1971 REGIONAL ENERGY S/D	-2825	-4260	-4067	-3922	-4155	-3120	2656	4555	3956	3956	3956	8754	5649	2257
1972 REGIONAL ENERGY S/D	2809	2384	-1448	-2148	-2614	-3476	3150	4490	12045	12045	12045	9670	3132	4087
1973 REGIONAL ENERGY S/D	3467	4156	-1148	-2070	-3326	-2454	-2446	-2980	4214	4214	4214	4937	2147	-1777
1974 REGIONAL ENERGY S/D	-4994	-4310	-4040	-3997	-3832	-270	7655	5916	7026	7026	7026	9177	9021	3259
1975 REGIONAL ENERGY S/D	2834	3310	-963	-3535	-4009	-3715	1750	371	2407	2407	2407	2276	2314	3693
1976 REGIONAL ENERGY S/D	-79	-996	-2353	-1362	147	3434	3681	2552	3388	3388	3388	9058	6363	1251
1977 REGIONAL ENERGY S/D	3970	3428	4286	-1915	-4283	-4907	-6612	-6889	-6325	-6325	-6325	1417	-1167	3024
1978 REGIONAL ENERGY S/D	5367	-5624	-4480	-4249	-4156	-5201	-5921	-4012	1729	1729	1729	6058	3207	-2650

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SECTION IX
ADMINISTRATOR'S RECORD OF DECISION ON THE
1995 PACIFIC NORTHWEST LOADS AND RESOURCES
STUDY (THE WHITE BOOK)

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1996 Pacific Northwest Loads and Resources Study

Administrator's Record Of Decision

I. Introduction

The 1996 Pacific Northwest Loads and Resources Study (White Book) establishes the Bonneville Power Administration's (BPA) long range planning basis for supplying electric power to BPA customers. The White Book includes Federal system loads and resources and regional loads and resources with detailed technical appendices. This White Book updates the 1995 Pacific Northwest Loads and Resources Study, published in February 1996. The 1996 White Book is being published as a projection of regional and Federal system load and resource capabilities to be used as input to BPA's resource planning process and as a benchmark for annual determinations under BPA's requirements power sales contracts.

Following the past year's execution by BPA's public agency customers of either amendatory agreements to the 1981 power sales contract or new contracts, BPA's firm power requirements obligations have been reduced and this White Book accounts for those reductions. In these amendatory agreements and contracts BPA agreed to permit such customers to diversify or add to the firm resources dedicated to serving their firm loads and purchasing for the rest of their firm load from BPA through 2001. This reduced the total amount of firm power regional loads for which BPA is obligated to deliver firm power to its utility customers under their 1981 metered and computed requirements contracts, as amended.

II. Statutory Background

With the passage of the Northwest Power Act in December 1980, Congress directed BPA to assure the Pacific Northwest an adequate, efficient, economic and reliable power supply. *16 U.S.C. 839(2)*. In order to carry out this mandate, BPA was directed by Congress to offer new power sales contracts to its regional firm power customers and to plan and acquire firm resources sufficient to meet these firm power loads. *16 U.S.C. 839e(9)*.

Sections 5(b) and 5(d) of the Northwest Power Act obligate BPA to serve, in accordance with the terms of its contracts, the net firm power load requirements of utilities in the Pacific Northwest, including public bodies, cooperatives, and investor-owned utilities (IOUs), and authorize BPA to serve up to a defined amount of the firm power requirements of its existing direct-service industrial (DSI) customers. *16 U.S.C. 839c(b) and (d)*. Under section 5(b), BPA is to provide firm power from the Federal system to meet firm regional loads of a customer in excess of the firm resources, if any, which the customer has dedicated to serve its own regional firm loads under the terms of its contract with BPA. *16 U.S.C 839c(b)(1)(A) and (B)*. BPA is also to provide electric power for those loads which were served by a customer's dedicated resources if a customer's dedicated resource is no longer available to serve loads due to obsolescence, retirement or loss of the resource, or loss of contract rights.

Customers were required to dedicate any firm resources which they used or had planned to use in the year prior to enactment of the Act on December 5, 1980. However, customers were not required to dedicate other, newly acquired, resources. Because the Northwest Power Act requires that the Administrator meet all of the firm regional peak and energy loads of its utility customers in excess of the customer's firm resources dedicated to serve such loads, BPA must have a high degree of certainty regarding its projected firm load obligations to efficiently and reliably plan the use of its own resources and anticipate any resource additions that may be needed to meet its obligations.

Section 6(a)(2) of the Northwest Power Act obligates BPA to acquire sufficient resources on a planning basis to meet its firm load obligations, including its section 5(b) contract obligations. BPA's obligations to provide firm electric power to its utility customers for their regional firm loads and its contract obligations to provide firm power to its DSI customers comprise the largest portion of BPA's firm obligations. *16 U.S.C. 839c(b); 839c(d)*. BPA's contracts with utility and DSI customers contain provisions which implement the above statutory directives.

III. The 1981 Utility Power Sales Contract and the White Book

A. The White Book

The White Book provides projections of regional and Federal system loads and resource capabilities that BPA uses to calculate the firm load obligations it must serve over the planning period and those Federal system resources that are or will be available to meet those loads. Technically, it is a loads and resources forecast document derived from regional economic planning models. It incorporates information on forecasted loads and resource capability obtained from (1) public agency and investor-owned utility (IOU) customers through their annual data submittals to the Pacific Northwest Utilities Conference; (2) the Pacific Northwest Coordination Agreement (PNCA) Operating Committee; and (3) analysis of the Federal hydroelectric power system. Verifiable changes to individual utility service obligations, as evidenced by the annual submissions to BPA of a utility Firm Resource Exhibit (FRE) under section 12 of the power sales contract with BPA, are also included. The White Book also serves as the referenced load-resource document under certain BPA contracts with extraregional purchasers.

B. The 1981 Utility Power Sales Contract

In 1981, BPA and its utility, Federal agency and DSI customers entered into 20-year power sales contracts. Section 5(b)(1) of the Northwest Power Act directed BPA to sell electric power for the firm load requirements under contracts with its public utility, electric cooperative, and IOU customers. *16 U.S.C. 839c(b)(1)*. BPA also entered into requirements power sales contracts with its DSI customers under section 5(d). *16 U.S.C. 839c(d)(1)*.

Certain provisions of the utility power sales contract address BPA's load obligation planning. Sections 10(a) and (d) require BPA and its customers to exchange long-term planning and load information with each other. Customers are to provide BPA with any planned changes in their firm power loads. Section 8 of the contract requires a customer to inform BPA of any new large single loads planned to be served by the customer. Section 5(a) of the contract restates BPA's statutory obligation to plan and acquire sufficient resources in order to meet the firm power load obligations of its customers.

BPA's contractual obligation to provide electric power to serve its customers' loads is not contingent upon any specific action taken by its customers to provide resources.

Section 12 of the utility contract addresses the statutory need for BPA and the customer to identify those firm resources, if any, which the customer will dedicate to serve its firm load for a rolling 7-year period. It also identifies the conditions for adding to, removing, or modifying dedicated firm resources and the terms for notice. These provisions enable both BPA and its customer to know the resources each will use to serve the customer's firm load and their respective service obligations, thus creating certainty for load and resource planning.

Under section 12 of the contract the customer must submit an FRE, which BPA reviews and either changes or accepts. The FRE declares the utility's resources dedicated to serve its regional firm load over the stated 7-year period. The customer must update the declaration and may make deletions or additions in the amounts of firm energy resources the customer will use to serve its firm load in the intervening 6 years and in the seventh year only to the extent such changes are consistent with the terms and notice periods required under section 12.

C. BPA and its Public Utility Customers Amend the 1981 Utility Power Sales Contract or Execute a New Contract

The 1981 utility requirements power sales contracts establish the terms and conditions for BPA's sales of electric power to meet its Pacific Northwest utility customers' firm power loads in excess of their dedicated resources. This contract was negotiated during market circumstances that differ from today's utility environment. In May 1996, in response to requests to provide greater flexibility to add firm resources or purchases, BPA offered its public agency customers a series of amendments to their 1981 power sales contract, or as an alternative, offered to negotiate a new power sales contract. Three forms of amendatory agreements were offered wherein customers could elect to either keep their total requirements service on BPA or add specific amounts of firm resources dedicated to serve a portion of requirements load, reducing an amount of their requirements service and leaving the remainder of it on BPA. BPA also negotiated new requirements power sales contracts with different terms and conditions with those customers who wished to have a larger portion of their firm power load served by dedicated firm non-Federal resources than was available under the amendatory agreements. Finally, some customers elected to continue with their 1981 contracts unamended. All of the agreements—the amendatory agreements, the new contracts, and the unamended 1981 utility power sales contracts—expire September 30, 2001.

BPA's 1996 White Book estimates the change in Federal firm loads and obligations resulting from the amendatory agreements and new contracts and also shows projections of Federal firm regional load obligations and resources for the 10-year period ending September 30, 2006. The firm load obligations projected for the years October 1, 2001, to October 1, 2006, are not based on any current firm contract obligations, but are estimates based on assumptions regarding the amount of load obligation BPA will have after expiration of the above agreements and negotiation of new agreements.

The 1996 Pacific Northwest Loads and Resources Study incorporates the following assumptions:

- ◆ BPA's current utility power sales contracts are re-executed with similar requirements service terms and conditions, and they continue through OY 2006-07, the end of the study period;¹
- ◆ The total public agency power diversification achieved in OY 2000-01 (1,194 average megawatts) will continue at that same level through OY 2006-07;
- ◆ Total public agency firm resources dedicated to serve firm regional load will continue to be available in OY 2000-01 and through OY 2006-07; and
- ◆ BPA serves all public agency load growth beyond OY 2000-01.²

BPA believes these assumptions are based on the best known terms and conditions for its regional obligations at this time and it is reasonable to use them. BPA recognizes that its firm requirements obligation to its public agency customers, under new contracts could range from zero to as much as 5,646 average megawatts in OY 2007 if no public agency diversification occurs after OY 2001. BPA may also serve firm nonrequirements obligations through sales of excess Federal power in the region under new contracts. BPA's firm regional obligations may be a combination of both requirements and excess Federal power in the next contracts. Table R-1, page 127, shows BPA's potential public agency firm obligations using a comparative range of possible requirements service. Under the existing utility power sales contract and with public agency diversification at the 1,194 average megawatt level, BPA's obligation ranges from 4,075 to 4,452 average megawatts over the OY 2001 through OY 2006 period.

¹ Requirements service provisions are well understood and, for purposes of this study, we continue to use them with the recognition that replacement contracts may modify or alter some of those provisions. It is too speculative to attempt to define in this study what may result from the renegotiation of the power sales contracts with customers. To the extent new terms or provisions for requirements service become known, a later study may make adjustments to the assumptions used here.

² This assumption is consistent with the current terms of the power sales contract, under which BPA is the provider for firm load which is not met by dedicated resources. This obligation may change and is proposed to be changed in the next contract, but the form of load growth obligation is not presently known. To the extent the different terms for load growth become known, they will be accounted for in a later study.

Table R-1

**Range of Possible BPA Utility Power Sales Contract Obligations
Beyond OY 2001**

Energy in Average Megawatts

OPERATING YEAR ³	2002	2003	2004	2005	2006	2007
MINIMUM BPA PSC OBLIGATION: Assuming No Power Sales Contract ⁴	0	0	0	0	0	0
1996 WHITE BOOK BPA PSC OBLIGATION: 1981 Amendatory Agreement With Public Agency Diversification ⁵	4,075	4,155	4,209	4,256	4,370	4,452
MAXIMUM BPA PSC OBLIGATION: 1981 Amendatory Agreement With No Public Agency Diversification ⁶	5,269	5,249	5,403	5,450	5,564	5,646

IV. Excess Federal Power

In October 1995, Congress passed the Energy and Water Development Act of 1996 giving BPA new authority to market a class of power denominated "excess Federal power." *P.L. No. 104-46, §508(a) and (b), 109 Stat. 402, 419-420 (1995) (codified at 16 U.S.C. 832m)*. This new authority is intended to ensure continued BPA revenues for BPA's financial obligations including repayment to the Treasury, and to provide BPA with increased flexibility to market Federal power that becomes available due to reductions in BPA's firm obligations to serve regional load and which is "abandoned" by BPA's regional customers. Excess Federal power also includes a calculated amount of Federal power generated as a result of operations on the hydrosystem to benefit fish and wildlife. Excess Federal power represents a new class of firm power service which may be sold for up to 7 years on a more competitive basis. The legislation did not add to the total amount of Federal generating resources but does redefine the terms and conditions under which a portion or all of the surplus Federal power BPA may have available beyond its firm Northwest obligations may be sold in or outside of the region under the new excess Federal power category.

Before making such sales, however, BPA must first make such excess Federal power available for purchase by its Pacific Northwest customers. The amount of power which may

³ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1997-98 is August 1, 1997, through July 31, 1998.

⁴ No BPA public utility power sales contract obligation after OY 2001.

⁵ Assumes: (1) BPA obligations to public agencies under the amendatory agreement to the 1981 utility power sales contract continue in OY 2002 and beyond, (2) public agency dedicated resources remain dedicated from OY 2001 through OY 2006, and (3) the same amount of public agency power sales contract diversification achieved in OY 2001—1,194 average megawatts—occurs in OY 2002 and each year thereafter through OY 2006.

⁶ Assumes: (1) BPA obligations to its public agency customers under the amendatory agreement to the 1981 utility power sales contract continue in effect in OY 2002 and beyond, (2) public agency dedicated resources remain dedicated from OY 2001 through OY 2006, and (3) no public agency power sales contract diversification occurs.

be sold as excess Federal power by BPA is directly related to BPA's firm load obligations under sections 5(b) and 5(d) of the Northwest Power Act. Therefore, the reduction in BPA's obligations under sections 5(b) and 5(d) resulting from the public agency customers' recent changes to their firm regional load purchase obligations from BPA (sometimes called load diversification) constitutes part of BPA's calculation of the amount of excess Federal power available to BPA for marketing under 16 U.S.C. 832m.⁷

On September 25, 1996, BPA published its implementation policy for sales of excess Federal power in the Federal Register. The policy explains the methodology BPA will use in calculating the amount of excess Federal power, the notices to be provided to Northwest customers, and how sales outside the Northwest region will be conducted. BPA published a Record of Decision addressing numerous issues raised by parties in the public process on the adoption of the excess Federal power policy. This White Book is not a recalculation of or change in BPA's earlier published calculations of the amount of excess Federal power that may be sold by BPA.

However, this White Book does provide a calculation of an amount of firm power in excess of BPA's firm obligations over a 10-year planning period that is expected to be available as surplus firm power under section 5(f) of the Northwest Power Act. This power may be sold as either excess Federal power under P.L. 104-46, consistent with BPA's calculations of excess Federal power, or as surplus power under P.L. 88-552 and section 9(c) of P.L. 96-501 (Northwest Power Act). To the extent that BPA has annual amounts of planned firm power that are surplus to its firm contract obligations, BPA may market all or a portion of that surplus power as excess Federal power. The duration of these sales will be as stated in BPA's Excess Federal Power Policy. For purposes of this White Book, a sale of excess Federal power with delivery occurring for a year or more is considered a firm obligation on BPA and is included as a firm obligation in Federal loads.

CONCLUSION:

For the foregoing reasons the methodology and the assumptions are approved.

Issued in Portland, Oregon on April 21, 1997.


FOR Randall W. Hardy
Administrator and
Chief Executive Officer

⁷ As BPA stated in its Excess Federal Power Record of Decision (Sept. 18, 1996), P.L. 104-46 identifies two bases for the calculation of excess Federal power: 1) the amount of power "abandoned" by customers through reductions in their firm obligations under section 5(b) and 5(d) requirements contracts in comparison to a base year, and 2) an amount of excess Federal power which results from changes in hydrosystem operations for the benefit of fish and wildlife. The amount of excess Federal power based on changes in BPA's firm load obligations under its requirements contracts is only one part of the calculation.

SECTION X

GLOSSARY AND ACRONYMS

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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 1 megawatt of capacity served over a period of 1 year. (Equivalent to 8.76 gigawatt hours, 8,760 megawatt hours, or 8,760,000 kilowatt hours.)

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.

Capacity - The maximum power that an electrical system or machine such as a hydro powered or thermal powered 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 loads. 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.

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), 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 Engineers (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.

50-Hour Peak Capacity - The amount of capacity that can be sustained for 10 hours a day during peak-load hours for a 5-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.

Fiscal Year - In this study, fiscal year (FY) is the 12 month period October 1 to September 30. For example FY 1997-98 is October 1, 1997 to September 30, 1998.

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.

Forebay - The portion of the reservoir at a hydroelectric plant that is immediately upstream of the generating station.

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

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

Megawatts - A unit of electrical power equal to 1 million watts or 1,000 kilowatts.

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

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.

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

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 August 1 through July 31. For example, OY 1997-98 is August 1, 1997 through July 31, 1998.

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 meet projected firm energy deficits.

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.

ACRONYMS

aMW	Average megawatt
BPA	Bonneville Power Administration
CDWR	California Department of Water Resources
COE	United States Army Corps of Engineers
CRFA	Columbia River Flow Augmentation
CSPE	Columbia Storage Power Exchange
DOE	United States Department of Energy
DSI	Direct service industry
EIS	Environmental Impact Statement
EPAct	Energy Policy Act of 1992
EWEB	Eugene Water and Electric Board
FCRPS	Federal Columbia River Power System
FERC	Federal Energy Regulatory Commission
FRE	Firm Resource Exhibit
FY	Fiscal Year
ICP	Intercompany Pool (PGE)
IOU	Investor-owned utility
IPC	Idaho Power Company
IPP	Independent power producer
LADWP	Los Angeles Department of Water and Power
MPC	Montana Power Company
M-S-R	M-S-R Public Power Agency, whose members include the Modesto Irrigation District and the cities of Santa Clara and Redding, California
MW	Megawatt
NCPA	Northern California Power Agency
NMFS	National Marine Fisheries Service
NUG	Non-utility generating resource
OY	Operating Year
PGE	Portland General Electric
PG&E	Pacific Gas and Electric Company
PNCA	Pacific Northwest Coordination Agreement
PNUCC	Pacific Northwest Utilities Conference Committee
PP&L	Pacific Power and Light Company
PSP&L	Puget Sound Power and Light Company
PUD	Public Utility District
PURPA	Public Utility Regulatory Policies Act
RCP	Resource Contingency Program
SCE	Southern California Edison Company
SCL	Seattle City Light Company
SDG&E	San Diego Gas and Electric Company
SMUD	Sacramento Municipal Utility District

SOR	System Operation Review
SOS	System Operating Strategy
TPU	Tacoma Public Utilities
UPC	Utah Power Company
USBR	United States Bureau of Reclamation
WAPA	Western Area Power Administration
WNP	Washington Nuclear Power
WPPSS	Washington Public Power Supply System
WWP	Washington Water Power