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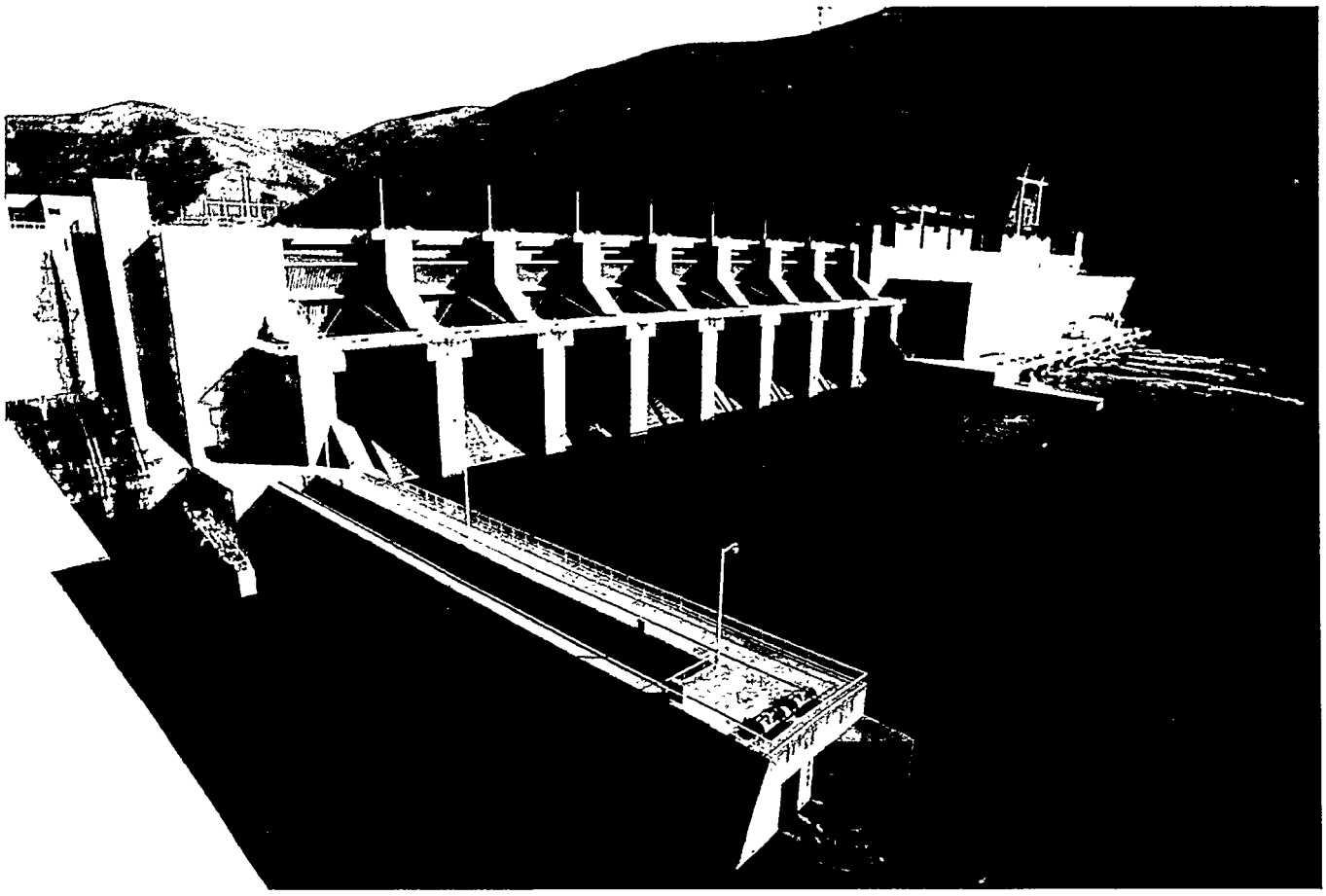
1997 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY



BONNEVILLE POWER ADMINISTRATION

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1997 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

THE WHITE BOOK

BONNEVILLE POWER ADMINISTRATION
December 1997

Cover: Lower Granite Dam

Spanning the Snake River in eastern Washington, the Lower Granite Dam was completed in April 1975. This run-of-river dam is operated by the U.S. Army Corps of Engineers and boasts an instantaneous generating capacity of 930 megawatts.

BPA Photo

ACKNOWLEDGMENTS

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.

Generation Supply
Regional Coordination Group

Pacific Northwest Utilities Conference Committee
Loads and Resources Data Collection

TABLE OF CONTENTS

FIGURES

TABLES

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.[1] 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, nor is it used for inventory planning to determine BPA revenues. 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 dynamics of operating a power system. Likewise, inventory and revenue projections may be based on different load, resource and contract assumptions. For example, the White Book accounts for several hundred megawatts of exchange energy as both resources and as loads, whereas some inventory analyses may simply look at the net of such contracts. Thus, the estimate of resources may appear different between various types of studies, while having the same net effect on inventory.

The Administrator's Record of Decision (ROD) for the 1997 White Book is contained in Section IX, page 121.

The 1997 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 1996 Pacific Northwest Loads and Resources Study, published in December 1996.

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. This study 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 their annual data submittals to the PNUCC,

[1] BPA's 1981 power sales contracts expire between June 30 and September 30, 2001.

from BPA's Firm Resource Exhibit (FRE Exhibit I) submittals, and through 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)[2] 1998-99 through 2007-08. The study shows the Federal system's and the region's monthly estimated maximum electricity demand, monthly energy demand, and monthly maximum generating capability — capacity — for OY 1998-99, 2002-03, and 2007-08. The Federal system and regional monthly capacity surplus/deficit projections are summarized for 10 operating years.

The hydroregulation study used in this analysis simulates operation of the system under the U.S. Army Corps of Engineers' (Corps) Lower Snake and John Day drawdown feasibility study—the Lower Snake A1 Study—dated November 7, 1997. The Corps used the 1995 National Marine Fisheries Service (NMFS) Biological Opinion as the Base Case for this study. To demonstrate the monthly energy variability resulting from implementing the Lower Snake A1 Study, this analysis includes the monthly Federal system and regional firm energy surpluses and deficits for OYs 1999 through 2008 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.

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 1997 Pacific Northwest Loads and Resources Study Technical Appendix (available May 1998) can be obtained from BPA's Public Involvement Office, toll-free, 1-800-622-4520. BPA will not publish a 1997 Non-Utility Generation Supplement. However, BPA is continuing to compile Pacific Northwest non-utility generation information.

[2] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1998-99 is August 1, 1998, through July 31, 1999.

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.

Hydro System Operations Under the Lower Snake A1 Study

The Lower Snake A1 Study made additional changes in 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.

This year's study continues BPA's 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 1999 through 2008 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 load forecast reflects BPA's current 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 YEAR[1]	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BPA Programmatic Conservation											
Residential	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Commercial	43.0	47.4	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8
Industrial	15.1	15.1	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	6.0	6.0	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	0.0
Competitive Acquisitions	14.5	18.2	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9
Power Plants	26.7	33.0	39.3	39.3	39.3	39.3	39.3	39.3	39.3	39.3	39.3
Assumed Market Transformation	9.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
MCS & Improved Building Codes	51.0	61.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0
Adjustments for New Codes & Standards	31.0	37.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
SUB-TOTAL	132.7	162.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7
Customer-Funded Conservation	85.6	103.5	121.4	121.4	121.4	121.4	121.4	121.4	121.4	121.4	121.4
TOTAL LOAD REDUCTION FOR CONSERVATION SAVINGS	291.3	343.6	401.9	401.9	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 1999 is October 1, 1998, through September 30, 1999.

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 capacity 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 nonpower 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 Corps, 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 addi-

tional programs in support of the Endangered Species 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 firm contractual obligations to deliver power. This study also includes firm DSI contracts signed through December 31, 1997, and new power sales contracts with its public utility customers executed in 1997.

The hydro resources of the Federal system include 30 dams owned and operated by the USBR and the Corps, 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 Corps 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 generat-

ing 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. 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]	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Investor-Owned Utilities	2	20	48	45	44	56	80	82	69	66	65
Public Agencies	2	15	30	31	31	39	56	57	66	69	69
Federal System	12	100	224	196	212	274	385	380	381	378	376
Other Entities	1	2	5	5	5	6	9	9	9	9	9
Total Energy Obligation	17	137	307	277	292	375	530	528	525	522	519

January Capacity in Megawatts

Operating Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Investor-Owned Utilities	0	14	80	75	74	74	135	135	112	112	112
Public Agencies	0	9	59	57	55	55	96	96	119	119	119
Federal System	0	112	654	653	645	657	1,201	1,201	1,201	1,201	1,201
Other Entities	0	2	9	9	9	8	15	15	15	15	15
Total Capacity Obligation	0	137	802	794	783	794	1,447	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 1998-99 is August 1, 1998, through July 31, 1999.

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 of retail sales in the electrical power industry;
- BPA's future marketing efforts and/or revised resources acquisition, including conservation;
- Possible increases or decreases in BPA's public agency, IOU, and DSI load obligations that could result from BPA's subscription process and execution of new contracts replacing its power sales contracts expiring 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
- Additional 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 load reductions in public agency and DSI firm requirements served by BPA through September 30, 2001, the extent of Federal obligations to these customers after the current contracts expire are somewhat uncertain. The extent of BPA's firm obligations after these contracts expire during the 10-year study period may affect the Federal system and regional loads and resources balances.

This study assumes that the following contracts, though they are subject to change as noted, will extend throughout the 10-year study period:

- BPA's power sales contracts with its public agency and IOU customers, which expire September 30, 2001, and its contracts with its DSI customers, which expire on September 30, 2001, will be replaced in the subscription process and may result in different Federal obligations to these customers.
- The Pacific Northwest Coordination Agreement will expire June 30, 2003. BPA expects that 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 1997 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

This section describes the major changes in the assumptions of the 1997 Pacific Northwest Loads and Resources Study compared to the 1996 study. Other changes are reflected in the data for each utility contained in the 1997 Pacific Northwest Loads and Resources Study Technical Appendix.

Firm Load Changes

The 1997 White Book analysis uses load projections that incorporate the following changes since last year's analysis:

- **1997 BPA Load Forecast:** This analysis uses the same medium load forecast of Federal agencies, public agencies, and investor-owned utilities that was used in BPA's 1996 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, but are assumed to remain at the OY 2001 level through the remainder of the study period.

Firm Resource Changes

The 1997 White Book analysis reflects the following resource changes compared to last year's study:

- **The Lower Snake A1 Study:** The hydroregulation study used in this analysis incorporates the streamflow requirements of the Corps' Lower Snake A1 Study dated November 7, 1997.

Figure 1, page 12, shows the monthly variation of the Lower Snake A1 Study on the Federal system hydro energy capability for OY 1998-99 assuming 1937 water conditions.

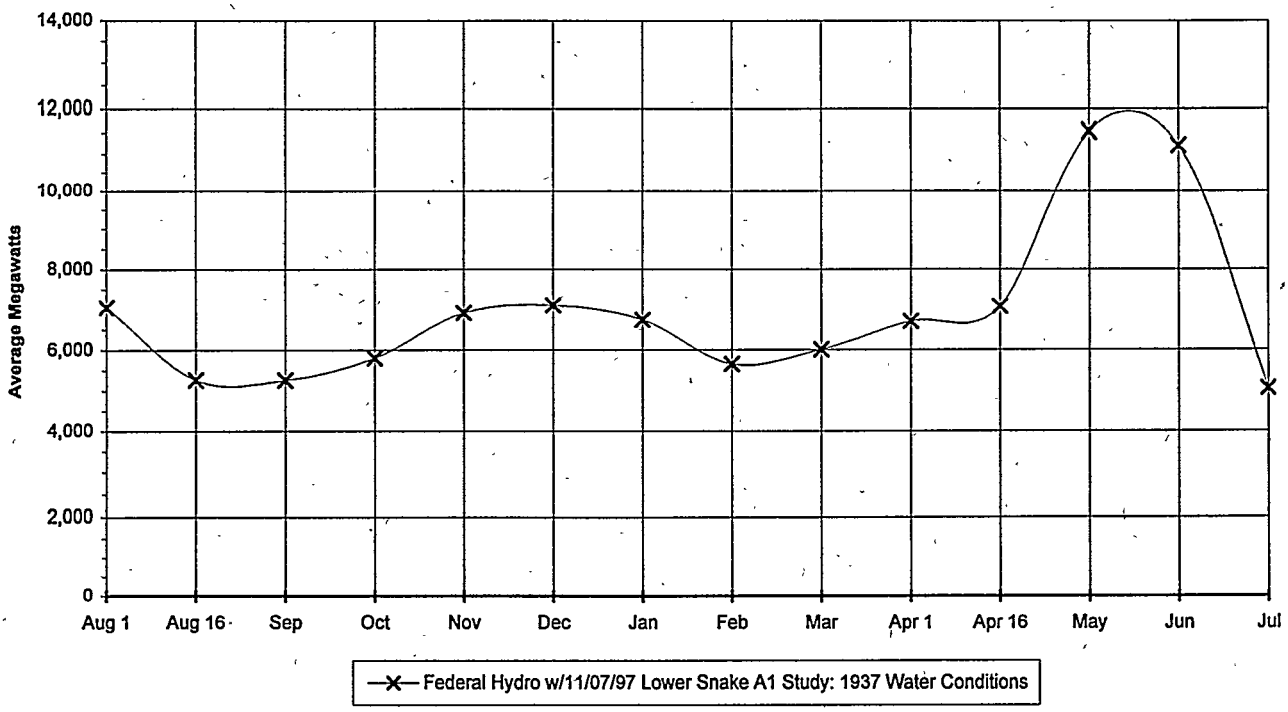
Firm Contract Changes

The 1997 White Book analysis uses the following contract changes versus last year's study:

Exports: The 1997 White Book analysis includes the following new or changed Federal export transactions: BPA to Anaheim, capacity/energy exchange; BPA to BART, power sale; BPA to the city of Burbank, power sale and capacity/energy exchange; BPA to Farmington, power sale; BPA to New Energy Ventures, power sale; BPA to Palo Alto, seasonal energy exchange; and BPA to Southern California Edison Company (SCE) Source, power sale. BPA's power sale and capacity/energy exchange agreements with the cities of Burbank, Glendale, and Pasadena and to SCE are shown in power sales mode through the study horizon. BPA to SCE option

Figure 1

Federal Firm Hydro Energy Monthly Variability for OY 1998-99



capacity is shown through OY 2003. BPA renegotiated its contract with the M-S-R Public Agency (M-S-R), whose members include the Modesto Irrigation District, and the cities of Santa Clara and Redding, California, to continue as a power sale through April 15, 2013. BPA's diversity exchange to Imperial was not signed and its power sale to San Diego Gas and Electric (SDG&E) expired.

- **Contracts Out:** This analysis has the following new or changed BPA intra-regional contracts out: BPA to Bandon, power sale; BPA to Benton County PUD, power sale; BPA to Big Bend Electric Cooperative, summer seasonal product; BPA to Central Electric Cooperative, summer seasonal product; BPA to the City of Ashland, power sale; BPA to Clark/Packwood Lake, terminated; BPA to Cowlitz County PUD, power sale; BPA to Grant County PUD, power sale; BPA to Lewis/Packwood Lake, terminated; BPA to Flathead Electric, power sale terminated; BPA to Kootenai Electric, power sale terminated; BPA to Montana Power Company, capacity/energy exchange; BPA to Okanogan, summer seasonal product; BPA to other entities, power sales; BPA to small non-generating public utilities, summer seasonal product; BPA to small nongenerating

public utilities, Hungry Horse power sales; BPA to PP&L, power sale expired; BPA to PP&L, WNP-3 settlement terminated; BPA to Puget Sound Electric (PSE) (formerly Puget Sound Power & Light—PSP&L), Baker HD loss; BPA to Portland General Electric (PGE), power sale; BPA to Port Angeles City Light, power sale expired; BPA to Raft River Electric Cooperative, power sale; BPA to Ravalli County Electric Cooperative, power sale; BPA to Salem Electric Cooperative, power sale; BPA to Surprise Valley Electric Corporation, summer seasonal product; BPA to Umatilla Electric Cooperative, summer seasonal product; BPA to United Electric Cooperative, power sale; BPA to Vigilante Electric Cooperative, power sale; and BPA to Wasco Electric Cooperative, summer seasonal product; BPA to WWP/Clark, power sale expired; and BPA to WWP/Riverside, power sale terminated.

- **Imports:** This analysis includes the following contract changes: Imperial to BPA, exchange energy and seasonal replacement energy agreements terminated; and M-S-R to BPA, exchange energy agreement terminated. Exchange energy from the cities of Burbank and Glendale 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 2003. 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. Agreements for exchange energy and seasonal replacement from Imperial to BPA and for exchange energy from M-S-R to BPA have been terminated.
- **Contracts In:** This analysis has the following change in BPA intra-regional contracts in: PP&L to BPA, WNP-3 settlement, terminated.

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 contracts. In 1996, BPA offered three forms of amendatory agreements to their customers' 1981 power sales contracts. 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.

Table 3, page 15, shows the load diversification for the public agencies from BPA's Load Commitment Exercise. It is shown 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 through September 30, 2001.

Pre-subscription Power Sales Contracts

To implement one of the recommendations by the Northwest Governor's Comprehensive Review Final Report, BPA is collaborating in a subscription process with state, utility and public interest representatives for the development of new power sales contracts for the post-2001 period. New contracts will be negotiated and executed over the next two years and those sales will form the majority of BPA's firm load obligations for that period. However, some customers desired to execute contracts for load service for the post-2001 period prior to the completion of the subscription contract process.

Table 3

Public Agency Power Sales Contract[1] Diversification

Average Megawatts

OPERATING YEAR[2]	1999	2000	2001
Chelan County PUD	0	0	0
Clark Public Utility	242	257	269
Cowlitz County PUD	104	104	104
Douglas County PUD	0	0	0
EWEB	0	0	0
Grant County PUD	5	5	5
Gray's Harbor PUD	13	13	13
Okanogan PUD	5	5	5
Pend Oreille PUD	0	0	0
Seattle City Light	43	47	45
Snohomish County PUD	210	248	262
Springfield Utility Board	45	44	22
Tacoma Public Utilities	63	65	63
Non-Generating Public Agencies	352	380	405
TOTAL PUBLIC AGENCY DIVERSIFICATION	**1,083**	**1,169**	**1,194**

[1] Public agency power sales contracts and amendments to them that allow for load diversification expire September 30, 2001. For OY 2002 and beyond, public agencies may place power sales obligations on BPA through the subscription process.

[2] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1998-99 is August 1, 1998, through July 31, 1999.

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 contract obligations with Pacific Northwest Federal and public agencies and IOUs, which expire September 30, 2001, are assumed to continue at their OY 2001 levels through the remainder of the study period;
- BPA's power sales contract obligations with its DSI customers, which expire September 30, 2001, are assumed to continue at their OY 2001 levels through the remainder of the study period;
- All existing Federal contractual arrangements not included under Pacific Northwest power sales contracts which expire by the terms of their agreements 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 sale mode throughout the study period;
- BPA purchases option energy from SCE through OY 2003;
- SCE purchases option capacity from BPA through OY 2003;
- 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;
- Extreme weather adjustments are assumed for capacity in the months of November through February. These adjustments vary monthly from 1,400 to 1,950 peak megawatts under the medium load forecast; and
- The IOUs do not make new long-term general requirements load purchases from BPA.

Federal Firm Energy Loads

The Federal system firm loads include BPA's firm DSI loads,[1] sales to Federal agencies, and current obligations to regional public agencies and IOUs under their power sales contracts,[2] less public agency diversification from BPA's Load Commitment Exercise, which reduced BPA's power sales contract obligations through September 30, 2001. The Federal system firm energy loads under the medium load forecast for OY 1998-99 through 2007-08 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 for export 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 1998-99, 2002-03, and 2007-08 assuming 1937 water conditions in Exhibits 2 through 4, pages 51 through 57.

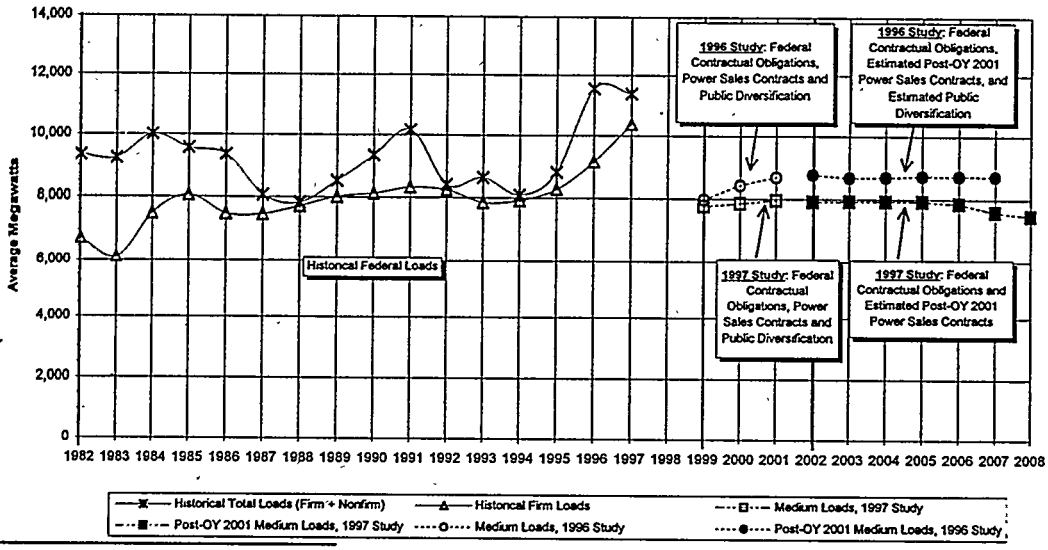
[1] This study includes the Federal DSI firm loads through OY 2001, per contracts signed through December 31, 1996. In OY 2002 and through the remainder of the study period, the Federal DSI loads continue at their OY 2001 level.

[2] This study includes Federal, public agency and IOU obligations through OY 2001, per contracts that expire September 30, 2001. BPA's obligations are assumed to continue at the OY 2001 level in OY 2002 and through the remainder of the study period under similar contracts for firm load service.

Figure 2

Federal Energy Load Projections[3,4]—1997 BPA Forecast

Medium Loads



[3] 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.

[4] The Federal firm energy load projections assume that BPA's power sales remain at the OY 2001 level through the remainder of the study period. For OY 2002 and beyond, however, these projections are uncertain because BPA's firm contractual obligations will be negotiated and executed over the next two years 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 1998-99, 2002-03, and 2007-08 under the medium load forecast.[1] The figure shows the expected 1-hour monthly demand under the 1997 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.

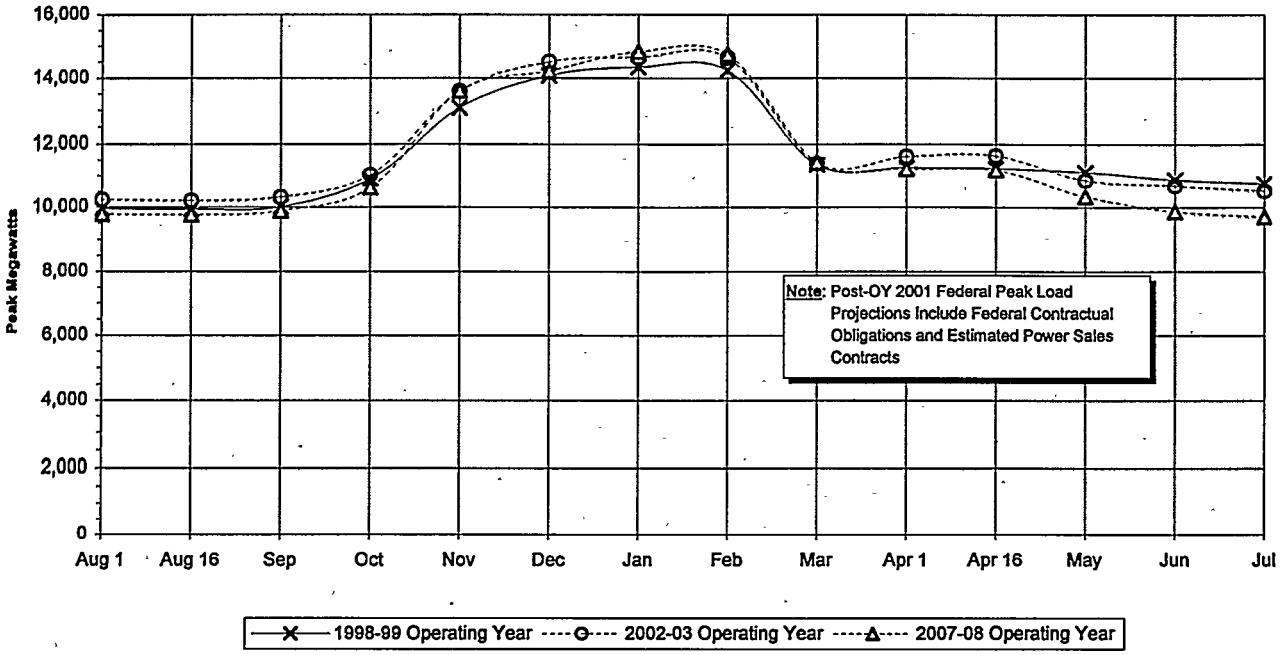
The monthly Federal firm peak loads are presented on line 15, and the monthly extreme weather obligations are presented on lines 44 and 47 of Exhibits 6 through 8, pages 61 through 67. These forecasts assume Federal obligations under 1937 water conditions.

[1] The Federal peak energy load projections assume that BPA's power sales contract obligations remain 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 contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

Figure 3

Federal Monthly Firm Peak Load Projections [1] Under Extreme Weather Conditions [2] for OY 1998-99, 2002-03, and 2007-08

Medium Loads



[1] After OY 2001, BPA's public and DSI firm peak load projections assume that BPA's power sales contract obligations remain 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 1997 Pacific Northwest Loads and Resources Technical Appendix (available May 1998).

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	6,465.0	5,979	1,854
Grand Coulee Pump Gen.	1973	6	314.0	314	0
Hungry Horse	1952	4	428.0	361	81
Palisades	1957	4	176.4	122	66
Anderson Ranch	1950	2	27.0	36	16
Minidoka	1909	4	27.7	13	8
Roza	1958	1	11.3	4	6
Black Canyon	1925	2	10.2	9	8
Chandler	1956	2	12.0	10	9
TOTAL U.S. BUREAU OF RECLAMATION PROJECTS		**52**	**7,471.6**	**6,848**	**2,048**
U.S. ARMY CORPS OF ENGINEERS HYDROELECTRIC PROJECTS					
Chief Joseph	1955	27	2,457.8	2,614	1,143
John Day	1968	16	2,160.0	2,484	836
The Dalles	1957	24	1,808.0	2,074	520
Bonneville w/Fishway	1938	20	1,092.9	1,147	449
McNary	1953	14	980.0	1,127	619
Lower Granite	1975	6	810.0	930	212
Lower Monumental	1969	6	810.0	922	203
Little Goose	1970	6	810.0	928	195
Ice Harbor	1961	6	603.0	693	149
Libby	1975	5	525.0	566	185
Dworshak	1974	3	400.0	444	136
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	33	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		**153**	**12,956.3**	**14,337**	**4,875**
TOTAL USBR AND CORPS PROJECTS		**205**	**20,427.9**	**21,185**	**6,923**

[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.

Table 5

Non-Federally Owned BPA Resources and Contracts

Capacity based on January 1998

PROJECT	Type	Operator	Date in Service	OY 1998-99 Capacity (peak MW)	OY 1998-99 Firm Energy (aMW)
EXISTING NON-FEDERALLY OWNED BPA RESOURCES					
WNP-2	Nuclear	WPPSS	1984	1,162	841
Packwood Lake	Hydro	WPPSS	1964	30	10
Idaho Falls Bulb Projects	Hydro	City of Idaho Falls	1982	18	18
Cowlitz Falls	Hydro	Lewis County PUD	1994	13[1]	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				1,256	924
Firm Contracts					
Canadian Entitlement for CSPE				96	38
Canadian Entitlement for Canada				112	37
Restoration, Columbia River Treaty with Canada				0	-26
Canadian Imports				0	0
Pacific Southwest Imports				282	163
Eastern Imports				285	132
Pacific Northwest Purchase				0	170
Non-Utility Generation				1	9
TOTAL BPA FIRM CONTRACTED RESOURCES				776	522
TOTAL NON-FEDERALLY OWNED BPA RESOURCE CONTRACTS				2,032	1,446

[1] 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 1998-99. Federal system firm Energy resources are comprised as follows: 83 percent from hydroelectric power, 10 percent from one nuclear power plant, and 7 percent from BPA's firm contracts.

Table 6

Federal[1] Firm Resources for OY 1998-99 [2] Based on 1936-37 Water Conditions

Capacity based on January 1999

PROJECT TYPE	Sustained Peak Capacity (MW)	Generating Peaking Capacity % of Total	Firm Energy (aMW) 12-Month Average	Firm Energy % of Total
Hydro	15,318	90	7,027	84
Nuclear	1,162	7	841	10
Firm Contracts	600	3	503	6
TOTAL FEDERAL RESOURCES	**17,080**	**100**	**8,371**	**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 1998-99 is August 1, 1998, through July 31, 1999.

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 Lower Snake A1 Study dated November 7, 1997.

The Federal firm energy surplus/deficit projections under the medium load forecast for OY 1998-99 through 2007-08 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 1998-99, 2002-03, and 2007-08 are shown in Exhibits 2 through 4, pages 51 through 57.

Table 7

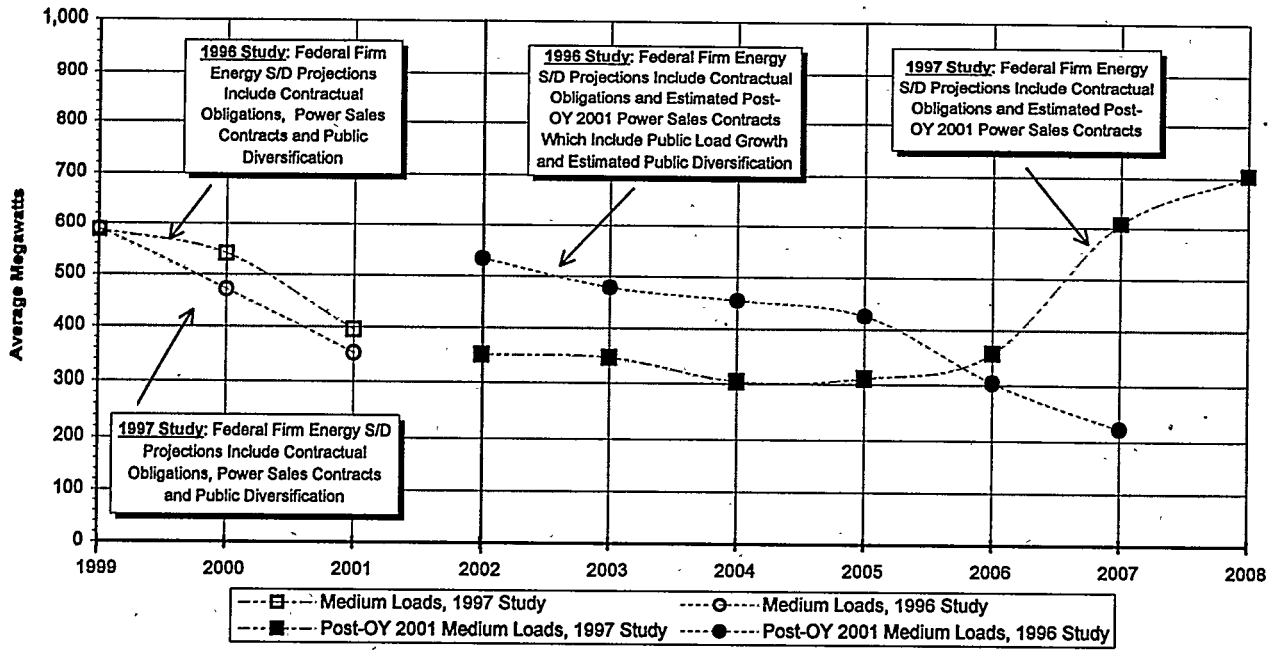
Federal Firm Energy Surplus/Deficit Projections Assuming Existing Loads, Resources, and Contracts Under 1936-37 Water Conditions

Energy In Average Megawatts

Medium Load Scenario	OPERATING YEAR[1]									
	1999	2000	2001	2002[2]	2003[2]	2004[2]	2005[2]	2006[2]	2007[2]	2008[2]
	587	540	395	350	*346*	*304*	*310*	*357*	*608*	*704*

Figure 4

Federal Firm Annual Energy Surplus/Deficit Projections [2]



[1] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1998-99 is August 1, 1998, through July 31, 1999.

[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 contract obligations remain at the OY 2001 level through the remainder of the study period. For OY 2002 and beyond, however, these projections are uncertain because BPA's firm contractual obligations and the impacts of deregulating the wholesale and retail electric utility industry are unknown.

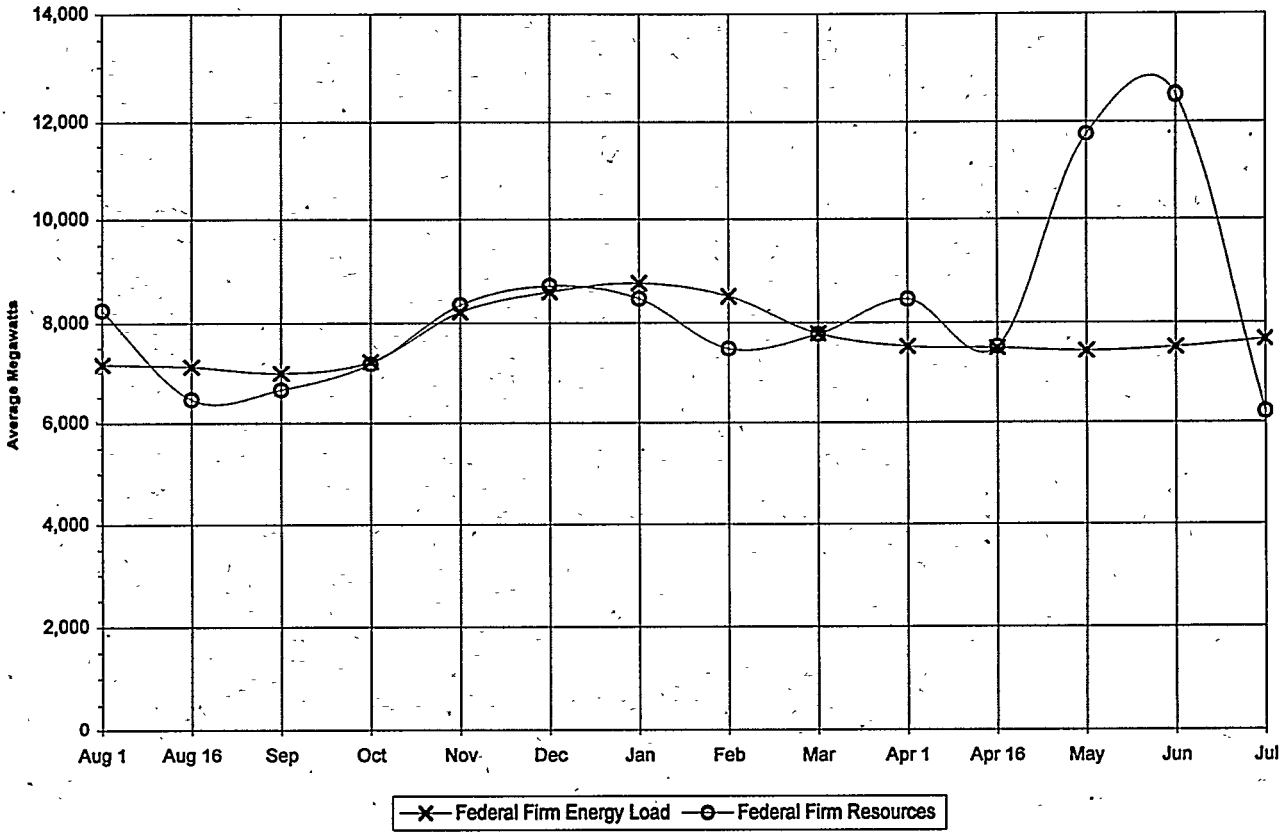
Figure 5, below, shows the monthly Federal system firm energy loads and resources for OY 1998-99. This figure illustrates the timing of Federal system monthly surpluses and deficits in any operating year created by incorporating the Lower Snake A1 Study.

Under critical water conditions, Federal hydro resources are generally operated at lower power production levels during the January through March timeframe 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 1998-99[1] 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 1998-99 is August 1, 1998, through July 31, 1999.

V. RESOURCE PLANNING ALTERNATIVES

BPA's Resource Strategy

As previously discussed, Federal hydro system operations have changed to reflect implementation of the Lower Snake A1 Study. 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.[1] 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 streamflow requirements of the Lower Snake A1 Study 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 for the output of three combustion turbine projects, 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

[1] A factor which will affect BPA's strategy for additional resources is the extent of BPA's new firm power for regional load obligations of its public agencies, investor-owned utilities, and Federal agencies in the post-2001 period.

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 Southern California Edison (SCE) 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
- Under some contracts, 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. Under some contracts, 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 1997 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]	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1. Resource Contingency Program (RCP) Resources[2]	0	0	854	854	854	854	854	854	854	854
2. Termination of PSW Surplus Power Sales	162	162	162	162	162	162	162	162	162	148
3. Exchange Energy from PSW	46	45	44	43	41	40	39	38	38	38
4. Supplemental Energy from PSW	41	42	43	44	46	47	48	49	49	49
5. Non-Treaty Storage	115	115	115	115	105	0	0	0	0	0
TOTAL CONTRACTUAL OPTIONS	364	364	1,218	1,218	1,208	1,103	1,103	1,103	1,103	1,089

[1] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1998-99 is August 1, 1998, through July 31, 1999.

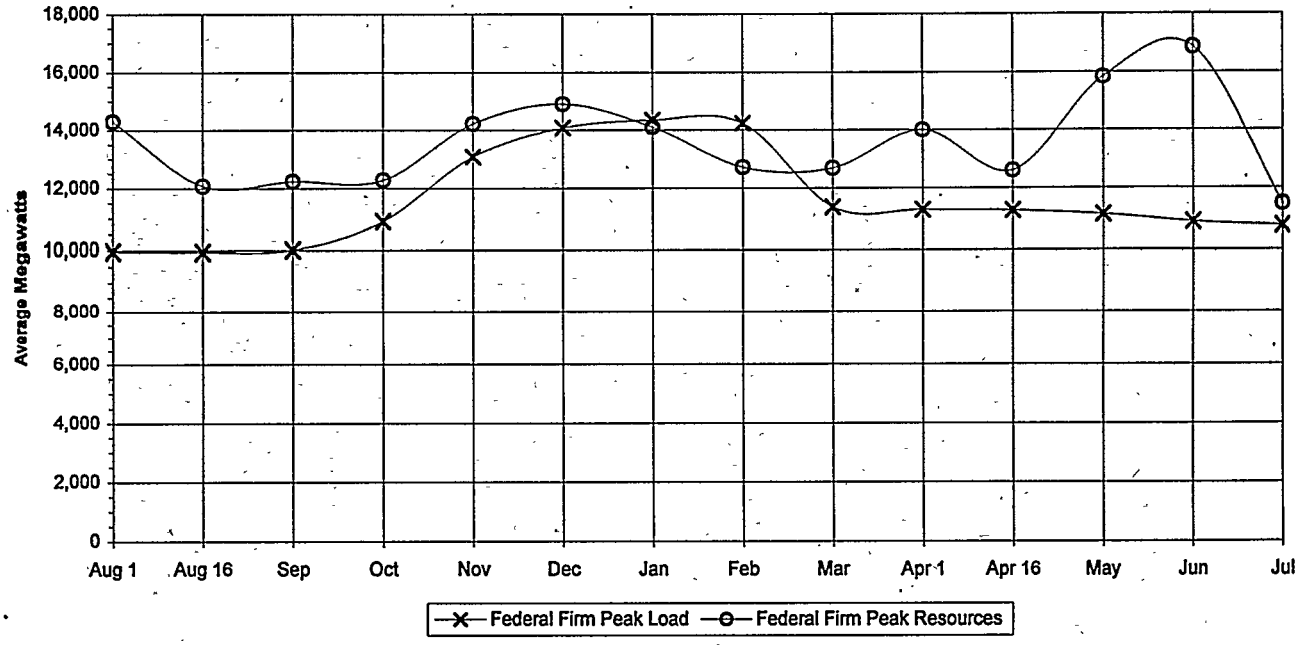
[2] These resources could be available as early as August 2000. Resource potential is 854 average megawatts.

Federal Firm Capacity Surplus/ Deficit Projections

Figure 6, below, shows the monthly Federal system peak loads and resources for OY 1998-99 under 1937 water conditions assuming extreme weather conditions during 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 Conditions[1] for OY 1998-99[2]



[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 1998-99 is August 1, 1998, through July 31, 1999.

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.

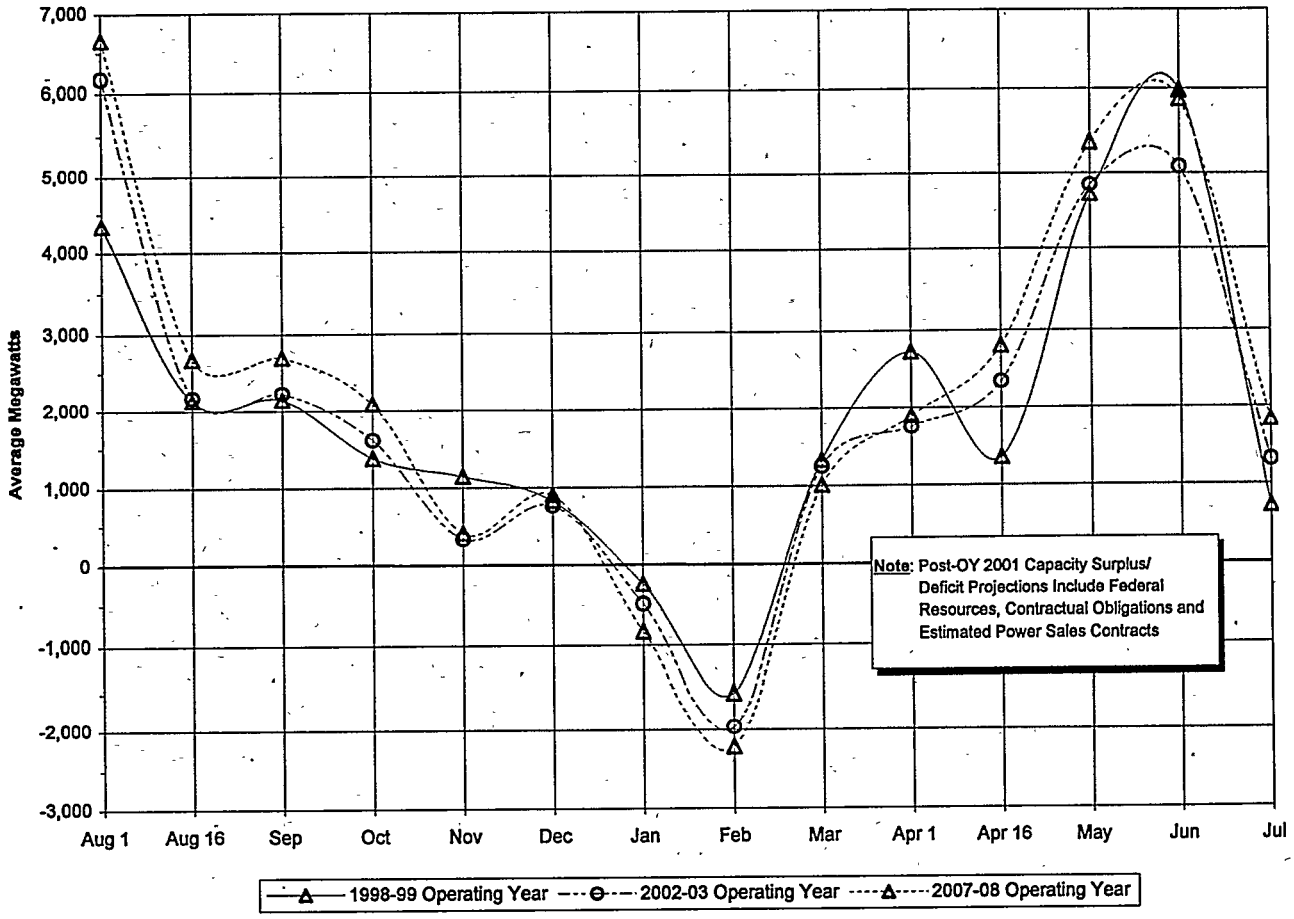
As BPA acquires future resources, the added capacity will increase capacity available to the Federal system.

Figure 7, page 30, shows the Federal firm capacity surplus/deficit projections under the medium load forecast for OY 1998-99, 2002-03, and 2007-08. This analysis incorporates all operating requirements currently adopted by the hydroelectric project owners and the firm planning assumptions from the Lower Snake A1 Study.

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 1998-99, 2002-03, and 2007-08, are shown on line 48 in Exhibits 6 through 8, pages 61 through 67.

Figure 7

Federal Monthly Capacity Surplus/Deficit Projections [1] Under Extreme Weather Conditions [2]



[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 contract obligations remain 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 1997 Pacific Northwest Loads and Resources Study compared to the 1996 Study for OY 1998-99 through 2006-07. The table lists the Federal firm energy surplus/deficit projections for the 1996 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.

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 DSI power sales contracts and block sales signed through December 31, 1996.

Public Agencies' Power Sales Contract Purchases

The small and non-generating public agencies' energy purchases and generating public agencies' purchases are different due to new public agencies' contract purchases and variations in the new hydro regulations used in this study.

Exports

The 1997 White Book analysis includes the following new Federal exports: BPA to Azusa, energy sale; BPA to Azusa, power sale; BPA to Banning, energy sale and power sale; BPA to BART, power sale; BPA to Colton, energy sale and power sale; and BPA to New Energy Ventures, 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.

Contracts Out

The 1997 White Book analysis includes the following new or changed Federal contracts out: BPA to Bandon, power sale; BPA to Benton County PUD, power sale; BPA to Big Bend Electric Cooperative, summer seasonal product; BPA to Central Electric Cooperative, summer seasonal product; BPA to the city of Ashland, power sale; BPA to Columbia Basin Electric Cooperative, summer seasonal product; BPA to Columbia Rural Electric Cooperative, summer seasonal product; BPA to Cowlitz County PUD, power sale; BPA to Grant County PUD, power sale; BPA to Harney Electric Cooperative, summer seasonal product; BPA to Inland Power and Light, summer seasonal product; BPA to Midstate Electric Cooperative, summer seasonal product; BPA to MPC, capacity/energy exchange; BPA to Okanogan, summer seasonal product; BPA to other entities, power sales; BPA to Nespelem Valley Electric Cooperative, summer seasonal product; BPA to Raft River Electric Cooperative, power sale; BPA to Ravalli County Electric

Cooperative, power sale; BPA to Salem Electric Cooperative, green power sale; BPA to small and nongenerating public agencies, Hungry Horse power sales; BPA to Springfield Utility Board, power sale; BPA to Surprise Valley Electric Corporation, summer seasonal product; BPA to United Electric Cooperative, power sale; BPA to Umatilla Electric Cooperative, summer seasonal product; BPA to Vigilante Electric Cooperative, summer seasonal product; BPA to Wasco Electric Cooperative, summer seasonal product; and BPA to Washington Water Power, power sale.

BPA's contracts to Clark and to Lewis for Packwood Lake, to PP&L for WNP-3 settlement, and its WWP Riverside power sale contract were terminated. Other BPA power sales contracts with Flathead Electric Cooperative, Kootenai Electric Cooperative, PP&L, the city of Port Angeles, and with WWP for Clark expired.

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 Lower Snake A1 Study when analyzing the Federal system firm hydro capability. This study produces slightly less energy than the 1996 analysis over the study horizon.

Independent Hydro

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

Imports

Federal imports have decreased versus the 1996 White Book analysis because BPA's exchange energy and seasonal replacement energy agreements with Imperial Irrigation District and the exchange energy agreement with M-S-R were terminated and its contract with Vernon expired. 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 through the end of the study period; therefore, it includes no exchange energy from those utilities. 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.

Contracts In

BPA's contract with PP&L for the WNP-3 settlement was terminated.

Table 9

Federal Firm Energy Surplus/Deficit Projections
Difference Between the 1997 Final White Book and the 1996 White Book [1/]
Under 1937 Water Conditions

Energy in Average Megawatts

Operating Year [2/]	1999	2000	2001	2002 [3/]	2003 [3/]	2004 [3/]	2005 [3/]	2006 [3/]	2007 [3/]
1. 1996 White Book Federal Firm Surplus/Deficit	590	472	352	533	479	455	426	304	223
2. Firm Load Changes for the 1997 Final White Book (+ Indicates Load Increase - Indicates Load Decrease)									
a) DSI Loads as of 12/31/96 [4/]	0	0	0	0	0	0	0	0	-1
b) Small & Non-Gen Public Purchases	-140	-141	-140	-258	-284	-306	-322	-349	-371
c) Exports [5/]	73	60	117	103	67	68	76	79	83
d) Contracts Out	80	20	28	348	479	480	488	428	177
e) Generating Public Agencies Purchases	-183	-167	-204	-240	-293	-326	-357	-444	-503
f) Miscellaneous	2	-2	-3	-35	-39	-40	-40	-42	-45
Total Load Change	-168	-230	-202	-82	-70	-124	-155	-328	-660
3. Resource Changes for the 1997 Final White Book (+ Indicates Resource Increase - Indicates Resource Decrease)									
a) Regulated Hydro (1937 12-Month Average)	-89	-83	-81	-188	-196	-198	-194	-197	-197
b) Independent Hydro (1937 12-Month Average)	0	0	0	0	0	0	0	0	0
c) Canadian Entitlement for Canada	-4	-9	-2	-3	-12	-14	-10	-13	-13
d) Imports [6/]	-11	-11	-11	-11	61	-10	-11	-11	-11
e) Contracts In	-65	-65	-65	-65	-65	-65	-65	-66	-66
f) Renewable Resources	0	0	0	0	0	0	0	0	0
g) Miscellaneous	-6	-3	-1	-3	-3	-2	-1	-1	-1
Total Resource Change	-175	-171	-160	-270	-215	-289	-281	-288	-288
4. 1997 Final White Book Federal Firm Surplus/Deficit (Line 1 - Line 2 + line 3)	587	540	395	350	346	304	310	357	608

1 The 1996 and 1997 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 1998-99 is August 1, 1998, through July 31, 1999.

3 After OY 2001, BPA's public agency and DSI firm requirements shown on lines 2a, 2b, and 2e assume that BPA's power sales contracts and public agency load diversification remain 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, and Pasadena and with SCE are assumed to be in power sales mode through the study horizon.

6 Imports include: option energy from SCE through OY 2003. 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 the study.

Federal Loads and Resources Comparison–Capacity

Table 10, page 35, shows changes in the capacity analysis of the 1997 Pacific Northwest Loads and Resources Study compared to the 1996 Study for OY 1998-99. The table lists the Federal system firm 50-hours-per-week capacity surplus/deficit projections for the 1996 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 1996 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 1996 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 1997 Final White Book and the 1996 White Book [1]
For Operating Year 1998-99 Under 1937 Water Conditions
Peak in Megawatts

Operating Year [2] 1998-99	Aug 1	Aug 2	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr2	May	Jun	Jul
1. 1996 White Book Federal Firm Capacity Surplus/Deficit	2,426	2,377	2,373	1,373	625	1,177	-1,549	-877	1,092	1,744	4,192	4,348	4,526	1,016
2. Firm Load Changes for the 1997 Final White Book (+ Indicates Load Increase - Indicates Load Decrease)														
a) DSI Loads 12/31/96 [3]	0	0	0	-1	0	0	0	0	0	0	0	0	0	0
b) Small & Non-Gen Public Purchase	-73	-73	-84	-117	-122	-127	-125	-132	-109	-110	-110	-280	-280	-282
c) Exports [4]	218	218	207	1	52	52	11	11	11	12	11	180	196	208
d) Contracts Out	78	78	78	116	-41	-36	-113	-116	-38	-90	-90	143	139	133
e) Gen Public Agencies Purchase	112	-29	-26	-66	112	127	103	-5	-185	-224	-243	138	46	94
f) Federal Diversity	-18	-1	0	3	2	0	7	15	30	38	40	-5	8	3
g) Federal Losses	24	34	34	36	32	43	33	35	34	41	34	38	34	27
h) Federal Extreme Weather Adj.	0	0	0	0	87	97	138	-54	0	0	0	0	0	0
i) Miscellaneous	-1	-1	-1	0	0	-2	0	1	0	-1	0	0	-1	1
Total Load Change	340	226	208	-28	122	154	54	-245	-257	-334	-358	214	142	184
3. Resource Changes for the 1997 Final White Book (+ Indicates Resource Increase - Indicates Resource Decrease)														
a) Regulated Hydro (1937 12-Month Avg.)	252	112	122	167	194	228	19	-65	78	70	363	739	404	-448
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	2,091	-106	-116	-160	494	-406	1,400	-827	-74	722	-3,512	0	394	425
d) Canadian Entitlement for Canada	-17	-15	-17	-17	-16	-17	-16	-17	-17	-106	-106	-102	-106	-107
e) Imports [5]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
f) Contracts In	0	0	0	0	0	0	0	0	0	0	0	0	0	0
g) Renewable Resources	0	0	0	0	0	10	0	0	0	0	0	0	0	0
h) Large Thermal	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	0	0	1,162	-8
i) Hydro Reserves	-12	-6	-6	-8	-10	-12	-1	3	-4	-3	-18	-37	-20	23
j) Large Thermal Reserves	1	1	1	1	1	1	1	1	1	1	0	0	-174	1
k) Spinning Reserves	-57	0	0	1	-16	5	-34	22	0	-19	77	-17	-60	0
l) Miscellaneous	0	1	0	0	-1	0	-1	0	0	0	0	-1	-1	0
Total Resource Change	2,250	-21	-24	-24	638	-199	1,360	-891	-24	657	-3,196	582	1,599	-114
4. 1997 Final White Book Federal Firm Capacity Surplus/Deficit (Line 1 - Line 2 + Line 3)	4,336	2,130	2,141	1,377	1,142	824	-243	-1,523	1,325	2,734	1,354	4,716	5,982	718

1 The 1996 and 1997 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 1998-99 is August 1, 1998, through July 31, 1999.

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

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

5 Imports include: Option energy from SCE through OY 2003. 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 2003;
- SCE purchases option capacity from BPA through OY 2003;
- 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 4,400 peak megawatts under the medium load forecast.

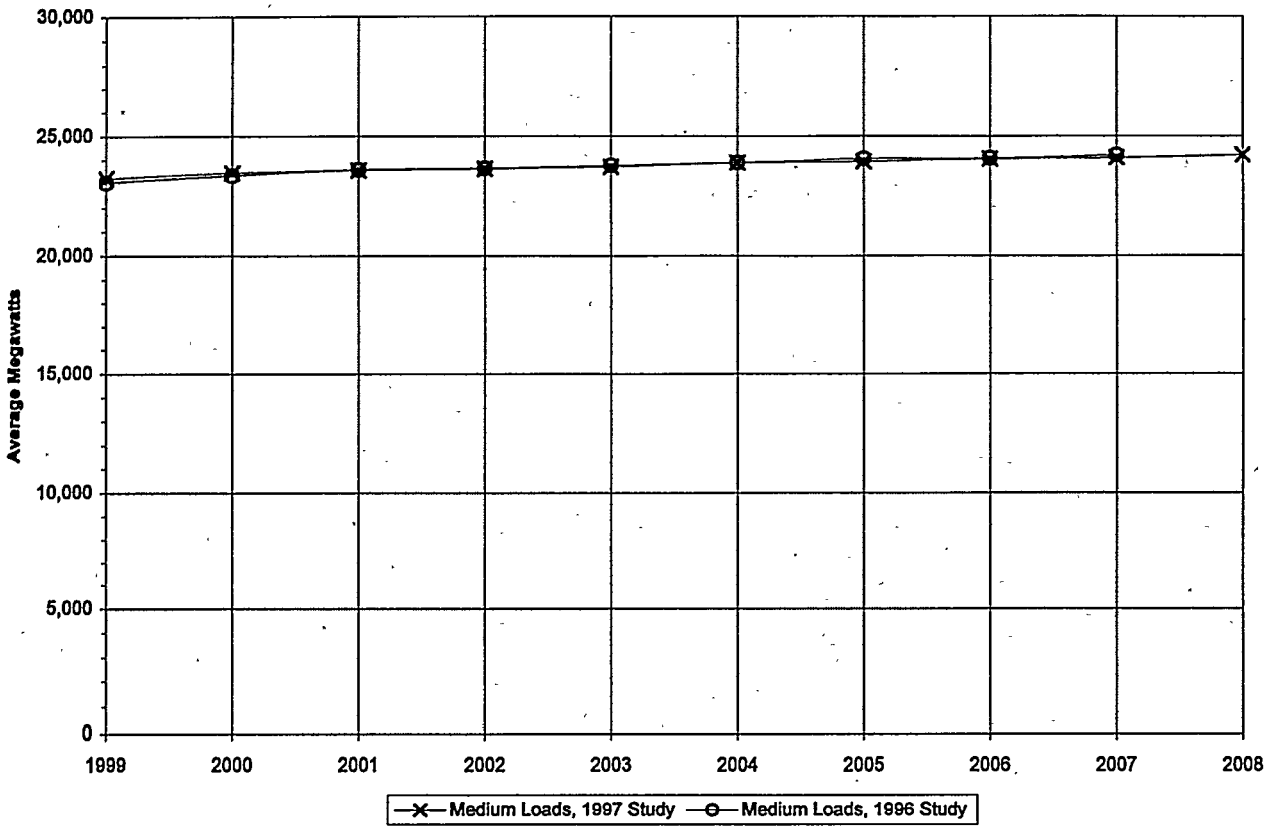
This analysis includes current operating requirements adopted by the hydroelectric project owners, and incorporates the Lower Snake A1 Study.

Regional Firm Energy Loads

Regional firm energy loads for OY 1998-99 through 2007-08 based on BPA's 1996 White Book 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 1998-99, 2002-03, and 2007-08 under the medium load forecast are presented in Exhibits 20 through 22, pages 89 through 95.

Figure 8

Regional Firm Annual Energy Loads
1997 BPA Forecast



Regional Firm Peak Loads

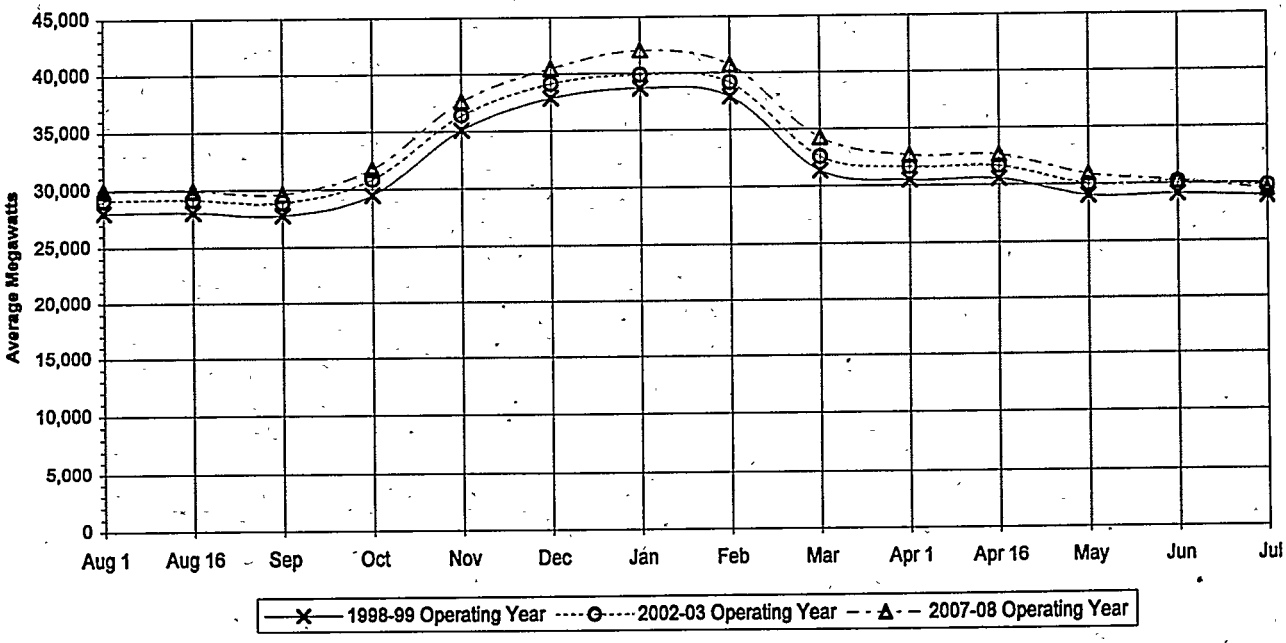
Figure 9, below, illustrates the regional firm peak loads under the medium load forecast for OY 1998-99, 2002-03, and 2007-08. The figures show the expected 1-hour monthly demand under BPA's 1997 White Book load forecast and include extreme weather adjustments for capacity. Extreme weather conditions 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 1998-99, 2002-03, and 2007-08 Under Extreme Weather Conditions[1]

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 1998-99. Hydroelectric resources make up a smaller percentage of the regional resources than of the Federal system resources because most of the thermal resources are owned by 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 1997 Pacific Northwest Loads and Resources Technical Appendix (available March 1998).

Table 11

Regional Firm Resources for OY 1998-99 [1] Based on 1936-37 Water Conditions

Capacity based on January 1999

PROJECT TYPE	Sustained Peak Capacity (MW)	Generating Peak Capacity % of Total	Firm Energy (aMW) 12-Month Average	Firm Energy % of Total
Hydro	25,887	67	12,187	57
Coal	4,521	12	4,061	19
Nuclear	1,162	3	841	4
Imports	2,996	8	1,669	8
Combustion Turbines	1,665	4	753	3
Non-Utility Generation	1,166	3	1,051	5
Miscellaneous	1,039	3	846	4
TOTAL RESOURCES	**38,436**	**100**	**21,408**	**100**

[1] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1998-99 is August 1, 1998, through July 31, 1999.

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 Lower Snake A1 Study.

The regional firm energy surplus/deficit projections for the medium load forecast for OY 1998-99 through 2007-08 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 regional energy surpluses/deficits for the medium load scenario are presented on line 35 in Exhibit 19, page 85. Monthly regional firm energy loads and resources balances under the medium load forecast for OY 1998-99, 2002-03, and 2007-08 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

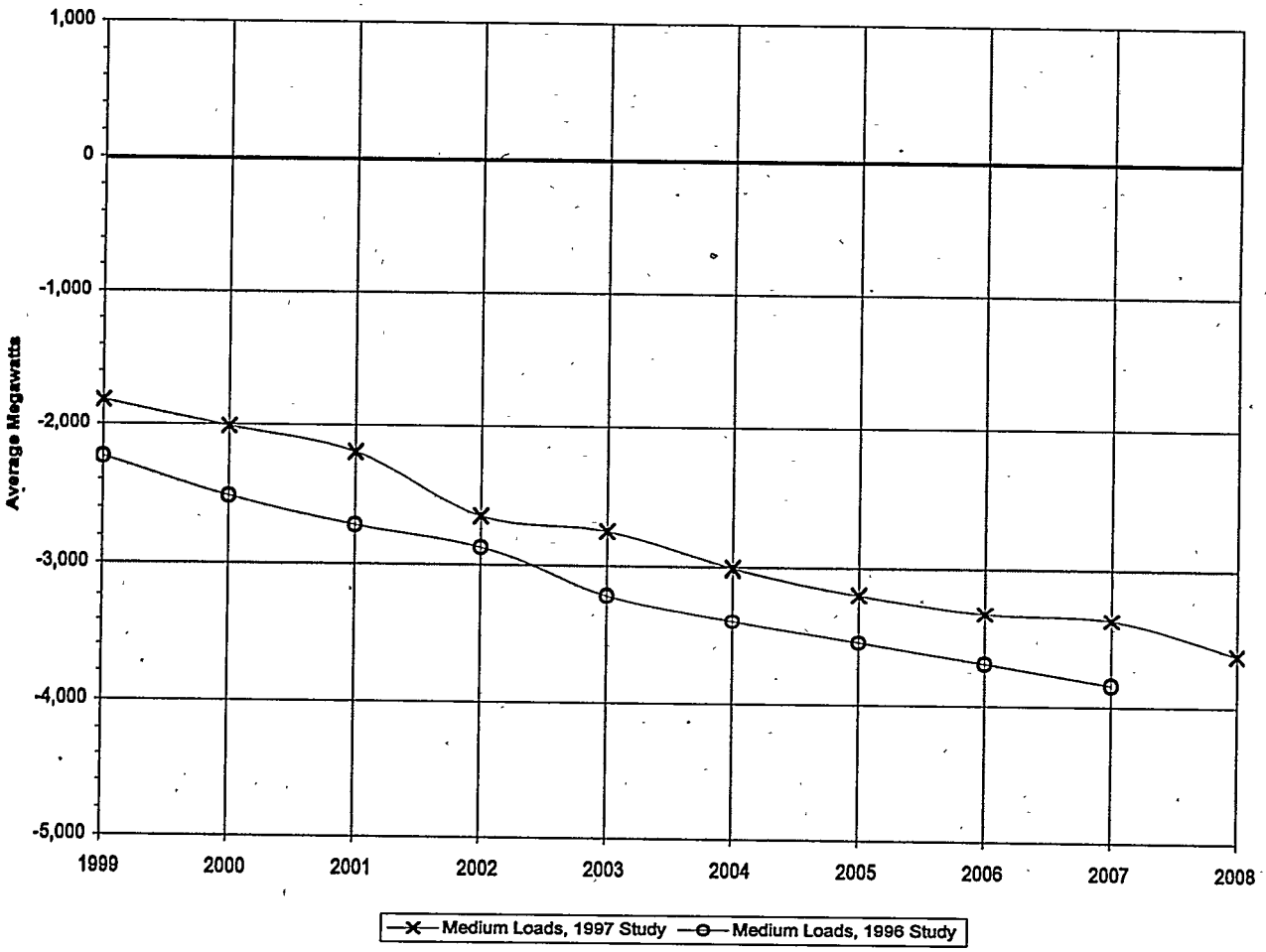
Energy In Average Megawatts

Medium Load Scenario	OPERATING YEAR[1]									
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	-1,820	-2,014	-2,198	-2,651	-2,753	-3,008	-3,174	-3,319	-3,372	-3,644

[1]Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1998-99 is August 1, 1998, through July 31, 1999.

Figure 10

Regional Firm Annual Energy Surplus/Deficit Projections



Regional Firm Capacity Surplus/Deficit Projections

Figure 11, page 43, shows the region's firm 50-hours-per-week capacity surplus/deficit projections under the medium load forecast for OY 1998-99, 2002-03, and 2007-08. This analysis incorporates all operating restrictions currently adopted by the hydroelectric project owners and the firm planning assumptions from the Lower Snake A1 Study.

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:

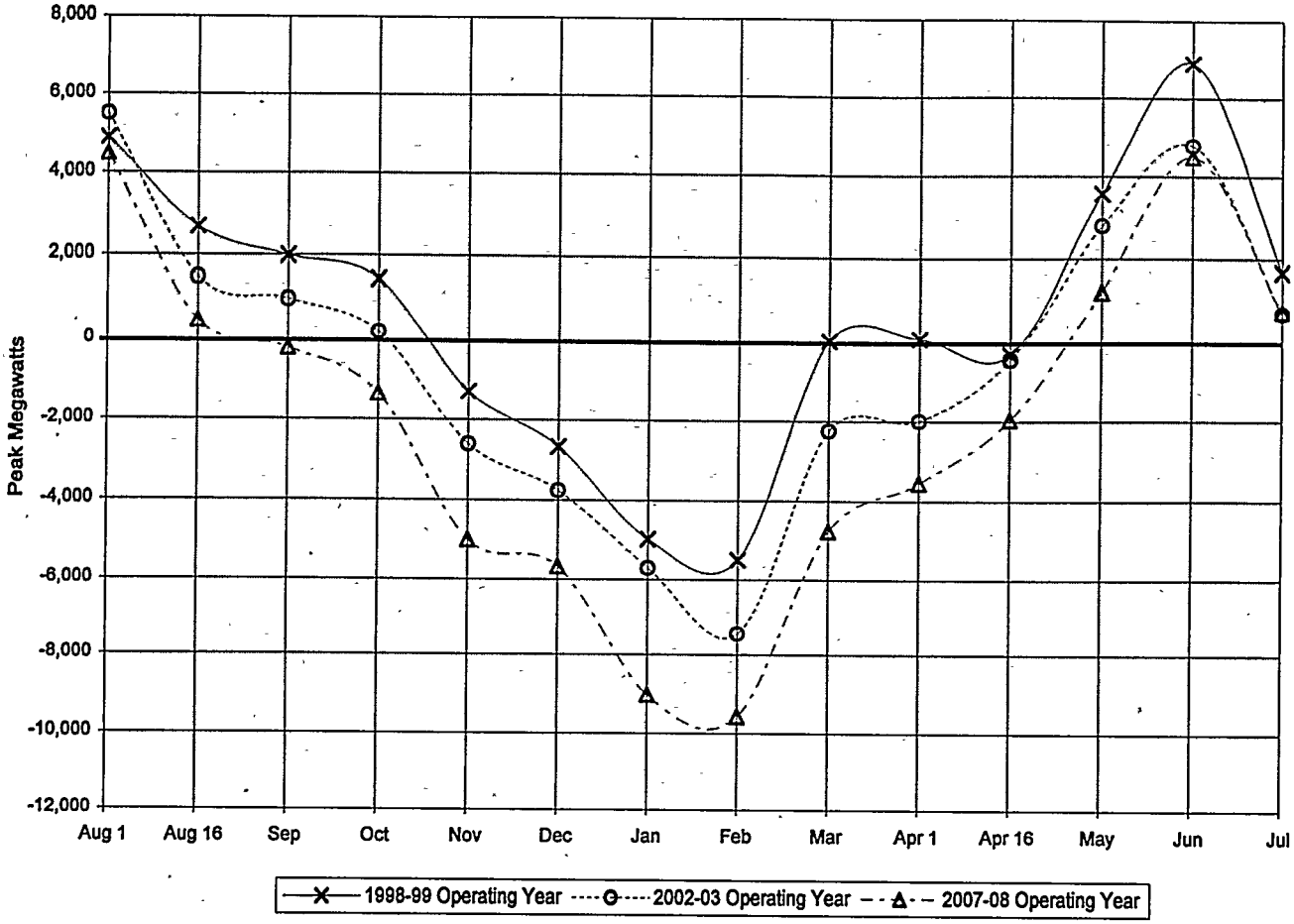
- Low regional system loads;
- Nonpower hydro requirements that dictate minimum streamflows; and
- The inability of the region's thermal resources to cycle from day to night.

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 1998-99, 2002-03, and 2007-08 are presented in Exhibits 24 through 26 on pages 99 through 105.

Figure 11

Regional Monthly Firm Capacity Surplus/Deficit Projections Under Extreme Weather Conditions[1]



[1]Extreme 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 SYSTEM ANNUAL ENERGY ANALYSIS UNDER 1937 WATER CONDITIONS FOR 10 OPERATING YEARS

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

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

OPERATING YEAR

MEGAWATTS		1998-99 AVG	1999- 0 AVG	2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG
LOADS											
1 FEDERAL AGENCIES		147	148	149	150	151	152	153	153	154	155
2 FEDERAL GPU TRANS LOSSES		64	61	62	28	25	24	24	22	20	19
3 FEDERAL NGP TRANS LOSSES		107	107	108	108	109	110	111	112	112	113
4 USBR		68	68	68	68	68	68	68	68	68	68
5 DSI FIRM LOAD		2021	2084	2159	2172	2172	2172	2172	2172	2172	2172
6 DSI FIRM LOSSES		57	59	60	60	60	60	60	60	60	60
7 SM & NON GEN PUB PURCH	1/	2129	2128	2117	2117	2117	2117	2117	2117	2117	2117
8 FIRM SYSTEM LOAD		4591	4655	4722	4703	4702	4702	4704	4704	4703	4705
TRANSFERS OUT											
9 EXPORTS	2/	689	864	890	877	829	891	881	881	882	868
10 CONTRACTS OUT	3/	1067	1003	789	786	885	886	888	828	577	480
11 CSPE TO WEST GROUP UTIL	4/	178	102	98	94	61	0	0	0	0	0
12 GEN PUB AGEN PSC PURCH	5/	1258	1251	1460	1460	1460	1460	1460	1460	1460	1460
13 IOU PSC PURCHASE	6/	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	7/	0	0	0	0	0	0	0	0	0	0
15 FIRM LOADS		7784	7873	7959	7921	7938	7940	7934	7873	7622	7513
HYDRO RESOURCES											
16 REGULATED HYDRO		6598	6652	6562	6457	6457	6457	6457	6457	6457	6457
17 INDEPENDENT HYDRO		380	380	380	380	380	380	380	380	380	380
18 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0
19 CAN. ENT. NON-FED(CSPE)	9/	38	23	22	21	14	0	0	0	0	0
20 CAN. ENT. NON-FED(CNDA)	10/	37	83	81	80	100	145	148	144	144	143
21 RESTORATION	11/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
22 TOTAL HYDRO		7027	7111	7020	6912	6926	6957	6960	6956	6956	6955
OTHER RESOURCES											
23 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0
24 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0
25 RENEWABLES	12/	29	29	29	29	29	29	29	29	29	29
26 COGENERATION		0	0	0	0	0	0	0	0	0	0
27 IMPORTS	13/	295	258	258	258	258	187	183	174	174	174
28 CONTRACTS IN	14/	170	159	156	180	180	180	180	179	179	167
29 LARGE THERMAL	15/	841	841	876	876	876	876	876	876	876	876
30 NON-UTILITY GENERATION	16/	9	16	16	16	16	16	16	16	16	16
31 RESOURCE ACQUISITIONS	17/	0	0	0	0	0	0	0	0	0	0
32 TOTAL RESOURCES		8371	8414	8354	8270	8284	8244	8244	8230	8230	8217

EXHIBIT 1

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

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

MEGAWATTS	OPERATING YEAR 1998-99 AVG	1999- 0 AVG	2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG
RESERVES & MAINTENANCE										
33 HYD SM THRM & MISC RES 18/	0	0	0	0	0	0	0	0	0	0
34 LARGE THERMAL RESERVES 19/	0	0	0	0	0	0	0	0	0	0
35 SPINNING RESERVES 20/	0	0	0	0	0	0	0	0	0	0
36 FEDERAL HYDRO MAINT 21/	0	0	0	0	0	0	0	0	0	0
37 NET RESOURCES	8371	8414	8354	8270	8284	8244	8244	8230	8230	8217
SURPLUS/DEFICITS										
38 FIRM SURPLUS/DEFICIT	587	540	395	350	346	304	310	357	608	704
39 EXTREME WEATHER ADJ. 22/	0	0	0	0	0	0	0	0	0	0
40 FIRM S/D W/EXT WEATHER ADJ.	587	540	395	350	346	304	310	357	608	704
41 POSS FED EXT WTHR. OBLG 23/	0	0	0	0	0	0	0	0	0	0
42 FIRM S/D W/EXT WTHR. OBLIG	587	540	395	350	346	304	310	357	608	704

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 PASADENA: PS & C/N/X
   D. 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 2003.
4. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH OY 2003.
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 SYSTEM MONTHLY ENERGY 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

1998-99 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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		145	145	137	141	149	166	160	161	153	141	141	136	134	144	147
2 FEDERAL GPU TRANS LOSSES		44	44	53	79	89	94	85	71	58	57	53	49	46	42	64
3 FEDERAL NGP TRANS LOSSES		94	94	88	93	112	131	135	127	110	102	102	96	96	96	107
4 USBR		161	161	109	42	3	2	2	2	4	50	50	117	151	168	68
5 DSI FIRM LOAD		1904	1904	1904	2044	2044	2044	2044	2044	2044	2044	2044	2044	2044	2044	2021
6 DSI FIRM LOSSES		50	50	49	55	59	63	63	63	59	57	57	55	55	53	57
7 SM & NON GEN PUB PURCH	1/	2105	2106	1926	1890	2209	2395	2527	2360	2146	2094	2095	1892	1945	2055	2129
8 FIRM SYSTEM LOAD		4503	4504	4266	4344	4665	4895	5016	4828	4574	4545	4542	4389	4471	4602	4591
TRANSFERS OUT																
9 EXPORTS	2/	697	697	690	535	525	535	510	505	476	731	768	956	1056	1037	689
10 CONTRACTS OUT	3/	670	670	710	943	1350	1441	1377	1304	1154	930	930	951	966	1003	1067
11 CSPE TO WEST GROUP UTIL	4/	216	216	216	216	216	216	216	216	216	103	103	103	103	103	178
12 GEN PUB AGEN PSC PURCH	5/	1081	1030	1105	1183	1465	1525	1659	1672	1364	1215	1154	1038	917	929	1258
13 IOU PSC PURCHASE	6/	0	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	0
15 FIRM LOADS		7168	7118	6986	7221	8221	8612	8778	8525	7784	7524	7497	7437	7513	7675	7784
HYDRO RESOURCES																
16 REGULATED HYDRO		6616	4823	4883	5396	6579	6846	6539	5424	5708	6200	6492	10773	10413	4546	6598
17 INDEPENDENT HYDRO		410	408	345	371	297	226	168	189	267	420	499	685	720	425	380
18 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 CAN. ENT. NON-FED(CSPE)	9/	45	45	45	45	45	45	45	45	45	23	23	23	23	23	38
20 CAN. ENT. NON-FED(CNDA)	10/	14	14	14	14	14	14	14	14	14	83	83	83	83	83	37
21 RESTORATION	11/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
22 TOTAL HYDRO		7059	5264	5261	5800	6909	7105	6740	5646	6008	6700	7071	11538	11213	5051	7027
OTHER RESOURCES																
23 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 RENEWABLES	12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27	29
26 COGENERATION		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 IMPORTS	13/	104	104	137	185	257	422	539	637	570	571	220	75	93	125	295
28 CONTRACTS IN	14/	98	98	263	194	193	193	193	193	193	193	193	107	194	29	170
29 LARGE THERMAL	15/	961	961	961	961	961	961	961	961	961	961	0	0	961	961	841
30 NON-UTILITY GENERATION	16/	5	5	5	7	10	12	13	12	9	8	8	6	6	14	9
31 RESOURCE ACQUISITIONS	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 TOTAL RESOURCES		8254	6459	6654	7176	8360	8725	8478	7480	7772	8463	7522	11753	12494	6207	8371

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

1998-99 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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																
33 HYD SM THRM & MISC RES	18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 LARGE THERMAL RESERVES	19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 SPINNING RESERVES	20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 FEDERAL HYDRO MAINT	21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 NET RESOURCES		8254	6459	6654	7176	8360	8725	8478	7480	7772	8463	7522	11753	12494	6207	8371
SURPLUS/DEFICITS																
38 FIRM SURPLUS/DEFICIT		1086	-659	-332	-45	138	113	-300	-1045	-12	939	25	4316	4981	-1468	587
39 EXTREME WEATHER ADJ.	22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FIRM S/D W/EXT WEATHER ADJ.		1086	-659	-332	-45	138	113	-300	-1045	-12	939	25	4316	4981	-1468	587
41 POSS FED EXT WTHR. OBLG	23/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 FIRM S/D W/EXT WTHR. OBLIG		1086	-659	-332	-45	138	113	-300	-1045	-12	939	25	4316	4981	-1468	587

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 PASADENA: PS & C/N/X
   D. 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 2003.
4. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH OY 2003.
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

M E D I U M L O A D S

2002- 3 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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		149	149	141	145	153	170	164	165	156	144	144	138	137	147	151
2 FEDERAL GPU TRANS LOSSES		16	16	18	35	40	41	36	26	23	23	15	16	15	14	25
3 FEDERAL NGP TRANS LOSSES		97	97	91	95	115	134	137	130	113	105	105	99	99	99	109
4 USBR		161	161	109	42	2	2	2	2	4	50	50	118	152	169	68
5 DSI FIRM LOAD		2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172
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	1/	2068	2072	1901	1880	2186	2359	2503	2336	2121	2069	2069	1914	1966	2094	2117
8 FIRM SYSTEM LOAD		4717	4721	4486	4427	4731	4945	5081	4898	4652	4624	4616	4516	4600	4749	4702
TRANSFERS OUT																
9 EXPORTS	2/	895	895	890	845	836	846	641	636	606	846	883	921	1011	960	829
10 CONTRACTS OUT	3/	644	644	635	674	1185	1254	1234	1195	909	901	901	632	658	701	885
11 CSPE TO WEST GROUP UTIL	4/	92	92	92	92	92	92	92	92	92	0	0	0	0	0	61
12 GEN PUB AGEN PSC PURCH	5/	1130	1085	1167	1425	1713	1777	1910	1920	1610	1425	1442	1216	1109	1131	1460
13 IOU PSC PURCHASE	6/	0	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	0
15 FIRM LOADS		7478	7437	7270	7463	8557	8914	8958	8742	7869	7797	7843	7284	7378	7541	7938
HYDRO RESOURCES																
16 REGULATED HYDRO		7775	5120	5600	5396	6424	7001	6572	4815	5399	5975	7353	10390	8467	4313	6457
17 INDEPENDENT HYDRO		410	408	345	371	297	226	168	189	267	420	499	685	720	425	380
18 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 CAN. ENT. NON-FED(CSPE)	9/	21	21	21	21	21	21	21	21	21	0	0	0	0	0	14
20 CAN. ENT. NON-FED(CNDA)	10/	79	79	79	79	79	79	79	79	79	143	143	143	143	143	100
21 RESTORATION	11/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
22 TOTAL HYDRO		8259	5602	6019	5841	6795	7301	6814	5078	5740	6512	7969	11192	9304	4855	6926
OTHER RESOURCES																
23 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 RENEWABLES	12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27	29
26 COGENERATION		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 IMPORTS	13/	110	110	143	185	257	326	443	541	474	475	169	75	93	125	258
28 CONTRACTS IN	14/	150	150	315	315	164	164	164	164	164	164	164	78	165	150	180
29 LARGE THERMAL	15/	1001	1001	1001	1001	1001	1001	1001	1001	1001	1001	0	0	1001	1001	876
30 NON-UTILITY GENERATION	16/	13	13	13	13	16	20	19	19	17	12	11	16	17	14	16
31 RESOURCE ACQUISITIONS	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 TOTAL RESOURCES		9560	6903	7519	7384	8263	8843	8474	6834	7428	8194	8344	11388	10607	6172	8284

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

2002- 3 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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																
33 HYD SM THRM & MISC RES	18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 LARGE THERMAL RESERVES	19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 SPINNING RESERVES	20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 FEDERAL HYDRO MAINT	21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 NET RESOURCES		9560	6903	7519	7384	8263	8843	8474	6834	7428	8194	8344	11388	10607	6172	8284
SURPLUS/DEFICITS																
38 FIRM SURPLUS/DEFICIT		2082	-534	249	-79	-294	-72	-485	-1908	-441	398	501	4104	3229	-1369	346
39 EXTREME WEATHER ADJ.	22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FIRM S/D W/EXT WEATHER ADJ.		2082	-534	249	-79	-294	-72	-485	-1908	-441	398	501	4104	3229	-1369	346
41 POSS FED EXT WTHR. OBLG	23/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 FIRM S/D W/EXT WTHR. OBLIG		2082	-534	249	-79	-294	-72	-485	-1908	-441	398	501	4104	3229	-1369	346

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 PASADENA: PS & C/N/X
   D. 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 2003.
4. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH OY 2003.
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

M E D I U M L O A D S

2007- 8 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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		153	153	144	149	157	176	169	170	161	149	149	143	141	151	155
2 FEDERAL GPU TRANS LOSSES		10	10	12	29	33	34	29	20	19	19	10	11	11	11	19
3 FEDERAL NGP TRANS LOSSES		101	101	95	99	119	137	141	134	117	108	108	103	103	101	113
4 USBR		162	162	110	42	2	2	2	2	4	50	50	118	152	170	68
5 DSI FIRM LOAD		2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172
6 DSI FIRM LOSSES		54	54	54	58	63	67	67	67	63	61	61	58	59	54	60
7 SM & NON GEN PUB PURCH	1/	2068	2072	1901	1880	2186	2359	2503	2336	2121	2069	2069	1914	1966	2094	2117
8 FIRM SYSTEM LOAD		4720	4724	4488	4429	4732	4947	5083	4901	4657	4628	4619	4519	4604	4753	4705
TRANSFERS OUT																
9 EXPORTS	2/	912	912	906	870	861	871	872	849	819	815	815	841	912	888	868
10 CONTRACTS OUT	3/	237	237	242	280	790	860	840	801	515	507	507	204	230	259	480
11 CSPE TO WEST GROUP UTIL	4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 GEN PUB AGEN PSC PURCH	5/	1130	1085	1167	1425	1713	1777	1910	1920	1610	1425	1442	1216	1109	1131	1460
13 IOU PSC PURCHASE	6/	0	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	0
15 FIRM LOADS		6999	6958	6803	7004	8096	8455	8705	8472	7601	7376	7384	6779	6855	7031	7513
HYDRO RESOURCES																
16 REGULATED HYDRO		7775	5120	5600	5396	6424	7001	6572	4815	5399	5975	7353	10390	8467	4313	6457
17 INDEPENDENT HYDRO		410	408	345	371	297	226	168	189	267	420	499	685	720	425	380
18 SUS. PKNG. ADJUSTMENT	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 CAN. ENT. NON-FED(CSPE)	9/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 CAN. ENT. NON-FED(CNDA)	10/	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143
21 RESTORATION	11/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
22 TOTAL HYDRO		8302	5645	6062	5884	6838	7344	6857	5121	5783	6512	7969	11192	9304	4855	6955
OTHER RESOURCES																
23 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 RENEWABLES	12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27	29
26 COGENERATION		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 IMPORTS	13/	104	104	137	185	235	289	263	219	189	190	169	75	93	125	174
28 CONTRACTS IN	14/	150	150	314	314	164	164	164	164	164	164	164	78	164	0	167
29 LARGE THERMAL	15/	1001	1001	1001	1001	1001	1001	1001	1001	1001	1001	0	0	1001	1001	876
30 NON-UTILITY GENERATION	16/	13	13	13	13	16	20	19	19	17	12	11	16	17	14	16
31 RESOURCE ACQUISITIONS	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 TOTAL RESOURCES		9597	6940	7555	7426	8284	8849	8337	6555	7186	7909	8344	11388	10606	6022	8217

EXHIBIT 4

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

M E D I U M L O A D S

2007- 8 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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															
33 HYD SM THRM & MISC RES 18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 LARGE THERMAL RESERVES 19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 SPINNING RESERVES 20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 FEDERAL HYDRO MAINT 21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 NET RESOURCES	9597	6940	7555	7426	8284	8849	8337	6555	7186	7909	8344	11388	10606	6022	8217
SURPLUS/DEFICITS															
38 FIRM SURPLUS/DEFICIT	2598	-18	752	422	188	393	-369	-1917	-415	534	960	4609	3751	-1009	704
39 EXTREME WEATHER ADJ. 22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FIRM S/D W/EXT WEATHER ADJ.	2598	-18	752	422	188	393	-369	-1917	-415	534	960	4609	3751	-1009	704
41 POSS FED EXT WTHR. OBLG 23/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 FIRM S/D W/EXT WTHR. OBLIG	2598	-18	752	422	188	393	-369	-1917	-415	534	960	4609	3751	-1009	704

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 PASADENA: PS & C/N/X
   D. 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 2003.
4. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH OY 2003.
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 SYSTEM MONTHLY 50-HOUR CAPACITY SURPLUS/DEFICIT UNDER MEDIUM LOADS FOR 1937 WATER CONDITIONS

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

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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
1998-99	4336	2130	2141	1377	1142	824	-243	-1523	1325	2734	1354	4716	5982	718
1999-00	5667	1648	1679	1147	862	453	-2090	-1993	878	1529	2634	4873	6050	884
2000-01	5716	1757	1768	1143	822	979	-2067	-1983	1712	1635	2324	4785	5536	889
2001-02	6269	2258	2316	1778	536	970	-678	-2097	1045	1933	2527	5036	5270	1468
2002-03	6172	2172	2230	1609	334	764	-496	-1960	1247	1751	2345	4848	5084	1310
2003-04	6284	2301	2337	1722	118	564	-1137	-2564	618	1504	2370	4883	5386	1604
2004-05	6288	2306	2341	1718	89	541	-1165	-2593	613	1501	2420	4932	5435	1652
2005-06	6283	2301	2337	1715	49	527	-997	-2516	706	1593	2512	5021	5523	1740
2006-07	6384	2402	2445	1912	239	730	-713	-2237	991	1877	2797	5329	5828	2059
2007-08	6660	2678	2701	2084	403	899	-835	-2215	1008	1891	2810	5381	5882	1827

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 PASADENA: PS & C/N/X
   D. 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 2003.
4. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH OY 2003.
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 SYSTEM 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

MEDIUM LOADS

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

1937 WATER YEAR PEAK IN-MEGAWATTS		1998-99 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		195	195	185	195	203	233	218	225	213	198	198	188	190	190
2 FEDERAL GPU TRANS LOSSES		79	89	117	158	169	193	169	149	122	118	111	93	81	74
3 FEDERAL NGP TRANS LOSSES		145	145	151	172	204	233	251	249	217	196	196	182	155	148
4 USBR		199	199	157	76	7	4	4	3	9	99	99	170	197	204
5 DSI FIRM LOAD		1962	1962	1962	2104	2104	2104	2104	2104	2104	2104	2104	2104	2104	2104
6 DSI FIRM LOSSES		57	57	59	67	74	78	82	80	76	72	72	69	63	61
7 SM & NON GEN PUB PURCH	1/	3102	3102	3076	3211	3573	3795	3973	4070	3669	3569	3570	3234	3053	3016
8 FIRM SYSTEM LOAD		5739	5749	5707	5983	6334	6640	6801	6880	6410	6356	6350	6040	5843	5797
TRANSFERS OUT															
9 EXPORTS	2/	1510	1510	1499	1278	907	907	866	866	866	1560	1611	1960	2261	2308
10 CONTRACTS OUT	3/	2255	2255	2304	2701	3181	3350	3255	3179	2901	2400	2400	2435	2443	2477
11 CSPE TO WEST GROUP UTIL	4/	416	416	416	416	416	416	416	416	416	200	200	200	200	200
12 GEN PUB AGEN PSC PURCH	5/	979	946	1120	1528	1725	1898	1941	2012	1682	1575	1501	1407	1055	871
13 IOU PSC PURCHASE	6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	7/	-932	-929	-958	-1006	-947	-708	-716	-721	-922	-826	-818	-929	-933	-907
15 FIRM LOADS		9967	9947	10088	10900	11616	12502	12563	12632	11353	11265	11244	11113	10869	10746
HYDRO RESOURCES															
16 REGULATED HYDRO		19329	18893	19695	19820	20796	20824	20646	20830	20454	19579	19168	19045	19404	18757
17 INDEPENDENT HYDRO		709	721	703	718	693	651	615	741	801	819	818	847	849	726
18 SUS. PKNG. ADJUSTMENT	8/	-2409	-4794	-5403	-5473	-4496	-4774	-6064	-7256	-6972	-4731	-4754	-1200	-1604	-5278
19 CAN. ENT. NON-FED(CSPE)	9/	96	96	96	96	96	96	96	96	96	46	46	46	46	46
20 CAN. ENT. NON-FED(CNDA)	10/	24	26	24	24	25	24	25	24	24	144	144	148	144	143
21 RESTORATION	11/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 TOTAL HYDRO		17749	14942	15115	15185	17114	16821	15318	14435	14403	15857	15422	18886	18839	14394
OTHER RESOURCES															
23 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 RENEWABLES	12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27
26 COGENERATION		0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 IMPORTS	13/	88	88	117	153	213	363	567	523	531	534	261	75	93	109
28 CONTRACTS IN	14/	69	69	69	0	0	0	0	0	0	0	0	0	0	0
29 LARGE THERMAL	15/	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	0	0	1162	1162
30 NON-UTILITY GENERATION	16/	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31 RESOURCE ACQUISITIONS	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 TOTAL RESOURCES		19096	16289	16491	16529	18519	18378	17080	16152	16128	17584	15714	18989	20122	15693

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

M E D I U M L O A D S

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

1998-99 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
RESERVES & MAINTENANCE															
33 HYD SM THRM & MISC RES	18/	-1003	-982	-1021	-1028	-1076	-1075	-1065	-1080	-1064	-1021	-1001	-996	-1014	-975
34 LARGE THERMAL RESERVES	19/	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	0	0	-174	-174
35 SPINNING RESERVES	20/	-352	-296	-297	-298	-346	-360	-336	-299	-297	-328	-310	-407	-447	-295
36 FEDERAL HYDRO MAINT	21/	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785
37 NET RESOURCES		14303	12076	12229	12277	14217	14902	14097	12715	12678	14000	12598	15829	16852	11464
SURPLUS/DEFICITS															
38 FIRM SURPLUS/DEFICIT		4336	2130	2141	1377	2602	2399	1534	83	1325	2734	1354	4716	5982	718
39 EXTREME WEATHER ADJ.	22/	0	0	0	0	-4	-5	-4	-5	0	0	0	0	0	0
40 FIRM S/D W/EXT WEATHER ADJ.		4336	2130	2141	1377	2598	2394	1530	78	1325	2734	1354	4716	5982	718
41 POSS FED EXT WTHR. OBLG	23/	0	0	0	0	-1456	-1571	-1772	-1601	0	0	0	0	0	0
42 FIRM S/D W/EXT WTHR. OBLIG		4336	2130	2141	1377	1142	824	-243	-1523	1325	2734	1354	4716	5982	718

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 PASADENA: PS & C/N/X
   D. 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 2003.
4. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH OY 2003.
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

M E D I U M L O A D S

2002- 3 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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		199	199	189	200	209	240	223	231	219	203	203	193	194	195
2 FEDERAL GPU TRANS LOSSES		42	45	51	84	89	92	83	65	56	56	45	43	40	38
3 FEDERAL NGP TRANS LOSSES		150	150	156	177	209	237	256	254	222	201	201	187	159	152
4 USBR		200	200	158	76	7	4	4	3	9	100	100	170	198	205
5 DSI FIRM LOAD		2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234
6 DSI FIRM LOSSES		63	63	65	72	78	83	87	85	80	76	76	73	67	62
7 SM & NON GEN PUB PURCH	1/	3089	3089	3076	3227	3562	3778	3962	4068	3672	3561	3562	3271	3087	3068
8 FIRM SYSTEM LOAD		5977	5980	5929	6070	6388	6668	6849	6940	6492	6431	6421	6171	5979	5954
TRANSFERS OUT															
9 EXPORTS	2/	2118	2118	2118	2074	1724	1724	1518	1518	1518	2172	2223	2331	2618	2598
10 CONTRACTS OUT	3/	1722	1722	1719	1768	2472	2561	2527	2512	2022	1928	1928	1652	1667	1703
11 CSPE TO WEST GROUP UTIL	4/	166	166	166	166	166	166	166	166	166	0	0	0	0	0
12 GEN PUB AGEN PSC PURCH	5/	1095	1064	1243	1846	2163	2364	2430	2481	2042	1872	1851	1525	1243	1070
13 IOU PSC PURCHASE	6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	7/	-846	-842	-864	-902	-895	-666	-681	-690	-846	-787	-784	-830	-836	-814
15 FIRM LOADS		10232	10208	10312	11022	12019	12817	12809	12927	11394	11616	11638	10849	10672	10511
HYDRO RESOURCES															
16 REGULATED HYDRO		19329	18957	19720	19836	20823	20996	21017	20976	20214	19453	19168	18846	19205	18708
17 INDEPENDENT HYDRO		709	721	703	718	693	651	615	741	801	819	818	847	849	726
18 SUS. PKNG. ADJUSTMENT	8/	-571	-4855	-5427	-5488	-4885	-4531	-6322	-7394	-6744	-5221	-3295	-1200	-2608	-5231
19 CAN. ENT. NON-FED(CSPE)	9/	37	37	37	37	37	37	37	37	37	0	0	0	0	0
20 CAN. ENT. NON-FED(CNDA)	10/	137	136	143	137	137	142	137	139	142	248	248	246	258	246
21 RESTORATION	11/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 TOTAL HYDRO		19641	14996	15176	15240	16805	17295	15484	14499	14450	15299	16939	18739	17704	14449
OTHER RESOURCES															
23 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 RENEWABLES	12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27
26 COGENERATION		0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 IMPORTS	13/	110	110	139	153	213	267	471	427	435	438	165	75	93	109
28 CONTRACTS IN	14/	300	300	300	300	0	0	0	0	0	0	0	0	0	300
29 LARGE THERMAL	15/	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	0	0	1162	1162
30 NON-UTILITY GENERATION	16/	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31 RESOURCE ACQUISITIONS	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 TOTAL RESOURCES		21241	16596	16805	16884	18210	18756	17150	16120	16079	16930	17135	18842	18987	16048

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

MEDIUM LOADS

2002- 3 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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
RESERVES & MAINTENANCE															
33 HYD SM THRM & MISC RES	18/	-1003	-985	-1022	-1029	-1077	-1084	-1083	-1087	-1052	-1015	-1001	-986	-1004	-973
34 LARGE THERMAL RESERVES	19/	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	0	0	-174	-174
35 SPINNING RESERVES	20/	-397	-296	-297	-298	-337	-370	-338	-299	-297	-313	-346	-403	-418	-295
36 FEDERAL HYDRO MAINT	21/	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785
37 NET RESOURCES		16404	12380	12542	12631	13916	15261	14147	12676	12641	13366	13983	15697	15756	11821
SURPLUS/DEFICITS															
38 FIRM SURPLUS/DEFICIT		6172	2172	2230	1609	1897	2445	1338	-252	1247	1751	2345	4848	5084	1310
39 EXTREME WEATHER ADJ.	22/	0	0	0	0	-4	-5	-5	-5	0	0	0	0	0	0
40 FIRM S/D W/EXT WEATHER ADJ.		6172	2172	2230	1609	1893	2440	1333	-257	1247	1751	2345	4848	5084	1310
41 POSS FED EXT WTHR. OBLG	23/	0	0	0	0	-1559	-1676	-1829	-1703	0	0	0	0	0	0
42 FIRM S/D W/EXT WTHR. OBLIG		6172	2172	2230	1609	334	764	-496	-1960	1247	1751	2345	4848	5084	1310

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 PASADENA: PS & C/N/X
   D. 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 2003.
4. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH OY 2003.
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

M E D I U M L O A D S

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

2007- 8 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		205	205	195	206	215	248	230	238	226	209	209	199	199	200
2 FEDERAL GPU TRANS LOSSES		33	35	40	72	76	78	71	53	51	51	39	38	35	33
3 FEDERAL NGP TRANS LOSSES		155	155	163	183	216	243	281	262	239	220	220	202	172	156
4 USBR		201	201	158	77	7	4	4	3	9	100	100	170	199	206
5 DSI FIRM LOAD		2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234
6 DSI FIRM LOSSES		62	62	64	71	78	83	87	85	80	76	76	74	67	62
7 SM & NON GEN PUB PURCH	1/	3089	3089	3076	3227	3562	3778	3962	4068	3672	3561	3562	3271	3087	3068
8 FIRM SYSTEM LOAD		5979	5981	5930	6070	6388	6668	6869	6943	6511	6451	6440	6188	5993	5959
TRANSFERS OUT															
9 EXPORTS	2/	2261	2261	2261	2246	2153	2153	2153	2116	2116	2116	2116	2193	2193	2193
10 CONTRACTS OUT	3/	1218	1218	1230	1278	1982	2071	2051	2024	1539	1522	1522	1209	1224	1237
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/	1095	1064	1243	1846	2163	2364	2430	2481	2042	1872	1851	1525	1243	1070
13 IOU PSC PURCHASE	6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	7/	-757	-753	-777	-821	-827	-619	-636	-643	-781	-748	-744	-777	-779	-753
15 FIRM LOADS		9796	9771	9888	10619	11859	12637	12867	12921	11427	11213	11184	10338	9875	9706
HYDRO RESOURCES															
16 REGULATED HYDRO		19329	18957	19720	19836	20823	20996	21017	20976	20214	19453	19168	18846	19205	18708
17 INDEPENDENT HYDRO		709	721	703	718	693	651	615	741	801	819	818	847	849	726
18 SUS. PKNG. ADJUSTMENT	8/	-571	-4855	-5427	-5488	-4885	-4531	-6322	-7394	-6744	-5221	-3295	-1200	-2608	-5231
19 CAN. ENT. NON-FED(CSPE)	9/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 CAN. ENT. NON-FED(CNDA)	10/	248	264	248	246	258	246	246	259	246	259	259	268	259	258
21 RESTORATION	11/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 TOTAL HYDRO		19715	15087	15244	15312	16889	17362	15556	14582	14517	15310	16950	18761	17705	14461
OTHER RESOURCES															
23 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 RENEWABLES	12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27
26 COGENERATION		0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 IMPORTS	13/	88	88	117	153	206	260	234	190	162	165	165	75	93	109
28 CONTRACTS IN	14/	300	300	300	300	0	0	0	0	0	0	0	0	0	0
29 LARGE THERMAL	15/	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	0	0	1162	1162
30 NON-UTILITY GENERATION	16/	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31 RESOURCE ACQUISITIONS	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 TOTAL RESOURCES		21293	16665	16851	16956	18287	18816	16985	15966	15873	16668	17146	18864	18988	15760

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

M E D I U M L O A D S

1997 WHITEBOOK: 12/31/97
2007- 8 OPERATING YEAR RUN DATE: 12/31/97

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
RESERVES & MAINTENANCE															
33 HYD SM THRM & MISC RES	18/	-1003	-985	-1022	-1029	-1077	-1084	-1083	-1087	-1052	-1015	-1001	-986	-1004	-973
34 LARGE THERMAL RESERVES	19/	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	0	0	-174	-174
35 SPINNING RESERVES	20/	-397	-296	-297	-298	-337	-370	-338	-299	-297	-313	-346	-403	-418	-295
36 FEDERAL HYDRO MAINT	21/	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785
37 NET RESOURCES		16456	12449	12588	12703	13993	15321	13982	12522	12435	13104	13994	15719	15757	11533
SURPLUS/DEFICITS															
38 FIRM SURPLUS/DEFICIT		6660	2678	2701	2084	2134	2684	1115	-400	1008	1891	2810	5381	5882	1827
39 EXTREME WEATHER ADJ.	22/	0	0	0	0	-4	-5	-5	-5	0	0	0	0	0	0
40 FIRM S/D W/EXT WEATHER ADJ.		6660	2678	2701	2084	2130	2679	1110	-405	1008	1891	2810	5381	5882	1827
41 POSS FED EXT WTHR. OBLG	23/	0	0	0	0	-1727	-1780	-1945	-1810	0	0	0	0	0	0
42 FIRM S/D W/EXT WTHR. OBLIG		6660	2678	2701	2084	403	899	-835	-2215	1008	1891	2810	5381	5882	1827

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 PASADENA: PS & C/N/X
D. 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 2003.
4. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH OY 2003.
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 at the OY 2001 level through the study period.
2. BPA's exports include: BPA to Anaheim, capacity sale and capacity/energy exchange; BPA to Azusa, energy sale and power sale; BPA to Banning, energy sale and power sale; BPA to BART, power sale; BPA to Burbank, power sale and capacity/energy exchange; BPA to Colton, energy sale and power sale; BPA to Farmington, power sale; BPA to Glendale, power sale and capacity/energy exchange; BPA to M-S-R, power sale; BPA to New Energy Ventures, power sale and surplus 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 and diversity exchange; BPA to SCE, power sale, capacity/energy exchange, environmental storage, and option capacity; BPA to SCE Source, two power sales; 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 sale 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 Bandon, power sale; BPA to Benton County PUD, power sale; BPA to Big Bend Electric Cooperative, summer seasonal product; BPA to Central Electric Cooperative, summer seasonal product; BPA to the city of Ashland, power sale; BPA to the city of Idaho Falls, power sale; BPA to Columbia Basin Electric Cooperative, summer seasonal product; BPA to Columbia River PUD, power sale; BPA to Columbia Rural Electric Cooperative, summer seasonal product; BPA to Cowlitz County PUD, power sale; BPA to EWEB, power sale; BPA to Grant County PUD, power sale; BPA to Harney Electric Cooperative, summer seasonal product; BPA to IPC, for Harney and Wells; BPA to Inland Power and Light, summer seasonal product; BPA to Lewis County PUD, power sale; BPA to Lower Valley, power sale; BPA to Mason County PUD #3, power sale; BPA to Midstate Electric Cooperative, summer seasonal product; 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, summer seasonal product; BPA to Nespelem Valley, summer seasonal product; BPA to Okanogan, summer seasonal product; BPA to other entities, power sales; 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 PSE (formerly PSP&L), Baker head loss, power sale, power exchange, and WNP-3 settlement; BPA to Raft River, power sale; BPA to Ravalli County Electric Cooperative, power sale; BPA to Salem Electric Cooperative, green

power sale; BPA to small nongenerating public utilities, summer seasonal product and Hungry Horse power sale; BPA to SUB, power sale; BPA to Surprise Valley Electric Corporation, summer seasonal product; BPA to TPU, power sale; BPA to United Electric Cooperative, power sale; BPA to Umatilla Electric Cooperative, summer seasonal product; BPA to Vigilante Electric Cooperative, summer seasonal product; BPA to Wasco Electric Cooperative, summer seasonal product; BPA to WWP, power sale, deferred power exchange, and WNP-3 settlement; and BPA to West Oregon Cooperative, power sale.

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 at the OY 2001 level 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, return energy; Banning to BPA, return energy and exchange energy; BGP to BPA, supplemental energy; Burbank to BPA, exchange energy; Colton to BPA, return energy; Glendale 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; Sierra to BPA, for Harney and Wells; SCE to BPA, exchange energy, supplemental energy, option energy, and environmental storage; Basin Electric to BPA, power sale; PP&L (Wyoming) to BPA, Southern Idaho transfer; and PowerEx

to BPA, replacement 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 sale mode, so exchanges and supplemental energy with these utilities are zero through the study horizon.

15. Federal contracts in include: MPC to BPA, exchange energy; other entities to BPA, power sales; PP&L to BPA, WNP-3 settlement; PGE to BPA, WNP-3 settlement; PSE to BPA, seasonal power exchange and WNP-3 settlement; and WWP to BPA, 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 SYSTEM ENERGY SURPLUSES AND DEFICITS FOR 50 HISTORICAL WATER CONDITIONS

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

1998-99 OPERATING 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
1929 FEDERAL ENERGY S/D	3574	-190	-342	-27	-402	-112	2208	-1726	266	200	2238	3555	2256	-1300	607
1930 FEDERAL ENERGY S/D	272	-879	-305	-19	146	78	-1000	-322	159	3863	4925	3655	2421	-2028	573
1931 FEDERAL ENERGY S/D	721	-812	-308	126	151	95	-1465	282	-408	2724	-666	4118	3354	-1145	482
1932 FEDERAL ENERGY S/D	1363	-558	-272	-148	93	-997	159	-1618	2925	6849	6384	6082	5812	1745	1733
1933 FEDERAL ENERGY S/D	2443	1139	79	223	126	1519	6188	5183	1181	1209	2198	3855	9397	6406	3138
1934 FEDERAL ENERGY S/D	3835	4031	843	1643	1931	7013	9596	7536	6857	10475	7938	7371	3535	-1670	4816
1935 FEDERAL ENERGY S/D	-1087	-1320	-332	-199	53	1141	6167	3402	1043	1047	3471	3824	4795	2393	1945
1936 FEDERAL ENERGY S/D	2269	-616	-343	-192	-474	-43	1911	-1429	481	1016	8312	6954	4985	96	1453
1937 FEDERAL ENERGY S/D	1086	-659	-332	-45	138	113	-300	-1045	-12	939	25	4316	4981	-1468	587
1938 FEDERAL ENERGY S/D	-194	-1209	-437	-32	-270	-175	6169	3397	1694	3573	5583	6928	5145	2193	2374
1939 FEDERAL ENERGY S/D	1120	-111	-256	-55	-356	-17	3387	1286	521	4132	3796	3939	2737	-746	1242
1940 FEDERAL ENERGY S/D	2374	-561	-340	5	138	162	3952	514	2828	5193	4710	3324	3206	-847	1567
1941 FEDERAL ENERGY S/D	-809	-1063	-501	-160	125	67	1278	-452	1330	1824	3285	3539	2865	-1778	661
1942 FEDERAL ENERGY S/D	405	-583	-92	244	22	4077	5577	-509	668	2229	2412	3996	4939	2955	2009
1943 FEDERAL ENERGY S/D	3753	964	-212	-74	-143	1246	6167	5803	2210	8855	8276	6713	6409	3245	3524
1944 FEDERAL ENERGY S/D	3722	766	-189	-10	-314	105	1902	-1297	-600	1238	2404	3780	2241	-2254	619
1945 FEDERAL ENERGY S/D	-391	-877	-304	-125	-14	-163	-1574	-959	505	824	1447	3137	3935	2505	620
1946 FEDERAL ENERGY S/D	2579	208	-52	-29	-361	1285	6189	4319	2710	3888	6004	7475	5660	2758	3025
1947 FEDERAL ENERGY S/D	3102	-132	325	195	65	4169	6185	6132	6191	6397	4445	5659	5655	1819	3608
1948 FEDERAL ENERGY S/D	2118	-261	89	3343	1341	2689	6181	6127	3962	3313	5304	8479	12105	5262	4568
1949 FEDERAL ENERGY S/D	4119	4667	1369	377	-117	571	5818	2139	4488	5498	7581	6622	5126	527	3154
1950 FEDERAL ENERGY S/D	-234	-1523	-783	-283	-700	223	6179	6107	5861	5710	5167	5378	9540	4562	3387
1951 FEDERAL ENERGY S/D	3435	3791	509	1621	1866	5771	6665	9171	6574	9139	6800	7513	4455	3327	4921
1952 FEDERAL ENERGY S/D	4235	3245	1103	2464	181	2907	6169	6114	1471	8153	7627	8831	5700	1890	4038
1953 FEDERAL ENERGY S/D	2309	-162	-261	-59	-221	88	3152	6123	2583	2139	2632	5531	7190	3422	2584
1954 FEDERAL ENERGY S/D	4222	1619	152	344	99	1680	6161	6109	4099	4399	4241	6060	8901	4955	3817
1955 FEDERAL ENERGY S/D	5427	4966	4427	1021	535	2069	5590	-900	-148	3053	2675	3360	7652	6345	3168
1956 FEDERAL ENERGY S/D	4129	3473	483	1203	1030	5449	7178	6703	7809	9095	7876	9365	9522	3497	5377
1957 FEDERAL ENERGY S/D	4365	2791	386	676	-75	1763	5444	4100	3232	6037	3136	8684	7967	475	3401
1958 FEDERAL ENERGY S/D	1578	-520	-361	-14	-51	367	5901	5197	1860	4354	4759	7787	6311	-117	2664
1959 FEDERAL ENERGY S/D	2699	-142	-213	433	410	3669	6878	6535	6129	7788	4425	5181	8253	3436	4008
1960 FEDERAL ENERGY S/D	4173	1366	3490	4297	2479	4233	6188	5437	2853	9034	5379	4481	4754	3011	4267
1961 FEDERAL ENERGY S/D	1903	-907	-352	-62	48	584	6196	6089	5469	4157	2440	5862	8967	1502	3175
1962 FEDERAL ENERGY S/D	2921	-138	-367	314	-194	384	6205	2549	87	5613	6569	4858	4279	1564	2264
1963 FEDERAL ENERGY S/D	3335	21	-197	1004	636	3550	6179	4186	1325	3717	3817	3449	4881	2000	2705
1964 FEDERAL ENERGY S/D	3588	712	558	-57	131	360	5617	3247	-147	3459	2595	4012	9199	5126	2769
1965 FEDERAL ENERGY S/D	4128	3073	1441	1530	106	5833	8026	9462	6124	5865	8075	6993	7332	2587	5000
1966 FEDERAL ENERGY S/D	3642	1829	202	895	192	1984	6202	4043	507	5301	3978	4975	4233	374	2582
1967 FEDERAL ENERGY S/D	1604	-351	-281	-52	-132	1439	6180	6101	4873	3292	1408	4033	8059	5211	3201
1968 FEDERAL ENERGY S/D	4078	2625	663	483	121	1747	6212	5950	2818	626	2386	4075	4524	3067	2877
1969 FEDERAL ENERGY S/D	3284	925	2038	1821	1180	3056	6800	7103	6377	9335	6836	8232	7003	2228	4669
1970 FEDERAL ENERGY S/D	2829	-960	-162	527	-213	821	6167	3465	1039	3024	1347	4255	5263	2256	2212
1971 FEDERAL ENERGY S/D	2207	-341	-397	-100	-257	1140	6341	9862	6996	9124	5525	9140	8905	4372	4522
1972 FEDERAL ENERGY S/D	5043	4071	857	335	143	1542	6231	7376	12049	9521	5740	8281	10161	7186	5529
1973 FEDERAL ENERGY S/D	5145	4882	1821	428	29	1735	6146	-544	179	401	2249	3438	1590	-1740	1618
1974 FEDERAL ENERGY S/D	-360	-1990	-758	-159	241	4732	10117	10407	8404	8613	7592	8142	10892	7246	5516
1975 FEDERAL ENERGY S/D	4846	4631	1413	-70	-499	784	6222	6100	3003	2299	3602	5464	7799	6092	3666
1976 FEDERAL ENERGY S/D	2337	1083	45	979	1296	6340	7786	6357	6310	10119	5639	7891	4597	4872	4672
1977 FEDERAL ENERGY S/D	5180	4623	5727	301	-301	104	1819	-1007	-536	958	2269	3682	294	-2705	1158
1978 FEDERAL ENERGY S/D	-373	-1088	-652	-145	-540	190	4940	3946	3083	5349	4611	4766	3535	2768	2178

EXHIBIT 9

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

1999- 0 OPERATING 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
1929 FEDERAL ENERGY S/D	3355	-421	-343	153	-287	165	942	-1869	65	371	1379	3805	3513	-1389	591
1930 FEDERAL ENERGY S/D	-558	-1086	-542	62	130	-35	-157	-834	-612	1395	4920	3760	3874	-2206	481
1931 FEDERAL ENERGY S/D	430	-1611	-548	-157	138	-18	-766	-1808	-652	1576	894	4185	3817	-1637	267
1932 FEDERAL ENERGY S/D	400	-1031	-225	-119	148	-17	-356	-1710	2731	6584	6719	5855	5900	2212	1730
1933 FEDERAL ENERGY S/D	1086	669	-42	339	109	1760	5503	1953	1578	1967	3418	4986	8869	6508	2928
1934 FEDERAL ENERGY S/D	3622	3960	844	1728	1977	6807	9532	5901	6245	10641	8520	7785	3208	-1696	4642
1935 FEDERAL ENERGY S/D	-881	-1646	-577	-219	-24	1156	4698	3309	1901	490	3139	3858	4804	2332	1816
1936 FEDERAL ENERGY S/D	2213	-889	-578	-32	-290	-3	367	-1310	587	1366	7592	6604	4848	674	1334
1937 FEDERAL ENERGY S/D	2026	-672	-491	87	120	3	-1083	-1827	-476	407	714	5157	4935	-1181	540
1938 FEDERAL ENERGY S/D	-237	-1852	-618	-58	-188	-131	5323	2657	2762	3467	5489	6976	5200	2218	2298
1939 FEDERAL ENERGY S/D	806	-271	-520	15	-405	-34	2447	1363	419	4005	3764	3958	3630	-1273	1146
1940 FEDERAL ENERGY S/D	1610	-709	-479	360	120	440	3041	224	2921	4652	4205	3265	3813	-1086	1458
1941 FEDERAL ENERGY S/D	-867	-1480	-592	-85	106	-41	-2	601	1169	468	732	4260	4306	-2241	576
1942 FEDERAL ENERGY S/D	-108	-783	-592	326	4	4339	5492	-627	556	2038	2254	4603	5360	1958	1927
1943 FEDERAL ENERGY S/D	3063	688	-200	251	-302	1402	5723	4659	2490	8857	7920	6758	6409	3245	3392
1944 FEDERAL ENERGY S/D	3693	535	-237	60	-259	73	725	-1431	-782	1306	1730	4068	3656	-2279	602
1945 FEDERAL ENERGY S/D	-1903	-1756	-587	-149	88	-10	-1725	-1150	-115	464	2244	3181	3972	2704	478
1946 FEDERAL ENERGY S/D	2231	-210	9	-54	-214	1147	5248	3018	3243	3539	6460	8058	5535	2153	2846
1947 FEDERAL ENERGY S/D	2989	-363	328	283	47	4205	5998	5947	4589	3985	5373	6757	4802	2244	3433
1948 FEDERAL ENERGY S/D	2015	-423	165	3425	1388	2465	5995	4034	3280	2614	6248	9663	11983	4763	4366
1949 FEDERAL ENERGY S/D	3911	4411	1548	474	-69	323	4648	1491	5173	5394	7630	6635	5132	560	3049
1950 FEDERAL ENERGY S/D	-415	-1673	-851	-77	-550	1025	5136	5133	5372	5667	5529	5680	9568	4269	3272
1951 FEDERAL ENERGY S/D	3217	3121	512	1706	1912	5747	5969	5954	7669	9828	7425	7538	4444	3541	4732
1952 FEDERAL ENERGY S/D	4023	3198	1103	2548	228	2925	5975	4451	1499	7782	7808	8883	5745	1885	3887
1953 FEDERAL ENERGY S/D	2257	-393	-424	21	-84	-20	1515	5935	3886	2033	2538	5583	7246	3467	2529
1954 FEDERAL ENERGY S/D	3844	1041	152	431	81	1517	5981	4980	2183	4444	4858	7417	8492	5069	3616
1955 FEDERAL ENERGY S/D	5106	4733	4419	1103	581	1846	4426	-1141	-444	2892	2385	3844	7427	6759	3032
1956 FEDERAL ENERGY S/D	3918	3432	484	1289	1077	5440	6285	5910	6538	8810	8756	9833	9197	3781	5191
1957 FEDERAL ENERGY S/D	4146	2731	389	763	-27	1773	4180	1479	4062	5912	4307	9163	7689	1180	3267
1958 FEDERAL ENERGY S/D	1474	-543	-459	42	-243	831	3872	4246	2183	3893	5547	8703	5521	326	2517
1959 FEDERAL ENERGY S/D	2505	-373	-162	583	457	3649	5982	5890	5942	4886	4853	6581	7720	3715	3858
1960 FEDERAL ENERGY S/D	3876	1375	3484	4372	2525	4012	5999	3682	2601	8624	5923	4496	4770	3147	4082
1961 FEDERAL ENERGY S/D	2274	-965	-587	226	121	445	6010	4881	3896	3810	3138	7676	8449	1610	3071
1962 FEDERAL ENERGY S/D	2776	-369	-421	556	-294	548	4566	2090	926	5137	6558	4906	4166	1769	2155
1963 FEDERAL ENERGY S/D	3280	-210	-199	1093	683	3328	5937	2736	1027	3527	3849	3495	4595	2753	2556
1964 FEDERAL ENERGY S/D	3613	481	559	-41	-231	279	4342	1625	1018	3349	3177	4258	9426	5216	2647
1965 FEDERAL ENERGY S/D	3913	2991	1143	1616	143	5623	6867	7109	7182	7108	8211	7110	7349	2723	4831
1966 FEDERAL ENERGY S/D	4065	1598	203	982	240	1761	6010	1757	992	5084	3685	4696	5219	443	2460
1967 FEDERAL ENERGY S/D	1570	-652	-263	189	-126	1530	5994	5915	2735	1529	1523	5377	8040	5112	3041
1968 FEDERAL ENERGY S/D	3859	2394	663	570	104	1585	5350	4216	3204	502	1984	3921	5015	2878	2656
1969 FEDERAL ENERGY S/D	3957	1924	2128	1907	1227	2833	5981	5949	5950	7745	8004	9210	6026	2461	4541
1970 FEDERAL ENERGY S/D	2662	-699	-366	602	-184	608	5787	2760	789	2637	1965	4133	5330	2288	2086
1971 FEDERAL ENERGY S/D	2214	-308	-539	37	-3	1720	6028	6354	7473	9260	6694	9241	8962	4290	4374
1972 FEDERAL ENERGY S/D	4804	4015	859	422	125	1652	6046	5916	11911	9452	4165	9479	9427	6877	5328
1973 FEDERAL ENERGY S/D	4706	4667	1780	515	77	1737	4657	-1364	836	-352	79	3741	4914	-1955	1624
1974 FEDERAL ENERGY S/D	-603	-1598	-975	-185	131	4817	8391	9044	9010	8342	7734	8452	10791	6939	5279
1975 FEDERAL ENERGY S/D	4719	4468	1413	-43	108	1078	5328	4009	4250	2175	2618	5486	7823	6092	3545
1976 FEDERAL ENERGY S/D	2118	1016	44	1066	1343	6130	6696	5901	5940	8325	7094	8779	4652	4237	4505
1977 FEDERAL ENERGY S/D	5123	4392	5520	584	-278	123	441	-1178	-736	1049	1640	3846	1540	-2616	1112
1978 FEDERAL ENERGY S/D	-172	-917	-600	-176	53	551	4381	2744	2765	5533	4566	4848	3568	2754	2116

EXHIBIT 10

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

ENERGY IN AVERAGE MEGAWATTS	2000- 1 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	3371	-403	237	19	-317	72	726	-1911	35	459	893	3111	2142	-833	453
1930 FEDERAL ENERGY S/D	656	-1007	-106	-126	105	343	-300	-563	-394	1069	4342	3504	886	-1284	383
1931 FEDERAL ENERGY S/D	408	-920	-540	335	109	-28	-516	-1830	-700	2410	-141	4035	1751	-1489	167
1932 FEDERAL ENERGY S/D	804	-485	103	-139	119	-263	487	-1692	2736	6779	6020	5823	5728	2016	1790
1933 FEDERAL ENERGY S/D	2407	926	491	-24	79	1715	5994	2546	1185	1140	2895	4325	9150	6218	2947
1934 FEDERAL ENERGY S/D	3825	4031	1427	1689	2143	6452	9556	6801	7006	10116	7185	7222	1861	-1022	4643
1935 FEDERAL ENERGY S/D	-868	-1225	-321	-304	7	1356	5659	2561	2073	299	3056	3688	4681	2017	1837
1936 FEDERAL ENERGY S/D	2468	-760	-140	-340	-436	180	1159	-1671	228	1047	7198	6218	4941	437	1296
1937 FEDERAL ENERGY S/D	2002	-541	50	-148	93	183	-1736	-1796	303	420	450	3952	3883	-1204	395
1938 FEDERAL ENERGY S/D	-593	-945	-522	-141	85	485	4512	2993	2792	3389	5377	6815	5080	2113	2319
1939 FEDERAL ENERGY S/D	1114	-157	77	-245	-493	147	1820	1431	636	3428	4091	3788	1569	-60	1076
1940 FEDERAL ENERGY S/D	2692	-509	70	-26	93	134	2685	618	2567	5144	4044	3010	1631	-226	1353
1941 FEDERAL ENERGY S/D	-623	-1139	-108	-28	78	167	-188	334	1177	403	1175	3409	2940	-1569	510
1942 FEDERAL ENERGY S/D	-443	-980	-180	296	-22	4540	5533	-54	206	2561	2185	3582	4819	3075	1955
1943 FEDERAL ENERGY S/D	3721	949	383	-74	-147	1092	5705	4765	2216	8860	7712	6588	6292	3138	3382
1944 FEDERAL ENERGY S/D	3706	555	341	-64	-261	114	791	-1491	-838	1465	1049	3611	1077	-2354	359
1945 FEDERAL ENERGY S/D	188	-963	-453	-127	59	-23	-1723	-568	338	462	1744	3012	3839	2260	611
1946 FEDERAL ENERGY S/D	1791	-87	352	28	81	1318	4856	2555	3081	3844	6311	7651	5680	2265	2816
1947 FEDERAL ENERGY S/D	3303	-345	914	243	18	4250	5992	5920	4834	4330	4644	5773	5608	1842	3447
1948 FEDERAL ENERGY S/D	2128	-404	758	3385	1554	2143	5987	4843	2910	3052	5196	9027	12036	5092	4393
1949 FEDERAL ENERGY S/D	3918	4474	1973	425	65	195	3823	2366	4885	5481	7017	6460	5003	233	2989
1950 FEDERAL ENERGY S/D	-222	-1632	-574	-163	-968	253	5985	4581	5803	5440	5344	5495	9442	4115	3203
1951 FEDERAL ENERGY S/D	3241	3373	1097	1668	2080	5528	6130	6764	7350	9135	7013	7342	4277	3189	4734
1952 FEDERAL ENERGY S/D	4037	3354	1687	2508	399	2747	5969	4684	935	7989	7197	8718	5628	1723	3857
1953 FEDERAL ENERGY S/D	2386	-341	160	-163	-239	234	57	5914	4458	1588	2409	5398	7113	3424	2448
1954 FEDERAL ENERGY S/D	4040	1441	740	391	52	1333	5972	5898	2598	3774	4175	6534	8613	4876	3644
1955 FEDERAL ENERGY S/D	5163	4752	4951	1066	750	1447	4769	-1155	-475	2824	2665	3036	7200	6524	2985
1956 FEDERAL ENERGY S/D	3951	3471	1071	1251	1243	5258	6992	5886	6346	8227	8360	9448	9318	3336	5179
1957 FEDERAL ENERGY S/D	4074	2815	1129	724	53	1656	4914	1363	3332	5953	3458	9257	7574	407	3213
1958 FEDERAL ENERGY S/D	1679	-382	68	-163	-277	167	5659	3350	1569	4065	4873	8102	6236	30	2488
1959 FEDERAL ENERGY S/D	2330	-300	415	518	627	3203	6672	5865	5853	4751	4553	5658	8015	3256	3812
1960 FEDERAL ENERGY S/D	3814	1564	4143	4329	2690	3683	5991	3830	2577	8643	5219	4333	4641	2880	4060
1961 FEDERAL ENERGY S/D	2019	-864	-63	151	93	472	6005	5880	3894	3794	2788	6111	8807	1169	3032
1962 FEDERAL ENERGY S/D	2892	-346	152	265	-157	113	4972	1370	821	5382	6504	4744	4047	1562	2092
1963 FEDERAL ENERGY S/D	3400	-101	384	1053	852	2828	5982	3205	997	3748	3052	3322	4350	2375	2533
1964 FEDERAL ENERGY S/D	3629	499	1144	-159	22	25	4808	1490	754	3153	2965	3852	9755	4269	2590
1965 FEDERAL ENERGY S/D	3938	3245	1725	1576	313	5262	7302	6990	7268	6549	7857	6948	7198	2461	4820
1966 FEDERAL ENERGY S/D	3641	1616	792	942	409	1350	6008	3077	308	5058	3146	4105	4618	879	2435
1967 FEDERAL ENERGY S/D	1586	-567	296	-65	-177	1211	5987	5891	4644	1350	1210	3903	9230	3253	2997
1968 FEDERAL ENERGY S/D	3875	2412	1247	531	139	1374	6016	4163	2773	749	2414	3319	4727	2876	2658
1969 FEDERAL ENERGY S/D	3864	1308	2611	1867	1393	2532	6637	5925	5829	7571	7256	8533	6813	1952	4508
1970 FEDERAL ENERGY S/D	2909	-561	158	555	-13	319	5262	2943	1058	2860	2147	3496	5226	2097	2065
1971 FEDERAL ENERGY S/D	2098	-264	24	-207	-324	1772	6019	6700	7396	9101	6152	9080	8856	4172	4336
1972 FEDERAL ENERGY S/D	4773	4135	1444	383	96	1635	6040	6240	12443	9219	3423	8803	9469	6568	5325
1973 FEDERAL ENERGY S/D	4786	4680	2376	477	117	1646	4224	-691	844	-244	313	3526	2833	-1450	1556
1974 FEDERAL ENERGY S/D	-633	-1321	-838	-262	-19	4512	9529	8215	9024	8361	7601	8283	10675	6652	5231
1975 FEDERAL ENERGY S/D	4558	4718	2089	-121	-367	724	5336	4086	4251	2127	2584	5316	7706	5888	3492
1976 FEDERAL ENERGY S/D	2387	945	629	1026	1509	5963	7295	5876	5891	7199	6494	8111	4516	4731	4505
1977 FEDERAL ENERGY S/D	5139	4410	5531	1104	-213	264	197	-1228	-793	1231	905	3566	-32	-2240	1000
1978 FEDERAL ENERGY S/D	75	-917	-589	-255	25	906	3234	3577	2753	5470	4437	4596	3451	2715	2079

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

ENERGY IN AVERAGE MEGAWATTS	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
1929 FEDERAL ENERGY S/D	3594	-184	412	633	-384	27	721	-2135	-49	-32	1276	2978	2553	-1186	491
1930 FEDERAL ENERGY S/D	890	-599	363	148	82	93	-345	-1081	-716	2906	4386	2858	1168	-1283	423
1931 FEDERAL ENERGY S/D	1614	-164	-115	37	90	193	-597	-2056	-750	2692	164	4203	2168	-1157	347
1932 FEDERAL ENERGY S/D	1219	-513	-302	23	100	-37	493	-1929	2621	6394	6065	5770	5981	2470	1814
1933 FEDERAL ENERGY S/D	2066	1032	874	602	59	855	5778	4133	-512	2708	1728	4407	9340	6817	3010
1934 FEDERAL ENERGY S/D	3861	4223	1594	2293	1901	6145	9233	6932	6537	10082	7268	7254	2423	-1227	4650
1935 FEDERAL ENERGY S/D	-89	-737	150	-29	-15	930	5757	2689	885	2906	2598	3180	4851	3022	1980
1936 FEDERAL ENERGY S/D	2452	-514	95	104	-517	60	1533	-1842	117	1113	6130	6077	5068	1079	1364
1937 FEDERAL ENERGY S/D	2265	-355	418	126	-85	137	-677	-2100	-637	312	416	4019	3146	-1471	350
1938 FEDERAL ENERGY S/D	349	-194	255	131	-55	952	5378	1190	3023	3327	4582	6955	5282	2480	2469
1939 FEDERAL ENERGY S/D	1483	-259	292	417	-605	-7	2349	413	484	3482	3056	4000	1488	1137	1154
1940 FEDERAL ENERGY S/D	2675	-311	441	467	72	259	2849	-794	2530	4910	3565	3291	1946	-362	1343
1941 FEDERAL ENERGY S/D	339	-710	340	663	56	176	99	-853	1019	430	1402	3604	2537	-1854	543
1942 FEDERAL ENERGY S/D	752	-283	223	753	204	4208	5305	-592	354	3127	1235	3459	5023	3787	2095
1943 FEDERAL ENERGY S/D	4170	1198	591	364	-119	357	5422	4529	2223	8707	7193	6800	6496	3376	3389
1944 FEDERAL ENERGY S/D	3713	2490	527	597	-342	28	383	-1703	-907	977	1440	3694	822	-2017	449
1945 FEDERAL ENERGY S/D	686	-478	-265	40	38	-30	-1526	-1125	268	245	1400	3224	4044	2612	684
1946 FEDERAL ENERGY S/D	2539	309	710	70	-264	1461	5778	2441	1913	3290	6033	7682	5771	3331	2915
1947 FEDERAL ENERGY S/D	3287	-126	1098	853	-2	3546	5776	5687	4663	4247	4216	6173	5931	2442	3498
1948 FEDERAL ENERGY S/D	2351	-185	937	3983	1311	1820	5770	5684	1710	2681	5303	9102	12264	5745	4450
1949 FEDERAL ENERGY S/D	4141	4690	2153	1033	-147	-55	4045	1279	4714	5262	6733	6673	5214	684	3001
1950 FEDERAL ENERGY S/D	1	-1072	-166	111	-1050	781	5767	5319	4588	5289	5131	5739	9682	4649	3341
1951 FEDERAL ENERGY S/D	3457	3650	1263	2273	1835	5050	6172	7340	6053	9066	6570	7533	4444	4285	4802
1952 FEDERAL ENERGY S/D	4267	3607	1859	3108	152	2247	5761	4170	1174	8040	6902	8932	5834	2612	3938
1953 FEDERAL ENERGY S/D	2496	-218	359	113	-277	192	767	5680	4640	1474	1648	4942	7276	3623	2501
1954 FEDERAL ENERGY S/D	4267	1679	906	999	31	794	4650	5659	4160	4111	3721	6612	8990	5383	3756
1955 FEDERAL ENERGY S/D	5467	4978	5142	1675	504	1125	4837	-1359	-527	2871	1197	3278	7527	7136	3050
1956 FEDERAL ENERGY S/D	4216	3717	1238	1856	1000	4778	6767	5951	6329	8101	7835	9654	9705	3984	5266
1957 FEDERAL ENERGY S/D	4385	2985	1150	1331	-105	1068	5015	2904	1658	5632	3229	9252	7787	1266	3287
1958 FEDERAL ENERGY S/D	1836	-224	489	324	-237	102	5467	2857	1596	3765	4805	8009	6639	492	2569
1959 FEDERAL ENERGY S/D	2744	-24	599	1088	380	2943	6353	5936	5817	5645	3128	5862	8386	3893	3917
1960 FEDERAL ENERGY S/D	4115	1643	4222	4896	2448	3367	5779	3787	2543	8524	4736	4545	4903	3513	4126
1961 FEDERAL ENERGY S/D	2513	-725	170	788	72	-80	5785	5640	3567	3895	1635	6834	9105	1772	3109
1962 FEDERAL ENERGY S/D	3115	-101	405	826	-326	-7	5794	614	-239	5300	5896	4969	4388	1980	2126
1963 FEDERAL ENERGY S/D	4012	277	566	1644	606	2648	5768	2484	983	3768	2112	3525	5262	2848	2618
1964 FEDERAL ENERGY S/D	3852	748	1311	490	-273	-140	5150	2449	-780	2735	1972	4273	9379	5550	2672
1965 FEDERAL ENERGY S/D	4153	3246	1994	2181	66	4952	7614	7281	5807	6197	7254	7160	7607	2921	4834
1966 FEDERAL ENERGY S/D	4271	2804	957	1549	162	1027	5792	3297	68	4834	2693	4350	4955	1296	2563
1967 FEDERAL ENERGY S/D	2027	-256	516	455	-237	578	5770	5656	4458	2351	325	4106	8415	5451	3116
1968 FEDERAL ENERGY S/D	4098	2661	1414	1140	53	898	5800	5672	2756	194	1223	2639	4943	3110	2709
1969 FEDERAL ENERGY S/D	3846	2177	2820	2474	1150	2210	6365	6420	5319	7428	7053	8719	7206	2547	4624
1970 FEDERAL ENERGY S/D	2901	-462	473	1097	-262	-84	5190	3123	636	2208	1902	3639	5372	2237	2058
1971 FEDERAL ENERGY S/D	3291	-141	339	342	-270	1314	5906	8092	5917	9057	5909	9292	9060	4587	4470
1972 FEDERAL ENERGY S/D	5043	4278	1610	992	75	918	5821	6786	12220	9179	3588	8984	9667	6770	5407
1973 FEDERAL ENERGY S/D	5123	4889	2582	1086	-1	1022	3966	-989	791	-493	212	3717	2370	-985	1535
1974 FEDERAL ENERGY S/D	181	-1148	-317	50	59	4436	9753	9529	7656	7940	6906	8529	10933	7291	5405
1975 FEDERAL ENERGY S/D	4940	4763	2171	333	-314	190	5809	3468	4022	2190	2670	5224	7910	6225	3527
1976 FEDERAL ENERGY S/D	3032	1555	794	1633	1266	5955	6668	5665	5812	8149	5605	8371	4687	5399	4618
1977 FEDERAL ENERGY S/D	5414	4644	5795	1623	-341	-24	287	-1456	-869	801	1145	3501	144	-2385	1023
1978 FEDERAL ENERGY S/D	689	-379	-328	18	6	1247	4655	1328	2448	5222	4194	4808	3652	3052	2146

EXHIBIT 12

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

2002- 3 OPERATING 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
1929 FEDERAL ENERGY S/D	3411	-363	243	428	-593	-182	913	-1943	147	54	1361	3063	2636	-1084	488
1930 FEDERAL ENERGY S/D	707	-778	194	-57	-127	-116	-153	-889	-520	2992	4471	2943	1251	-1181	420
1931 FEDERAL ENERGY S/D	1431	-343	-284	-168	-119	-16	-405	-1864	-554	2778	249	4288	2251	-1055	344
1932 FEDERAL ENERGY S/D	1036	-692	-471	-182	-109	-246	685	-1737	2817	6480	6150	5855	6064	2572	1811
1933 FEDERAL ENERGY S/D	1883	853	705	397	-150	646	5970	4325	-316	2794	1813	4492	9423	6919	3007
1934 FEDERAL ENERGY S/D	3678	4044	1425	2088	1692	5936	9425	7124	6733	10168	7353	7339	2506	-1125	4647
1935 FEDERAL ENERGY S/D	-272	-916	-19	-234	-224	721	5949	2881	1081	2992	2683	3265	4934	3124	1977
1936 FEDERAL ENERGY S/D	2269	-693	-74	-101	-726	-149	1725	-1650	313	1199	6215	6162	5151	1181	1361
1937 FEDERAL ENERGY S/D	2082	-534	249	-79	-294	-72	-485	-1908	-441	398	501	4104	3229	-1369	346
1938 FEDERAL ENERGY S/D	166	-373	86	-74	-264	743	5570	1382	3219	3413	4667	7040	5365	2582	2465
1939 FEDERAL ENERGY S/D	1300	-438	123	212	-814	-216	2541	605	680	3568	3141	4085	1571	1239	1151
1940 FEDERAL ENERGY S/D	2492	-490	272	262	-137	50	3041	-602	2726	4996	3650	3376	2029	-260	1340
1941 FEDERAL ENERGY S/D	156	-889	171	458	-153	-33	291	-661	1215	516	1487	3689	2620	-1752	540
1942 FEDERAL ENERGY S/D	569	-462	54	548	-5	3999	5497	-400	550	3213	1320	3544	5106	3889	2092
1943 FEDERAL ENERGY S/D	3987	1019	422	159	-328	148	5614	4721	2419	8793	7278	6885	6579	3478	3386
1944 FEDERAL ENERGY S/D	3530	2311	358	392	-551	-181	575	-1511	-711	1063	1525	3779	905	-1915	446
1945 FEDERAL ENERGY S/D	503	-657	-434	-165	-171	-239	-1334	-933	464	331	1485	3309	4127	2714	681
1946 FEDERAL ENERGY S/D	2356	130	541	-135	-473	1252	5970	2633	2109	3376	6118	7767	5854	3433	2912
1947 FEDERAL ENERGY S/D	3104	-305	929	648	-211	3337	5968	5879	4859	4333	4301	6258	6014	2544	3495
1948 FEDERAL ENERGY S/D	2168	-364	768	3778	1102	1611	5962	5876	1906	2767	5388	9187	12347	5847	4447
1949 FEDERAL ENERGY S/D	3958	4511	1984	828	-356	-264	4237	1471	4910	5348	6818	6758	5297	786	2997
1950 FEDERAL ENERGY S/D	-182	-1251	-335	-94	-1259	572	5959	5511	4784	5375	5216	5824	9765	4751	3338
1951 FEDERAL ENERGY S/D	3274	3471	1094	2068	1626	4841	6364	7532	6249	9152	6655	7618	4527	4387	4799
1952 FEDERAL ENERGY S/D	4084	3428	1690	2903	-57	2038	5953	4362	1370	8126	6987	9017	5917	2714	3935
1953 FEDERAL ENERGY S/D	2313	-397	190	-92	-486	-17	959	5872	4836	1560	1733	5027	7359	3725	2498
1954 FEDERAL ENERGY S/D	4084	1500	737	794	-178	585	4842	5851	4356	4197	3806	6697	9073	5485	3753
1955 FEDERAL ENERGY S/D	5284	4799	4973	1470	295	916	5029	-1167	-331	2957	1282	3363	7610	7238	3046
1956 FEDERAL ENERGY S/D	4033	3538	1069	1651	791	4569	6959	6143	6525	8187	7920	9739	9788	4086	5263
1957 FEDERAL ENERGY S/D	4202	2806	981	1126	-314	859	5207	3096	1854	5718	3314	9337	7870	1368	3284
1958 FEDERAL ENERGY S/D	1653	-403	320	119	-446	-107	5659	3049	1792	3851	4890	8094	6722	594	2566
1959 FEDERAL ENERGY S/D	2561	-203	430	883	171	2734	6545	6128	6013	5731	3213	5947	8469	3995	3914
1960 FEDERAL ENERGY S/D	3932	1464	4053	4691	2239	3158	5971	3979	2739	8610	4821	4630	4986	3615	4123
1961 FEDERAL ENERGY S/D	2330	-904	1	583	-137	-289	5977	5832	3763	3981	1720	6919	9188	1874	3106
1962 FEDERAL ENERGY S/D	2932	-280	236	621	-535	-216	5986	806	-43	5386	5981	5054	4471	2082	2123
1963 FEDERAL ENERGY S/D	3829	98	397	1439	397	2439	5960	2676	1179	3854	2197	3610	5345	2950	2615
1964 FEDERAL ENERGY S/D	3669	569	1142	285	-482	-349	5342	2641	-584	2821	2057	4358	9462	5652	2669
1965 FEDERAL ENERGY S/D	3970	3067	1825	1976	-143	4743	7806	7473	6003	6283	7339	7245	7690	3023	4831
1966 FEDERAL ENERGY S/D	4088	2625	788	1344	-47	818	5984	3489	264	4920	2778	4435	5038	1398	2560
1967 FEDERAL ENERGY S/D	1844	-435	347	250	-446	369	5962	5848	4654	2437	410	4191	8498	5553	3113
1968 FEDERAL ENERGY S/D	3915	2482	1245	935	-156	689	5992	5864	2952	280	1308	2724	5026	3212	2706
1969 FEDERAL ENERGY S/D	3663	1998	2651	2269	941	2001	6557	6612	5515	7514	7138	8804	7289	2649	4620
1970 FEDERAL ENERGY S/D	2718	-641	304	892	-471	-293	5382	3315	832	2294	1987	3724	5455	2339	2055
1971 FEDERAL ENERGY S/D	3108	-320	170	137	-479	1105	6098	8284	6113	9143	5994	9377	9143	4689	4467
1972 FEDERAL ENERGY S/D	4860	4099	1441	787	-134	709	6013	6978	12416	9265	3673	9069	9750	6872	5404
1973 FEDERAL ENERGY S/D	4940	4710	2413	881	-210	813	4158	-797	987	-407	297	3802	2453	-883	1532
1974 FEDERAL ENERGY S/D	-2	-1327	-486	-155	-150	4227	9945	9721	7852	8026	6991	8614	11016	7393	5402
1975 FEDERAL ENERGY S/D	4757	4584	2002	128	-523	-19	6001	3660	4218	2276	2755	5309	7993	6327	3524
1976 FEDERAL ENERGY S/D	2849	1376	625	1428	1057	5746	6860	5857	6008	8235	5690	8456	4770	5501	4615
1977 FEDERAL ENERGY S/D	5231	4465	5626	1418	-550	-233	479	-1264	-673	887	1230	3586	227	-2283	1020
1978 FEDERAL ENERGY S/D	506	-558	-497	-187	-203	1038	4847	1520	2644	5308	4279	4893	3735	3154	2143

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

2003- 4 OPERATING 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
1929 FEDERAL ENERGY S/D	3520	-254	353	538	-481	-71	675	-2323	-235	-214	1379	3081	2664	-1069	446
1930 FEDERAL ENERGY S/D	816	-669	304	53	-15	-5	-391	-1269	-902	2724	4489	2961	1279	-1166	377
1931 FEDERAL ENERGY S/D	1540	-234	-174	-58	-7	95	-643	-2244	-936	2510	267	4306	2279	-1040	302
1932 FEDERAL ENERGY S/D	1145	-583	-361	-72	3	-135	447	-2117	2435	6212	6168	5873	6092	2587	1769
1933 FEDERAL ENERGY S/D	1992	962	815	507	-38	757	5732	3945	-698	2526	1831	4510	9451	6934	2964
1934 FEDERAL ENERGY S/D	3787	4153	1535	2198	1804	6047	9187	6744	6351	9900	7371	7357	2534	-1110	4604
1935 FEDERAL ENERGY S/D	-163	-807	91	-124	-112	832	5711	2501	699	2724	2701	3283	4962	3139	1934
1936 FEDERAL ENERGY S/D	2378	-584	36	9	-614	-38	1487	-2030	-69	931	6233	6180	5179	1196	1318
1937 FEDERAL ENERGY S/D	2191	-425	359	31	-182	39	-723	-2288	-823	130	519	4122	3257	-1354	304
1938 FEDERAL ENERGY S/D	275	-264	196	36	-152	854	5332	1002	2837	3145	4685	7058	5393	2597	2423
1939 FEDERAL ENERGY S/D	1409	-329	233	322	-702	-105	2303	225	298	3300	3159	4103	1599	1254	1108
1940 FEDERAL ENERGY S/D	2601	-381	382	372	-25	161	2803	-982	2344	4728	3668	3394	2057	-245	1297
1941 FEDERAL ENERGY S/D	265	-780	281	568	-41	78	53	-1041	833	248	1505	3707	2648	-1737	497
1942 FEDERAL ENERGY S/D	678	-353	164	658	107	4110	5259	-780	168	2945	1338	3562	5134	3904	2049
1943 FEDERAL ENERGY S/D	4096	1128	532	269	-216	259	5376	4341	2037	8525	7296	6903	6607	3493	3344
1944 FEDERAL ENERGY S/D	3639	2420	468	502	-439	-70	337	-1891	-1093	795	1543	3797	933	-1900	404
1945 FEDERAL ENERGY S/D	612	-548	-324	-55	-59	-128	-1572	-1313	82	63	1503	3327	4155	2729	638
1946 FEDERAL ENERGY S/D	2465	239	651	-25	-361	1363	5732	2253	1727	3108	6136	7785	5882	3448	2869
1947 FEDERAL ENERGY S/D	3213	-196	1039	758	-99	3448	5730	5499	4477	4065	4319	6276	6042	2559	3452
1948 FEDERAL ENERGY S/D	2277	-255	878	3888	1214	1722	5724	5496	1524	2499	5406	9205	12375	5862	4404
1949 FEDERAL ENERGY S/D	4067	4620	2094	938	-244	-153	3999	1091	4528	5080	6836	6776	5325	801	2955
1950 FEDERAL ENERGY S/D	-73	-1142	-225	16	-1147	683	5721	5131	4402	5107	5234	5842	9793	4766	3295
1951 FEDERAL ENERGY S/D	3383	3580	1204	2178	1738	4952	6126	7152	5867	8884	6673	7636	4555	4402	4756
1952 FEDERAL ENERGY S/D	4193	3537	1800	3013	55	2149	5715	3982	988	7858	7005	9035	5945	2729	3892
1953 FEDERAL ENERGY S/D	2422	-288	300	18	-374	94	721	5492	4454	1292	1751	5045	7387	3740	2455
1954 FEDERAL ENERGY S/D	4193	1609	847	904	-66	696	4604	5471	3974	3929	3824	6715	9101	5500	3710
1955 FEDERAL ENERGY S/D	5393	4908	5083	1580	407	1027	4791	-1547	-713	2689	1300	3381	7638	7253	3004
1956 FEDERAL ENERGY S/D	4142	3647	1179	1761	903	4680	6721	5763	6143	7919	7938	9757	9816	4101	5221
1957 FEDERAL ENERGY S/D	4311	2915	1091	1236	-202	970	4969	2716	1472	5450	3332	9355	7898	1383	3241
1958 FEDERAL ENERGY S/D	1762	-294	430	229	-334	4	5421	2669	-1410	3583	4908	8112	6750	609	2523
1959 FEDERAL ENERGY S/D	2670	-94	540	993	283	2845	6307	5748	5631	5463	3231	5965	8497	4010	3871
1960 FEDERAL ENERGY S/D	4041	1573	4163	4801	2351	3269	5733	3599	2357	8342	4839	4648	5014	3630	4080
1961 FEDERAL ENERGY S/D	2439	-795	111	693	-25	-178	5739	5452	3381	3713	1738	6937	9216	1889	3064
1962 FEDERAL ENERGY S/D	3041	-171	346	731	-423	-105	5748	426	-425	5118	5999	5072	4499	2097	2080
1963 FEDERAL ENERGY S/D	3938	207	507	1549	509	2550	5722	2296	797	3586	2215	3628	5373	2965	2572
1964 FEDERAL ENERGY S/D	3778	678	1252	395	-370	-238	5104	2261	-966	2553	2075	4376	9490	5667	2626
1965 FEDERAL ENERGY S/D	4079	3176	1935	2086	-31	4854	7568	7093	5621	6015	7357	7263	7718	3038	4788
1966 FEDERAL ENERGY S/D	4197	2734	898	1454	65	929	5746	3109	-118	4652	2796	4453	5066	1413	2517
1967 FEDERAL ENERGY S/D	1953	-326	457	360	-334	480	5724	5468	4272	2169	428	4209	8526	5568	3070
1968 FEDERAL ENERGY S/D	4024	2591	1355	1045	-44	800	5754	5484	2570	12	1326	2742	5054	3227	2664
1969 FEDERAL ENERGY S/D	3772	2107	2761	2379	1053	2112	6319	6232	5133	7246	7156	8822	7317	2664	4578
1970 FEDERAL ENERGY S/D	2827	-532	414	1002	-359	-182	5144	2935	450	2026	2005	3742	5483	2354	2012
1971 FEDERAL ENERGY S/D	3217	-211	280	247	-367	1216	5860	7904	5731	8875	6012	9395	9171	4704	4424
1972 FEDERAL ENERGY S/D	4969	4208	1551	897	-22	820	5775	6598	12034	8997	3691	9087	9778	6887	5361
1973 FEDERAL ENERGY S/D	5049	4819	2523	991	-98	924	3920	-1177	605	-675	315	3820	2481	-868	1490
1974 FEDERAL ENERGY S/D	107	-1218	-376	-45	-38	4338	9707	9341	7470	7758	7009	8632	11044	7408	5359
1975 FEDERAL ENERGY S/D	4866	4693	2112	238	-411	92	5763	3280	3836	2008	2773	5327	8021	6342	3481
1976 FEDERAL ENERGY S/D	2958	1485	735	1538	1169	5857	6622	5477	5626	7967	5708	8474	4798	5516	4573
1977 FEDERAL ENERGY S/D	5340	4574	5736	1528	-438	-122	241	-1644	-1055	619	1248	3604	255	-2268	977
1978 FEDERAL ENERGY S/D	615	-449	-387	-77	-91	1149	4609	1140	2262	5040	4297	4911	3763	3169	2100

EXHIBIT 14

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

2004- 5 OPERATING 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
1929 FEDERAL ENERGY S/D	3526	-248	359	542	-485	-75	671	-2327	-234	-223	1406	3108	2692	-1060	452
1930 FEDERAL ENERGY S/D	822	-663	310	57	-19	-9	-395	-1273	-901	2715	4516	2988	1307	-1157	384
1931 FEDERAL ENERGY S/D	1546	-228	-168	-54	-11	91	-647	-2248	-935	2501	294	4333	2307	-1031	308
1932 FEDERAL ENERGY S/D	1151	-577	-355	-68	-1	-139	443	-2121	2436	6203	6195	5900	6120	2596	1775
1933 FEDERAL ENERGY S/D	1998	968	821	511	-42	753	5728	3941	-697	2517	1858	4537	9479	6943	2970
1934 FEDERAL ENERGY S/D	3793	4159	1541	2202	1800	6043	9183	6740	6352	9891	7398	7384	2562	-1101	4611
1935 FEDERAL ENERGY S/D	-157	-801	97	-120	-116	828	5707	2497	700	2715	2728	3310	4990	3148	1940
1936 FEDERAL ENERGY S/D	2384	-578	42	13	-618	-42	1483	-2034	-68	922	6260	6207	5207	1205	1324
1937 FEDERAL ENERGY S/D	2197	-419	365	35	-186	35	-727	-2292	-822	121	546	4149	3285	-1345	310
1938 FEDERAL ENERGY S/D	281	-258	202	40	-156	850	5328	998	2838	3136	4712	7085	5421	2606	2429
1939 FEDERAL ENERGY S/D	1415	-323	239	326	-706	-109	2299	221	299	3291	3186	4130	1627	1263	1114
1940 FEDERAL ENERGY S/D	2607	-375	388	376	-29	157	2799	-986	2345	4719	3695	3421	2085	-236	1304
1941 FEDERAL ENERGY S/D	271	-774	287	572	-45	74	49	-1045	834	239	1532	3734	2676	-1728	504
1942 FEDERAL ENERGY S/D	684	-347	170	662	103	4106	5255	-784	169	2936	1365	3589	5162	3913	2055
1943 FEDERAL ENERGY S/D	4102	1134	538	273	-220	255	5372	4337	2038	8516	7323	6930	6635	3502	3350
1944 FEDERAL ENERGY S/D	3645	2426	474	506	-443	-74	333	-1895	-1092	786	1570	3824	961	-1891	410
1945 FEDERAL ENERGY S/D	618	-542	-318	-51	-63	-132	-1576	-1317	83	54	1530	3354	4183	2738	644
1946 FEDERAL ENERGY S/D	2471	245	657	-21	-365	1359	5728	2249	1728	3099	6163	7812	5910	3457	2875
1947 FEDERAL ENERGY S/D	3219	-190	1045	762	-103	3444	5726	5495	4478	4056	4346	6303	6070	2568	3459
1948 FEDERAL ENERGY S/D	2283	-249	884	3892	1210	1718	5720	5492	1525	2490	5433	9232	12403	5871	4410
1949 FEDERAL ENERGY S/D	4073	4626	2100	942	-248	-157	3995	1087	4529	5071	6863	6803	5353	810	2961
1950 FEDERAL ENERGY S/D	-67	-1136	-219	20	-1151	679	5717	5127	4403	5098	5261	5869	9821	4775	3302
1951 FEDERAL ENERGY S/D	3389	3586	1210	2182	1734	4948	6122	7148	5868	8875	6700	7663	4583	4411	4762
1952 FEDERAL ENERGY S/D	4199	3543	1806	3017	51	2145	5711	3978	989	7849	7032	9062	5973	2738	3898
1953 FEDERAL ENERGY S/D	2428	-282	306	22	-378	90	717	5488	4455	1283	1778	5072	7415	3749	2462
1954 FEDERAL ENERGY S/D	4199	1615	853	908	-70	692	4600	5467	3975	3920	3851	6742	9129	5509	3716
1955 FEDERAL ENERGY S/D	5399	4914	5089	1584	403	1023	4787	-1551	-712	2680	1327	3408	7666	7262	3010
1956 FEDERAL ENERGY S/D	4148	3653	1185	1765	899	4676	6717	5759	6144	7910	7965	9784	9844	4110	5227
1957 FEDERAL ENERGY S/D	4317	2921	1097	1240	-206	966	4965	2712	1473	5441	3359	9382	7926	1392	3247
1958 FEDERAL ENERGY S/D	1768	-288	436	233	-338	0	5417	2665	1411	3574	4935	8139	6778	618	2529
1959 FEDERAL ENERGY S/D	2676	-88	546	997	279	2841	6303	5744	5632	5454	3258	5992	8525	4019	3877
1960 FEDERAL ENERGY S/D	4047	1579	4169	4805	2347	3265	5729	3595	2358	8333	4866	4675	5042	3639	4086
1961 FEDERAL ENERGY S/D	2445	-789	117	697	-29	-182	5735	5448	3382	3704	1765	6964	9244	1898	3070
1962 FEDERAL ENERGY S/D	3047	-165	352	735	-427	-109	5744	422	-424	5109	6026	5099	4527	2106	2086
1963 FEDERAL ENERGY S/D	3944	213	513	1553	505	2546	5718	2292	798	3577	2242	3655	5401	2974	2579
1964 FEDERAL ENERGY S/D	3784	684	1258	399	-374	-242	5100	2257	-965	2544	2102	4403	9518	5676	2632
1965 FEDERAL ENERGY S/D	4085	3182	1941	2090	-35	4850	7564	7089	5622	6006	7384	7290	7746	3047	4794
1966 FEDERAL ENERGY S/D	4203	2740	904	1458	61	925	5742	3105	-117	4643	2823	4480	5094	1422	2523
1967 FEDERAL ENERGY S/D	1959	-320	463	364	-338	476	5720	5464	4273	2160	455	4236	8554	5577	3076
1968 FEDERAL ENERGY S/D	4030	2597	1361	1049	-48	796	5750	5480	2571	3	1353	2769	5082	3236	2670
1969 FEDERAL ENERGY S/D	3778	2113	2767	2383	1049	2108	6315	6228	5134	7237	7183	8849	7345	2673	4584
1970 FEDERAL ENERGY S/D	2833	-526	420	1006	-363	-186	5140	2931	451	2017	2032	3769	5511	2363	2018
1971 FEDERAL ENERGY S/D	3223	-205	286	251	-371	1212	5856	7900	5732	8866	6039	9422	9199	4713	4430
1972 FEDERAL ENERGY S/D	4975	4214	1557	901	-26	816	5771	6594	12035	8988	3718	9114	9806	6896	5368
1973 FEDERAL ENERGY S/D	5055	4825	2529	995	-102	920	3916	-1181	606	-684	342	3847	2509	-859	1496
1974 FEDERAL ENERGY S/D	113	-1212	-370	-41	-42	4334	9703	9337	7471	7749	7036	8659	11072	7417	5365
1975 FEDERAL ENERGY S/D	4872	4699	2118	242	-415	88	5759	3276	3837	1999	2800	5354	8049	6351	3487
1976 FEDERAL ENERGY S/D	2964	1491	741	1542	1165	5853	6618	5473	5627	7958	5735	8501	4826	5525	4579
1977 FEDERAL ENERGY S/D	5346	4580	5742	1532	-442	-126	237	-1648	-1054	610	1275	3631	283	-2259	983
1978 FEDERAL ENERGY S/D	621	-443	-381	-73	-95	1145	4605	1136	2263	5031	4324	4938	3791	3178	2106

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

ENERGY IN AVERAGE MEGAWATTS	2005- 6 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	3518	-256	351	532	-507	-111	739	-2259	-134	-120	1509	3212	2794	-958	499
1930 FEDERAL ENERGY S/D	814	-671	302	47	-41	-45	-327	-1205	-801	2818	4619	3092	1409	-1055	431
1931 FEDERAL ENERGY S/D	1538	-236	-176	-64	-33	55	-579	-2180	-835	2604	397	4437	2409	-929	355
1932 FEDERAL ENERGY S/D	1143	-585	-363	-78	-23	-175	-511	-2053	2536	6306	6298	6004	6222	2698	1822
1933 FEDERAL ENERGY S/D	1990	960	813	501	-64	717	5796	4009	-597	2620	1961	4641	9581	7045	3017
1934 FEDERAL ENERGY S/D	3785	4151	1533	2192	1778	6007	9251	6808	6452	9994	7501	7488	2664	-999	4657
1935 FEDERAL ENERGY S/D	-165	-809	89	-130	-138	792	5775	2565	800	2818	2831	3414	5092	3250	1987
1936 FEDERAL ENERGY S/D	2376	-586	34	3	-640	-78	1551	-1966	32	1025	6363	6311	5309	1307	1371
1937 FEDERAL ENERGY S/D	2189	-427	357	25	-208	-1	-659	-2224	-722	224	649	4253	3387	-1243	357
1938 FEDERAL ENERGY S/D	273	-266	194	30	-178	814	5396	1066	2938	3239	4815	7189	5523	2708	2476
1939 FEDERAL ENERGY S/D	1407	-331	231	316	-728	-145	2367	289	399	3394	3289	4234	1729	1365	1161
1940 FEDERAL ENERGY S/D	2599	-383	380	366	-51	121	2867	-918	2445	4822	3798	3525	2187	-134	1351
1941 FEDERAL ENERGY S/D	263	-782	279	562	-67	38	117	-977	934	342	1635	3838	2778	-1626	550
1942 FEDERAL ENERGY S/D	676	-355	162	652	81	4070	5323	-716	269	3039	1468	3693	5264	4015	2102
1943 FEDERAL ENERGY S/D	4094	1126	530	263	-242	219	5440	4405	2138	8619	7426	7034	6737	3604	3397
1944 FEDERAL ENERGY S/D	3637	2418	466	496	-465	-110	401	-1827	-992	889	1673	3928	1063	-1789	457
1945 FEDERAL ENERGY S/D	610	-550	-326	-61	-85	-168	-1508	-1249	183	157	1633	3458	4285	2840	691
1946 FEDERAL ENERGY S/D	2463	237	649	-31	-387	1323	5796	2317	1828	3202	6266	7916	6012	3559	2922
1947 FEDERAL ENERGY S/D	3211	-198	1037	752	-125	3408	5794	5563	4578	4159	4449	6407	6172	2670	3506
1948 FEDERAL ENERGY S/D	2275	-257	876	3882	1188	1682	5788	5560	1625	2593	5536	9336	12505	5973	4457
1949 FEDERAL ENERGY S/D	4065	4618	2092	932	-270	-193	4063	1155	4629	5174	6966	6907	5455	912	3008
1950 FEDERAL ENERGY S/D	-75	-1144	-227	10	-1173	643	5785	5195	4503	5201	5364	5973	9923	4877	3349
1951 FEDERAL ENERGY S/D	3381	3578	1202	2172	1712	4912	6190	7216	5968	8978	6803	7767	4685	4513	4809
1952 FEDERAL ENERGY S/D	4191	3535	1798	3007	29	2109	5779	4046	1089	7952	7135	9166	6075	2840	3945
1953 FEDERAL ENERGY S/D	2420	-290	298	12	-400	54	785	5556	4555	1386	1881	5176	7517	3851	2509
1954 FEDERAL ENERGY S/D	4191	1607	845	898	-92	656	4668	5535	4075	4023	3954	6846	9231	5611	3763
1955 FEDERAL ENERGY S/D	5391	4906	5081	1574	381	987	4855	-1483	-612	2783	1430	3512	7768	7364	3057
1956 FEDERAL ENERGY S/D	4140	3645	1177	1755	877	4640	6785	5827	6244	8013	8068	9888	9946	4212	5274
1957 FEDERAL ENERGY S/D	4309	2913	1089	1230	-228	930	5033	2780	1573	5544	3462	9486	8028	1494	3294
1958 FEDERAL ENERGY S/D	1760	-296	428	223	-360	-36	5485	2733	1511	3677	5038	8243	6880	720	2576
1959 FEDERAL ENERGY S/D	2668	-96	538	987	257	2805	6371	5812	5732	5557	3361	6096	8627	4121	3924
1960 FEDERAL ENERGY S/D	4039	1571	4161	4795	2325	3229	5797	3663	2458	8436	4969	4779	5144	3741	4133
1961 FEDERAL ENERGY S/D	2437	-797	109	687	-51	-218	5803	5516	3482	3807	1868	7068	9346	2000	3117
1962 FEDERAL ENERGY S/D	3039	-173	344	725	-449	-145	5812	490	-324	5212	6129	5203	4629	2208	2133
1963 FEDERAL ENERGY S/D	3936	205	505	1543	483	2510	5786	2360	898	3680	2345	3759	5503	3076	2626
1964 FEDERAL ENERGY S/D	3776	676	1250	389	-396	-278	5168	2325	-865	2647	2205	4507	9620	5778	2679
1965 FEDERAL ENERGY S/D	4077	3174	1933	2080	-57	4814	7632	7157	5722	6109	7487	7394	7848	3149	4841
1966 FEDERAL ENERGY S/D	4195	2732	896	1448	39	889	5810	3173	-17	4746	2926	4584	5196	1524	2570
1967 FEDERAL ENERGY S/D	1951	-328	455	354	-360	440	5788	5532	4373	2263	558	4340	8656	5679	3123
1968 FEDERAL ENERGY S/D	4022	2589	1353	1039	-70	760	5818	5548	2671	106	1456	2873	5184	3338	2717
1969 FEDERAL ENERGY S/D	3770	2105	2759	2373	1027	2072	6383	6296	5234	7340	7286	8953	7447	2775	4631
1970 FEDERAL ENERGY S/D	2825	-534	412	996	-385	-222	5208	2999	551	2120	2135	3873	5613	2465	2065
1971 FEDERAL ENERGY S/D	3215	-213	278	241	-393	1176	5924	7968	5832	8969	6142	9526	9301	4815	4477
1972 FEDERAL ENERGY S/D	4967	4206	1549	891	-48	780	5839	6662	12135	9091	3821	9218	9908	6998	5415
1973 FEDERAL ENERGY S/D	5047	4817	2521	985	-124	884	3984	-1113	706	-581	445	3951	2611	-757	1543
1974 FEDERAL ENERGY S/D	105	-1220	-378	-51	-64	4298	9771	9405	7571	7852	7139	8763	11174	7519	5412
1975 FEDERAL ENERGY S/D	4864	4691	2110	232	-437	52	5827	3344	3937	2102	2903	5458	8151	6453	3534
1976 FEDERAL ENERGY S/D	2956	1483	733	1532	1143	5817	6686	5541	5727	8061	5838	8605	4928	5627	4626
1977 FEDERAL ENERGY S/D	5338	4572	5734	1522	-464	-162	305	-1580	-954	713	1378	3735	385	-2157	1030
1978 FEDERAL ENERGY S/D	613	-451	-389	-83	-117	1109	4673	1204	2363	5134	4427	5042	3893	3280	2153

EXHIBIT 16

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

2006- 7 OPERATING 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
1929 FEDERAL ENERGY S/D	3635	-139	475	733	-307	87	1033	-1966	159	174	1804	3539	3121	-616	750
1930 FEDERAL ENERGY S/D	931	-554	426	248	159	153	-33	-912	-508	3112	4914	3419	1736	-713	681
1931 FEDERAL ENERGY S/D	1655	-119	-52	137	167	253	-285	-1887	-542	2898	692	4764	2736	-587	606
1932 FEDERAL ENERGY S/D	1260	-468	-239	123	177	23	805	-1760	2829	6600	6593	6331	6549	3040	2073
1933 FEDERAL ENERGY S/D	2107	1077	937	702	136	915	6090	4302	-304	2914	2256	4968	9908	7387	3268
1934 FEDERAL ENERGY S/D	3902	4268	1657	2393	1978	6205	9545	7101	6745	10288	7796	7815	2991	-657	4908
1935 FEDERAL ENERGY S/D	-48	-692	213	71	62	990	6069	2858	1093	3112	3126	3741	5419	3592	2238
1936 FEDERAL ENERGY S/D	2493	-469	158	204	-440	120	1845	-1673	325	1319	6658	6638	5636	1649	1622
1937 FEDERAL ENERGY S/D	2306	-310	481	226	-8	197	-365	-1931	-429	518	944	4580	3714	-901	608
1938 FEDERAL ENERGY S/D	390	-149	318	231	22	1012	5690	-1359	3231	3533	5110	7516	5850	3050	2727
1939 FEDERAL ENERGY S/D	1524	-214	355	517	-528	53	2661	582	692	3688	3584	4561	2056	1707	1412
1940 FEDERAL ENERGY S/D	2716	-266	504	567	149	319	3161	-625	2738	5116	4093	3852	2514	208	1601
1941 FEDERAL ENERGY S/D	380	-665	403	763	133	236	411	-684	1227	636	1930	4165	3105	-1284	801
1942 FEDERAL ENERGY S/D	793	-238	286	853	281	4268	5617	-423	562	3333	1763	4020	5591	4357	2353
1943 FEDERAL ENERGY S/D	4211	1243	654	464	-42	417	5734	4698	2431	8913	7721	7361	7064	3946	3648
1944 FEDERAL ENERGY S/D	3754	2535	590	697	-265	88	695	-1534	-699	1183	1968	4255	1390	-1447	708
1945 FEDERAL ENERGY S/D	727	-433	-202	140	115	30	-1214	-956	476	451	1928	3785	4612	3182	942
1946 FEDERAL ENERGY S/D	2580	354	773	170	-187	1521	6090	2610	2121	3496	6561	8243	6339	3901	3173
1947 FEDERAL ENERGY S/D	3328	-81	1161	953	75	3606	6088	5856	4871	4453	4744	6734	6499	3012	3756
1948 FEDERAL ENERGY S/D	2392	-140	1000	4083	1388	1880	6082	5853	1918	2887	5831	9663	12832	6315	4708
1949 FEDERAL ENERGY S/D	4182	4735	2216	1133	-70	5	4357	1448	4922	5468	7261	7234	5782	1254	3259
1950 FEDERAL ENERGY S/D	42	-1027	-103	211	-973	841	6079	5488	4796	5495	5659	6300	10250	5219	3599
1951 FEDERAL ENERGY S/D	3498	3695	1326	2373	1912	5110	6484	7509	6261	9272	7098	8094	5012	4855	5060
1952 FEDERAL ENERGY S/D	4308	3652	1922	3208	229	2307	6073	4339	1382	8246	7430	9493	6402	3182	4196
1953 FEDERAL ENERGY S/D	2537	-173	422	213	-200	252	1079	5849	4848	1680	2176	5503	7844	4193	2759
1954 FEDERAL ENERGY S/D	4308	1724	969	1099	108	854	4962	5828	4368	4317	4249	7173	9558	5953	4014
1955 FEDERAL ENERGY S/D	5508	5023	5205	1775	581	1185	5149	-1190	-319	3077	1725	3839	8095	7706	3308
1956 FEDERAL ENERGY S/D	4257	3762	1301	1956	1077	4838	7079	6120	6537	8307	8363	10215	10273	4554	5525
1957 FEDERAL ENERGY S/D	4426	3030	1213	1431	-28	1128	5327	3073	1866	5838	3757	9813	8355	1836	3545
1958 FEDERAL ENERGY S/D	1877	-179	552	424	-160	162	5779	3026	1804	3971	5333	8570	7207	1062	2827
1959 FEDERAL ENERGY S/D	2785	21	662	1188	457	3003	6665	6105	6025	5851	3656	6423	8954	4463	4175
1960 FEDERAL ENERGY S/D	4156	1688	4285	4996	2525	3427	6091	3956	2751	8730	5264	5106	5471	4083	4384
1961 FEDERAL ENERGY S/D	2554	-680	233	888	149	-20	6097	5809	3775	4101	2163	7395	9673	2342	3368
1962 FEDERAL ENERGY S/D	3156	-56	468	926	-249	53	6106	783	-31	5506	6424	5530	4956	2550	2384
1963 FEDERAL ENERGY S/D	4053	322	629	1744	683	2708	6080	2653	1191	3974	2640	4086	5830	3418	2876
1964 FEDERAL ENERGY S/D	3893	793	1374	590	-196	-80	5462	2618	-572	2941	2500	4834	9947	6120	2930
1965 FEDERAL ENERGY S/D	4194	3291	2057	2281	143	5012	7926	7450	6015	6403	7782	7721	8175	3491	5092
1966 FEDERAL ENERGY S/D	4312	2849	1020	1649	239	1087	6104	3466	276	5040	3221	4911	5523	1866	2821
1967 FEDERAL ENERGY S/D	2068	-211	579	555	-160	638	6082	5825	4666	2557	853	4667	8983	6021	3374
1968 FEDERAL ENERGY S/D	4139	2706	1477	1240	130	958	6112	5841	2964	400	1751	3200	5511	3680	2968
1969 FEDERAL ENERGY S/D	3887	2222	2883	2574	1227	2270	6677	6589	5527	7634	7581	9280	7774	3117	4882
1970 FEDERAL ENERGY S/D	2942	-417	536	1197	-185	-24	5502	3292	844	2414	2430	4200	5940	2807	2316
1971 FEDERAL ENERGY S/D	3332	-96	402	442	-193	1374	6218	8261	6125	9263	6437	9853	9628	5157	4728
1972 FEDERAL ENERGY S/D	5084	4323	1673	1092	152	978	6133	6955	12428	9385	4116	9545	10235	7340	5665
1973 FEDERAL ENERGY S/D	5164	4934	2645	1186	76	1082	4278	-820	999	-287	740	4278	2938	-415	1794
1974 FEDERAL ENERGY S/D	222	-1103	-254	150	136	4496	10065	9698	7864	8146	7434	9090	11501	7861	5663
1975 FEDERAL ENERGY S/D	4981	4808	2234	433	-237	250	6121	3637	4230	2396	3198	5785	8478	6795	3785
1976 FEDERAL ENERGY S/D	3073	1600	857	1733	1343	6015	6980	5834	6020	8355	6133	8932	5255	5969	4877
1977 FEDERAL ENERGY S/D	5455	4689	5858	1723	-264	36	599	-1287	-661	1007	1673	4062	712	-1815	1281
1978 FEDERAL ENERGY S/D	730	-334	-265	118	83	1307	4967	1497	2656	5428	4722	5369	4220	3622	2404

FEDERAL SYSTEM ENERGY ANALYSIS

FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 42)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

2007- 8 OPERATING 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
1929 FEDERAL ENERGY S/D	3927	153	746	929	-111	283	1029	-1952	173	190	1820	3568	3158	-724	845
1930 FEDERAL ENERGY S/D	1223	-262	697	444	355	349	-37	-898	-494	3128	4930	3448	1773	-821	777
1931 FEDERAL ENERGY S/D	1947	173	219	333	363	449	-289	-1873	-528	2914	708	4793	2773	-695	701
1932 FEDERAL ENERGY S/D	1552	-176	32	319	373	219	801	-1746	2843	6616	6609	6360	6586	2932	2168
1933 FEDERAL ENERGY S/D	2399	1369	1208	898	332	1111	6086	4316	-290	2930	2272	4997	9945	7279	3364
1934 FEDERAL ENERGY S/D	4194	4560	1928	2589	2174	6401	9541	7115	6759	10304	7812	7844	3028	-765	5004
1935 FEDERAL ENERGY S/D	244	-400	484	267	258	1186	6065	2872	1107	3128	3142	3770	5456	3484	2334
1936 FEDERAL ENERGY S/D	2785	-177	429	400	-244	316	1841	-1659	339	1335	6674	6667	5673	1541	1718
1937 FEDERAL ENERGY S/D	2598	-18	752	422	188	393	-369	-1917	-415	534	960	4609	3751	-1009	704
1938 FEDERAL ENERGY S/D	682	143	589	427	218	1208	5686	1373	3245	3549	5126	7545	5887	2942	2823
1939 FEDERAL ENERGY S/D	1816	78	626	713	-332	249	2657	596	706	3704	3600	4590	2093	1599	1508
1940 FEDERAL ENERGY S/D	3008	26	775	763	345	515	3157	-611	2752	5132	4109	3881	2551	100	1697
1941 FEDERAL ENERGY S/D	672	-373	674	959	329	432	407	-670	1241	652	1946	4194	3142	-1392	897
1942 FEDERAL ENERGY S/D	1085	54	557	1049	477	4464	5613	-409	576	3349	1779	4049	5628	4249	2449
1943 FEDERAL ENERGY S/D	4503	1535	925	660	154	613	5730	4712	2445	8929	7737	7390	7101	3838	3743
1944 FEDERAL ENERGY S/D	4046	2827	861	893	-69	284	691	-1520	-685	1199	1984	4284	1427	-1555	803
1945 FEDERAL ENERGY S/D	1019	-141	69	336	311	226	-1218	-942	490	467	1944	3814	4649	3074	1038
1946 FEDERAL ENERGY S/D	2872	646	1044	366	9	1717	6086	2624	2135	3512	6577	8272	6376	3793	3269
1947 FEDERAL ENERGY S/D	3620	211	1432	1149	271	3802	6084	5870	4885	4469	4760	6763	6536	2904	3852
1948 FEDERAL ENERGY S/D	2684	152	1271	4279	1584	2076	6078	5867	1932	2903	5847	9692	12869	6207	4804
1949 FEDERAL ENERGY S/D	4474	5027	2487	1329	126	201	4353	1462	4936	5484	7277	7263	5819	1146	3354
1950 FEDERAL ENERGY S/D	334	-735	168	407	-777	1037	6075	5502	4810	5511	5675	6329	10287	5111	3695
1951 FEDERAL ENERGY S/D	3790	3987	1597	2569	2108	5306	6480	7523	6275	9288	7114	8123	5049	4747	5156
1952 FEDERAL ENERGY S/D	4600	3944	2193	3404	425	2503	6069	4353	1396	8262	7446	9522	6439	3074	4292
1953 FEDERAL ENERGY S/D	2829	119	693	409	-4	448	1075	5863	4862	1696	2192	5532	7881	4085	2855
1954 FEDERAL ENERGY S/D	4600	2016	1240	1295	304	1050	4958	5842	4382	4333	4265	7202	9595	5845	4110
1955 FEDERAL ENERGY S/D	5800	5315	5476	1971	777	1381	5145	-1176	-305	3093	1741	3868	8132	7598	3403
1956 FEDERAL ENERGY S/D	4549	4054	1572	2152	1273	5034	7075	6134	6551	8323	8379	10244	10310	4446	5620
1957 FEDERAL ENERGY S/D	4718	3322	1484	1627	168	1324	5323	3087	1880	5854	3773	9842	8392	1728	3641
1958 FEDERAL ENERGY S/D	2169	113	823	620	36	358	5775	3040	1818	3987	5349	8599	7244	954	2923
1959 FEDERAL ENERGY S/D	3077	313	933	1384	653	3199	6661	6119	6039	5867	3672	6452	8991	4355	4271
1960 FEDERAL ENERGY S/D	4448	1980	4556	5192	2721	3623	6087	3970	2765	8746	5280	5135	5508	3975	4480
1961 FEDERAL ENERGY S/D	2846	-388	504	1084	345	176	6093	5823	3789	4117	2179	7424	9710	2234	3463
1962 FEDERAL ENERGY S/D	3448	236	739	1122	-53	249	6102	797	-17	5522	6440	5559	4993	2442	2480
1963 FEDERAL ENERGY S/D	4345	614	900	1940	879	2904	6076	2667	1205	3990	2656	4115	5867	3310	2972
1964 FEDERAL ENERGY S/D	4185	1085	1645	786	0	116	5458	2632	-558	2957	2516	4863	9984	6012	3026
1965 FEDERAL ENERGY S/D	4486	3583	2328	2477	339	5208	7922	7464	6029	6419	7798	7750	8212	3383	5188
1966 FEDERAL ENERGY S/D	4604	3141	1291	1845	435	1283	6100	3480	290	5056	3237	4940	5560	1758	2917
1967 FEDERAL ENERGY S/D	2360	81	850	751	36	834	6078	5839	4680	2573	869	4696	9020	5913	3470
1968 FEDERAL ENERGY S/D	4431	2998	1748	1436	326	1154	6108	5855	2978	416	1767	3229	5548	3572	3063
1969 FEDERAL ENERGY S/D	4179	2514	3154	2770	1423	2466	6673	6603	5541	7650	7597	9309	7811	3009	4977
1970 FEDERAL ENERGY S/D	3234	-125	807	1393	11	172	5498	3306	858	2430	2446	4229	5977	2699	2412
1971 FEDERAL ENERGY S/D	3624	196	673	638	3	1570	6214	8275	6139	9279	6453	9882	9665	5049	4824
1972 FEDERAL ENERGY S/D	5376	4615	1944	1288	348	1174	6129	6969	12442	9401	4132	9574	10272	7232	5761
1973 FEDERAL ENERGY S/D	5456	5226	2916	1382	272	1278	4274	-806	1013	-271	756	4307	2975	-523	1889
1974 FEDERAL ENERGY S/D	514	-811	17	346	332	4692	10061	9712	7878	8162	7450	9119	11538	7753	5759
1975 FEDERAL ENERGY S/D	5273	5100	2505	629	-41	446	6117	3651	4244	2412	3214	5814	8515	6687	3881
1976 FEDERAL ENERGY S/D	3365	1892	1128	1929	1539	6211	6976	5848	6034	8371	6149	8961	5292	5861	4972
1977 FEDERAL ENERGY S/D	5747	4981	6129	1919	-68	232	595	-1273	-647	1023	1689	4091	749	-1923	1377
1978 FEDERAL ENERGY S/D	1022	-42	6	314	279	1503	4963	1511	2670	5444	4738	5398	4257	3514	2500

EXHIBIT 18

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SECTION VIII
REGIONAL SYSTEM EXHIBITS

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EXHIBIT 19
REGIONAL ANNUAL ENERGY ANALYSIS UNDER 1937 WATER CONDITIONS FOR 10 OPERATING YEARS

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

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

OPERATING YEAR

MEGAWATTS		1998-99 AVG	1999- 0 AVG	2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG
FIRM LOADS											
1 SYSTEM FIRM LOADS	1/	21565	21670	21775	21856	21986	22128	22286	22470	22566	22753
2 EXPORTS	3/	1650	1782	1782	1773	1724	1756	1638	1573	1528	1456
3 FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0
4 FIRM LOADS		23216	23452	23557	23629	23709	23885	23924	24043	24094	24208
NON-FIRM LOADS											
5 REGIONAL NON-FIRM LOADS	2/	0	0	0	0	0	0	0	0	0	0
6 TOTAL LOADS		23216	23452	23557	23629	23709	23885	23924	24043	24094	24208
HYDRO RESOURCES											
7 REGULATED HYDRO	5/	11089	11165	11055	10900	10900	10900	10900	10900	10900	10900
8 INDEPENDENT HYDRO	6/	1099	1098	1098	1093	1093	1094	1093	1093	1093	1094
9 SUS. PKNG. ADJUSTMENT	7/	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO		12187	12263	12153	11993	11993	11993	11993	11993	11993	11994
OTHER RESOURCES											
11 SMALL THERMAL & MISC	8/	95	94	94	90	90	90	90	90	90	90
12 COMBUSTION TURBINES	9/	753	754	753	749	752	753	749	752	753	749
13 RENEWABLES	10/	75	75	75	75	75	75	75	75	75	75
14 COGENERATION	11/	675	675	675	675	675	675	654	639	639	639
15 IMPORTS	12/	1669	1636	1635	1523	1541	1419	1312	1306	1310	1210
16 CENTRALIA		1273	1273	1273	1231	1183	1253	1233	1268	1227	1210
17 JIM BRIDGER		616	610	610	596	629	601	630	595	629	592
18 COLSTRIP 1 & 2		387	386	385	377	377	377	377	377	377	378
19 BOARDMAN		385	385	385	385	385	385	385	385	385	385
20 VALMY		194	195	195	196	195	194	195	195	196	195
21 COLSTRIP 3		546	545	545	539	539	539	539	538	539	539
22 WNP 2		841	841	876	876	876	876	876	876	876	876
23 COLSTRIP 4		660	660	660	660	660	660	660	660	660	660
24 FED RESOURCE ACQUIS	13/	0	0	0	0	0	0	0	0	0	0
25 NON-UTILITY GENERATION	14/	1051	1057	1057	1024	999	999	996	987	985	985
26 TOTAL RESOURCES		21408	21450	21371	20990	20969	20888	20762	20736	20734	20577

EXHIBIT 16

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

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

OPERATING YEAR

MEGAWATTS		1998-99 AVG	1999- 0 AVG	2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG
RESERVES & MAINTENANCE											
27 HYD SM THRM & MISC RES	15/	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
29 BPA SPINNING RESERVES	17/	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE	18/	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12
31 NET RESOURCES		21396	21438	21359	20978	20957	20876	20750	20724	20721	20564
SURPLUS/DEFICITS											
32 FIRM SURPLUS/DEFICIT		-1820	-2014	-2198	-2651	-2753	-3008	-3174	-3319	-3372	-3644
33 TOTAL SURPLUS/DEFICIT		-1820	-2014	-2198	-2651	-2753	-3008	-3174	-3319	-3372	-3644
34 EXTREME WEATHER ADJ.	19/	0	0	0	0	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.		-1820	-2014	-2198	-2651	-2753	-3008	-3174	-3319	-3372	-3644
36 TOTAL S/D W/EXT WTHR. ADJ.		-1820	-2014	-2198	-2651	-2753	-3008	-3174	-3319	-3372	-3644

EXHIBIT 19 (continued)

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EXHIBITS 20 - 22
REGIONAL MONTHLY ENERGY 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

M E D I U M L O A D S

1998-99 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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	1/	20189	20189	19696	20396	22393	23945	24600	23528	22171	20895	20891	20278	20254	20438	21565
2 EXPORTS	3/	1974	1974	1905	1428	1399	1398	1348	1283	1291	1570	1607	1705	2187	2300	1650
3 FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FIRM LOADS		22163	22163	21601	21824	23792	25343	25948	24811	23462	22465	22498	21983	22441	22738	23216
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		22163	22163	21601	21824	23792	25343	25948	24811	23462	22465	22498	21983	22441	22738	23216
HYDRO RESOURCES																
7 REGULATED HYDRO	5/	10980	9675	7868	8953	10670	11644	11123	8674	9628	10320	11311	16535	17209	9615	11088
8 INDEPENDENT HYDRO	6/	1063	1088	1021	1008	936	991	812	828	973	1241	1284	1540	1575	1164	1099
9 SUS. PKNG. ADJUSTMENT	7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO		12043	10763	8889	9961	11606	12635	11935	9502	10601	11561	12595	18075	18784	10779	12187
OTHER RESOURCES																
11 SMALL THERMAL & MISC	8/	108	114	100	100	106	103	104	104	99	111	103	67	28	110	95
12 COMBUSTION TURBINES	9/	795	795	798	804	837	839	835	836	801	356	356	546	794	790	753
13 RENEWABLES	10/	77	77	77	78	79	81	82	81	81	80	80	33	77	77	75
14 COGENERATION	11/	723	723	723	723	723	716	723	723	723	494	723	280	723	716	675
15 IMPORTS	12/	1550	1550	1105	1270	1554	1968	2168	2280	1888	1746	1395	1396	1578	1704	1669
16 CENTRALIA		1300	1300	1300	1300	1300	1300	1300	1300	1300	943	1018	1300	1300	1300	1273
17 JIM BRIDGER		642	642	642	643	642	643	642	642	642	578	482	472	609	643	616
18 COLSTRIP 1 & 2		428	442	412	411	412	406	408	407	410	218	331	254	385	432	387
19 BOARDMAN		440	440	440	440	440	440	440	440	440	440	440	0	220	440	385
20 VALMY		211	211	211	211	211	211	211	211	169	116	101	165	211	202	194
21 COLSTRIP 3		588	597	576	575	575	571	573	572	575	592	348	326	557	591	546
22 WNP 2		961	961	961	961	961	961	961	961	961	961	0	0	961	961	841
23 COLSTRIP 4		696	696	696	696	696	696	696	696	696	696	418	404	696	696	660
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/	1195	1200	1113	1004	973	961	948	976	1001	1145	1141	859	1172	1259	1051
26 TOTAL RESOURCES		21756	20510	18043	19177	21115	22531	22026	19731	20386	20036	19530	24177	28094	20699	21408

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

1998-99 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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	-26	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES		21725	20484	18034	19168	21111	22531	22026	19731	20381	20028	19522	24157	28079	20649	21396
SURPLUS/DEFICITS																
32 FIRM SURPLUS/DEFICIT		-438	-1679	-3566	-2656	-2681	-2812	-3922	-5081	-3081	-2437	-2976	2174	5638	-2089	-1820
33 TOTAL SURPLUS/DEFICIT		-438	-1679	-3566	-2656	-2681	-2812	-3922	-5081	-3081	-2437	-2976	2174	5638	-2089	-1820
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.		-438	-1679	-3566	-2656	-2681	-2812	-3922	-5081	-3081	-2437	-2976	2174	5638	-2089	-1820
36 TOTAL S/D W/EXT WTHR. ADJ.		-438	-1679	-3566	-2656	-2681	-2812	-3922	-5081	-3081	-2437	-2976	2174	5638	-2089	-1820

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

SHEET 1 OF 2

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

2002- 3 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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	1/	20612	20612	20112	20791	22786	24338	25033	23968	22610	21317	21309	20702	20684	20880	21986
2 EXPORTS	3/	2059	2059	1992	1679	1657	1655	1425	1355	1364	1630	1667	1613	2079	2159	1724
3 FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FIRM LOADS		22671	22671	22104	22470	24443	25993	26457	25323	23974	22947	22976	22315	22763	23039	23709
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		22671	22671	22104	22470	24443	25993	26457	25323	23974	22947	22976	22315	22763	23039	23709
HYDRO RESOURCES																
7 REGULATED HYDRO	5/	12581	10110	8845	8945	10404	11509	11428	7948	9215	10005	11719	16202	14815	9278	10900
8 INDEPENDENT HYDRO	6/	1058	1082	1015	1002	931	985	807	821	967	1236	1278	1534	1570	1160	1093
9 SUS. PKNG. ADJUSTMENT	7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO		13639	11192	9860	9947	11335	12494	12235	8769	10182	11241	12997	17736	16385	10438	11993
OTHER RESOURCES																
11 SMALL THERMAL & MISC	8/	103	109	94	94	101	98	99	98	94	105	97	61	28	105	90
12 COMBUSTION TURBINES	9/	787	787	791	796	829	831	840	841	805	360	360	551	798	794	752
13 RENEWABLES	10/	77	77	77	78	79	81	82	81	81	80	80	33	77	77	75
14 COGENERATION	11/	723	723	723	723	723	716	723	723	723	494	723	280	723	716	675
15 IMPORTS	12/	1492	1492	1257	1308	1674	1742	1935	2024	1604	1534	1228	1033	1460	1586	1541
16 CENTRALIA		1300	1300	1300	1300	1300	1300	1300	736	649	922	1300	1300	1300	1300	1183
17 JIM BRIDGER		643	643	642	643	643	642	642	642	554	503	642	643	642	643	629
18 COLSTRIP 1 & 2		418	430	401	400	401	396	398	396	400	211	321	246	375	422	377
19 BOARDMAN		440	440	440	440	440	440	440	440	440	440	440	0	220	440	385
20 VALMY		211	211	211	211	211	211	211	211	169	116	101	162	211	211	195
21 COLSTRIP 3		580	589	568	567	568	564	565	564	567	583	343	321	549	583	539
22 WNP 2		1001	1001	1001	1001	1001	1001	1001	1001	1001	1001	0	0	1001	1001	876
23 COLSTRIP 4		696	696	696	696	696	696	696	696	696	696	418	404	696	696	660
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/	1141	1145	1058	948	917	907	892	921	947	1086	1081	829	1145	1197	999
26 TOTAL RESOURCES		23250	20834	19119	19152	20918	22118	22059	18142	18912	19372	20131	23598	25609	20208	20969

EXHIBIT 21

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

2002- 3 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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	-26	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES		23219	20808	19110	19143	20914	22118	22059	18142	18907	19364	20124	23578	25594	20158	20957
SURPLUS/DEFICITS																
32 FIRM SURPLUS/DEFICIT		548	-1863	-2994	-3326	-3529	-3875	-4399	-7181	-5067	-3583	-2853	1263	2831	-2881	-2753
33 TOTAL SURPLUS/DEFICIT		548	-1863	-2994	-3326	-3529	-3875	-4399	-7181	-5067	-3583	-2853	1263	2831	-2881	-2753
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.		548	-1863	-2994	-3326	-3529	-3875	-4399	-7181	-5067	-3583	-2853	1263	2831	-2881	-2753
36 TOTAL S/D W/EXT WTHR. ADJ.		548	-1863	-2994	-3326	-3529	-3875	-4399	-7181	-5067	-3583	-2853	1263	2831	-2881	-2753

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA SHEET 1 OF 2

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

1997 WHITEBOOK: 12/31/97
2007- 8 OPERATING YEAR RUN DATE: 12/31/97

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	1/	21357	21357	20855	21537	23549	25117	25858	24855	23408	22085	22076	21470	21455	21491	22753
2 EXPORTS	3/	1764	1764	1706	1419	1389	1396	1374	1312	1317	1351	1351	1299	1540	1600	1456
3 FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FIRM LOADS		23121	23121	22561	22956	24938	26513	27232	26167	24725	23436	23427	22769	22995	23091	24208
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		23121	23121	22561	22956	24938	26513	27232	26167	24725	23436	23427	22769	22995	23091	24208
HYDRO RESOURCES																
7 REGULATED HYDRO	5/	12569	10104	8845	8945	10404	11516	11436	7953	9215	10005	11719	16203	14815	9269	10900
8 INDEPENDENT HYDRO	6/	1048	1071	1015	1002	931	993	815	829	967	1236	1278	1534	1571	1149	1094
9 SUS. PKNG. ADJUSTMENT	7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO		13617	11175	9860	9947	11335	12509	12251	8782	10182	11241	12997	17737	16386	10418	11993
OTHER RESOURCES																
11 SMALL THERMAL & MISC	8/	93	98	95	95	101	105	106	106	94	105	97	62	28	95	90
12 COMBUSTION TURBINES	9/	790	790	794	800	833	834	832	833	797	352	352	543	790	787	749
13 RENEWABLES	10/	77	77	77	78	79	81	82	81	81	80	80	33	77	77	75
14 COGENERATION	11/	687	687	687	687	687	680	687	687	687	458	687	244	687	680	639
15 IMPORTS	12/	1294	1294	892	957	1161	1444	1360	1337	1130	1080	1059	1049	1362	1464	1210
16 CENTRALIA		1300	1300	1300	1300	1300	1300	1300	1127	651	776	1300	1300	1300	1300	1210
17 JIM BRIDGER		642	643	642	642	642	642	642	643	554	439	364	415	599	642	592
18 COLSTRIP 1 & 2		398	408	401	401	402	410	413	411	400	212	322	247	376	402	378
19 BOARDMAN		440	440	440	440	440	440	440	440	440	440	440	0	220	440	385
20 VALMY		211	211	211	211	211	211	211	211	169	116	101	161	211	211	195
21 COLSTRIP 3		566	573	568	568	568	574	576	575	568	583	343	322	550	569	539
22 WNP 2		1001	1001	1001	1001	1001	1001	1001	1001	1001	1001	0	0	1001	1001	876
23 COLSTRIP 4		696	696	696	696	696	696	696	696	696	696	418	404	696	696	660
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/	1126	1129	1049	938	905	896	882	910	929	1070	1065	813	1128	1178	985
26 TOTAL RESOURCES		22937	20521	18713	18761	20361	21822	21479	17839	18379	18649	19625	23330	25410	19959	20577

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

2007- 8 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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	-26	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES		22907	20496	18704	18752	20357	21822	21479	17839	18374	18642	19618	23310	25395	19909	20564
SURPLUS/DEFICITS																
32 FIRM SURPLUS/DEFICIT		-214	-2625	-3857	-4204	-4581	-4690	-5753	-8328	-6351	-4794	-3809	541	2401	-3183	-3644
33 TOTAL SURPLUS/DEFICIT		-214	-2625	-3857	-4204	-4581	-4690	-5753	-8328	-6351	-4794	-3809	541	2401	-3183	-3644
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.		-214	-2625	-3857	-4204	-4581	-4690	-5753	-8328	-6351	-4794	-3809	541	2401	-3183	-3644
36 TOTAL S/D W/EXT WTHR. ADJ.		-214	-2625	-3857	-4204	-4581	-4690	-5753	-8328	-6351	-4794	-3809	541	2401	-3183	-3644

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EXHIBIT 23
REGIONAL MONTHLY 50-HOUR CAPACITY SURPLUSES AND DEFICITS UNDER MEDIUM LOADS FOR 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

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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
1998-99	4899	2677	1991	1451	-1286	-2666	-4981	-5492	5	62	-320	3585	6888	1698
1999-00	5910	1893	1399	769	-1857	-3561	-7291	-6372	-1018	-1259	498	3495	6862	1441
2000-01	5596	1629	954	583	-2184	-3262	-6974	-6689	-250	-1280	201	3480	6081	1435
2001-02	5555	1534	800	442	-2836	-3464	-5651	-6826	-2143	-1208	10	3032	5428	1335
2002-03	5505	1495	991	181	-2607	-3753	-5704	-7452	-2250	-1999	-444	2786	4778	717
2003-04	5113	1103	415	-294	-3369	-4520	-7229	-8383	-3009	-2236	-702	2417	4885	689
2004-05	4876	868	136	-1087	-4473	-5085	-7422	-8609	-3757	-1830	-519	2501	4830	682
2005-06	4769	760	330	-968	-4385	-5258	-7564	-8678	-3428	-2556	-821	1901	4527	1348
2006-07	4620	612	-5	-1026	-4443	-5307	-7869	-9091	-3978	-2332	-916	2090	4487	395
2007-08	4483	474	-229	-1340	-5008	-5671	-9023	-9571	-4776	-3547	-1961	1244	4479	768

EXHIBIT 23

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

M E D I U M L O A D S

1998-99 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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
FIRM LOADS															
1 SYSTEM FIRM LOADS	1/	25818	25828	25643	28173	30378	32604	33341	32764	30433	28738	28731	27139	26342	25878
2 EXPORTS	3/	3167	3167	3103	2311	1995	2016	2014	1909	1828	2550	2601	2819	3810	3909
3 FED DIVERSITY	4/	-932	-929	-958	-1006	-947	-708	-716	-721	-922	-826	-818	-929	-933	-907
4 FIRM LOADS		28053	28066	27788	29479	31426	33912	34639	33952	31339	30462	30514	29029	29219	28880
NON-FIRM LOADS															
5 REGIONAL NON-FIRM LOADS	2/	111	111	103	77	125	66	153	101	148	106	106	94	138	118
6 TOTAL LOADS		28164	28177	27891	29555	31552	33978	34792	34053	31487	30569	30621	29123	29357	28997
HYDRO RESOURCES															
7 REGULATED HYDRO	5/	30048	29597	29584	29921	30937	31230	30234	30729	30521	29696	29392	28931	29946	29414
8 INDEPENDENT HYDRO	6/	1855	1840	1822	1808	1796	1767	1717	1829	1908	1942	1956	2006	2020	1911
9 SUS. PKNG. ADJUSTMENT	7/	-2409	-4794	-5403	-5473	-4496	-4774	-6064	-7256	-6972	-4731	-4754	-1200	-1604	-5278
10 TOTAL HYDRO		29494	26643	26003	26256	28237	28223	25887	25302	25457	26907	26594	29737	30362	26047
OTHER RESOURCES															
11 SMALL THERMAL & MISC	8/	90	90	83	86	181	178	179	176	86	88	82	37	39	91
12 COMBUSTION TURBINES	9/	1201	1201	1204	1210	1666	1669	1665	1663	1207	673	673	1203	1200	1196
13 RENEWABLES	10/	80	80	80	81	82	84	85	84	84	83	83	33	80	80
14 COGENERATION	11/	775	775	775	775	775	755	775	775	775	534	775	306	775	755
15 IMPORTS	12/	1934	1934	1389	1806	2052	2702	2996	3027	2524	1928	1655	1945	2117	2000
16 CENTRALIA		1340	1340	1340	1340	1340	1340	1340	1340	1340	670	1340	1340	1340	1340
17 JIM BRIDGER		693	693	693	693	692	693	693	693	693	520	519	520	693	693
18 COLSTRIP 1 & 2		410	410	397	403	412	406	407	401	402	204	395	190	385	413
19 BOARDMAN		508	508	508	508	508	508	508	508	508	508	508	0	508	508
20 VALMY		242	242	242	242	242	242	242	242	242	121	121	242	242	242
21 COLSTRIP 3		593	593	583	587	594	589	591	586	587	590	582	570	575	595
22 WNP 2		1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	0	0	1162	1162
23 COLSTRIP 4		740	740	740	740	740	740	740	740	740	740	740	740	740	740
24 FED RESOURCE ACQUIS	13/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 NON-UTILITY GENERATION	14/	1431	1431	1340	1238	1194	1180	1166	1194	1228	1384	1380	931	1329	1484
26 TOTAL RESOURCES		40692	37841	36539	37128	39877	40471	38436	37893	37035	36112	35447	37794	41547	37345

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

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

1998-99 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
RESERVES & MAINTENANCE															
27 HYD SM THRM & MISC RES	15/	-1772	-1749	-1742	-1754	-1831	-1841	-1790	-1821	-1789	-1718	-1716	-1671	-1768	-1744
28 LARGE THERMAL RESERVES	16/	-1010	-1010	-934	-937	-922	-990	-993	-997	-973	-790	-744	-742	-1023	-1007
29 BPA SPINNING RESERVES	17/	-352	-296	-297	-298	-346	-360	-336	-299	-297	-328	-310	-407	-447	-295
30 HYDRO MAINTENANCE	18/	-4606	-4044	-3787	-3208	-2935	-2037	-1561	-2289	-2632	-2751	-2483	-2360	-2202	-3721
31 NET RESOURCES		32952	30743	29779	30930	33843	35242	33755	32487	31343	30525	30194	32614	36106	30578
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT		4899	2677	1991	1451	2417	1330	-884	-1465	5	62	-320	3585	6888	1698
33 TOTAL SURPLUS/DEFICIT		4788	2566	1888	1374	2291	1264	-1037	-1566	-144	-44	-427	3491	6749	1581
34 EXTREME WEATHER ADJ.	19/	0	0	0	0	-3702	-3996	-4097	-4027	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.		4899	2677	1991	1451	-1286	-2666	-4981	-5492	5	62	-320	3585	6888	1698
36 TOTAL S/D W/EXT WTHR. ADJ.		4788	2566	1888	1374	-1411	-2732	-5134	-5593	-144	-44	-427	3491	6749	1581

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

2002- 3 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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
FIRM LOADS															
1 SYSTEM FIRM LOADS	1/	26390	26393	26203	28726	30886	33110	33916	33350	31029	29326	29315	27736	26938	26468
2 EXPORTS	3/	3611	3611	3559	3012	2660	2649	2448	2410	2399	3086	3138	3110	4081	4109
3 FED. DIVERSITY	4/	-846	-842	-864	-902	-895	-666	-681	-690	-846	-787	-784	-830	-836	-814
4 FIRM LOADS		29155	29162	28898	30836	32651	35093	35683	35071	32582	31625	31669	30016	30183	29763
NON-FIRM LOADS															
5 REGIONAL NON-FIRM LOADS	2/	111	111	103	77	128	61	152	100	150	120	120	90	144	117
6 TOTAL LOADS		29266	29273	29001	30913	32780	35154	35835	35170	32732	31745	31790	30106	30327	29880
HYDRO RESOURCES															
7 REGULATED HYDRO	5/	30066	29679	29541	29947	30935	31434	31176	30933	30297	29589	29164	29071	29881	29384
8 INDEPENDENT HYDRO	6/	1875	1860	1842	1826	1814	1785	1736	1846	1927	1966	1975	2027	2043	1930
9 SUS. PKNG. ADJUSTMENT	7/	-571	-4855	-5427	-5488	-4885	-4531	-6322	-7394	-6744	-5221	-3295	-1200	-2608	-5231
10 TOTAL HYDRO		31370	26684	25956	26285	27864	28688	26590	25385	25480	26334	27844	29898	29316	26083
OTHER RESOURCES															
11 SMALL THERMAL & MISC	8/	100	100	94	97	192	189	190	187	96	101	93	49	39	102
12 COMBUSTION TURBINES	9/	1193	1193	1197	1202	1658	1661	1670	1668	1211	677	677	1208	1204	1200
13 RENEWABLES	10/	81	81	81	82	83	85	86	85	85	84	84	34	81	81
14 COGENERATION	11/	775	775	775	775	775	755	775	775	775	534	775	306	775	755
15 IMPORTS	12/	1814	1814	1590	1902	2487	2432	2734	2758	2169	1673	1400	1796	1958	1854
16 CENTRALIA		1340	1340	1340	1340	1340	1340	1340	670	670	670	1340	1340	1340	1340
17 JIM BRIDGER		693	693	693	693	693	693	692	693	520	519	692	693	692	693
18 COLSTRIP 1 & 2		431	431	419	425	434	427	429	423	424	217	418	202	409	434
19 BOARDMAN		508	508	508	508	508	508	508	508	508	508	508	0	508	508
20 VALMY		242	242	242	242	242	242	242	242	242	0	0	242	242	242
21 COLSTRIP 3		608	608	599	603	609	605	606	602	602	609	598	588	592	610
22 WNP 2		1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	0	0	1162	1162
23 COLSTRIP 4		740	740	740	740	740	740	740	740	740	740	740	740	740	740
24 FED RESOURCE ACQUIS	13/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 NON-UTILITY GENERATION	14/	1379	1379	1288	1186	1143	1128	1114	1142	1176	1334	1329	905	1302	1432
26 TOTAL RESOURCES		42436	37750	36684	37243	39930	40655	38878	37039	35860	35162	36498	38001	40360	37236

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

2002- 3 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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
RESERVES & MAINTENANCE															
27 HYD SM THRM & MISC RES	15/	-1771	-1752	-1739	-1754	-1829	-1851	-1836	-1830	-1777	-1712	-1703	-1679	-1765	-1743
28 LARGE THERMAL RESERVES	16/	-999	-999	-972	-965	-1001	-978	-980	-885	-820	-760	-741	-757	-1013	-996
29 BPA SPINNING RESERVES	17/	-397	-296	-297	-298	-337	-370	-338	-299	-297	-313	-346	-403	-418	-295
30 HYDRO MAINTENANCE	18/	-4609	-4046	-3787	-3208	-2935	-2037	-1561	-2289	-2634	-2751	-2483	-2360	-2202	-3722
31 NET RESOURCES		34661	30657	29888	31017	33828	35418	34162	31735	30332	29626	31226	32802	34961	30480
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT		5505	1495	991	181	1176	326	-1521	-3335	-2250	-1999	-444	2786	4778	717
33 TOTAL SURPLUS/DEFICIT		5395	1384	888	104	1048	265	-1673	-3435	-2400	-2119	-564	2696	4634	600
34 EXTREME WEATHER ADJ.	19/	0	0	0	0	-3783	-4079	-4182	-4116	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.		5505	1495	991	181	-2607	-3753	-5704	-7452	-2250	-1999	-444	2786	4778	717
36 TOTAL S/D W/EXT WTHR. ADJ.		5395	1384	888	104	-2735	-3814	-5855	-7552	-2400	-2119	-564	2696	4634	600

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

2007- 8 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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
FIRM LOADS															
1 SYSTEM FIRM LOADS	1/	27386	27388	27200	29769	31903	34163	35544	34454	32403	30753	30741	29053	28193	27295
2 EXPORTS	3/	3297	3297	3211	2781	2673	2696	2701	2636	2632	2659	2659	2620	2866	2914
3 FED DIVERSITY	4/	-757	-753	-777	-821	-827	-619	-636	-643	-781	-748	-744	-777	-779	-753
4 FIRM LOADS		29926	29931	29634	31729	33749	36240	37609	36447	34254	32665	32656	30896	30280	29455
NON-FIRM LOADS															
5 REGIONAL NON-FIRM LOADS	2/	110	110	103	77	130	45	155	124	143	114	114	116	144	122
6 TOTAL LOADS		30035	30041	29737	31806	33878	36284	37764	36571	34396	32779	32770	31012	30424	29578
HYDRO RESOURCES															
7 REGULATED HYDRO	5/	30057	29670	29541	29947	30935	31444	31186	30944	30299	29590	29164	29072	29881	29375
8 INDEPENDENT HYDRO	6/	1865	1850	1844	1826	1814	1797	1747	1857	1928	1968	1977	2029	2045	1920
9 SUS. PKNG. ADJUSTMENT	7/	-571	-4855	-5427	-5488	-4885	-4531	-6322	-7394	-6744	-5221	-3295	-1200	-2608	-5231
10 TOTAL HYDRO		31351	26665	25958	26285	27864	28710	26611	25407	25483	26337	27846	29901	29318	26064
OTHER RESOURCES															
11 SMALL THERMAL & MISC	8/	95	95	95	97	192	196	196	194	97	102	94	49	39	97
12 COMBUSTION TURBINES	9/	1196	1196	1200	1206	1662	1664	1662	1660	1203	669	669	1200	1196	1193
13 RENEWABLES	10/	81	81	81	82	83	85	86	85	85	84	84	34	81	81
14 COGENERATION	11/	730	730	730	730	730	710	730	730	730	489	730	261	730	710
15 IMPORTS	12/	1634	1634	1088	1306	1265	1786	1560	1586	1372	1210	1210	1275	1800	1681
16 CENTRALIA		1340	1340	1340	1340	1340	1340	1340	1340	670	670	1340	1340	1340	1340
17 JIM BRIDGER		693	693	693	692	692	692	693	693	519	520	347	520	693	692
18 COLSTRIP 1 & 2		420	420	420	426	434	441	442	437	426	218	419	203	410	424
19 BOARDMAN		508	508	508	508	508	508	508	508	508	508	508	0	508	508
20 VALMY		242	242	242	242	242	242	242	242	242	0	0	242	242	242
21 COLSTRIP 3		600	600	600	604	610	615	615	612	604	610	599	589	593	603
22 WNP 2		1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	0	0	1162	1162
23 COLSTRIP 4		740	740	740	740	740	740	740	740	740	740	740	740	740	740
24 FED RESOURCE ACQUIS	13/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 NON-UTILITY GENERATION	14/	1365	1365	1277	1175	1129	1115	1101	1128	1157	1315	1310	887	1284	1415
26 TOTAL RESOURCES		42157	37471	36134	36595	38652	40007	37688	36523	34998	34634	35896	37241	40136	36951

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

2007- 8 OPERATING YEAR

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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
RESERVES & MAINTENANCE															
27 HYD SM THRM & MISC RES	15/	-1769	-1749	-1739	-1754	-1827	-1852	-1836	-1830	-1775	-1712	-1703	-1677	-1763	-1740
28 LARGE THERMAL RESERVES	16/	-976	-976	-906	-946	-892	-961	-963	-968	-815	-741	-670	-661	-994	-971
29 BPA SPINNING RESERVES	17/	-397	-296	-297	-298	-337	-370	-338	-299	-297	-313	-346	-403	-418	-295
30 HYDRO MAINTENANCE	18/	-4607	-4045	-3787	-3208	-2935	-2037	-1561	-2290	-2634	-2751	-2483	-2360	-2202	-3722
31 NET RESOURCES		34408	30405	29405	30388	32661	34786	32989	31136	29477	29117	30695	32140	34759	30224
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT		4483	474	-229	-1340	-1087	-1454	-4620	-5311	-4776	-3547	-1961	1244	4479	768
33 TOTAL SURPLUS/DEFICIT		4373	364	-332	-1418	-1217	-1498	-4775	-5435	-4919	-3662	-2075	1128	4334	646
34 EXTREME WEATHER ADJ.	19/	0	0	0	0	-3920	-4217	-4403	-4260	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.		4483	474	-229	-1340	-5008	-5671	-9023	-9571	-4776	-3547	-1961	1244	4479	768
36 TOTAL S/D W/EXT WTHR. ADJ.		4373	364	-332	-1418	-5137	-5716	-9178	-9696	-4919	-3662	-2075	1128	4334	646

REGIONAL FOOTNOTES

For Exhibits 19 through 26

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, energy sale and power sale; BPA to Banning, energy sale and power sale; BPA to BART, power sale; BPA to Big Horn, power sale; BPA to Burbank, power sale and capacity/energy exchange; BPA to Central Montana, power sale; BPA to Colton, energy sale and power sale; BPA to Farmington, power sale; BPA to Glendale, power sale and capacity/energy exchange; BPA to M-S-R, power sale; BPA to New Energy Ventures, power sale and surplus 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 and diversity exchange; BPA to SCE, power sale, capacity/energy exchange, environmental storage, and option capacity; BPA to SCE Source, two power sales; BPA to BC Hydro for Canadian Entitlement beginning April 1, 1998; BPA's Northwest-Southwest Intertie losses; city of Idaho Falls to UPC, for Gem State; 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; IPC to Truckee/Donner, power sale; MPC to PAC East, power sale; PP&L to CDWR, 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 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 WAPA, power sale; PSE (formerly PSP&L) 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 Arizona Public Service, seasonal power sale; WWP to Modesto, capacity sale; WWP to Riverside, power sale; and WWP to West Kotenai, capacity sale.

   Also included in exports are resources purchased by utilities outside the region. These include Longview Fibre to WAPA; 14.8 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 Corette; PGE: Summit 1 and 2; PSE: 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; PSE: 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; PGE: Coyote Springs; and PP&L: Hermiston. Longview Fibre output is sold outside the region to WAPA.
12. Regional imports include: Anaheim to BPA, exchange energy; Azusa to BPA, return energy; Banning to BPA, return energy; BGP to BPA, supplemental power; Burbank to BPA, exchange energy; Colton to BPA, return energy; Glendale 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; Sierra to BPA, for Harney and Wells; SCE to BPA, exchange energy, supplemental energy, option energy, and environmental storage; Basin Electric to BPA, power sale; PP&L (Wyoming) to BPA, Southern Idaho transfer; PowerEx to BPA, replacement energy; PowerEx to EWEB, power sale; SCE to PP&L, power sale; Glendale to PGE, seasonal power exchange; BC Hydro to PSE, power sale; BC Hydro to SCL, Ross replacement; NCPA to SCL, seasonal power exchange; PG&E to PSE, seasonal power exchange; PowerEx to Benton REA, power sale; and PowerEx to Clearwater Power Company, power sale.

    In addition, imports include 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 sale mode, so exchanges 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 reserve 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 SURPLUSES AND DEFICITS FOR 50 HISTORICAL WATER CONDITIONS

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

1998-99 OPERATING 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
1929 REGIONAL ENERGY S/D	3655	-491	-3387	-2092	-2641	-2943	-590	-5320	-2883	-3572	-383	1971	2055	-2288	-1543
1930 REGIONAL ENERGY S/D	-1939	-2679	-3612	-2760	-2700	-3417	-4484	-3194	-2543	1540	3574	-1327	858	-3520	-1983
1931 REGIONAL ENERGY S/D	-1544	-2825	-3601	-2538	-2508	-3638	-4839	-3096	-3100	-800	-3975	1785	2072	-2400	-2203
1932 REGIONAL ENERGY S/D	-680	-2441	-3652	-3029	-2468	-4347	-2711	-5082	1361	5216	5675	5509	7660	1531	-112
1933 REGIONAL ENERGY S/D	1470	-514	-2765	-1981	-1033	-306	4916	3957	-863	-1498	504	2395	11846	8977	2094
1934 REGIONAL ENERGY S/D	4254	3814	-1200	1186	1408	7507	9920	7436	7381	11332	8969	6947	3250	-2802	4601
1935 REGIONAL ENERGY S/D	-2826	-3829	-3749	-2785	-1466	-885	5377	2379	-1112	-2559	1728	2626	5902	2549	424
1936 REGIONAL ENERGY S/D	1525	-1589	-3434	-2657	-3153	-3282	-687	-4331	-2445	-2529	7790	6564	5942	-1641	-544
1937 REGIONAL ENERGY S/D	-438	-1679	-3566	-2656	-2681	-2812	-3922	-5081	-3081	-2437	-2976	2174	5638	-2089	-1820
1938 REGIONAL ENERGY S/D	-2498	-3080	-3508	-2561	-2273	-2437	5040	2176	-358	1075	5939	7138	6765	2191	1074
1939 REGIONAL ENERGY S/D	-513	-2491	-3024	-2338	-2573	-2583	1738	-996	-1960	2357	2956	2917	1907	-1526	-607
1940 REGIONAL ENERGY S/D	856	-2226	-3722	-2674	-2577	-2812	2305	-1529	1484	3613	3731	1697	1668	-2182	-446
1941 REGIONAL ENERGY S/D	-2534	-3538	-3601	-3022	-2841	-3186	-1832	-3099	-1557	-1856	562	942	1114	-3417	-2015
1942 REGIONAL ENERGY S/D	-2043	-2518	-3406	-2384	-2724	3138	3956	-3117	-2308	-1042	338	2476	5429	2847	106
1943 REGIONAL ENERGY S/D	3078	-1190	-3203	-2557	-1829	-511	5106	6217	496	8696	8940	7330	8863	5030	2892
1944 REGIONAL ENERGY S/D	3856	-863	-2837	-2077	-2545	-2640	-691	-4114	-3706	-2170	-386	1260	570	-3876	-1703
1945 REGIONAL ENERGY S/D	-3051	-2953	-3577	-3016	-2602	-3225	-5147	-3907	-2467	-2565	-1479	2021	4362	2069	-1709
1946 REGIONAL ENERGY S/D	1397	-2049	-2748	-2105	-2266	-315	5851	3959	1590	2424	5718	8098	7675	3530	2251
1947 REGIONAL ENERGY S/D	2636	-1363	-2507	-1671	-1295	3863	4772	5833	6130	5989	5055	5471	7068	1494	2943
1948 REGIONAL ENERGY S/D	1066	-1066	-2962	3536	630	1264	4914	5824	2846	1252	5315	8617	15269	6617	4153
1949 REGIONAL ENERGY S/D	4524	4821	-505	-1331	-1921	-1932	4260	741	3821	4601	7464	6790	6621	-84	2264
1950 REGIONAL ENERGY S/D	-1670	-2731	-3446	-2453	-2366	-2242	5411	6063	6447	4761	5150	5138	12165	7012	2874
1951 REGIONAL ENERGY S/D	4011	4004	-1592	1157	1887	6699	5929	11031	6997	10351	7802	8734	6047	4298	5356
1952 REGIONAL ENERGY S/D	4455	2606	-773	2314	-1110	1968	4738	6289	151	6951	7800	9823	7778	1851	3661
1953 REGIONAL ENERGY S/D	1601	-1031	-3383	-2519	-2778	-2885	2392	5867	1110	-633	992	5707	9357	4854	1516
1954 REGIONAL ENERGY S/D	4402	518	-2334	-1460	-1510	473	5937	6062	3966	3457	3382	5438	11280	7494	3436
1955 REGIONAL ENERGY S/D	6114	5563	4045	-417	-570	259	3965	-3418	-2815	424	281	1521	9597	8880	2270
1956 REGIONAL ENERGY S/D	4573	2863	-1881	677	675	5588	6462	6437	8378	10123	9207	11291	13380	4890	5773
1957 REGIONAL ENERGY S/D	4715	2204	-1807	-429	-1737	594	4533	3901	2450	4985	1620	9430	10319	-634	2782
1958 REGIONAL ENERGY S/D	268	-1548	-3594	-2359	-2219	-2169	5735	5471	77	2565	3894	8203	8179	-1520	1533
1959 REGIONAL ENERGY S/D	1646	-1811	-3112	-1305	-483	3115	5904	5824	5832	7954	5168	5306	10411	4626	3550
1960 REGIONAL ENERGY S/D	4328	286	3088	5017	2497	3482	4474	5519	1867	9317	5881	3989	6324	3508	4139
1961 REGIONAL ENERGY S/D	1267	-1769	-3295	-2406	-1446	-1857	5495	6425	5410	2589	288	5255	10963	1058	2232
1962 REGIONAL ENERGY S/D	1978	-2136	-3102	-1719	-2316	-2017	5203	1079	-2202	4312	6622	4124	5056	1027	877
1963 REGIONAL ENERGY S/D	3066	-1837	-2951	-447	-284	2943	4835	4300	-794	2113	2639	2172	6077	1612	1704
1964 REGIONAL ENERGY S/D	2969	-1319	-1810	-2135	-1314	-2056	4834	1709	-2338	1086	808	3122	12174	7237	1766
1965 REGIONAL ENERGY S/D	4652	2568	-279	300	-1500	6016	7592	10454	5861	5738	8525	7824	9704	3230	4995
1966 REGIONAL ENERGY S/D	3743	843	-1988	-676	-1561	39	5145	3194	-1626	4411	2862	4336	4899	-10	1474
1967 REGIONAL ENERGY S/D	755	-1098	-3421	-2309	-2284	52	5544	5860	4337	1744	-400	3591	10831	6700	2450
1968 REGIONAL ENERGY S/D	4085	1495	-1742	-743	-1386	-16	5879	6580	2100	-2348	291	2652	5944	3456	2041
1969 REGIONAL ENERGY S/D	2980	-208	854	1192	495	2118	5550	6736	6004	10278	7495	10190	9217	2167	4566
1970 REGIONAL ENERGY S/D	1787	-2092	-3085	-1358	-2268	-1573	5795	2730	-1189	1062	-1241	3632	6837	2106	949
1971 REGIONAL ENERGY S/D	1040	-1538	-3160	-2422	-2261	-1076	5482	11103	7159	9657	6638	10546	12431	6685	4365
1972 REGIONAL ENERGY S/D	5972	3869	-1270	-1281	-1213	-121	5345	7666	14704	11093	7368	9826	13642	9793	5937
1973 REGIONAL ENERGY S/D	5974	5349	339	-1433	-1746	561	5519	-2863	-2616	-3108	-119	1287	231	-2928	33
1974 REGIONAL ENERGY S/D	-2945	-4478	-3741	-2816	-1934	4791	10693	11566	9370	9476	8468	9860	14880	10625	5713
1975 REGIONAL ENERGY S/D	5846	4903	-461	-2279	-2503	-993	5669	5796	1579	-874	2213	5692	10414	8584	3129
1976 REGIONAL ENERGY S/D	1844	98	-2202	-68	1014	7209	8072	6309	6213	10973	6655	8924	6479	6715	4871
1977 REGIONAL ENERGY S/D	6232	5163	5831	-1808	-2564	-2899	-878	-3813	-3663	-2858	-705	1076	-2340	-4708	-987
1978 REGIONAL ENERGY S/D	-3143	-3340	-3885	-2939	-2511	-2154	3675	2463	1677	4272	3860	4866	4180	3393	799

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

ENERGY IN AVERAGE MEGAWATTS

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

	1999- 0 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 REGIONAL ENERGY S/D	3379	-770	-3169	-1932	-2577	-3087	-2525	-5650	-3434	-3487	-1510	1904	3770	-2472	-1697
1930 REGIONAL ENERGY S/D	-2085	-3288	-3682	-2777	-3108	-3823	-3578	-4217	-3749	-2078	3554	1050	2770	-3885	-2246
1931 REGIONAL ENERGY S/D	-1919	-3971	-3663	-3083	-2809	-3921	-4084	-5934	-3974	-2602	-2610	1507	2689	-3128	-2663
1932 REGIONAL ENERGY S/D	-1984	-3019	-3303	-3137	-2641	-3441	-3547	-5057	918	4710	6084	5198	7482	2005	-219
1933 REGIONAL ENERGY S/D	-387	-1134	-2657	-1950	-1094	-272	4332	-877	-615	-627	2295	3552	11135	9006	1720
1934 REGIONAL ENERGY S/D	3984	3748	-927	1167	1397	6952	9589	5462	6195	11179	9447	6906	2758	-2930	4229
1935 REGIONAL ENERGY S/D	-2485	-4247	-3560	-2982	-1806	-1174	3529	1958	-162	-3517	1263	2275	5843	2373	150
1936 REGIONAL ENERGY S/D	1480	-1929	-3549	-2694	-3040	-3558	-2930	-4377	-2564	-2205	6930	5828	5683	-891	-829
1937 REGIONAL ENERGY S/D	893	-1632	-3552	-2674	-2726	-3282	-5202	-6400	-4014	-3360	-2788	3109	5679	-1668	-2014
1938 REGIONAL ENERGY S/D	-2420	-3970	-3516	-2793	-2334	-2783	4366	806	853	750	5820	6805	6761	2136	866
1939 REGIONAL ENERGY S/D	-923	-2665	-3122	-2431	-2686	-3095	404	-1102	-2361	2033	2978	2555	3105	-2388	-867
1940 REGIONAL ENERGY S/D	-165	-2383	-3648	-2303	-2680	-2702	891	-2176	1352	2659	3058	1206	2449	-2623	-721
1941 REGIONAL ENERGY S/D	-2575	-4091	-3753	-3018	-2848	-3513	-3409	-2642	-1868	-3864	-2905	1535	3026	-4155	-2280
1942 REGIONAL ENERGY S/D	-2734	-2739	-3832	-2400	-2821	3288	3630	-3639	-2732	-1448	139	2886	5957	1426	-136
1943 REGIONAL ENERGY S/D	2137	-1528	-2904	-2231	-2132	-558	4913	3904	575	8524	8497	6993	8776	4941	2591
1944 REGIONAL ENERGY S/D	3847	-1141	-2625	-2194	-2523	-2918	-2558	-4582	-4246	-2254	-1322	1217	2438	-3990	-1868
1945 REGIONAL ENERGY S/D	-4304	-4654	-3623	-3187	-2914	-3697	-5268	-4345	-3256	-3258	-323	1460	4325	2237	-2045
1946 REGIONAL ENERGY S/D	944	-2603	-2381	-2275	-2223	-747	4678	1678	2058	1740	6221	8274	7471	2424	1842
1947 REGIONAL ENERGY S/D	2488	-1641	-2226	-1682	-1390	3628	4524	6208	4097	2453	5584	5730	5967	2009	2609
1948 REGIONAL ENERGY S/D	952	-1687	-2522	3733	619	675	4530	3083	1364	-38	5776	9980	15183	5937	3757
1949 REGIONAL ENERGY S/D	4260	4447	32	-1325	-1927	-2556	2569	-429	4562	4281	7530	6417	6561	-128	2003
1950 REGIONAL ENERGY S/D	-1893	-2888	-3349	-2389	-2292	-1181	4567	4586	5207	4369	5605	5152	12128	6541	2631
1951 REGIONAL ENERGY S/D	3736	3183	-1312	1140	1876	6385	4937	6507	8126	10901	8639	8353	5963	4502	4976
1952 REGIONAL ENERGY S/D	4185	2585	-502	2294	-1119	1713	4604	4317	-557	6198	8048	9445	7731	1734	3347
1953 REGIONAL ENERGY S/D	1562	-2153	-3187	-2514	-2509	-3416	-24	5244	2849	-852	882	5385	9368	4825	1312
1954 REGIONAL ENERGY S/D	3945	-316	-2055	-1472	-1602	-40	5266	4971	759	3290	4237	6734	10843	7584	3047
1955 REGIONAL ENERGY S/D	5723	5282	4292	-438	-579	-328	2371	-3939	-3490	13	-114	1817	9258	9274	1974
1956 REGIONAL ENERGY S/D	4304	2851	-1602	662	667	5293	5059	5920	6071	9350	10254	11223	12976	5171	5402
1957 REGIONAL ENERGY S/D	4440	2160	-1524	-441	-1744	329	2785	15	3363	4630	3369	9628	9913	261	2490
1958 REGIONAL ENERGY S/D	180	-1521	-3482	-2394	-2608	-1754	2989	3926	293	1735	5042	8961	7166	-1090	1227
1959 REGIONAL ENERGY S/D	1406	-2377	-2608	-1229	-491	2807	4545	5489	5795	3720	5120	5863	9921	4903	3244
1960 REGIONAL ENERGY S/D	3972	315	3355	4986	2484	2900	4373	2824	1196	8605	6484	3597	6276	3598	3773
1961 REGIONAL ENERGY S/D	1812	-1794	-3460	-2110	-1398	-2316	5080	4716	2910	1879	1310	6918	10524	1146	1968
1962 REGIONAL ENERGY S/D	1807	-2414	-3053	-1424	-2488	-2080	3328	44	-1743	3669	6726	3964	4927	1239	634
1963 REGIONAL ENERGY S/D	3034	-2114	-2616	-445	-291	2358	4675	1885	-1551	1681	2691	1834	5582	2546	1385
1964 REGIONAL ENERGY S/D	3036	-1598	-1532	-2235	-1911	-2441	3159	-782	-1580	1192	1830	3324	12546	7327	1509
1965 REGIONAL ENERGY S/D	4410	2509	-325	291	-1520	5446	5806	7011	6987	6543	9217	7728	9658	3296	4643
1966 REGIONAL ENERGY S/D	4466	564	-1709	-692	-1570	-552	5134	-548	-1202	3941	2483	3547	6125	-2	1188
1967 REGIONAL ENERGY S/D	733	-1471	-3111	-2134	-2326	-105	5085	5835	934	-1114	-242	4887	10730	6482	2103
1968 REGIONAL ENERGY S/D	3809	1216	-1475	-761	-1477	-526	4824	3918	2360	-2767	-270	2042	6501	3060	1622
1969 REGIONAL ENERGY S/D	4036	1218	1233	1171	487	1533	4249	5401	5523	7488	8763	10647	8062	2383	4287
1970 REGIONAL ENERGY S/D	1584	-1646	-3094	-1389	-2378	-2060	5339	1348	-1801	342	-336	3023	6846	2037	654
1971 REGIONAL ENERGY S/D	1077	-2732	-3031	-2114	-1866	-235	5418	5695	7551	9639	6871	10713	12434	6487	4040
1972 REGIONAL ENERGY S/D	5607	3893	-989	-1291	-1305	-254	4882	5586	14098	10819	5378	10483	12927	9390	5531
1973 REGIONAL ENERGY S/D	5425	5094	549	-1444	-1753	287	3539	-4468	-2080	-3344	-3375	1185	4450	-3338	-98
1974 REGIONAL ENERGY S/D	-3096	-3960	-3935	-2986	-2166	4587	8469	9663	9811	8918	8668	9745	14726	10180	5280
1975 REGIONAL ENERGY S/D	5666	4738	-187	-2466	-1789	-745	4639	2601	3025	-1216	805	5266	10376	8494	2851
1976 REGIONAL ENERGY S/D	1568	54	-1924	-82	1003	6638	6440	6037	5562	7906	7405	9681	6495	5902	4518
1977 REGIONAL ENERGY S/D	6144	4884	5802	-1534	-2616	-3143	-3000	-4320	-4221	-2910	-1565	859	-665	-4670	-1186
1978 REGIONAL ENERGY S/D	-2811	-3025	-3821	-3078	-1872	-1812	2872	519	944	4357	3810	4571	4161	3274	577

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

2000- 1 OPERATING 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
1929 REGIONAL ENERGY S/D	3256	-890	-2639	-2152	-2678	-3294	-2918	-5687	-3325	-3348	-2050	1325	1936	-1587	-1878
1930 REGIONAL ENERGY S/D	-1497	-2948	-3357	-3070	-3151	-3490	-3631	-3706	-3255	-2517	2932	1094	-1374	-2459	-2368
1931 REGIONAL ENERGY S/D	-2099	-3098	-3945	-2417	-2929	-4119	-3821	-5865	-3883	-1398	-3068	1601	-210	-2938	-2780
1932 REGIONAL ENERGY S/D	-1569	-3112	-3151	-3168	-2678	-3689	-2815	-4870	1090	5012	5400	5157	7594	1885	-148
1933 REGIONAL ENERGY S/D	1304	-909	-2168	-2488	-1192	-379	4347	230	-957	-1750	1696	3028	11518	8695	1734
1934 REGIONAL ENERGY S/D	4117	3696	-409	1081	1562	6412	9505	6422	7415	10756	8170	6722	944	-1892	4261
1935 REGIONAL ENERGY S/D	-2610	-3775	-3734	-3093	-1660	-951	4414	954	242	-3778	1299	2411	5732	1985	156
1936 REGIONAL ENERGY S/D	1697	-1889	-3296	-3181	-3404	-3562	-1701	-4801	-2887	-2640	6543	5755	5889	-1187	-876
1937 REGIONAL ENERGY S/D	715	-1588	-3077	-2959	-2981	-3373	-5969	-6243	-3015	-3061	-2876	1843	4518	-1717	-2198
1938 REGIONAL ENERGY S/D	-3065	-2788	-3966	-2817	-1930	-1954	3227	1290	1078	659	5812	6956	6655	2045	908
1939 REGIONAL ENERGY S/D	-638	-2642	-2563	-2832	-2900	-3003	-447	-988	-1877	1222	3596	2691	244	-1631	-1045
1940 REGIONAL ENERGY S/D	1655	-1622	-3099	-2756	-2668	-2937	300	-1504	1019	3380	2980	1220	-590	-2588	-867
1941 REGIONAL ENERGY S/D	-1670	-3059	-3321	-2899	-2568	-3470	-3638	-2946	-1676	-3912	-2080	764	1214	-3106	-2250
1942 REGIONAL ENERGY S/D	-3363	-3169	-3534	-2463	-2871	3607	3579	-3262	-2973	-636	212	1942	5430	3075	-79
1943 REGIONAL ENERGY S/D	2930	-1291	-2328	-2706	-1864	-1067	4779	4064	332	8537	8377	7129	8673	4845	2595
1944 REGIONAL ENERGY S/D	3719	-1255	-2097	-2400	-2591	-2933	-2559	-4638	-4162	-2018	-2136	1015	-1085	-4051	-2195
1945 REGIONAL ENERGY S/D	-2348	-3155	-3841	-3154	-2987	-3723	-5235	-3482	-2755	-3227	-870	1830	4218	1686	-1853
1946 REGIONAL ENERGY S/D	192	-2567	-2188	-2180	-1780	-599	4055	1044	1982	2208	6162	8199	7714	2739	1832
1947 REGIONAL ENERGY S/D	2811	-1761	-1695	-1767	-1469	3592	4180	5841	4676	3158	4792	5012	7081	1496	2621
1948 REGIONAL ENERGY S/D	967	-2490	-1666	3698	790	156	4318	4199	1022	587	5324	9263	15148	6351	3790
1949 REGIONAL ENERGY S/D	4127	4446	311	-1430	-1797	-2816	1388	813	4284	4412	6879	6548	6444	-529	1929
1950 REGIONAL ENERGY S/D	-1766	-2973	-3591	-2388	-2696	-2381	5001	4054	6070	4091	5520	5268	12017	6382	2514
1951 REGIONAL ENERGY S/D	3621	3390	-790	1053	2051	6008	4900	7714	7874	10184	8206	8492	5793	4081	4990
1952 REGIONAL ENERGY S/D	4061	2655	18	2206	-943	1390	4423	4686	-1212	6501	7347	9590	7628	1561	3303
1953 REGIONAL ENERGY S/D	1597	-2744	-2442	-2716	-2868	-3225	-2118	5231	3837	-1451	849	5505	9248	4816	1200
1954 REGIONAL ENERGY S/D	4024	176	-1519	-1559	-1681	-394	5210	6137	1507	2311	3388	5981	10960	7374	3081
1955 REGIONAL ENERGY S/D	5648	5163	4730	-522	-405	-955	2686	-3959	-3374	-66	430	1052	9035	9030	1909
1956 REGIONAL ENERGY S/D	4206	2758	-1082	575	835	4969	5888	5789	5974	8569	9888	11238	13137	4633	5389
1957 REGIONAL ENERGY S/D	4228	2130	-801	-528	-1684	79	3602	-135	2458	4215	2502	10118	9858	-764	2395
1958 REGIONAL ENERGY S/D	307	-1463	-3054	-2700	-2717	-2717	5110	2687	-429	2002	4226	8571	8062	-1341	1167
1959 REGIONAL ENERGY S/D	1020	-2562	-2004	-1352	-314	2116	5304	5365	5898	3584	4843	5411	10069	4346	3190
1960 REGIONAL ENERGY S/D	3773	419	3936	4891	2648	2381	4175	3077	1340	8646	5798	3741	6155	3291	3746
1961 REGIONAL ENERGY S/D	1304	-1793	-3044	-2215	-1474	-2394	4880	6092	3053	1862	956	5339	10856	592	1904
1962 REGIONAL ENERGY S/D	1824	-2526	-2530	-1865	-2423	-2688	3729	-951	-1738	4049	6792	4111	4821	1002	545
1963 REGIONAL ENERGY S/D	3061	-2097	-2080	-533	-118	1593	4359	2691	-1370	2002	1731	1968	5303	2093	1355
1964 REGIONAL ENERGY S/D	2913	-1718	-1011	-2435	-1617	-2872	3632	-957	-1814	912	1672	3130	12947	6207	1425
1965 REGIONAL ENERGY S/D	4296	2712	192	203	-1345	4869	6301	6859	7259	5755	8895	7875	9517	3018	4632
1966 REGIONAL ENERGY S/D	3632	444	-1168	-778	-1394	-1201	4628	1597	-1999	3912	1863	3155	5388	641	1150
1967 REGIONAL ENERGY S/D	610	-1497	-2630	-2523	-2446	-622	4957	5535	3849	-1269	-536	3379	11945	4215	2026
1968 REGIONAL ENERGY S/D	3686	1096	-956	-842	-1473	-911	5318	3905	1943	-2324	491	1577	6190	3070	1608
1969 REGIONAL ENERGY S/D	3776	293	1625	1088	660	1041	5010	5219	5984	7198	7617	10162	8941	1743	4243
1970 REGIONAL ENERGY S/D	1782	-1588	-2644	-1487	-2200	-2541	4552	1610	-1273	667	76	2485	6759	1822	629
1971 REGIONAL ENERGY S/D	772	-2813	-2521	-2489	-2367	-252	4952	6353	7626	9466	6398	10939	12341	6368	3989
1972 REGIONAL ENERGY S/D	5386	3948	-461	-1378	-1383	-375	4739	5864	15067	10529	4485	10222	12973	9079	5544
1973 REGIONAL ENERGY S/D	5382	4967	1085	-1529	-1744	68	2827	-3500	-1909	-3172	-2889	1276	1861	-2671	-174
1974 REGIONAL ENERGY S/D	-2435	-4067	-4158	-3128	-2317	3946	9615	8803	9957	8962	8547	9882	14624	9872	5217
1975 REGIONAL ENERGY S/D	5169	5000	491	-2608	-2444	-1388	4535	2720	3189	-1269	910	5403	10273	8295	2781
1976 REGIONAL ENERGY S/D	1803	-193	-1388	-170	1177	6484	6951	5983	5837	6256	6709	9260	6366	6491	4523
1977 REGIONAL ENERGY S/D	6021	4764	5500	-831	-2605	-3007	-3443	-4364	-4139	-2642	-2454	884	-1964	-4653	-1315
1978 REGIONAL ENERGY S/D	-2601	-3423	-4116	-3246	-2103	-1391	1218	1712	1093	4288	3779	4615	4058	3312	515

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

ENERGY IN AVERAGE MEGAWATTS

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

	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
1929 REGIONAL ENERGY S/D	3063	-1220	-2936	-1915	-3086	-3536	-2881	-5979	-4277	-4315	-1507	657	2141	-2707	-2209
1930 REGIONAL ENERGY S/D	-1668	-2872	-3247	-3324	-3572	-4018	-3646	-4428	-4562	-236	2962	-324	-1309	-3052	-2699
1931 REGIONAL ENERGY S/D	-912	-3272	-3788	-3364	-3187	-4111	-3817	-6082	-4789	-1282	-3497	1438	111	-2971	-2920
1932 REGIONAL ENERGY S/D	-1489	-2925	-4259	-3592	-3175	-3809	-2692	-5140	115	4214	5364	5060	7321	1836	-479
1933 REGIONAL ENERGY S/D	324	-1267	-2179	-2249	-1617	-1742	4082	2347	-4151	83	0	2657	11405	8872	1416
1934 REGIONAL ENERGY S/D	3668	3460	-724	1280	838	5832	9132	6442	5972	10336	8228	6378	1344	-2789	3879
1935 REGIONAL ENERGY S/D	-3101	-3138	-3607	-3308	-1840	-1717	4349	1293	-2243	-321	635	1208	5595	2801	-36
1936 REGIONAL ENERGY S/D	1164	-2047	-3522	-3218	-3824	-3962	-1159	-5040	-3867	-2792	5091	5112	5687	-868	-1163
1937 REGIONAL ENERGY S/D	579	-1837	-3108	-3230	-3561	-3660	-4446	-6649	-4893	-3747	-3063	1466	3018	-2717	-2651
1938 REGIONAL ENERGY S/D	-2335	-2186	-3410	-3067	-2489	-1534	4338	-1208	605	315	4674	6683	6560	1974	724
1939 REGIONAL ENERGY S/D	-626	-1960	-3214	-2699	-3588	-3478	316	-2390	-2933	1028	2111	2510	-260	-532	-1332
1940 REGIONAL ENERGY S/D	1127	-1852	-3129	-2705	-3089	-2940	551	-3497	129	2775	2295	1142	-523	-2105	-1166
1941 REGIONAL ENERGY S/D	-2575	-3133	-3279	-2620	-3193	-3667	-3602	-3835	-2867	-4190	-1818	557	266	-4154	-2688
1942 REGIONAL ENERGY S/D	-2165	-2678	-3523	-2473	-3083	2879	3320	-3965	-3627	-129	-1135	1278	5335	3479	-286
1943 REGIONAL ENERGY S/D	3062	-1457	-2591	-2734	-2217	-2271	4437	3760	-489	8060	7682	6947	8579	4592	2224
1944 REGIONAL ENERGY S/D	3274	912	-2386	-2109	-3083	-3242	-3084	-4918	-5099	-2977	-1585	666	-1813	-4165	-2452
1945 REGIONAL ENERGY S/D	-2147	-2964	-4123	-3571	-3366	-3962	-4908	-4254	-3693	-3804	-1356	1649	4125	1594	-2137
1946 REGIONAL ENERGY S/D	724	-2509	-2235	-2674	-2761	-567	4929	1184	-503	1138	5768	7889	7439	3718	1582
1947 REGIONAL ENERGY S/D	2279	-2140	-1889	-1553	-1913	2464	3939	5147	3634	2943	4203	5249	7145	1763	2302
1948 REGIONAL ENERGY S/D	775	-2508	-2063	3880	60	-469	4081	5153	-1386	-169	5458	8903	15074	6643	3471
1949 REGIONAL ENERGY S/D	3935	4238	14	-1227	-2486	-3340	1713	-684	3195	3825	6477	6368	6357	-483	1555
1950 REGIONAL ENERGY S/D	-1958	-2665	-3650	-2675	-3232	-1749	4610	5135	3473	3648	5219	5119	11958	6527	2303
1951 REGIONAL ENERGY S/D	3421	3238	-1106	1252	1318	5183	4983	8514	5306	9748	7603	8291	5649	4967	4697
1952 REGIONAL ENERGY S/D	3875	2501	-292	2396	-1678	524	3909	4020	-1622	6339	6925	9418	7540	2229	3022
1953 REGIONAL ENERGY S/D	1247	-1719	-3152	-3163	-3412	-3482	-1088	5046	3207	-1955	-248	4496	9100	4516	894
1954 REGIONAL ENERGY S/D	3836	3	-1836	-1354	-2125	-1303	3774	4457	3194	2670	2891	5683	11125	7470	2815
1955 REGIONAL ENERGY S/D	5546	4970	4446	-319	-1138	-1577	2788	-4263	-4263	-264	-1652	908	9086	9233	1600
1956 REGIONAL ENERGY S/D	4069	2597	-1397	774	106	4128	5626	5198	5357	8335	9269	11069	13213	4925	5095
1957 REGIONAL ENERGY S/D	4124	1863	-1302	-326	-2306	-911	3680	2030	-775	3521	2157	9685	9774	-147	2103
1958 REGIONAL ENERGY S/D	7	-1709	-2999	-2670	-3077	-2986	4877	1958	-1274	1295	4129	8005	8229	-1279	887
1959 REGIONAL ENERGY S/D	1091	-2676	-2295	-1201	-1048	1578	4920	4783	4984	4143	3314	5505	10176	4624	2914
1960 REGIONAL ENERGY S/D	3659	37	3514	5038	1926	1775	3638	3090	468	8181	5151	3571	6138	3566	3437
1961 REGIONAL ENERGY S/D	1496	-2110	-3315	-1966	-1875	-3316	4664	5593	1764	1755	-695	5811	10839	839	1605
1962 REGIONAL ENERGY S/D	1632	-2687	-2725	-1721	-2992	-3102	4407	-1868	-4043	3587	5957	3980	4922	1002	175
1963 REGIONAL ENERGY S/D	3409	-2066	-2377	-353	-852	1165	4095	1671	-2250	1742	407	1777	6210	2171	1084
1964 REGIONAL ENERGY S/D	2721	-1874	-1326	-2160	-2421	-3279	3947	389	-4185	-378	81	2986	12024	7188	1120
1965 REGIONAL ENERGY S/D	4065	2204	-58	395	-2082	4259	6754	7284	4391	4941	8060	7693	9655	3006	4244
1966 REGIONAL ENERGY S/D	4014	1745	-1488	-576	-2130	-1831	4317	1918	-3211	3310	1220	3016	5465	636	938
1967 REGIONAL ENERGY S/D	692	-1567	-2879	-2435	-2913	-1687	4718	5083	2761	-44	-1807	3185	10881	6414	1814
1968 REGIONAL ENERGY S/D	3494	936	-1265	-634	-2001	-1737	5044	5948	1118	-3374	-1201	118	6111	2867	1291
1969 REGIONAL ENERGY S/D	3267	920	1362	1287	-71	418	4682	5570	4442	6804	7362	9987	9075	1994	3994
1970 REGIONAL ENERGY S/D	1270	-1961	-2748	-1374	-2937	-3282	4483	1919	-2683	-517	-274	2205	6586	1429	238
1971 REGIONAL ENERGY S/D	1929	-2966	-2717	-2373	-2692	-1057	4613	8552	4700	9117	6050	10758	12248	6357	3788
1972 REGIONAL ENERGY S/D	5291	3609	-777	-1165	-1829	-1530	4516	6603	13921	10168	4718	10016	12873	8804	5277
1973 REGIONAL ENERGY S/D	5331	4747	829	-1319	-2312	-968	2517	-3961	-2754	-4021	-2904	1082	834	-2583	-588
1974 REGIONAL ENERGY S/D	-2783	-3885	-4122	-3260	-2576	3864	9920	10218	7402	8070	7719	9734	14577	10104	5035
1975 REGIONAL ENERGY S/D	5313	4505	27	-2594	-2761	-2325	4891	2025	2063	-1451	1028	4872	10179	8181	2438
1976 REGIONAL ENERGY S/D	2206	167	-1708	32	446	6355	6065	5111	4820	7608	6551	9010	6216	6783	4283
1977 REGIONAL ENERGY S/D	5891	4582	5322	-752	-3151	-3608	-3268	-4661	-5083	-3516	-2116	319	-2047	-5476	-1665
1978 REGIONAL ENERGY S/D	-2242	-3154	-4288	-3506	-2519	-1088	3212	-1447	-177	3659	3431	4434	3959	3199	219

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

2002- 3 OPERATING 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
1929 REGIONAL ENERGY S/D	3032	-1245	-2823	-2011	-3054	-3750	-2834	-6511	-4452	-4152	-1298	454	1953	-2871	-2311
1930 REGIONAL ENERGY S/D	-1700	-2897	-3133	-3420	-3541	-4233	-3598	-4961	-4737	-72	3171	-528	-1496	-3216	-2801
1931 REGIONAL ENERGY S/D	-943	-3298	-3674	-3460	-3155	-4325	-3770	-6615	-4963	-1118	-3287	1235	-77	-3134	-3022
1932 REGIONAL ENERGY S/D	-1520	-2951	-4145	-3688	-3143	-4024	-2644	-5672	-60	4377	5574	4857	7133	1672	-581
1933 REGIONAL ENERGY S/D	293	-1293	-2066	-2346	-1586	-1957	4130	1814	-4326	247	209	2453	11218	8708	1314
1934 REGIONAL ENERGY S/D	3637	3434	-610	1184	869	5617	9180	5910	5797	10499	8437	6174	1157	-2952	3777
1935 REGIONAL ENERGY S/D	-3132	-3163	-3493	-3405	-1808	-1932	4396	760	-2417	-157	844	1004	5408	2637	-138
1936 REGIONAL ENERGY S/D	1133	-2072	-3409	-3315	-3792	-4177	-1112	-5572	-4042	-2629	5301	4909	5500	-1031	-1265
1937 REGIONAL ENERGY S/D	548	-1863	-2994	-3326	-3529	-3875	-4399	-7181	-5067	-3583	-2853	1263	2831	-2881	-2753
1938 REGIONAL ENERGY S/D	-2366	-2211	-3296	-3163	-2457	-1749	4386	-1741	430	479	4884	6480	6372	1810	622
1939 REGIONAL ENERGY S/D	-657	-1986	-3100	-2795	-3556	-3693	364	-2923	-3108	1192	2321	2306	-448	-696	-1435
1940 REGIONAL ENERGY S/D	1096	-1878	-3015	-2802	-3057	-3155	599	-4030	-45	2939	2505	938	-710	-2268	-1268
1941 REGIONAL ENERGY S/D	-2606	-3159	-3165	-2716	-3161	-3882	-3555	-4368	-3041	-4026	-1609	354	79	-4317	-2789
1942 REGIONAL ENERGY S/D	-2197	-2703	-3409	-2570	-3051	2665	3368	-4497	-3801	35	-926	1075	5148	3315	-388
1943 REGIONAL ENERGY S/D	3031	-1482	-2477	-2831	-2185	-2486	4485	3227	-663	8223	7892	6744	8392	4427	2122
1944 REGIONAL ENERGY S/D	3243	886	-2272	-2205	-3052	-3456	-3037	-5450	-5274	-2814	-1375	462	-2000	-4328	-2554
1945 REGIONAL ENERGY S/D	-2178	-2990	-4009	-3667	-3335	-4177	-4860	-4787	-3867	-3641	-1147	1446	3938	1429	-2239
1946 REGIONAL ENERGY S/D	692	-2534	-2122	-2770	-2729	-782	4977	651	-678	1302	5978	7686	7251	3554	1480
1947 REGIONAL ENERGY S/D	2248	-2165	-1775	-1649	-1881	2249	3987	4614	3460	3107	4412	5045	6957	1599	2201
1948 REGIONAL ENERGY S/D	743	-2533	-1949	3783	92	-683	4129	4620	-1561	-5	5668	8700	14886	6479	3369
1949 REGIONAL ENERGY S/D	3903	4212	128	-1323	-2454	-3554	1761	-1216	3020	3989	6686	6164	6170	-647	1454
1950 REGIONAL ENERGY S/D	-1989	-2690	-3536	-2772	-3201	-1964	4658	4603	3299	3812	5429	4916	11771	6363	2202
1951 REGIONAL ENERGY S/D	3390	3211	-993	1155	1350	4969	5031	7981	5131	9912	7812	8087	5462	4803	4595
1952 REGIONAL ENERGY S/D	3844	2475	-178	2299	-1647	309	3957	3488	-1797	6503	7135	9215	7353	2065	2920
1953 REGIONAL ENERGY S/D	1215	-1744	-3038	-3259	-3380	-3697	-1040	4513	3033	-1791	-38	4292	8913	4352	793
1954 REGIONAL ENERGY S/D	3804	-24	-1722	-1451	-2093	-1518	3822	3924	3019	2834	3101	5480	10938	7306	2714
1955 REGIONAL ENERGY S/D	5515	4943	4560	-415	-1107	-1792	2836	-4795	-4438	-100	-1443	705	8898	9069	1498
1956 REGIONAL ENERGY S/D	4037	2571	-1283	678	138	3913	5673	4665	5183	8499	9479	10866	13026	4761	4993
1957 REGIONAL ENERGY S/D	4092	1837	-1188	-422	-2274	-1126	3728	1498	-950	3685	2367	9482	9587	-311	2001
1958 REGIONAL ENERGY S/D	-24	-1735	-2886	-2766	-3045	-3200	4925	1425	-1449	1458	4339	7802	8042	-1442	785
1959 REGIONAL ENERGY S/D	1060	-2701	-2181	-1297	-1017	1364	4967	4250	4810	4307	3523	5301	9988	4460	2812
1960 REGIONAL ENERGY S/D	3627	11	3627	4941	1957	1560	3686	2557	294	8345	5361	3368	5951	3401	3335
1961 REGIONAL ENERGY S/D	1464	-2135	-3201	-2062	-1843	-3530	4711	5061	1590	1919	-486	5607	10652	675	1503
1962 REGIONAL ENERGY S/D	1601	-2712	-2611	-1818	-2960	-3316	4454	-2401	-4218	3750	6167	3776	4734	838	73
1963 REGIONAL ENERGY S/D	3378	-2091	-2264	-450	-821	950	4143	1138	-2424	1906	617	1574	6023	2007	982
1964 REGIONAL ENERGY S/D	2690	-1899	-1212	-2257	-2389	-3493	3994	-143	-4360	-215	290	2783	11837	7024	1018
1965 REGIONAL ENERGY S/D	4034	2178	56	298	-2051	4045	6802	6752	4217	5105	8269	7490	9468	2842	4143
1966 REGIONAL ENERGY S/D	3982	1719	-1374	-673	-2098	-2045	4365	1386	-3386	3473	1429	2812	5278	471	836
1967 REGIONAL ENERGY S/D	661	-1593	-2765	-2532	-2881	-1901	4766	4551	2587	119	-1598	2982	10694	6250	1712
1968 REGIONAL ENERGY S/D	3462	910	-1152	-731	-1970	-1952	5092	5416	944	-3211	-991	-85	5924	2702	1189
1969 REGIONAL ENERGY S/D	3235	894	1476	1190	-39	204	4729	5037	4268	6968	7571	9784	8888	1829	3892
1970 REGIONAL ENERGY S/D	1238	-1986	-2634	-1471	-2906	-3496	4530	1387	-2857	-353	-64	2002	6398	1265	136
1971 REGIONAL ENERGY S/D	1898	-2991	-2604	-2470	-2660	-1272	4661	8019	4526	9280	6260	10555	12060	6193	3686
1972 REGIONAL ENERGY S/D	5260	3582	-663	-1262	-1797	-1744	4564	6071	13747	10331	4927	9813	12686	8640	5175
1973 REGIONAL ENERGY S/D	5299	4721	943	-1415	-2281	-1182	2565	-4493	-2929	-3857	-2694	878	647	-2747	-690
1974 REGIONAL ENERGY S/D	-2814	-3910	-4008	-3357	-2544	3649	9968	9686	7228	8234	7928	9531	14390	9940	4933
1975 REGIONAL ENERGY S/D	5282	4478	140	-2690	-2729	-2540	4938	1493	1889	-1288	1238	4669	9992	8017	2336
1976 REGIONAL ENERGY S/D	2175	140	-1594	-64	477	6140	6112	4578	4646	7771	6761	8806	6028	6619	4181
1977 REGIONAL ENERGY S/D	5859	4556	5436	-849	-3119	-3823	-3220	-5193	-5257	-3353	-1906	116	-2234	-5639	-1767
1978 REGIONAL ENERGY S/D	-2273	-3179	-4175	-3603	-2487	-1303	3260	-1980	-351	3823	3640	4230	3771	3035	117

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

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 REGIONAL ENERGY S/D	2806	-1472	-3208	-2269	-3250	-3949	-3403	-6674	-4704	-4691	-1597	355	1836	-3056	-2567
1930 REGIONAL ENERGY S/D	-1926	-3124	-3519	-3679	-3736	-4431	-4168	-5123	-4989	-611	2872	-627	-1613	-3400	-3057
1931 REGIONAL ENERGY S/D	-1170	-3525	-4059	-3718	-3351	-4524	-4339	-6777	-5216	-1657	-3587	1135	-194	-3316	-3277
1932 REGIONAL ENERGY S/D	-1746	-3178	-4531	-3946	-3338	-4222	-3212	-5834	-312	3838	5275	4758	7016	1482	-837
1933 REGIONAL ENERGY S/D	67	-1520	-2451	-2604	-1781	-2155	3561	1653	-4578	-293	-90	2354	11101	8518	1058
1934 REGIONAL ENERGY S/D	3411	3207	-995	926	674	5418	8610	5752	5545	9960	8138	6075	1040	-3137	3522
1935 REGIONAL ENERGY S/D	-3359	-3390	-3878	-3663	-2004	-2130	3827	599	-2669	-697	545	905	5291	2447	-394
1936 REGIONAL ENERGY S/D	907	-2299	-3794	-3573	-3988	-4375	-1681	-5734	-4294	-3168	5002	4810	5383	-1215	-1520
1937 REGIONAL ENERGY S/D	322	-2089	-3379	-3584	-3724	-4073	-4968	-7343	-5320	-4123	-3153	1163	2714	-3066	-3008
1938 REGIONAL ENERGY S/D	-2592	-2438	-3681	-3421	-2653	-1947	3817	-1903	178	-60	4584	6381	6255	1620	366
1939 REGIONAL ENERGY S/D	-883	-2213	-3486	-3053	-3751	-3891	-206	-3085	-3360	653	2022	2207	-565	-881	-1690
1940 REGIONAL ENERGY S/D	870	-2105	-3400	-3060	-3253	-3353	29	-4192	-298	2400	2206	839	-827	-2450	-1523
1941 REGIONAL ENERGY S/D	-2832	-3386	-3551	-2974	-3357	-4080	-4124	-4530	-3293	-4566	-1908	255	-38	-4499	-3045
1942 REGIONAL ENERGY S/D	-2423	-2930	-3794	-2828	-3246	2466	2799	-4659	-4054	-504	-1225	976	5031	3125	-644
1943 REGIONAL ENERGY S/D	2804	-1709	-2862	-3089	-2381	-2684	3917	3065	-915	7684	7593	6645	8275	4238	1866
1944 REGIONAL ENERGY S/D	3017	659	-2658	-2463	-3247	-3655	-3606	-5613	-5526	-3353	-1675	363	-2117	-4510	-2809
1945 REGIONAL ENERGY S/D	-2405	-3217	-4394	-3925	-3530	-4375	-5429	-4949	-4119	-4180	-1446	1347	3821	1239	-2495
1946 REGIONAL ENERGY S/D	466	-2761	-2507	-3028	-2925	-980	4408	491	-930	763	5678	7586	7134	3364	1224
1947 REGIONAL ENERGY S/D	2022	-2393	-2160	-1907	-2077	2051	3417	4456	3208	2567	4113	4946	6840	1409	1945
1948 REGIONAL ENERGY S/D	517	-2760	-2334	3525	-104	-882	3560	4459	-1813	-544	5369	8601	14769	6289	3113
1949 REGIONAL ENERGY S/D	3677	3984	-257	-1581	-2649	-3753	1192	-1378	2768	3450	6387	6065	6053	-836	1198
1950 REGIONAL ENERGY S/D	-2215	-2917	-3921	-3030	-3396	-2162	4089	4444	3047	3272	5130	4817	11654	6174	1946
1951 REGIONAL ENERGY S/D	3164	2984	-1378	897	1154	4770	4461	7823	4879	9373	7513	7988	5345	4613	4339
1952 REGIONAL ENERGY S/D	3618	2247	-563	2041	-1842	111	3388	3329	-2049	5964	6836	9116	7236	1875	2665
1953 REGIONAL ENERGY S/D	989	-1971	-3423	-3517	-3576	-3895	-1609	4351	2781	-2330	-337	4193	8796	4162	537
1954 REGIONAL ENERGY S/D	3578	-251	-2108	-1709	-2289	-1716	3254	3763	2767	2295	2801	5381	10821	7117	2458
1955 REGIONAL ENERGY S/D	5289	4716	4175	-673	-1302	-1990	2267	-4957	-4690	-639	-1742	606	8781	8879	1242
1956 REGIONAL ENERGY S/D	3811	2344	-1668	419	-58	3715	5103	4506	4931	7960	9180	10767	12909	4571	4737
1957 REGIONAL ENERGY S/D	3866	1610	-1574	-681	-2470	-1324	3159	1336	-1202	3146	2068	9383	9470	-500	1745
1958 REGIONAL ENERGY S/D	-251	-1962	-3271	-3024	-3241	-3399	4356	1264	-1701	919	4040	7703	7925	-1627	530
1959 REGIONAL ENERGY S/D	834	-2929	-2567	-1555	-1212	1165	4397	4092	4557	3768	3224	5202	9871	4270	2556
1960 REGIONAL ENERGY S/D	3401	-216	3242	4683	1762	1362	3117	2399	42	7805	5062	3269	5834	3211	3079
1961 REGIONAL ENERGY S/D	1238	-2362	-3586	-2321	-2038	-3729	4142	4899	1337	1379	-785	5508	10535	485	1247
1962 REGIONAL ENERGY S/D	1375	-2940	-2996	-2076	-3155	-3515	3887	-2561	-4470	3211	5868	3677	4617	648	-182
1963 REGIONAL ENERGY S/D	3151	-2318	-2649	-708	-1016	752	3574	979	-2676	1366	317	1475	5906	1817	726
1964 REGIONAL ENERGY S/D	2463	-2126	-1597	-2515	-2585	-3692	3425	-305	-4612	-754	-9	2684	11720	6834	762
1965 REGIONAL ENERGY S/D	3808	1950	-329	40	-2246	3846	6232	6593	3965	4565	7970	7391	9351	2652	3887
1966 REGIONAL ENERGY S/D	3756	1491	-1760	-931	-2293	-2244	3796	1224	-3638	2934	1130	2713	5161	282	580
1967 REGIONAL ENERGY S/D	435	-1820	-3151	-2790	-3077	-2100	4196	4392	2334	-420	-1897	2883	10577	6060	1456
1968 REGIONAL ENERGY S/D	3236	682	-1537	-989	-2165	-2150	4524	5255	692	-3750	-1290	-184	5807	2513	934
1969 REGIONAL ENERGY S/D	3009	667	1090	932	-234	5	4160	4878	4016	6429	7272	9684	8771	1640	3636
1970 REGIONAL ENERGY S/D	1012	-2214	-3020	-1729	-3101	-3695	3962	1226	-3109	-892	-363	1902	6281	1075	-120
1971 REGIONAL ENERGY S/D	1672	-3218	-2989	-2728	-2855	-1470	4091	7862	4273	8741	5961	10456	11943	6003	3430
1972 REGIONAL ENERGY S/D	5034	3355	-1049	-1520	-1992	-1943	3995	5908	13495	9792	4628	9714	12569	8450	4919
1973 REGIONAL ENERGY S/D	5073	4494	557	-1674	-2476	-1381	1996	-4655	-3181	-4397	-2993	779	530	-2931	-946
1974 REGIONAL ENERGY S/D	-3041	-4137	-4394	-3615	-2740	3451	9398	9528	6975	7694	7629	9432	14273	9750	4678
1975 REGIONAL ENERGY S/D	5056	4251	-245	-2948	-2925	-2738	4369	1332	1637	-1827	938	4570	9875	7828	2080
1976 REGIONAL ENERGY S/D	1949	-87	-1979	-322	282	5942	5544	4417	4394	7232	6461	8707	5911	6429	3925
1977 REGIONAL ENERGY S/D	5633	4328	5050	-1107	-3314	-4021	-3790	-5355	-5509	-3892	-2205	17	-2351	-5820	-2022
1978 REGIONAL ENERGY S/D	-2499	-3406	-4560	-3861	-2683	-1501	2692	-2141	-603	3284	3341	4131	3654	2845	-139

EXHIBIT 32

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

ENERGY IN AVERAGE MEGAWATTS

2004- 5 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 REGIONAL ENERGY S/D	2605	-1674	-3382	-2611	-3740	-4155	-3537	-6792	-5266	-4537	-1423	508	1812	-3115	-2733
1930 REGIONAL ENERGY S/D	-2122	-3321	-3693	-4021	-4226	-4638	-4302	-5242	-5551	-457	3046	-474	-1637	-3459	-3222
1931 REGIONAL ENERGY S/D	-1364	-3721	-4233	-4061	-3841	-4731	-4473	-6896	-5777	-1503	-3412	1289	-218	-3375	-3443
1932 REGIONAL ENERGY S/D	-1940	-3376	-4705	-4288	-3828	-4429	-3346	-5953	-874	3992	5449	4911	6992	1423	-1003
1933 REGIONAL ENERGY S/D	-133	-1720	-2625	-2946	-2271	-2360	3427	1534	-5140	-138	84	2507	11077	8460	892
1934 REGIONAL ENERGY S/D	3210	3003	-1169	584	184	5214	8476	5633	4983	10114	8312	6228	1016	-3196	3356
1935 REGIONAL ENERGY S/D	-3553	-3588	-4052	-4005	-2494	-2335	3693	480	-3231	-542	719	1058	5267	2388	-559
1936 REGIONAL ENERGY S/D	707	-2498	-3968	-3915	-4478	-4583	-1815	-5853	-4856	-3014	5176	4963	5359	-1274	-1686
1937 REGIONAL ENERGY S/D	124	-2286	-3553	-3927	-4214	-4281	-5102	-7462	-5881	-3968	-2978	1317	2690	-3125	-3174
1938 REGIONAL ENERGY S/D	-2788	-2635	-3855	-3763	-3143	-2154	3683	-2022	-384	94	4759	6534	6231	1561	200
1939 REGIONAL ENERGY S/D	-1082	-2411	-3660	-3396	-4241	-4098	-339	-3204	-3922	807	2196	2360	-589	-940	-1856
1940 REGIONAL ENERGY S/D	673	-2302	-3574	-3402	-3743	-3561	-105	-4311	-860	2554	2380	992	-851	-2509	-1689
1941 REGIONAL ENERGY S/D	-3025	-3583	-3725	-3316	-3847	-4287	-4258	-4649	-3855	-4411	-1734	408	-62	-4558	-3210
1942 REGIONAL ENERGY S/D	-2615	-3127	-3968	-3170	-3736	2261	2665	-4778	-4615	-350	-1051	1129	5007	3066	-809
1943 REGIONAL ENERGY S/D	2604	-1908	-3036	-3431	-2871	-2890	3783	2947	-1477	7838	7767	6798	8251	4179	1700
1944 REGIONAL ENERGY S/D	2816	455	-2832	-2805	-3737	-3862	-3740	-5732	-6088	-3199	-1500	516	-2141	-4569	-2975
1945 REGIONAL ENERGY S/D	-2597	-3413	-4568	-4267	-4020	-4582	-5563	-5068	-4681	-4026	-1272	1500	3797	1181	-2660
1946 REGIONAL ENERGY S/D	268	-2958	-2681	-3370	-3415	-1185	4274	372	-1492	917	5853	7740	7111	3305	1058
1947 REGIONAL ENERGY S/D	1822	-2591	-2334	-2250	-2567	1846	3283	4337	2646	2722	4287	5099	6816	1350	1779
1948 REGIONAL ENERGY S/D	317	-2962	-2508	3183	-594	-1087	3427	4340	-2375	-390	5543	8754	14746	6231	2948
1949 REGIONAL ENERGY S/D	3476	3780	-431	-1923	-3139	-3960	1058	-1497	2206	3604	6561	6219	6029	-894	1032
1950 REGIONAL ENERGY S/D	-2414	-3116	-4095	-3372	-3886	-2367	3955	4325	2485	3427	5304	4970	11630	6115	1780
1951 REGIONAL ENERGY S/D	2962	2779	-1552	555	664	4565	4327	7704	4317	9527	7687	8142	5321	4555	4173
1952 REGIONAL ENERGY S/D	3417	2043	-737	1699	-2332	-94	3254	3210	-2611	6118	7010	9269	7212	1817	2498
1953 REGIONAL ENERGY S/D	789	-2170	-3597	-3859	-4066	-4102	-1743	4232	2219	-2176	-163	4347	8772	4104	371
1954 REGIONAL ENERGY S/D	3377	-455	-2282	-2051	-2779	-1923	3120	3644	2205	2449	2976	5534	10797	7058	2291
1955 REGIONAL ENERGY S/D	5091	4511	4000	-1015	-1792	-2196	2133	-5076	-5252	-485	-1568	759	8758	8821	1076
1956 REGIONAL ENERGY S/D	3610	2140	-1842	77	-548	3510	4970	4387	4369	8114	9354	10920	12885	4512	4571
1957 REGIONAL ENERGY S/D	3665	1406	-1748	-1023	-2960	-1530	3025	1217	-1764	3300	2242	9536	9446	-559	1579
1958 REGIONAL ENERGY S/D	-449	-2160	-3445	-3366	-3731	-3606	4222	1145	-2263	1073	4214	7856	7901	-1686	364
1959 REGIONAL ENERGY S/D	635	-3126	-2741	-1898	-1702	960	4264	3973	3995	3922	3398	5355	9848	4211	2390
1960 REGIONAL ENERGY S/D	3200	-421	3068	4341	1272	1157	2984	2280	-520	7960	5236	3422	5810	3153	2913
1961 REGIONAL ENERGY S/D	1038	-2561	-3760	-2663	-2528	-3935	4008	4781	776	1534	-611	5661	10511	426	1081
1962 REGIONAL ENERGY S/D	1176	-3138	-3170	-2418	-3645	-3721	3753	-2680	-5032	3365	6042	3830	4593	590	-348
1963 REGIONAL ENERGY S/D	2951	-2517	-2823	-1050	-1506	547	3440	860	-3238	1521	492	1628	5882	1758	560
1964 REGIONAL ENERGY S/D	2264	-2324	-1771	-2857	-3075	-3899	3291	-424	-5174	-600	165	2837	11696	6775	596
1965 REGIONAL ENERGY S/D	3607	1746	-503	-302	-2736	3641	6098	6474	3403	4720	8144	7544	9327	2593	3721
1966 REGIONAL ENERGY S/D	3555	1287	-1934	-1273	-2783	-2450	3662	1105	-4200	3088	1304	2867	5137	223	414
1967 REGIONAL ENERGY S/D	236	-2019	-3325	-3132	-3567	-2305	4062	4273	1773	-266	-1723	3036	10553	6001	1290
1968 REGIONAL ENERGY S/D	3035	479	-1711	-1331	-2655	-2356	4390	5136	130	-3596	-1116	-31	5783	2455	768
1969 REGIONAL ENERGY S/D	2808	462	916	590	-724	-200	4026	4759	3454	6583	7446	9838	8747	1581	3470
1970 REGIONAL ENERGY S/D	814	-2412	-3194	-2071	-3591	-3901	3828	1107	-3671	-738	-189	2056	6258	1017	-285
1971 REGIONAL ENERGY S/D	1471	-3417	-3163	-3070	-3345	-1677	3957	7743	3711	8895	6135	10609	11920	5944	3264
1972 REGIONAL ENERGY S/D	4833	3150	-1223	-1862	-2482	-2149	3861	5790	12933	9946	4802	9867	12545	8391	4753
1973 REGIONAL ENERGY S/D	4875	4288	383	-2016	-2966	-1587	1862	-4774	-3743	-4242	-2819	932	506	-2990	-1112
1974 REGIONAL ENERGY S/D	-3235	-4334	-4568	-3957	-3230	3246	9264	9409	6414	7849	7803	9585	14249	9691	4512
1975 REGIONAL ENERGY S/D	4854	4046	-419	-3290	-3415	-2945	4235	1213	1075	-1673	1113	4723	9851	7769	1914
1976 REGIONAL ENERGY S/D	1747	-292	-2153	-664	-208	5737	5410	4298	3832	7386	6636	8861	5888	6370	3759
1977 REGIONAL ENERGY S/D	5433	4127	4876	-1449	-3804	-4228	-3923	-5474	-6071	-3738	-2031	170	-2375	-5879	-2188
1978 REGIONAL ENERGY S/D	-2691	-3603	-4734	-4203	-3173	-1707	2558	-2260	-1165	3438	3515	4284	3630	2786	-305

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

ENERGY IN AVERAGE MEGAWATTS

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

	2005- 6 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 REGIONAL ENERGY S/D	2595	-1685	-3151	-2509	-3607	-4290	-3669	-6950	-4870	-5010	-1740	-134	1599	-4027	-2877
1930 REGIONAL ENERGY S/D	-2132	-3332	-3461	-3919	-4094	-4773	-4435	-5399	-5155	-930	2729	-1115	-1850	-4371	-3367
1931 REGIONAL ENERGY S/D	-1374	-3732	-4002	-3958	-3709	-4865	-4605	-7053	-5382	-1976	-3730	647	-431	-4287	-3588
1932 REGIONAL ENERGY S/D	-1950	-3387	-4474	-4186	-3696	-4564	-3478	-6110	-478	3519	5131	4270	6779	511	-1147
1933 REGIONAL ENERGY S/D	-142	-1730	-2394	-2844	-2139	-2495	3295	1377	-4744	-612	-233	1866	10864	7547	748
1934 REGIONAL ENERGY S/D	3200	2992	-938	686	316	5079	8344	5476	5379	9641	7995	5587	802	-4108	3211
1935 REGIONAL ENERGY S/D	-3563	-3599	-3821	-3903	-2362	-2470	3561	322	-2835	-1016	402	417	5054	1476	-704
1936 REGIONAL ENERGY S/D	697	-2509	-3737	-3813	-4346	-4717	-1947	-6011	-4460	-3487	4858	4322	5146	-2186	-1831
1937 REGIONAL ENERGY S/D	114	-2297	-3322	-3824	-4082	-4416	-5234	-7620	-5486	-4442	-3296	675	2477	-4037	-3319
1938 REGIONAL ENERGY S/D	-2798	-2646	-3624	-3661	-3011	-2288	3550	-2179	12	-380	4441	5892	6018	648	55
1939 REGIONAL ENERGY S/D	-1092	-2422	-3428	-3293	-4109	-4233	-472	-3361	-3526	334	1878	1719	-802	-1852	-2001
1940 REGIONAL ENERGY S/D	663	-2313	-3343	-3300	-3611	-3695	-237	-4468	-464	2081	2062	351	-1064	-3421	-1834
1941 REGIONAL ENERGY S/D	-3035	-3594	-3493	-3214	-3715	-4422	-4391	-4806	-3460	-4885	-2051	-234	-275	-5470	-3355
1942 REGIONAL ENERGY S/D	-2625	-3138	-3737	-3068	-3604	2126	2532	-4935	-4220	-824	-1368	487	4794	2154	-954
1943 REGIONAL ENERGY S/D	2594	-1919	-2805	-3329	-2739	-3025	3651	2789	-1082	7365	7449	6157	8038	3267	1556
1944 REGIONAL ENERGY S/D	2806	444	-2601	-2703	-3605	-3997	-3873	-5889	-5692	-3672	-1818	-125	-2354	-5482	-3120
1945 REGIONAL ENERGY S/D	-2607	-3424	-4337	-4165	-3888	-4717	-5696	-5225	-4286	-4499	-1589	859	3584	268	-2805
1946 REGIONAL ENERGY S/D	258	-2969	-2450	-3268	-3283	-1320	4142	215	-1096	443	5535	7098	6897	2393	913
1947 REGIONAL ENERGY S/D	1812	-2602	-2103	-2147	-2435	1711	3151	4179	3041	2248	3970	4458	6603	437	1634
1948 REGIONAL ENERGY S/D	307	-2973	-2277	3285	-462	-1222	3294	4183	-1979	-863	5225	8113	14532	5318	2803
1949 REGIONAL ENERGY S/D	3466	3769	-200	-1821	-3007	-4094	925	-1654	2602	3130	6244	5577	5816	-1807	887
1950 REGIONAL ENERGY S/D	-2424	-3126	-3864	-3270	-3754	-2502	3823	4168	2880	2953	4986	4329	11416	5202	1635
1951 REGIONAL ENERGY S/D	2953	2768	-1321	657	796	4431	4195	7547	4713	9053	7370	7500	5108	3642	4028
1952 REGIONAL ENERGY S/D	3407	2032	-506	1801	-2200	-229	3122	3052	-2215	5644	6692	8627	6999	904	2354
1953 REGIONAL ENERGY S/D	779	-2180	-3366	-3757	-3934	-4237	-1875	4075	2614	-2650	-481	3705	8559	3191	226
1954 REGIONAL ENERGY S/D	3367	-466	-2051	-1949	-2646	-2057	2988	3486	2601	1975	2658	4892	10583	6145	2147
1955 REGIONAL ENERGY S/D	5081	4501	4232	-913	-1660	-2330	2000	-5233	-4856	-958	-1885	117	8544	7908	932
1956 REGIONAL ENERGY S/D	3600	2129	-1611	179	-415	3375	4837	4229	4764	7640	9036	10279	12671	3599	4426
1957 REGIONAL ENERGY S/D	3655	1395	-1517	-921	-2827	-1665	2892	1060	-1368	2826	1924	8894	9232	-1471	1434
1958 REGIONAL ENERGY S/D	-459	-2171	-3214	-3264	-3599	-3741	4090	987	-1867	600	3897	7214	7688	-2598	219
1959 REGIONAL ENERGY S/D	626	-3137	-2510	-1795	-1570	826	4131	3815	4391	3448	3081	4714	9634	3299	2245
1960 REGIONAL ENERGY S/D	3190	-432	3299	4443	1404	1022	2851	2122	-124	7486	4918	2780	5597	2240	2768
1961 REGIONAL ENERGY S/D	1028	-2572	-3529	-2561	-2396	-4070	3876	4623	1171	1060	-928	5020	10298	-486	937
1962 REGIONAL ENERGY S/D	1166	-3149	-2939	-2316	-3513	-3856	3620	-2838	-4636	2892	5724	3189	4380	-323	-493
1963 REGIONAL ENERGY S/D	2941	-2528	-2592	-948	-1374	412	3308	702	-2843	1047	174	986	5669	846	415
1964 REGIONAL ENERGY S/D	2254	-2335	-1540	-2755	-2943	-4033	3159	-581	-4778	-1073	-152	2195	11483	5863	451
1965 REGIONAL ENERGY S/D	3597	1735	-272	-200	-2604	3506	5966	6317	3798	4246	7827	6902	9113	1681	3576
1966 REGIONAL ENERGY S/D	3545	1276	-1703	-1171	-2651	-2584	3530	948	-3804	2615	987	2225	4924	-689	270
1967 REGIONAL ENERGY S/D	226	-2029	-3093	-3030	-3434	-2440	3930	4116	2168	-739	-2040	2394	10340	5089	1146
1968 REGIONAL ENERGY S/D	3026	468	-1480	-1229	-2523	-2490	4257	4979	525	-4069	-1434	-673	5570	1542	623
1969 REGIONAL ENERGY S/D	2798	451	1148	692	-592	-335	3894	4602	3850	6109	7129	9196	8534	668	3325
1970 REGIONAL ENERGY S/D	805	-2423	-2962	-1969	-3459	-4036	3696	949	-3276	-1212	-506	1414	6044	104	-430
1971 REGIONAL ENERGY S/D	1461	-3427	-2932	-2968	-3213	-1811	3825	7585	4107	8422	5817	9967	11706	5032	3120
1972 REGIONAL ENERGY S/D	4823	3140	-992	-1760	-2350	-2284	3729	5632	13328	9473	4485	9225	12332	7479	4608
1973 REGIONAL ENERGY S/D	4865	4278	615	-1914	-2834	-1722	1730	-4931	-3347	-4716	-3137	291	293	-3902	-1256
1974 REGIONAL ENERGY S/D	-3245	-4345	-4336	-3855	-3098	3111	9132	9252	6809	7375	7486	8944	14036	8779	4367
1975 REGIONAL ENERGY S/D	4845	4035	-188	-3188	-3282	-3080	4103	1055	1470	-2146	795	4081	9638	6856	1769
1976 REGIONAL ENERGY S/D	1738	-303	-1922	-562	-76	5602	5277	4141	4228	6913	6318	8219	5674	5458	3614
1977 REGIONAL ENERGY S/D	5424	4116	5107	-1347	-3672	-4363	-4056	-5631	-5676	-4211	-2349	-472	-2588	-6792	-2333
1978 REGIONAL ENERGY S/D	-2701	-3614	-4503	-4101	-3041	-1842	2426	-2418	-770	2964	3198	3643	3417	1874	-449

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

ENERGY IN AVERAGE 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	12 MO AVG
1929 REGIONAL ENERGY S/D	2419	-1861	-3481	-2615	-3654	-4335	-3869	-7182	-5425	-4878	-1695	243	1528	-3366	-2930
1930 REGIONAL ENERGY S/D	-2309	-3508	-3792	-4024	-4140	-4817	-4635	-5631	-5710	-799	2774	-738	-1921	-3710	-3420
1931 REGIONAL ENERGY S/D	-1551	-3908	-4332	-4064	-3755	-4910	-4805	-7285	-5937	-1845	-3685	1024	-502	-3627	-3641
1932 REGIONAL ENERGY S/D	-2127	-3563	-4804	-4292	-3743	-4609	-3678	-6343	-1034	3651	5177	4647	6708	1172	-1201
1933 REGIONAL ENERGY S/D	-319	-1907	-2724	-2949	-2185	-2540	3095	1144	-5300	-480	-188	2243	10793	8208	695
1934 REGIONAL ENERGY S/D	3024	2815	-1268	580	270	5034	8144	5244	4824	9773	8040	5964	731	-3447	3158
1935 REGIONAL ENERGY S/D	-3740	-3775	-4152	-4008	-2408	-2515	3361	90	-3391	-884	447	794	4983	2137	-757
1936 REGIONAL ENERGY S/D	521	-2685	-4067	-3918	-4392	-4762	-2147	-6243	-5015	-3355	4903	4699	5075	-1525	-1884
1937 REGIONAL ENERGY S/D	-63	-2473	-3653	-3930	-4129	-4460	-5435	-7852	-6041	-4310	-3251	1052	2405	-3376	-3372
1938 REGIONAL ENERGY S/D	-2975	-2822	-3954	-3766	-3057	-2333	3350	-2412	-544	-248	4486	6270	5947	1310	3
1939 REGIONAL ENERGY S/D	-1269	-2598	-3759	-3399	-4156	-4277	-672	-3593	-4082	466	1924	2096	-873	-1191	-2054
1940 REGIONAL ENERGY S/D	486	-2489	-3674	-3405	-3657	-3740	-437	-4700	-1019	2212	2107	728	-1136	-2761	-1887
1941 REGIONAL ENERGY S/D	-3212	-3770	-3824	-3319	-3761	-4466	-4591	-5039	-4015	-4753	-2006	143	-347	-4809	-3408
1942 REGIONAL ENERGY S/D	-2803	-3314	-4067	-3173	-3651	2082	2332	-5168	-4775	-692	-1323	865	4723	2815	-1007
1943 REGIONAL ENERGY S/D	2418	-2095	-3135	-3434	-2785	-3069	3451	2557	-1637	7497	7494	6534	7967	3928	1503
1944 REGIONAL ENERGY S/D	2630	267	-2931	-2809	-3651	-4041	-4073	-6121	-6248	-3540	-1773	252	-2425	-4821	-3173
1945 REGIONAL ENERGY S/D	-2784	-3600	-4667	-4271	-3934	-4762	-5896	-5457	-4841	-4367	-1544	1236	3513	929	-2858
1946 REGIONAL ENERGY S/D	80	-3145	-2780	-3374	-3329	-1365	3941	-17	-1651	575	5580	7475	6826	3054	860
1947 REGIONAL ENERGY S/D	1636	-2778	-2433	-2253	-2481	1666	2951	3947	2486	2380	4015	4835	6532	1099	1581
1948 REGIONAL ENERGY S/D	131	-3149	-2607	3179	-508	-1266	3094	3951	-2534	-731	5271	8490	14461	5979	2750
1949 REGIONAL ENERGY S/D	3290	3593	-531	-1927	-3054	-4139	725	-1886	2047	3262	6289	5954	5744	-1146	834
1950 REGIONAL ENERGY S/D	-2601	-3303	-4194	-3375	-3800	-2547	3623	3936	2325	3085	5032	4706	11345	5864	1582
1951 REGIONAL ENERGY S/D	2776	2592	-1651	552	750	4386	3994	7315	4157	9186	7415	7877	5037	4303	3975
1952 REGIONAL ENERGY S/D	3231	1856	-837	1695	-2247	-274	2922	2820	-2771	5776	6737	9005	6927	1565	2300
1953 REGIONAL ENERGY S/D	603	-2357	-3696	-3863	-3980	-4282	-2075	3843	2059	-2518	-436	4082	8488	3852	173
1954 REGIONAL ENERGY S/D	3191	-642	-2381	-2054	-2693	-2102	2788	3254	2046	2107	2703	5270	10512	6807	2094
1955 REGIONAL ENERGY S/D	4904	4324	3901	-1019	-1706	-2375	1800	-5466	-5412	-827	-1840	494	8473	8569	878
1956 REGIONAL ENERGY S/D	3424	1953	-1941	74	-462	3331	4637	3997	4209	7773	9081	10656	12600	4261	4373
1957 REGIONAL ENERGY S/D	3479	1218	-1847	-1026	-2874	-1709	2692	828	-1923	2958	1970	9271	9161	-810	1381
1958 REGIONAL ENERGY S/D	-636	-2347	-3544	-3370	-3645	-3785	3890	755	-2422	732	3942	7592	7617	-1938	166
1959 REGIONAL ENERGY S/D	448	-3313	-2840	-1901	-1616	781	3931	3583	3836	3580	3126	5091	9563	3960	2192
1960 REGIONAL ENERGY S/D	3014	-608	2969	4338	1358	977	2651	1890	-680	7618	4963	3157	5526	2901	2715
1961 REGIONAL ENERGY S/D	852	-2748	-3860	-2666	-2443	-4115	3676	4391	616	1192	-883	5397	10226	175	884
1962 REGIONAL ENERGY S/D	989	-3325	-3269	-2421	-3560	-3900	3420	-3070	-5191	3024	5769	3566	4309	338	-546
1963 REGIONAL ENERGY S/D	2765	-2704	-2922	-1054	-1420	367	3108	470	-3398	1179	219	1363	5598	1507	362
1964 REGIONAL ENERGY S/D	2078	-2511	-1871	-2860	-2989	-4078	2959	-813	-5334	-941	-107	2573	11411	6524	398
1965 REGIONAL ENERGY S/D	3421	1559	-603	-305	-2650	3462	5766	6085	3243	4378	7872	7280	9042	2342	3523
1966 REGIONAL ENERGY S/D	3369	1099	-2033	-1276	-2698	-2629	3330	716	-4359	2747	1032	2602	4853	-28	217
1967 REGIONAL ENERGY S/D	49	-2206	-3424	-3135	-3481	-2485	3729	3884	1613	-607	-1995	2772	10269	5750	1093
1968 REGIONAL ENERGY S/D	2849	292	-1810	-1334	-2569	-2535	4057	4747	-30	-3937	-1389	-295	5499	2203	570
1969 REGIONAL ENERGY S/D	2622	275	817	587	-639	-379	3694	4370	3294	6241	7174	9573	8463	1329	3272
1970 REGIONAL ENERGY S/D	627	-2599	-3293	-2074	-3505	-4081	3496	717	-3831	-1080	-461	1791	5973	765	-483
1971 REGIONAL ENERGY S/D	1285	-3604	-3262	-3073	-3260	-1856	3625	7353	3552	8554	5862	10344	11635	5693	3067
1972 REGIONAL ENERGY S/D	4647	2963	-1322	-1865	-2397	-2329	3528	5400	12773	9605	4530	9603	12261	8140	4555
1973 REGIONAL ENERGY S/D	4687	4101	284	-2019	-2880	-1766	1529	-5164	-3903	-4584	-3092	668	222	-3242	-1310
1974 REGIONAL ENERGY S/D	-3422	-4521	-4667	-3960	-3144	3066	8932	9020	6254	7507	7531	9321	13964	9440	4314
1975 REGIONAL ENERGY S/D	4668	3859	-518	-3294	-3329	-3124	3903	823	915	-2014	840	4458	9567	7518	1716
1976 REGIONAL ENERGY S/D	1561	-479	-2253	-668	-122	5558	5077	3909	3672	7045	6363	8596	5603	6119	3561
1977 REGIONAL ENERGY S/D	5247	3940	4777	-1452	-3719	-4407	-4256	-5863	-6231	-4079	-2304	-95	-2659	-6131	-2386
1978 REGIONAL ENERGY S/D	-2878	-3790	-4833	-4206	-3087	-1886	2226	-2650	-1325	3096	3243	4020	3346	2535	-502

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(REGION TABLE 1 LINE 35)

1997 WHITEBOOK: 12/31/97
RUN DATE: 12/31/97

ENERGY IN AVERAGE MEGAWATTS — 2007- 8 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 REGIONAL ENERGY S/D	2267	-2013	-3686	-2889	-4106	-4565	-4188	-7658	-5735	-5362	-2253	-268	1524	-3173	-3202
1930 REGIONAL ENERGY S/D	-2461	-3661	-3996	-4298	-4592	-5047	-4953	-6107	-6020	-1282	2216	-1249	-1926	-3517	-3692
1931 REGIONAL ENERGY S/D	-1702	-4061	-4537	-4338	-4207	-5140	-5124	-7761	-6247	-2328	-4242	513	-506	-3434	-3912
1932 REGIONAL ENERGY S/D	-2278	-3715	-5008	-4566	-4195	-4839	-3996	-6818	-1343	3167	4619	4135	6704	1366	-1472
1933 REGIONAL ENERGY S/D	-471	-2059	-2929	-3223	-2637	-2770	-2776	669	-5609	-963	-746	1732	10788	8402	423
1934 REGIONAL ENERGY S/D	2872	2663	-1473	306	-182	4804	7826	4768	4514	9289	7483	5453	727	-3254	2887
1935 REGIONAL ENERGY S/D	-3892	-3927	-4356	-4282	-2860	-2745	3042	-385	-3700	-1367	-111	283	4978	2331	-1029
1936 REGIONAL ENERGY S/D	369	-2837	-4272	-4192	-4844	-4992	-2466	-6718	-5325	-3839	4346	4187	5071	-1332	-2155
1937 REGIONAL ENERGY S/D	-214	-2625	-3857	-4204	-4581	-4690	-5753	-8328	-6351	-4794	-3809	541	2401	-3183	-3644
1938 REGIONAL ENERGY S/D	-3127	-2975	-4159	-4041	-3509	-2563	3032	-2887	-853	-731	3929	5758	5943	1504	-269
1939 REGIONAL ENERGY S/D	-1420	-2750	-3963	-3673	-4608	-4507	-990	-4069	-4391	-18	1366	1585	-877	-998	-2325
1940 REGIONAL ENERGY S/D	335	-2641	-3878	-3680	-4109	-3970	-756	-5176	-1329	1729	1550	217	-1140	-2568	-2159
1941 REGIONAL ENERGY S/D	-3364	-3923	-4028	-3594	-4213	-4697	-4909	-5514	-4324	-5236	-2564	-368	-351	-4616	-3680
1942 REGIONAL ENERGY S/D	-2954	-3466	-4272	-3447	-4103	1852	2014	-5643	-5085	-1175	-1881	353	4718	3009	-1279
1943 REGIONAL ENERGY S/D	2266	-2247	-3340	-3708	-3237	-3299	3133	2081	-1946	7013	6937	6022	7963	4121	1231
1944 REGIONAL ENERGY S/D	2478	115	-3135	-3083	-4103	-4271	-4391	-6597	-6557	-4024	-2330	-259	-2430	-4628	-3445
1945 REGIONAL ENERGY S/D	-2936	-3753	-4872	-4545	-4387	-4992	-6214	-5933	-5150	-4851	-2102	724	3508	1123	-3130
1946 REGIONAL ENERGY S/D	-71	-3298	-2984	-3648	-3781	-1595	3623	-493	-1961	92	5023	6964	6822	3248	589
1947 REGIONAL ENERGY S/D	1484	-2930	-2638	-2527	-2933	1436	2633	3472	2177	1897	3458	4324	6528	1293	1310
1948 REGIONAL ENERGY S/D	-21	-3301	-2812	2906	-960	-1496	2776	3475	-2844	-1215	4713	7978	14457	6172	2478
1949 REGIONAL ENERGY S/D	3138	3441	-735	-2201	-3506	-4369	407	-2362	1737	2779	5732	5443	5740	-953	562
1950 REGIONAL ENERGY S/D	-2752	-3455	-4399	-3649	-4252	-2777	3304	3460	2016	2602	4474	4194	11341	6057	1311
1951 REGIONAL ENERGY S/D	2624	2440	-1855	278	298	4156	3676	6839	3848	8702	6858	7366	5032	4497	3704
1952 REGIONAL ENERGY S/D	3079	1704	-1041	1422	-2699	-504	2603	2345	-3080	5293	6180	8493	6923	1759	2029
1953 REGIONAL ENERGY S/D	451	-2509	-3901	-4137	-4432	-4512	-2394	3367	1750	-3001	-993	3571	8483	4046	-99
1954 REGIONAL ENERGY S/D	3039	-794	-2585	-2328	-3145	-2332	2469	2778	1736	1624	2146	4758	10508	7000	1822
1955 REGIONAL ENERGY S/D	4753	4172	3697	-1293	-2158	-2605	1482	-5941	-5721	-1310	-2398	-17	8469	8763	607
1956 REGIONAL ENERGY S/D	3272	1801	-2146	-200	-914	3101	4319	3522	3900	7289	8524	10144	12596	4455	4101
1957 REGIONAL ENERGY S/D	3327	1066	-2051	-1300	-3326	-1939	2374	352	-2233	2475	1412	8760	9157	-617	1110
1958 REGIONAL ENERGY S/D	-787	-2499	-3748	-3644	-4097	-4015	3571	279	-2732	248	3384	7080	7613	-1745	-106
1959 REGIONAL ENERGY S/D	297	-3466	-3044	-2175	-2068	551	3613	3108	3526	3097	2569	4580	9559	4154	1921
1960 REGIONAL ENERGY S/D	2862	-760	2765	4064	906	747	2333	1415	-989	7135	4406	2646	5521	3095	2444
1961 REGIONAL ENERGY S/D	700	-2901	-4064	-2940	-2895	-4345	3357	3915	306	709	-1440	4886	10222	369	612
1962 REGIONAL ENERGY S/D	838	-3478	-3474	-2695	-4012	-4131	3102	-3545	-5501	2540	5212	3055	4305	532	-818
1963 REGIONAL ENERGY S/D	2613	-2856	-3126	-1328	-1872	137	2790	-5	-3707	696	-338	852	5593	1701	91
1964 REGIONAL ENERGY S/D	1925	-2664	-2075	-3134	-3441	-4308	2640	-1289	-5643	-1425	-665	2061	11407	6718	127
1965 REGIONAL ENERGY S/D	3269	1407	-807	-579	-3102	3232	5448	5609	2934	3895	7315	6768	9038	2536	3251
1966 REGIONAL ENERGY S/D	3217	947	-2237	-1550	-3150	-2859	3011	240	-4669	2264	475	2091	4848	165	-55
1967 REGIONAL ENERGY S/D	-102	-2358	-3628	-3409	-3933	-2715	3411	3408	1304	-1091	-2552	2260	10265	5944	821
1968 REGIONAL ENERGY S/D	2697	140	-2015	-1608	-3021	-2765	3739	4271	-339	-4421	-1946	-807	5494	2396	298
1969 REGIONAL ENERGY S/D	2470	123	613	313	-1091	-609	3375	3894	2985	5758	6617	9062	8458	1523	3000
1970 REGIONAL ENERGY S/D	476	-2751	-3497	-2348	-3958	-4311	3178	242	-4140	-1563	-1019	1280	5969	959	-755
1971 REGIONAL ENERGY S/D	1133	-3756	-3466	-3347	-3712	-2086	3306	6878	3242	8070	5305	9833	11631	5887	2795
1972 REGIONAL ENERGY S/D	4495	2811	-1526	-2139	-2849	-2559	3210	4924	12464	9122	3973	9091	12256	8334	4284
1973 REGIONAL ENERGY S/D	4536	3949	80	-2293	-3333	-1996	1211	-5639	-4212	-5067	-3649	157	217	-3049	-1581
1974 REGIONAL ENERGY S/D	-3574	-4674	-4871	-4234	-3596	2836	8613	8544	5945	7024	6973	8809	13960	9634	4043
1975 REGIONAL ENERGY S/D	4516	3707	-722	-3568	-3781	-3354	3584	348	606	-2498	283	3947	9562	7711	1445
1976 REGIONAL ENERGY S/D	1409	-631	-2457	-942	-574	5328	4759	3433	3363	6561	5806	8085	5599	6313	3290
1977 REGIONAL ENERGY S/D	5095	3787	4573	-1726	-4171	-4638	-4574	-6339	-6540	-4563	-2861	-606	-2664	-5938	-2658
1978 REGIONAL ENERGY S/D	-3030	-3942	-5037	-4480	-3539	-2116	1908	-3125	-1634	2613	2686	3509	3342	2729	-773

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SECTION IX
ADMINISTRATOR'S RECORD OF DECISION ON THE 1997 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY (THE WHITE BOOK)

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1997 Pacific Northwest Loads and Resources Study Administrator's Record of Decision

I. Introduction

The 1997 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 1996 Pacific Northwest Loads and Resources Study, published in December 1996. The 1997 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.

In 1996, BPA and its public agency customers executed amendatory agreements to the 1981 power sales contract or new 1996 contracts. BPA's firm power requirements obligations were reduced. In 1997, BPA began a public process to implement recommendations made in the Comprehensive Review of the Northwest Energy System Final Report. One aspect of that report recommends a contracting process, termed "subscription," through which BPA would offer new power sales contracts for the post-2001 period. BPA recognized some of its customers wanted contracts before the subscription contracting process would open. BPA has concluded contracts with some regional and extraregional customers. This White Book accounts for those additional contracts executed this past year as part of firm power sales for the post-2001 period.

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.

Section 5(b)(1)(A) required customers 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 that 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. Amendments to the 1981 Utility Power Sales Contract and the 1996 Contracts

In 1996, BPA offered its public agency customers a series of amendments to their 1981 power sales contracts, or as an alternative, offered to negotiate new power sales contracts. As a result of customers executing either amendatory agreements or new contracts, BPA's firm load obligations were reduced. BPA's firm load obligations under the amendatory agreements, the new contracts, and the unamended 1981 utility power sales contracts expire September 30, 2001. BPA's power sales contract obligations to its public agency customers are determined by each customer's dedicated resources. These dedicated resources are categorized as either 5(b)(1)(A) or 5(b)(1)(B) resources. 5(b)(1)(B) resources include each customer's generation and contract resources dedicated to serve that customer's load, including pre- and post-1996 diversification 5(b)(1)(B) resources.

BPA's 1997 White Book includes 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, 2008. The firm load obligations projected for the years October 1, 2001, to October 1, 2008, are based in part on current firm contract obligations for the post-2001 period, and on 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 1997 Pacific Northwest Loads and Resources Study incorporates the following assumptions:

- BPA's power sales contracts with Pacific Northwest Federal and public agencies and IOUs, which expire between June 30, 2001, and September

30, 2001, are assumed to continue at their OY 2001 levels through the remainder of the study period;[1]

- Total public agency firm resources serving firm regional load will continue to be available in OY 2000-01 and through OY 2007-08.[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 218 average megawatts to as much as 5,121 average megawatts in OY 2008 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, below, shows BPA's potential public agency firm obligations using a comparative range of possible requirements service. Under BPA's existing utility power sales contracts and amendments, BPA's obligation to public agencies and cooperatives is 3,577 average megawatts for OY 2001. The same level of obligation is assumed for OYs 2002 through 2008.

Table R-1

Range of Potential Federal System Public Obligations for OY 2001-02 Through OY 2007-08
Energy in Average Megawatts

OPERATING YEAR	2001-2	2002-3	2003-4	2004-5	2005-6	2006-7	2007-8
1. Federal Minimum Public Obligations [3] (Already Signed Post-2001 Public Contracts)	218	244	248	252	257	233	235
2. 1997 White Book Estimated Federal Public Obligations (Public Obligation Remains at OY 2001 Levels)	3,577	3,577	3,577	3,577	3,577	3,577	3,577
3. Public Federal Maximum Obligation (Maximum Pubic Obligation Including Public Load Growth)	4,804	4,909	5,000	5,042	4,933	5,070	5,121

Excess Federal Power

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

[1] Requirements service provisions are well understood and, for purposes of this study, BPA continues 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 obligation is proposed to be changed in the subscription contracts, but the form of load growth obligation is not presently known. To the extent that different terms for load growth become known, they will be accounted for in a later study.

[3] Federal minimum public obligations include sales to regional public agencies and cooperatives and extraregional sales to public agencies in eastern Montana.

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 in the 1997 White Book are approved.

Issued in Portland, Oregon on JUN 6 2 1997.

John S. Robertson
Acting Administrator and
Chief Executive Officer

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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

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