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1999 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

BONNEVILLE
POWER ADMINISTRATION

1999 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

THE WHITE BOOK

BONNEVILLE POWER ADMINISTRATION
December 1999

Cover: Lower Granite Dam

Lower Granite Dam spans the Snake River just east of Pasco, Washington. The U. S. Army Corps of Engineers began operating this run of river dam in 1975. Lower Granite has an instantaneous generating capacity of 811 megawatts.

BPA Photo

ACKNOWLEDGMENTS

Preparation of the annual Pacific Northwest loads and resources study is a complex, multidisciplinary effort. BPA wishes 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

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Section 1: 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 its 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. The White Book will not be used in calculations for the 2002 regional power sales contract subscription 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 determining 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.

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 Federal system 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 Federal system firm loads exceed available resources, there is a deficit of energy and/or capacity and BPA would add conservation or contract purchases as needed to meet its firm loads.

The load forecast is derived by using econometric models and analysis to predict the loads that will be placed on electric utilities in the region. This study incorporates information on contract obligations and contract resources, combined with the resource capabilities obtained from public utility and investor-owned utility (IOU) customers through their annual data submittals to the PNUCC, from BPA's Firm Resource Exhibit (FRE Exhibit I) submittals, and through analysis of the Federal hydroelectric power 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. The PNCA defines the planning and operation of the regional hydrosystem.

[1] BPA's 1981 power sales contracts expire between June 30 and September 30, 2001. BPA's 2002 power sales contracts begin October 1, 2001.

Major features recently introduced into hydroregulation studies are the Columbia River flow augmentation targets from the National Marine Fisheries Services (NMFS) Biological Opinion for Salmon (1995 BO) dated March 2, 1995, and the 1998 NMFS Supplemental Biological Opinion for Steelhead (1998 BO) dated May 14, 1998. These NMFS opinions provide:

- Snake River flow augmentation April 3 through August 31;
- Storage of water January through mid-April for lower-Columbia River flow augmentation April 20 through August 31; and
- Mid-Columbia flow augmentation April 10 through June 30.

The 1999 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 (available electronically only) detailing the loads and resources for each major Pacific Northwest generating utility. This analysis updates the December 1998 Pacific Northwest Loads and Resources Study.

This analysis projects the yearly average energy consumption and resource availability for Operating Years (OY)[1] 2000-01 through 2009-10. The study shows the Federal system's and the region's monthly estimated maximum electricity demand, monthly energy demand, monthly energy generation, and monthly maximum generating capability—capacity—for OY 2000-01, 2004-05, and 2009-10. The Federal system and regional monthly capacity surplus/deficit projections are summarized for 10 operating years.

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 Federal system analysis is presented in section 4, beginning on page 11. The analysis for the Pacific Northwest region is presented in section 6, page 31.

The Administrator's Record of Decision (ROD) for the 1999 White Book is contained in section 9, page 115.

The glossary of terms and a list of acronyms are included in section 10, page 123.

The 1999 Pacific Northwest Loads and Resources Study Technical Appendix and this 1999 Pacific Northwest Loads and Resources Study summary document are available on BPA's external web site at http://www.bpa.gov/power/whitebook99.

Additional copies of this summary are also available from BPA's Public Involvement Office, toll-free, 1-800-622-4520.

[1] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 2000-01 is August 1, 2000, through July 31, 2001.

Section 2: 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 the Pacific Northwest planning area.

Hydro System Operations Under the PNCA

Incorporating the NMFS 1995 and 1998 BOs into the PNCA changed the focus of hydro system operation for fish passage from storage-based to monthly flow-based targets. These changes 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.

To demonstrate the variability of the hydro system under the current PNCA, this document presents the Federal system and regional firm surpluses and deficits for OYs 2001 through 2010 for each of the 50 historical water conditions on record (1929 through 1978). The results are shown in exhibits 9 through 18, pages 65 through 75, for the Federal system, and in exhibits 27 through 36, pages 103 through 113, 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 4 and 6.

Load Forecasting

For this study, load forecasts for each of the customer groups were estimated separately: non-generating public agencies, direct service agencies (DSIs), IOUs, Federal agencies, and the U.S. Bureau of Reclamation (USBR). The forecast is based on BPA's 1996 Final Rate Filing for all but the DSIs, Federal agencies, and the USBR. The DSI load forecast reflects BPA's actual industrial contracts and was updated for this study, as were the Federal agency and USBR load estimates. In general, BPA's load forecasts are designed to respond to and reflect factors such as employment, electricity prices, and planned conservation actions.

Pacific Northwest Hydro and Thermal Resources

Hydro Resources

Energy Capability. This study uses OY 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 1937 water reservoir levels. BPA assumes 1937 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 outages.

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 Council, BPA, and other Pacific Northwest entities will continue to evaluate ways to enhance fish and wildlife. Future proposals could include additional amendments to the Council's Columbia River Basin Fish and Wildlife Program, revision of the Pacific Northwest Coordination Agreement, renegotiation of Canadian Entitlement allocation agreements, and/or implementation of additional programs in support of the Endangered Species Act. The impacts of future proposals are unknown. These proposals, however, most likely will increase nonpower 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.

The hydro resources of the Federal system include 30 dams owned and operated by the USBR and the U. S. Army Corps of Engineers (Corps), plus hydroelectric projects owned by the City of Idaho Falls, Energy Northwest (ENW) (formerly Washington Public Power Supply System), 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 ENW.

The Federal system analysis is shown in section 4, beginning on page 11.

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 6, beginning on page 31.

Canadian Treaty Downstream Benefits

The Columbia River Treaty between the United States and Canada enhanced the use of storage in the Columbia River Basin. The treaty and treaty projects provide downstream benefits by increasing the firm power generating capability of U.S. hydro projects. Under the terms of the agreement, the downstream power benefits are shared equally between the two countries as determined by a joint Assured Operating Plan. BPA's obligations under the Columbia River Treaty vary during the study period.

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 began 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 began 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. The Canadian Entitlement to Canada is included in each participating utility's loads and resources balance as a delivery to BPA. BPA then delivers the total Canadian Entitlement to Canada, shown in table 1, page 6, as a Federal export.

Table 1

Canadian Entitlement to Canada - Energy and Capacity Obligations[1]

ENERGY IN AVERAGE MEGAWATTS

OPERATING YEAR	2001	2002	2003	2004	2005	2006[2]	2007[2]	2008[2]	2009[2]	2010[2]
Investor-Owned Utilities	46	46	56	77	76	66	63	62	63	50
Public Agencies	29	29	38	56	56	65	67	67	65	77
Federal System	197	212	273	395	396	395	393	391	390	388
Other Entities	5	5	6	9	9	9	9	9	9	9
Total Energy Obligation	277	292	373	537	537	535	532	529	527	524

JANUARY CAPACITY

OPERATING YEAR	2001	2002	2003	2004	2005	2006[2]	2007[2]	2008[2]	2009[2]	2010[2]
Investor-Owned Utilities	84	80	78	142	145	119	114	114	114	87
Public Agencies	52	53	54	96	103	126	119	118	117	151
Federal System	648	640	501	922	912	915	928	930	931	922
Other Entities	9	9	9	16	16	16	16	15	15	16
Total Capacity Obligation	793	782	642	1,176	1,176	1,176	1,177	1,177	1,177	1,176

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 resulting from deregulation of retail sales in the electrical power industry;
- BPA's future marketing efforts, 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 the 2002 power sales contracts, which will replace BPA's current power sales contracts that expire between June 30 and September 30, 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 reductions in public agency and DSI firm requirements, the extent of Federal obligations to these customers after the current contracts expire in 2001 is somewhat uncertain. The extent of BPA's firm obligations after these contracts expire may affect the

[1] Actual capacity and energy deliveries began April 1, 1998.
[2] Estimated values, OY 2006-10

Federal system and regional loads and resources balances during the 10-year period examined in this study.

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 between June 30 and September 30, 2001, and its contracts with its DSI customers, which expire on September 30, 2001, will be replaced in the subscription process with new negotiated 2002 power sales contracts. This may result in different Federal obligations to these customers.

Section 3: Changes in the 1999 Pacific Northwest Loads and Resources Study

This section describes the major changes in the assumptions of the 1999 Pacific Northwest Loads and Resources Study compared to the 1998 study. Other changes are reflected in the data for each utility contained in the 1999 Pacific Northwest Loads and Resources Study Technical Appendix. The 1999 Technical Appendix is available on BPA's external web site at http://www.bpa.gov/power/whitebook99.

Firm Load Changes

The 1999 White Book analysis uses load projections that incorporate the following changes since last year's analysis:

- The DSI, Federal agency, and USBR load forecasts were updated for this study.
- BPA's 1981 power sales contract obligations, which expire between June 30 and September 30, 2001, were combined, beginning October 1, 2001, with new 2002 power sales contract obligation estimates. The 2002 power sales contract obligations are shown only in aggregate because BPA did not produce a utility-level forecast.
- Federal transmission losses are now treated as a resource reduction rather than an increase in load.

Firm Resource Changes

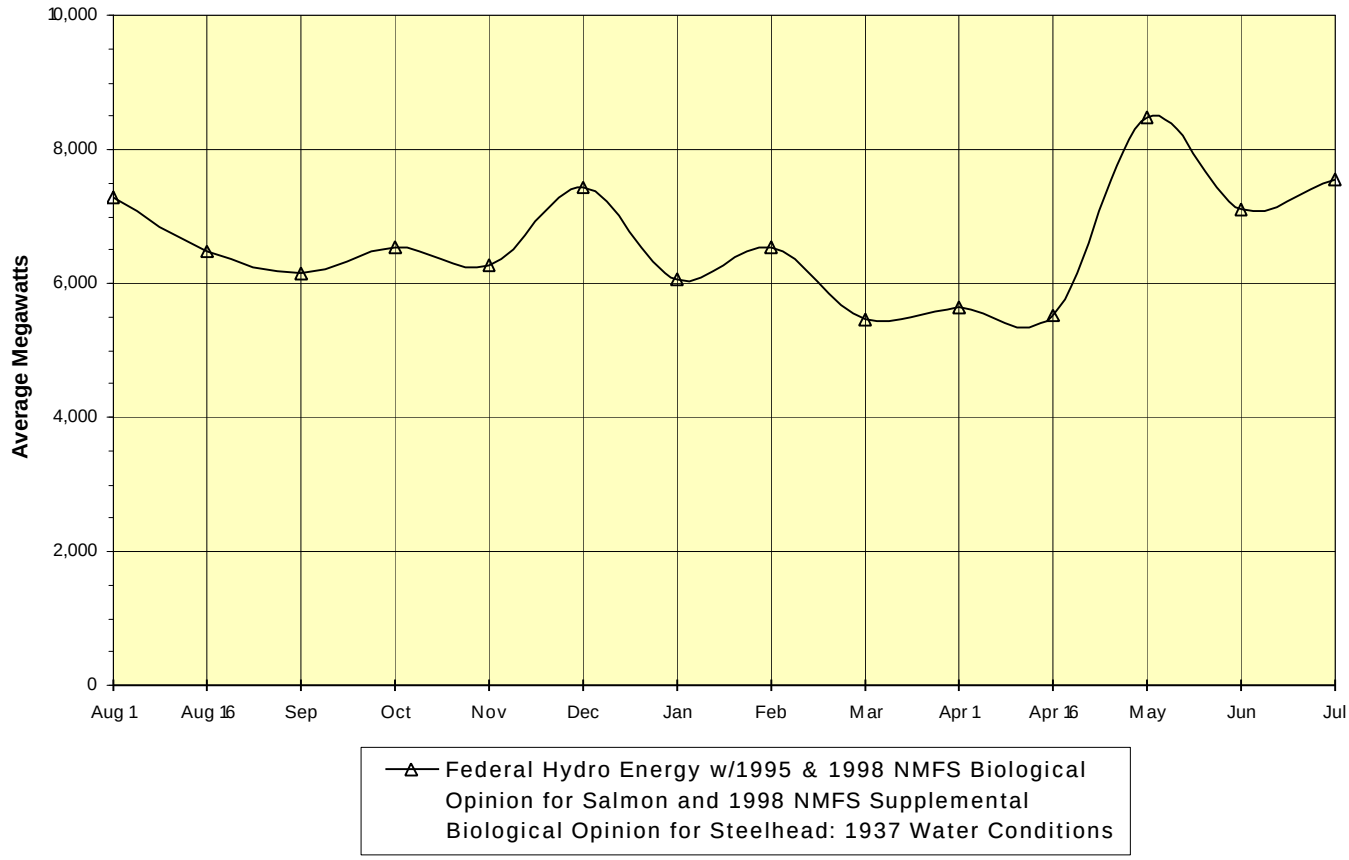
The 1999 White Book analysis reflects the following resource changes compared to last year's study:

- New hydroregulation studies that incorporate the assumptions of the current PNCA, including the Columbia River streamflow requirements of the 1995 and 1998 NMFS Biological Opinions; and
- Federal and regional transmission losses are now treated as a resource reduction. Federal and regional total resources less reserves and maintenance are reduced by 2.82 percent for energy and 3.35 percent for peak.

Figure 1, page 9, shows the monthly variation of the Federal system hydro energy capability for OY 2000-01 under the current PNCA and the streamflow requirements of the NMFS 1995 and 1998 BOs, assuming 1937 water conditions.

Figure 1

Federal Firm Hydro Energy: Monthly Variability for OY 2000-01



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 amended 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—will expire by September 30, 2001. Table 2 shows the updated load diversification for the public agencies from BPA's Load Commitment Exercise. Utility-level values are shown as resources called BPA PSC Diversification in each utility's load-resource balance, which reduces each utility's power sales contract purchase from BPA through September 30, 2001.

Table 2

Public Agency Power Sales [1] Diversification Under the 1981 Power Sales Contract

AVERAGE MEGAWATTS

OPERATING YEAR [2]	2001	2002
Chelan County PUD	0	0
Clark Public Utility	206	26
Cowlitz County PUD	104	17
Douglas County PUD	0	0
EWEB	0	0
Grant County PUD	5	1
Gray's Harbor PUD	6	0
Okanogan PUD	5	1
Pend Oreille PUD	0	0
Seattle City Light	45	2
Snohomish County PUD	263	44
Springfield Utility Board	0	0
Tacoma Public Utilities	63	6
Non-Generating Public Agencies	347	38
TOTAL PUBLIC AGENCY DIVERSIFICATION	1,044	135

[1] Public agency power sales contracts and amendments to them that allow for load diversification expire between June 30 and September 30, 2001. Beginning October 1, 2001, 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 2000-01 is August 1, 2000, through July 31, 2001.

Section 4: Federal System Analysis

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

- Load forecasts and capacity availability reflect normal weather conditions;
- 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 public and IOU obligations reflect the expiration of the 1981 power sales contracts between June 30 and September 30, 2001. Beginning October 1, 2001, BPA's new 2002 power sales contract obligations to public agencies and IOUs are estimated for the remainder of the study period. (Utility-level forecasts are not shown because BPA did not produce a utility-level forecast of 2002 power sales contract obligations.);
- BPA's 1981 power sales contract obligations to its DSI customers expire September 30, 2001. New DSI contracts are assumed to begin October 1, 2001, and continue through September 30, 2006;
- All existing Federal contractual arrangements not included under Pacific Northwest power sales contracts will expire by the terms of their agreements and are not renewed;
- Federal surplus firm power sales and capacity/energy exchange agreements with SCE and the cities of Burbank, Glendale, and Pasadena are shown in power sale mode throughout the study period;
- BPA purchases option energy from SCE through October 31, 2004;
- SCE purchases option capacity from BPA through October 31, 2004;
- All operating requirements currently adopted by the hydroelectric project owners and the firm planning assumptions for assured resource capability in the PNCA are included;
- Sustained capacity limits are 50 hours per week; and
- Transmission losses are a resource reduction.

Federal Firm Energy Loads

In this study, 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 1981 [2] and forecasted 2002 power sales contracts. BPA's 1981 power sales contract obligations through September 30, 2001, were reduced by public agency diversification from BPA's Load Commitment Exercise. The Federal loads also include Federal and public agency intra- and interregional contracts. The methods and assumptions used to complete this year's load forecast are discussed under Load Forecasting, page 3.

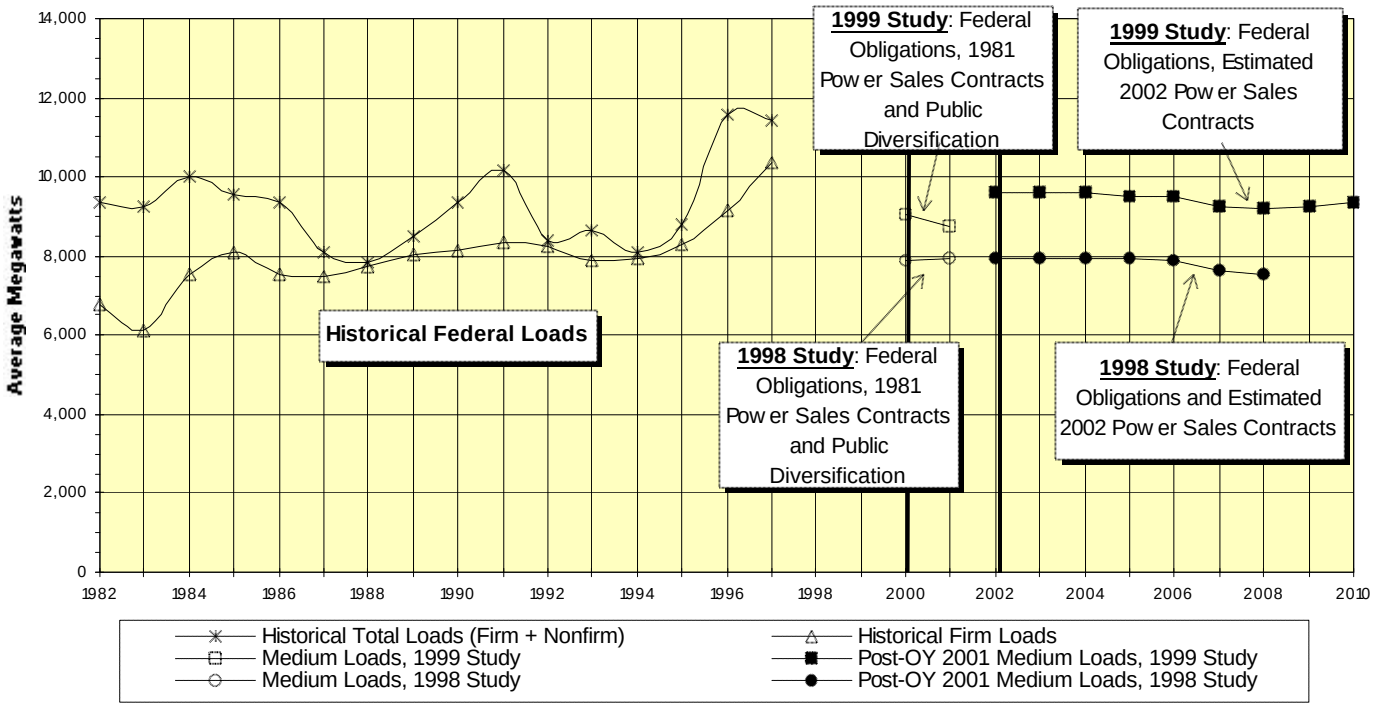
The Federal system firm energy loads for OY 2000-01 through 2009-10 are shown in figure 2. They are also presented on line 15 of exhibit 1, page 42. The monthly values for OY 2000-01, 2004-05, and 2009-10 assuming 1937 water conditions are shown in exhibits 2 through 4, pages 45 through 51.

[1] This study includes the Federal DSI firm loads through OY 2001 (per contracts signed through December 31, 1996) and assumes new DSI contracts beginning October 1, 2001, and continuing through September 30, 2006.

[2] This study includes Federal, public agency, and IOU obligations through OY 2001 (per contracts that expire between June 30 and September 30, 2001) and assumes new 2002 power sales contract obligation estimates beginning October 1, 2001, and continuing through the end of the study period.

Figure 2

Federal Firm Energy Load Projections[1]—1999 BPA Forecast
Medium Loads



[1] BPA's projected firm contractual obligations are uncertain because its 2002 power sales contracts are still being negotiated and the impacts of deregulating the wholesale and retail electric utility industry are yet unknown.

Federal Firm Peak Loads

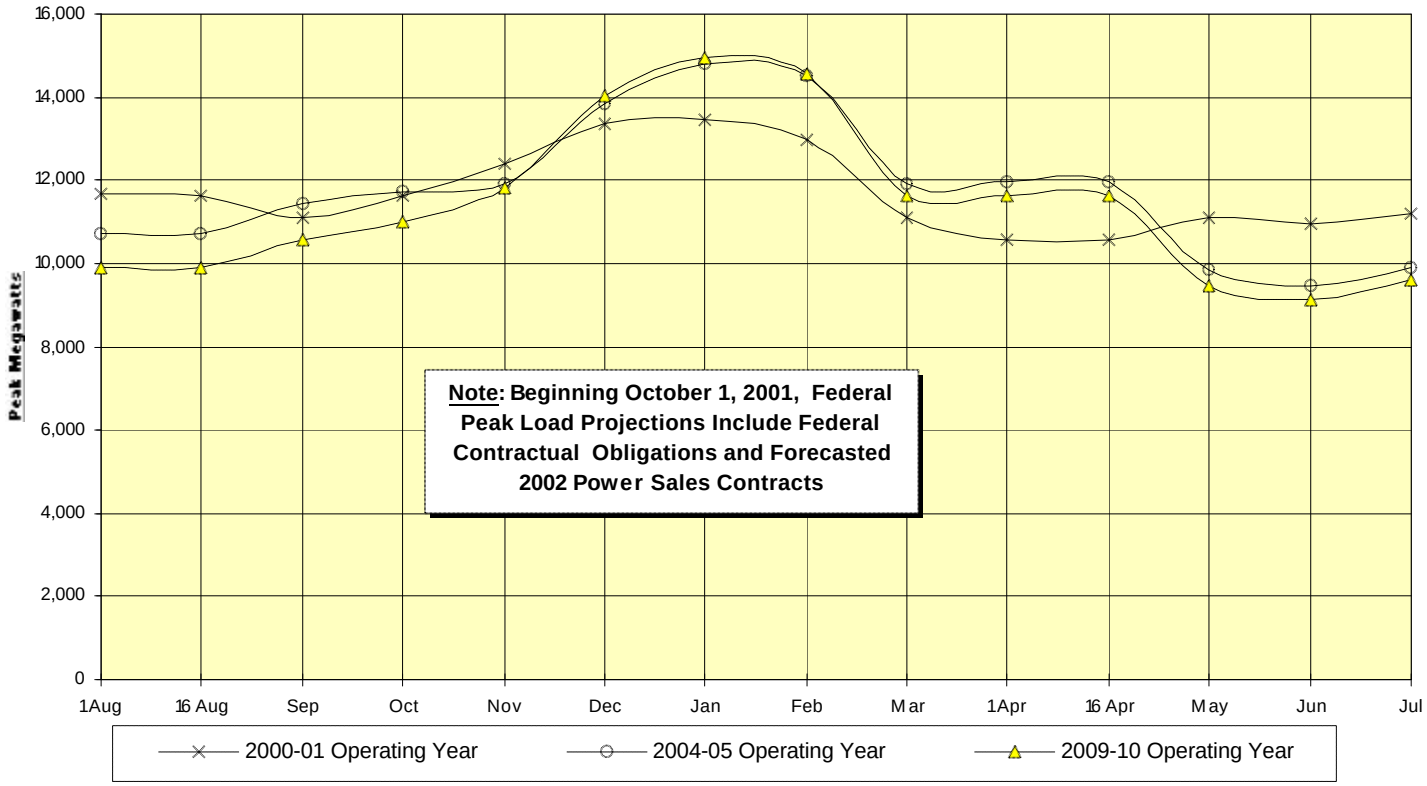
Figure 3, below, shows the Federal firm peak loads for OY 2000-01, 2004-05, and 2009-10.[1] The figure shows the expected 1-hour monthly demand under the 1999 BPA load forecast. These forecasts assume that public agencies will purchase capacity from BPA under their power sales contracts to meet peak loads not served by their own resources. Federal loads also include Federal and public agency intra- and interregional contracts. The peak loads are estimated based on 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.

The monthly Federal firm peak loads are presented on line 18, exhibits 6 through 8, pages 55 through 61.

Figure 3

Federal Monthly Firm Peak Load Projections Under Normal Weather Conditions for OY 2000-01, 2004-05, and 2009-10

Medium Loads



[1] The Federal peak load projections are based on BPA's power sales contract obligations under the 1981 power sales contracts through September 30, 2001, and under the estimated 2002 power sales contract obligations beginning October 1, 2001, and continuing for the remainder of the study period. BPA's actual power sales obligation under the new 2002 contracts will be set in the subscription process.

Federal Firm Resources

The Federal system hydro resources from which BPA markets power are shown in table 4, page 15. BPA also markets power purchased from non-Federally owned resources. In addition, BPA's capacity/energy exchange contracts provide marketable 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 16.

Combined, these resources represent BPA's available firm resources. A detailed listing of Federal generating resources is available electronically in BPA's 1999 Pacific Northwest Loads and Resources Study Technical Appendix (available September 2000 on BPA's external web site at http://www.bpa.gov/power/whitebook99).

Table 3, below, summarizes the Federal system firm energy resources and contracts available to meet Federal firm loads for OY 2000-01. Federal system firm energy resources are comprised as follows: 80 percent from hydroelectric power, 10 percent from one nuclear power plant, and 10 percent from BPA's firm contracts and small thermal resources.

Table 3

Federal[1] Firm Resources for OY 2000-01[2] Based on 1937 Water Conditions
Capacity Based on January 2001

Project Type	Sustained Peak Capacity (MW)	Generating Peaking Capacity % of Total	Firm Energy (aMW) 12-Month Average	Firm Energy % of Total
Hydro	13,598	89	6,671	80
Nuclear	1,162	8	875	10
Firm Contracts/Small Thermal Resources	500	3	876	10
TOTAL FEDERAL RESOURCES	15,260	100	8,422	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 2000-01 is August 1, 2000, through July 31, 2001.

Table 4

Federal System Hydroelectric Projects

Project	Initial Year of Service	Number of Units	Nameplate Rating (MW)	Instantaneous Generating Capacity [1] (peak MW)	Firm Energy [2]
U.S. BUREAU OF RECLAMATION HYDROELECTRIC PROJECTS					
Grand Coulee	1941	27	6,465.0	5,391	1,778
Grand Coulee Pump Gen.	1973	6	314.0	314	0
Hungry Horse	1952	4	428.0	333	77
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 USBR PROJECTS		52	7,471.6	6,232	1,968
U.S. ARMY CORPS OF ENGINEERS HYDROELECTRIC PROJECTS					
Chief Joseph	1955	27	2,457.8	2,053	1,043
John Day	1968	16	2,160.0	2,211	801
The Dalles w/fish turbines	1957	24	1,808.0	2,074	515
Bonneville w/fish turbines	1938	20	1,092.9	860	429
McNary	1953	14	980.0	992	548
Lower Granite	1975	6	810.0	811	212
Lower Monumental	1969	6	810.0	768	214
Little Goose	1970	6	810.0	771	209
Ice Harbor	1961	6	603.0	589	97
Libby	1975	5	525.0	544	161
Dworshak	1974	3	400.0	417	118
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	23	25
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	12,468	4,572
TOTAL USBR AND CORPS PROJECTS		205	20,427.9	18,720	6,540

[1] Maximum generation under optimum conditions assuming January 1937 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 1937 water conditions.

Table 5

Non-Federally Owned BPA Resources and Contracts
Capacity Based on January 2001

Project	Type	Operator	Date in Service	OY2000-01 Capacity (peak MW)	OY 2000-01 Firm Energy (aMW)
EXISTING NON-FEDERALLY OWNED BPA RESOURCES					
WNP-2	Nuclear	ENW	1984	1,162	895
Packwood Lake	Hydro	ENW	1964	30	10
Idaho Falls Bulb Projects	Hydro	City of Idaho Falls	1982	18	19
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	979
FIRM CONTRACTS					
Canadian Entitlement for CSPE (non-Federal)				43	22
Canadian Entitlement for Canada (non-Federal)				145	80
Restoration, Columbia River Treaty with Canada				0	-26
Canadian Imports				0	0
Pacific Southwest Imports				233	210
Inland Southwest Imports				45	60
Eastern Imports				189	94
Pacific Northwest Purchase				0	478
Non-Utility Generation				1	8
Supplemental & Entitlement Replacement Energy				0	48
TOTAL BPA FIRM CONTRACTED RESOURCES				656	974
TOTAL NON-FEDERALLY OWNED BPA RESOURCE CONTRACTS				1,912	1,953

[1] Operational capacity is 70 MW, but is restricted in January.

Federal Firm Energy Surplus/Deficit Projections

The Federal firm energy surplus/deficit projections under 1937 water conditions for OY 2000-01 through 2009-10 are presented below in table 6 and graphically shown in figure 4, page 18.

The components of the 10-year Federal energy loads and resources balances under 1937 water conditions are presented in exhibit 1, line 42, page 42.

Table 6

Federal Firm Energy Surplus/Deficit Projections Assuming Existing Loads, Resources, and Contracts Under 1937 Water Conditions

Energy in Average Megawatts

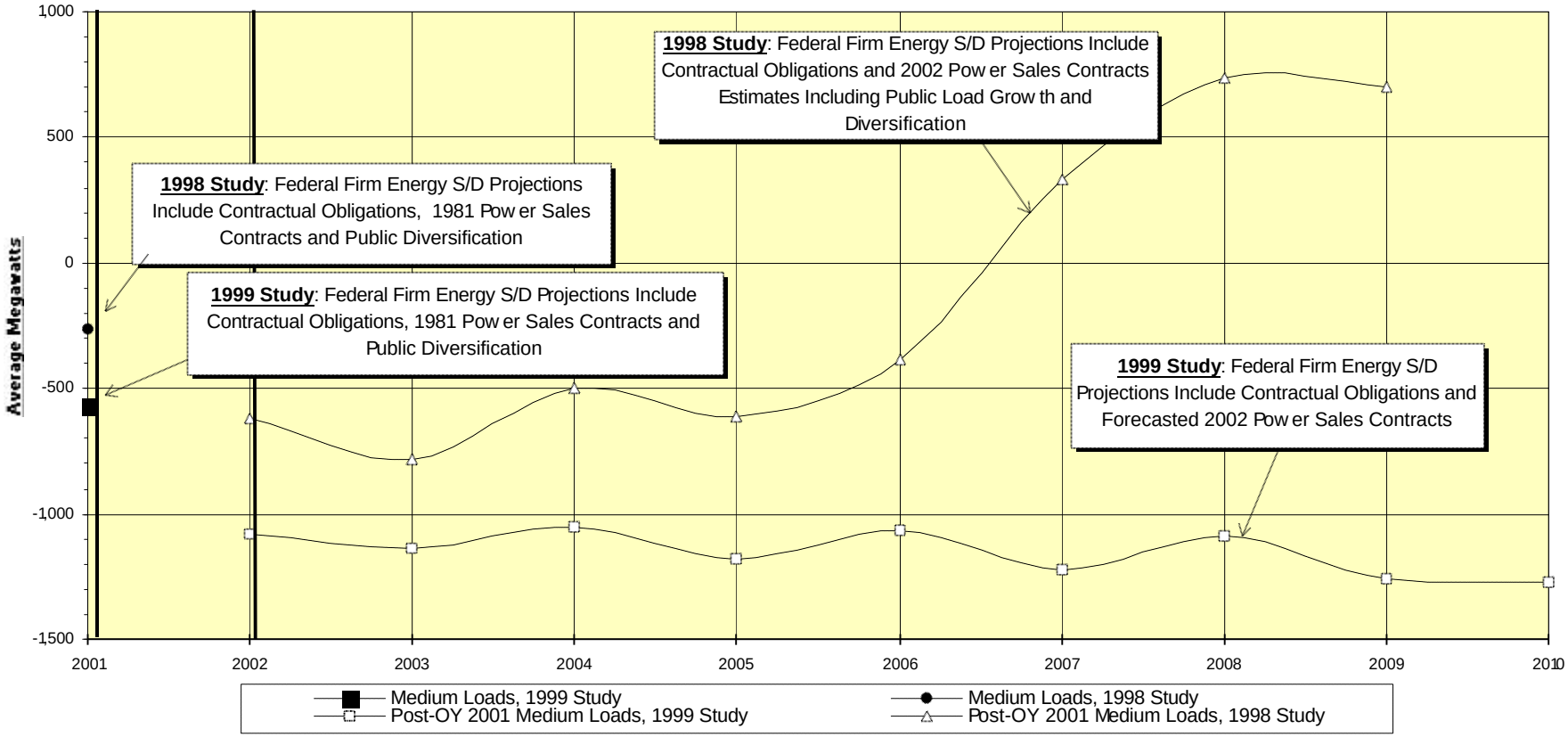
Medium	Operating Year[1]									
Load	2001	2002[2]	2003	2004	2005	2006	2007	2008	2009	2010
Scenario	-569	-1,080	-1,138	-1,056	-1,181	-1,068	-1,221	-1,091	-1,260	-1,270

[1] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 2000-01 is August 1, 2000, through July 31, 2001.

[2] Beginning October 1, 2001, BPA's public, IOU, and DSI load estimates assume the 2002 power sales contract subscription process. Public agency and IOU contracts remain in effect through the end of the study period; the new DSI contracts expire September 30, 2006.

Figure 4

Federal Firm Annual Energy Surplus/Deficit Projections



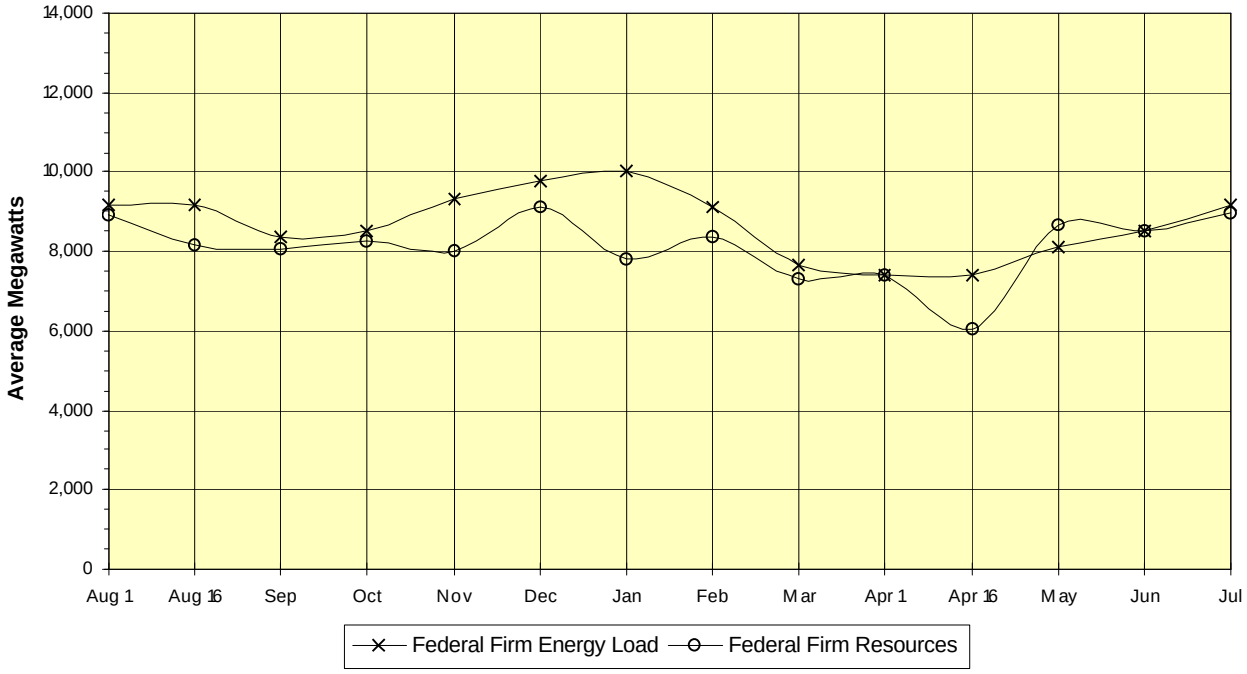
To show the monthly variability of the loads and resources study, the monthly Federal system energy components under 1937 water conditions for OY 2000-01, 2004-05, and 2009-10 are shown in exhibits 2 through 4, pages 45 through 51.

Figure 5, below, shows the monthly Federal system firm energy loads and resources for OY 2000-01. This figure illustrates the timing of Federal system monthly surpluses and deficits under the provisions of the PNCA.

Under critical water conditions, Federal hydro resources are generally operated at lower power production levels during the January through March timeframe because the reservoirs store water then to release in the spring to assist fish passage.

Figure 5

Federal Monthly Firm Energy Loads and Resources for OY 2000-01[1]
Assuming 1937 Water Conditions
Medium Load Forecast



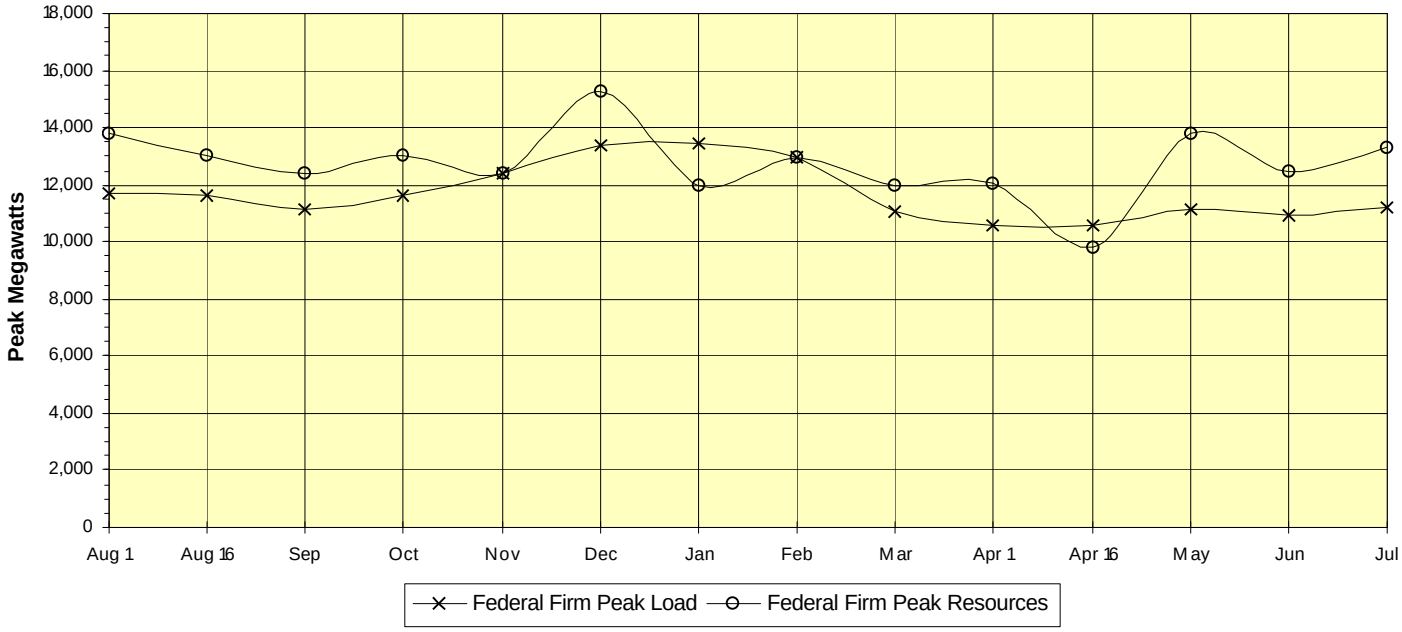
[1] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 2000-2001 is August 1, 2000, through July 31, 2001.

Federal Firm Capacity Surplus/Deficit Projections

Figure 6, below, shows the monthly Federal system peak loads and resources for OY 2000-01 under 1937 water conditions assuming normal weather conditions and a 50 percent probability that the actual peak loads will be exceeded. This figure illustrates the timing and magnitude of the Federal system capacity surpluses and deficits in any operating year.

Figure 6

Federal Monthly Capacity Loads and Resources Under Normal Weather Conditions for OY 2000-01



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 NWE'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 operation; 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.

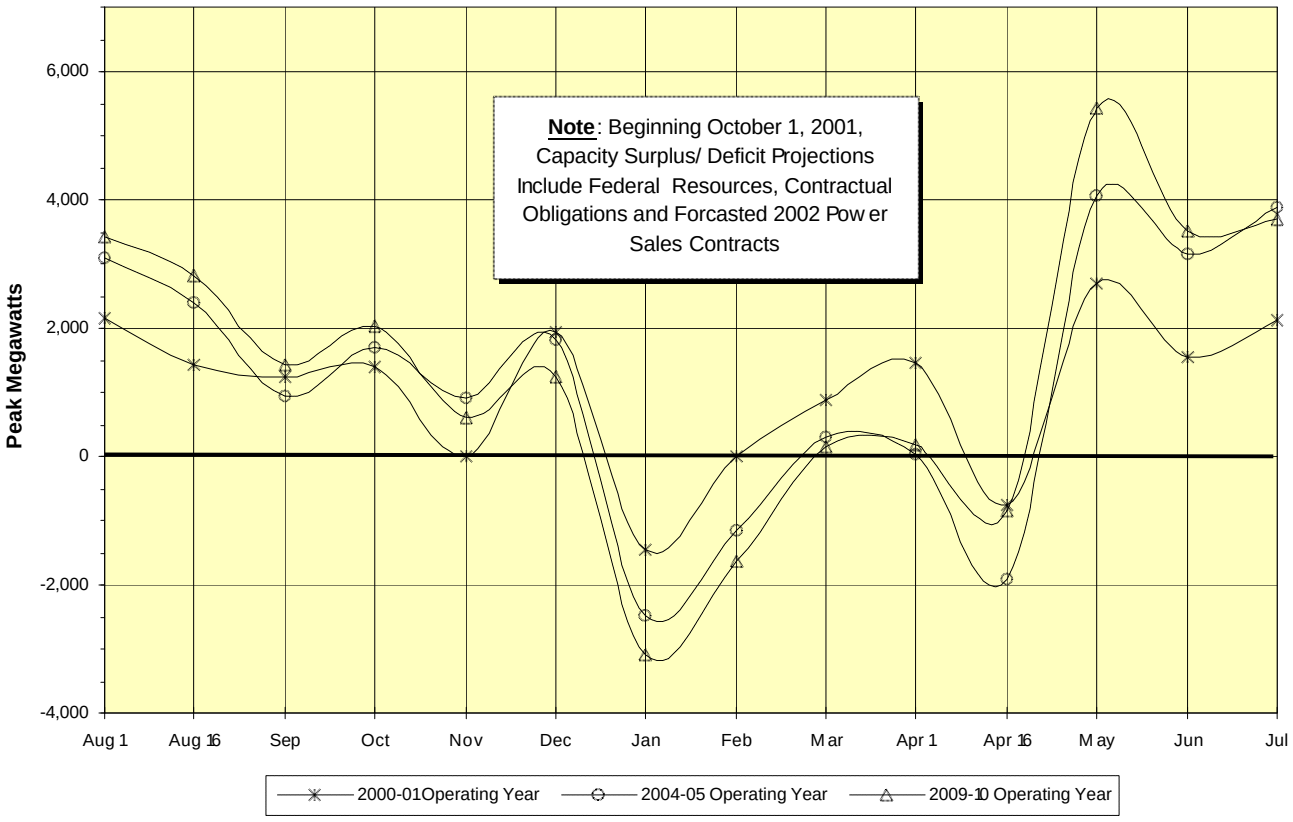
If BPA makes additional market purchases, any added capacity will increase capacity available to the Federal system.

Figure 7, page 22, shows the Federal firm capacity surplus/deficit projections for OY 2000-01, 2004-05, and 2009-10.

A 10-year summary of Federal capacity surplus/deficit projections, assuming normal weather conditions, is presented in exhibit 5, page 53. Monthly Federal system capacity components under normal weather and 1937 water conditions for OY 2000-01, 2004-05, and 2009-10, are shown on line 48 in exhibits 6 through 8, pages 55 through 61.

Figure 7

Federal Monthly Capacity Surplus/Deficit Projections Under Normal Weather Conditions



Federal Loads and Resources Comparison—Energy

Table 7, page 25, shows changes in the energy analysis of the 1999 Pacific Northwest Loads and Resources Study compared to the 1998 study for OY 2000-01 through 2009-10. The table lists the Federal firm energy surplus/deficit projections for the 1998 study and changes since last year to obtain the current firm energy surplus. For "Load Changes," table 7, line 2, positive values indicate load increases and negative values show load decreases. Similarly, for "Resource Changes," table 7, 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. As previously stated, 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 1981 DSI power sales contracts and block sales through September 30, 2001, and the estimated 2002 power sales contracts October 1, 2001, through September 30, 2006.

Public Agencies' Power Sales Contract Purchases

The small and non-generating public agencies' purchases are different mainly due to the post-October 1, 2001, power sales contract obligation estimates and variations in the new hydro regulations used in this study.

Exports

The 1999 White Book analysis includes the following new or changed Federal export transactions: BPA to Azusa, power sale and capacity sale; BPA to Banning, power sale and capacity sale; BPA to BART, power sale; BPA to BC Hydro, Canadian Entitlement; BPA to Burbank, power sale and capacity/energy exchange; BPA to Colton, power exchange and capacity sale; BPA to eastern entities, power sale; BPA to Farmington, power sale; BPA to Federal agencies, power sales; BPA to Glendale, power sale and capacity/energy exchange; BPA to the M-S-R Public Agency (M-S-R), power sale; BPA to other entities, power sale; BPA to Pasadena, power sale, capacity/energy exchange and seasonal exchange; BPA to Riverside, capacity sale, capacity/energy exchange and seasonal exchange; BPA to SCE, power sale, environmental storage and option capacity; and BPA to SPP for Harney and Wells.

Contracts Out

This analysis has the following new or changed BPA intraregional contracts out: BPA to Avista Utility Corporation (WWP Division), deferred power exchange, power sales, energy sale and WNP-3 settlement; BPA to Bandon, power sales; BPA to Big Bend Electric Cooperative, summer seasonal product and power sale; BPA to Central Electric Cooperative, summer seasonal product; BPA to Clatskanie, power sale; BPA to the City of Ashland, power sale; BPA to Columbia Basin Electric Cooperative, summer seasonal product; BPA to Columbia River PUD, power sales; BPA to Columbia Rural Electric Association, summer seasonal product; BPA to Cowlitz County PUD, presubscription power sale and power sale; BPA to Douglas County PUD, power sale; BPA to Eugene Water and Electric Board, presubscription power sale and power sale; BPA to the City of Forest Grove, power sale; BPA to Harney Electric Cooperative, summer seasonal product; BPA to the City of Idaho

Falls, power sale; BPA to Inland Power and Light, summer seasonal product; BPA to Lewis County PUD, power sale; BPA to Lower Valley Electric Cooperative, power sale; BPA to Mason County PUD, power sale; BPA to the City of McMinnville, power sale; BPA to Midstate Electric Cooperative, summer seasonal product; BPA to the City of Milton-Freewater, power sale; BPA to Mission Valley, summer seasonal product; BPA to Modern Electric Cooperative, power sale; BPA to the City of Monmouth, power sale; BPA to Nespelem Valley Electric Cooperative, summer seasonal product; BPA to Northern Wasco PUD, power sale; BPA to Okanogan, summer seasonal product; BPA to other entities, power sales; BPA to PP&L, capacity sale, power sale for Southern Idaho, Centralia standby, seasonal power exchange and seasonal energy exchange; BPA to PGE, capacity sale, power sale for Canby, and other power sales; BPA to PSE, Baker Head loss, WNP-3 settlement, and power sale; BPA to Ravalli Electric Cooperative, power sale; BPA to Richland, power sale; BPA to the City of Salem, green power sale; BPA to small and nongenerating public utilities, IOUs and others, power sales; BPA to small and nongenerating public utilities, summer seasonal product; BPA to Snohomish County PUD, power sales; BPA to Springfield Utility Board, power sales and presubscription power sales; BPA to Surprise Valley, summer seasonal product; BPA to TPU, power sale; BPA to Tillamook County PUD, power sale; BPA to United Electric Cooperative, power sale; BPA to Umatilla Electric Cooperative, summer seasonal product; BA to USBIA Wapato, summer seasonal product; BPA to Vigilante Electric Cooperative, summer seasonal product; BPA to Wasco Electric Cooperative, summer seasonal product; and BPA to Western Oregon Electric Cooperative, power sale.

Regulated Hydro

This year's study assumes the 12-month annual average energy, consistent with PNCA monthly assured capability for Federal resources, using 1937 water conditions under the NMFS 1995 and 1998 BOs when analyzing the Federal system firm hydro capability.

Independent Hydro

Independent hydro generation is generally the same as was forecasted in last year's study.

Imports

This analysis includes the following new or changed interregional contracts: Colton to BPA, power exchange; other entities to BPA, power sales; Pasadena to BPA, exchange energy, peak replacement, and seasonal replacement; Riverside to BPA, exchange energy, peak replacement, and seasonal exchange energy; PowerEx to BPA for Azusa, Banning and Colton, and peak replacement; Sierra to BPA for Harney and Wells; and SCE to BPA, environmental storage, option energy, and option capacity peak replacement.

Contracts In

This analysis includes the following changes in BPA intraregional contracts in: Avista Utility Corporation (WWP Division) to BPA, WNP-3 settlement; other entities to BPA, power sales; PP&L to BPA, surplus power exchange, seasonal exchange, and peak replacement; PGE to BPA, peak replacement; and PSE to BPA, WNP-3 settlement.

Federal Transmission Losses

Federal and regional transmission losses are now treated as a resource reduction. Federal and regional total resources less reserves and maintenance are reduced by 2.82 percent for energy. In prior studies, transmission losses were treated as an increase in Federal loads rather than a reduction in Federal resources.

Table 7

Federal Firm Energy Surplus/Deficit Projections, Difference Between the 1999 Final White Book and the 1998 White Book Under 1937 Water Conditions [1] (Energy in Average Megawatts)

Operating Year[2]	2001	2002	2003	2004	2005	2006	2007	2008	2009
1. 1998 White Book Federal Firm Surplus/Deficit	-219	-548	-711	-424	-533	-307	410	815	777
2. Firm Load Changes for the 1999 Final White Book (+ indicates load increase; - indicates load decrease)									
a) DSI Loads[3]	9	-305	-512	-512	-512	-512	-1,712	-1,952	-1,952
b) Federal Agencies + USBR[4]	-29	-54	-59	-59	-60	-59	-61	-60	-60
c) Public PSC Sales [3]	86	346	366	496	568	722	1,494	1,692	1,799
d) IOU PSC Sales [3]	0	833	1,000	1,000	1,000	1,000	2,000	2,200	2,200
e) Exports[5]	-17	71	149	218	186	126	-12	-80	-50
f) Intraregional Transfers Out	71	-281	-342	-362	-411	-411	-232	-136	-135
g) Removal of Transmission Losses	-225	-191	-189	-189	-190	-188	-187	-187	-188
h) Miscellaneous	0	1	0	-1	2	-1	2	0	-1
Total Load Change	**-105**	**420**	**413**	**591**	**583**	**677**	**1,292**	**1,477**	**1,613**
3. Resource Changes for the 1999 Final White Book (+ indicates resource increase; - indicates resource decrease)									
a) Regulated Hydro (1937 12-Month Average)	-204	-120	-120	-119	-119	-120	-120	-119	-120
b) Independent Hydro (1937 12-Month Average)	10	10	10	10	10	10	10	10	10
c) NFD CER (Canada) to BPA	0	0	0	-3	-7	-4	-5	-5	-6
d) Imports[6]	4	45	74	74	94	75	25	-4	-2
e) Intraregional Transfers In	-26	199	268	247	199	199	-17	-76	-76
f) Large Thermal	0	0	0	0	0	0	0	0	0
g) Federal Transmission Losses	-238	-247	-246	-248	-241	-244	-233	-235	-231
h) Miscellaneous	-1	1	0	-2	-1	0	1	0	1
Total Resource Changes	**-455**	**-112**	**-14**	**-41**	**-65**	**-84**	**-339**	**-429**	**-424**
4. 1999 Final White Book Federal Firm Surplus/Deficit (line 1 – line 2 + line 3)	**-569**	**-1,080**	**-1,138**	**-1,056**	**-1,181**	**-1,068**	**-1,221**	**-1,091**	**-1,260**

[1] 1998 and 1999 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 2000-01 is August 1, 2000, through July 31, 2001.
[3] The DSI loads include signed contracts that expire September 30, 2001, and forecasted contracts that begin October 1, 2001, and expire September 30, 2006.
[4] Public agency, Federal agency, USBR, and IOU power sales contracts are based on the 1981 contracts through September 30, 2001. Beginning October 1, 2001, these loads are based on the 2002 power sales contract obligation estimates used in BPA's 2002 Final Rate Case.
[5] These exports include: power sale-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] These imports include: option energy from SCE through October 31, 2004. 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.

Federal Loads and Resources Comparison—Capacity

Table 8, page 27, shows changes in the capacity analysis of the 1999 Pacific Northwest Loads and Resources Study compared to the 1998 study for OY 2000-01. The table lists the Federal system firm 50-hours-per-week capacity surplus/deficit projections for the 1998 study and changes since last year to obtain the current firm 50-hours-per-week capacity surplus/deficit projections. For "Load Changes," table 8, line 2, positive values indicate load increases and negative values show load decreases. Similarly, for "Resource Changes," table 8, 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," page 23, plus the following changes that pertain only to the capacity analysis.

Sustained Peaking Adjustment

The 50-hours-per-week sustained peaking adjustment in this year's analysis decreased the Federal capacity surplus in the hydro regulation versus the 1998 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.

Federal Transmission Losses

Federal and regional transmission losses are now treated as a resource reduction. Federal and regional total resources less reserves and maintenance are reduced by 3.35 percent for peak. In prior studies, transmission losses were treated as an increase in Federal loads, rather than a reduction in Federal resources.

Table 8

Federal Firm Capacity Surplus/Deficit Projections, Difference Between the 1999 Final White Book and the 1998 White Book for Operating Year 2000-01 Under 1937 Water Conditions[1] (Peak in Megawatts)

Operating Year[2] 2000-01	Aug1	Aug2	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr2	May	Jun	Jul
1. 1998 White Book Federal Firm Capacity Surplus/Deficit[3]	2,689	712	1,337	631	54	1,963	-70	-426	1,019	1,552	-765	3,012	3,446	2,356
2. Firm Load Changes for the 1999 Final White Book (+ indicates load increase; - indicates load decrease)														
a) DSI Loads[4]	0	0	0	190	179	-223	240	71	-438	-131	-131	55	62	213
b) Federal Agencies + USBR[5]	-172	-172	-141	-54	-7	-4	-4	-3	21	-53	-53	-117	-167	-164
c) Public PSC Sales[5]	123	115	143	98	126	149	142	146	132	130	132	145	156	142
d) IOU PSC Sales[5]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
e) Exports[6]	603	603	604	-45	-36	-36	-114	-114	-114	-83	-83	-92	-92	-92
f) Intraregional Transfers Out	26	26	-50	282	-18	-18	58	172	472	117	117	-178	-43	-14
g) Removal of Transmission Losses	-284	-295	-315	-381	-431	-490	-481	-443	-380	-351	-337	-342	-295	-288
h) Federal Diversity	9	10	21	-8	25	19	15	5	-27	7	5	36	15	12
i) Miscellaneous	0	0	-1	0	0	0	-1	-1	0	0	1	1	-2	0
Total Load Change	**305**	**287**	**261**	**82**	**-162**	**-603**	**-145**	**-167**	**-334**	**-364**	**-349**	**-492**	**-366**	**-191**
3. Resource Changes for the 1999 Final White Book (+ indicates resource increase; - indicates resource decrease)														
a) Regulated Hydro (1937 12-Month Avg.)	-310	-357	-405	-506	-500	-458	-431	-470	-474	-486	-370	-242	-188	-295
b) Independent Hydro (1937 12-Month Avg.)	35	35	35	34	27	30	30	30	31	33	34	35	35	35
c) Sustained Peaking Adjustment	0	1,262	349	1,510	386	114	-689	1,229	441	450	341	-120	-1,706	228
d) NFD CER (Canada) to BPA	-1	-1	4	-1	4	4	4	-2	-1	-2	-1	4	-1	4
e) Imports[7]	99	99	100	0	-4	-4	-4	-4	0	0	0	0	0	0
f) Intraregional Transfers In	425	425	516	291	291	200	-50	-50	-50	-25	-25	-25	-25	50
g) Large Thermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
h) Hydro Reserves	14	16	19	23	24	22	20	22	22	23	16	10	7	13
i) Large Thermal Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0
j) Spinning Reserves	-3	-41	-19	-46	-17	-12	10	-40	-22	-22	-1	16	59	-2
k) Federal Transmission Losses	-479	-452	-429	-452	-430	-530	-416	-449	-415	-417	-340	-479	-433	-462
l) Miscellaneous	-1	1	0	0	0	0	-2	-1	0	-1	0	0	-1	0
Total Resource Change	**-221**	**987**	**170**	**853**	**-219**	**-634**	-1,528	**265**	**-468**	**-447**	**-346**	**-801**	-2,253	**-429**
4. 1999 Final White Book Federal Firm Capacity Surplus/Deficit (line 1 – line 2 + line 3)	**2,163**	**1,412**	**1,247**	**1,403**	**-3**	**1,932**	-1,453	**6**	**885**	**1,469**	**-762**	**2,704**	**1,559**	**2,118**

[1] 1998 and 1999 White Book analyses both assume 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 2000-01 is August 1, 2000, through July 31, 2001.
[3] 1998 White Book Peak Federal Surplus/Deficit without Extreme Weather Adjustments.
[4] The DSI loads include signed contracts that expire September 30, 2001, and forecasted contracts that begin October 1, 2001, and expire September 30, 2006.
[5] Public agency, Federal agency, USBR, and IOU PSC sales are based on the 1981 power sales contracts through September 30, 2001. Beginning October 1, 2001, these PSC sales are based on the 2002 power sales contract obligation estimates used in BPA's 2002 Final Rate Case.
[6] These exports include: 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.
[7] These imports include: option energy from SCE through OY 2004. 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.

Section 5: Resource Planning Alternatives

BPA's Resource Strategy

As previously discussed, Federal hydro system operations have changed to reflect implementation of the Columbia River flow augmentation targets from the NMFS 1995 and 1998 BOs. 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. 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 contracts 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 some 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 NMFS 1995 and 1998 BOs changed the shape of the hydro system and its ability to meet energy needs in all months.

The region also has experienced a shift in emphasis in power marketing from supply-driven to price-driven. Market changes are dictating changes in resource risk management. One way to manage resource risks is to use probabilistic analyses on water and loads. 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. BPA has non-exclusive contracts for the output of three combustion turbine projects that carry a combined 854 average megawatts (911 peak megawatts). If these resources are available, they can potentially be obtained within three years. Prior to acquiring the output from these projects, BPA must first conduct an administrative hearing and obtain determinations from the Council and the Administrator that the resource is needed and consistent with the Council's Plan. The RCP resources are shown in line 1, table 9, page 30.

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 for BPA to purchase upon conversion of the Southwest surplus firm energy sales to capacity/energy exchanges. The amount of added resources that would become available by purchasing supplemental energy is shown in table 9, line 4.

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, October 31, 2004, for SCE and April 15, 2008, for the cities of Burbank, Glendale and Pasadena. 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 9, lines 2 and 3, page 30.

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 that will increase flexibility in operating the hydro system when needed. Since this energy may not be available in every year, BPA needs to use probability methods for its inclusion as a firm resource, but has not done so for this loads and resources study. It may be included as a firm resource in future studies. The Federal system share of non-treaty storage energy is shown in table 9, line 5.

Table 9

Alternate Federal Contractual Resources
Energy in Average Megawatts

Operating Year[1]	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Resource Contingency Program[2]	0	0	854	854	854	854	854	854	854	854
2. Termination of PSW Surplus Power Sales	162	162	162	162	68	28	28	14	0	0
3. Exchange Energy from PSW	44	43	41	40	10	10	10	8	0	0
4. Supplemental Energy from PSW	43	44	46	47	3	3	3	3	0	0
5. Non-Treaty Storage	115	115	105	0	0	0	0	0	0	0
Total Contractual Options	364	364	1,208	1,103	935	895	895	879	854	854

[1] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 2000-01 is August 1, 2000, through July 31, 2001.
[2] These resources could be available as early as August 2003. Resource potential is 854 average megawatts.

Section 6: Regional Analysis

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

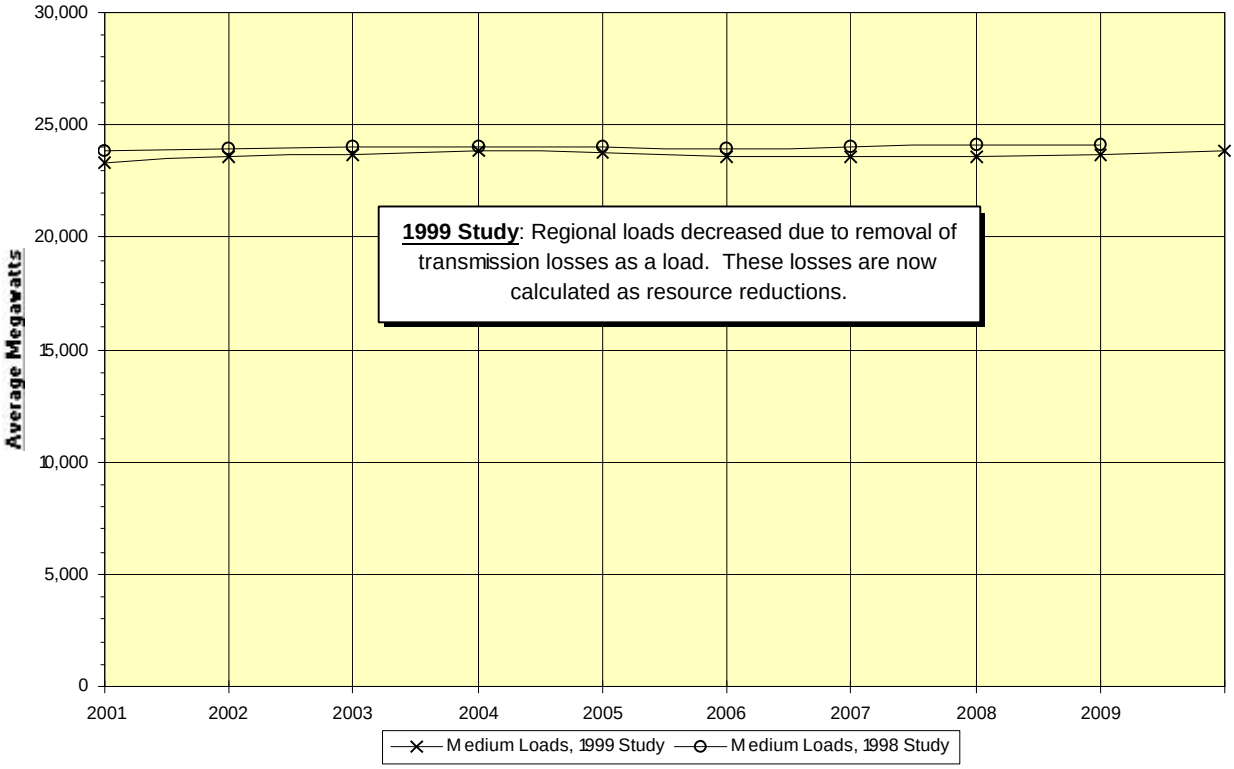
- Capacity surplus/deficit values do not reflect potential nighttime return problems on regional entities;
- The region experiences medium load growth;
- The Pacific Northwest Coordination Agreement, which expires June 30, 2003, is replaced with a like agreement;
- Federal surplus firm power sales and capacity/energy exchange agreements with SCE and the cities of Burbank, Glendale, and Pasadena are shown in power sales mode throughout the study period;
- BPA purchases option energy from SCE through October 31, 2004;
- SCE purchases option capacity from BPA through October 31, 2004;
- Sustained capacity limits are 50 hours per week;
- Transmission losses are a resource reduction; and
- All operating requirements currently adopted by the hydroelectric project owners and the firm planning assumptions for assured resource capability in the PNCA are included.

Regional Firm Energy Loads

Regional firm energy loads for OY 2000-01 through 2009-10 based on BPA's 1999 White Book forecast are shown in figure 8, page 32. The load projections also include all intraregional contracts made by Pacific Northwest utilities and the Federal system. The regional firm energy load is also presented on line 4 in exhibit 19, page 80, and the monthly firm loads for OY 2000-01, 2004-05, and 2009-10 are presented in exhibits 20 through 22, pages 84 through 89. Regional load forecasts no longer include transmission losses, which are now calculated as resource reductions.

Figure 8

Regional Firm Annual Energy Loads
1999 BPA Forecast



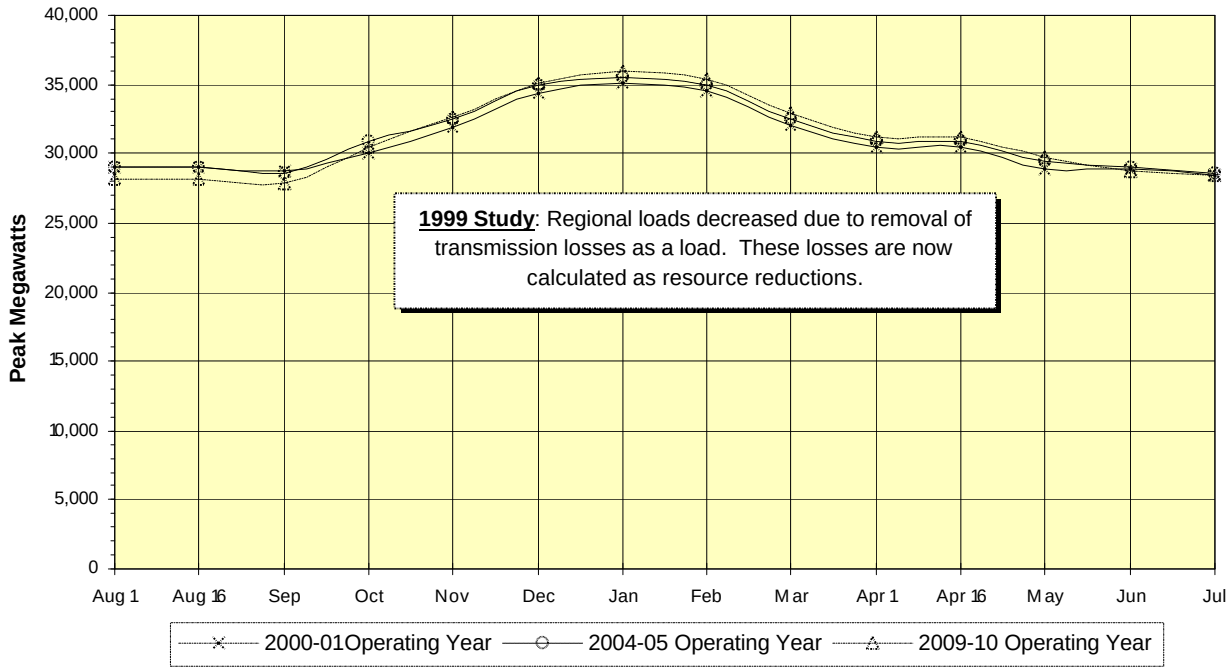
Regional Firm Peak Loads

Figure 9, below, illustrates the regional firm peak loads for OY 2000-01, 2004-05, and 2009-10. The figures show the expected 1-hour monthly demand under BPA's 1999 White Book load forecast. The peak loads are estimated based on normal weather conditions with a 50-percent probability that the forecasted peak load will be exceeded. The projected regional peak loads include all intraregional contracts made by Pacific Northwest utilities, including the Federal system. The peak load projections are decreased by a diversity factor because all peak electrical demands do not occur simultaneously throughout the region.

The monthly regional firm peak loads are presented on line 4 and the firm peak loads are presented on line 34 of exhibits 24 through 26, pages 94 through 99.

Figure 9

Regional Firm Peak Loads for OY 2000-01, 2004-05, and 2009-10 Under Normal Weather Conditions



Regional Firm Resources

Table 10, below, summarizes the regional system resources for OY 2000-01. 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 ENW's WNP-2 nuclear plant. A detailed listing of all regional generating resources is contained in the 1999 Pacific Northwest Loads and Resources Study Technical Appendix (available September 2000 on BPA's external web site at http://www.bpa.gov/power/ whitebook99).

Table 10

Regional Firm Resources for OY 2000-01[1] Based on 1936-37 Water Conditions
Capacity Based on January 2001

Project Type	Sustained Peak Capacity (MW)	Generating Peak Capacity % of Total	Firm Energy (aMW) 12-Month Average	Firm Energy % of Total
Hydro	24,613	67	11488	56
Coal	4.530	12	3,985	19
Nuclear	1,162	3	875	4
Imports	2,988	8	1,737	9
Combustion Turbines	775	2	688	3
Non-Utility Generation	1,155	3	1,056	5
Miscellaneous	1,733	5	804	4
Total Resources	36,956	100	20,633	100

Regional Firm Energy Surplus/Deficit Projections

The regional firm energy surplus/deficit projections for OY 2000-01 through 2009-10 assuming 1937 water conditions are presented in table 11 and depicted graphically in figure 10, page 35. The region experiences firm energy deficits in all study years.

The regional energy surpluses/deficits are presented on line 35 in exhibit 19, page 80. Monthly regional firm energy loads and resources balances for OY 2000-01, 2004-05, and 2009-10 are presented in exhibits 20 through 22, on pages 84 through 89.

[1] Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 2000-01 is August 1, 2000, through July 31, 2001.

Table 11

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

Energy in Average Megawatts

Medium Load Scenario	Operating Year									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	-3,319	-3,517	-3,784	-3,815	-3,945	-3,773	-3,887	-3,837	-4,097	-4,178

Figure 10

Regional Firm Annual Energy Surplus/Deficit Projections

Regional Firm Capacity Surplus/Deficit Projections

Figure 11, page 37, shows the region's firm 50-hours-per-week capacity surplus/deficit projections for OY 2000-01, 2004-05, and 2009-10. The regional firm capacity surpluses/deficits incorporate the regional assumptions on page 31.

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:

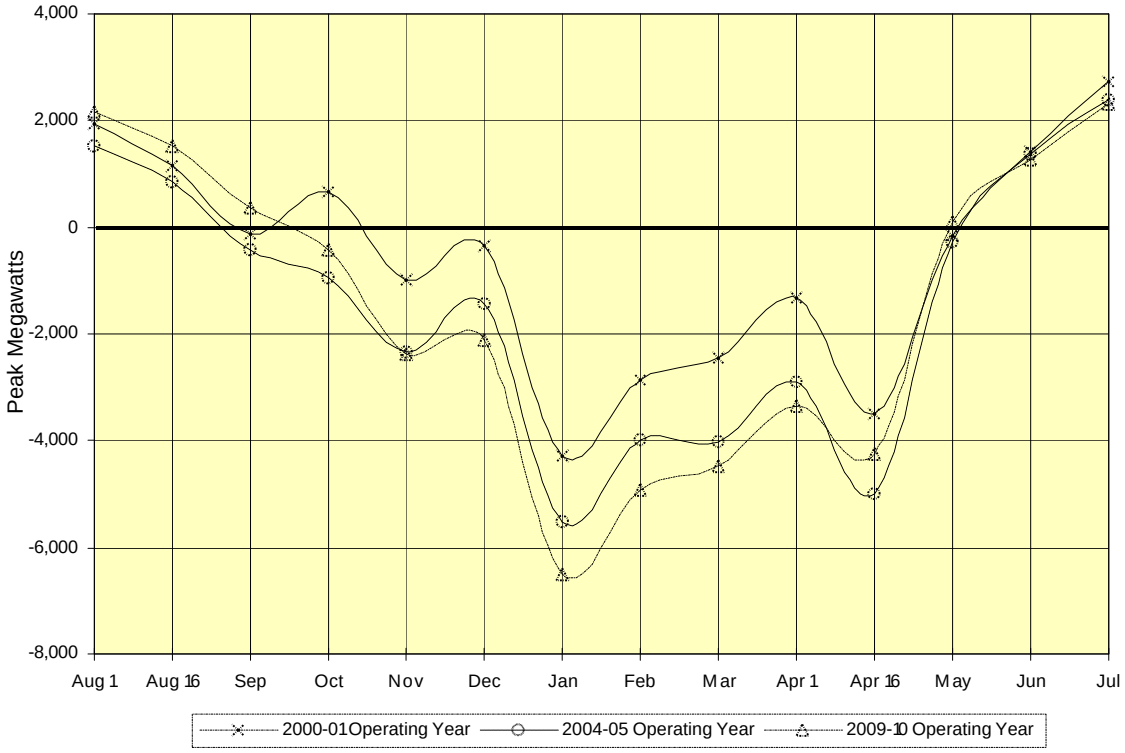
- Low regional system loads;
- Nonpower hydro requirements that dictate minimum streamflows; and
- The inability of the region's thermal resources to cycle from day to night.

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 is shown in exhibit 23, page 91. Monthly regional firm capacity surpluses/deficits for OY 2000-01, 2004-05, and 2009-10 are presented in exhibits 24 through 26 on pages 94 through 99.

Figure 11

Regional Monthly Firm Capacity Surplus/Deficit Projections Under Normal Weather Conditions



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Section 7: Federal System Exhibits

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Exhibit 1

Federal System Annual Energy Analysis Under 1937 Water Conditions for 10 Operating Years

Exhibit 1: Medium Loads

TABLE 2: FEDERAL SYSTEM SHEET 1 OF 2

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

M E D I U M L O A D S

1999 WHITE BOOK: 12/31/99

OPERATING YEAR RUN DATE: 12/31/99

MEGAWATTS	2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
NON-UTILITY LOADS										
1 FED AGENCIES 1981 PSC 1/	149	24	0	0	0	0	0	0	0	0
2 USBR 1981 PSC 1/	38	10	0	0	0	0	0	0	0	0
3 DSI 1981 PSC 1/	1961	447	0	0	0	0	0	0	0	0
4 FED AGENCIES 2002 PSC 2/	0	103	122	123	123	124	124	125	126	126
5 USBR 2002 PSC 2/	0	27	38	38	38	38	38	38	38	38
6 DSI 2002 PSC 2/	0	1200	1440	1440	1440	1440	240	0	0	0
7 FIRM NON-UTILITY LOADS	2148	1812	1599	1600	1601	1601	402	163	163	164
UTILITY TRANSFERS OUT										
8 NGP 1981 PSC SALES 1/	2218	377	0	0	0	0	0	0	0	0
9 GPU 1981 PSC SALES 1/	1594	246	0	0	0	0	0	0	0	0
10 IOU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0
11 PUB 2002 PSC SALES 2/	0	3449	4092	4222	4294	4448	5220	5418	5525	5668
12 IOU 2002 PSC SALES 2/	0	833	1000	1000	1000	1000	2000	2200	2200	2200
13 EXPORTS 3/	1246	1385	1388	1396	1246	1156	997	855	798	797
14 INTRA-REG TRANSFERS OUT 4/	1401	1349	1437	1391	1348	1281	646	541	541	528
15 SUPP & ENTITLE CAP OUT 5/	49	46	28	0	0	0	0	0	0	0
16 CSPE TO WEST GROUP UTIL 6/	98	94	61	0	0	0	0	0	0	0
17 FED DIVERSITY 7/	0	0	0	0	0	0	0	0	0	0
18 FIRM LOADS	8753	9591	9606	9609	9490	9486	9266	9177	9227	9356
HYDRO RESOURCES										
19 REGULATED HYDRO	6206	6219	6227	6235	6242	6249	6257	6264	6267	6267
20 INDEPENDENT HYDRO	389	403	404	404	404	404	404	404	404	404
21 SUS. PKNG. ADJUSTMENT 8/	0	0	0	0	0	0	0	0	0	0
22 NFD CER(CSPE) TO BPA 9/	22	21	14	0	0	0	0	0	0	0
23 NFD CER(CAN) TO BPA 10/	81	80	100	142	141	140	139	138	137	136
24 RESTORATION 11/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
25 TOTAL HYDRO	6671	6697	6719	6755	6761	6767	6774	6780	6782	6781
OTHER RESOURCES										
26 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0
28 RENEWABLES 12/	29	29	29	29	29	29	29	29	29	29
29 COGENERATION	0	0	0	0	0	0	0	0	0	0
30 IMPORTS 13/	306	338	367	367	281	262	212	183	183	182
31 INTRA-REG TRANSFERS IN 14/	478	633	658	606	558	558	342	283	283	283
32 SUPP & ENTITLE CAP IN 15/	48	45	28	0	0	0	0	0	0	0
33 LARGE THERMAL 16/	875	1000	875	1000	875	1000	875	1000	875	1000
34 NON-UTILITY GENERATION 17/	15	16	38	45	45	45	45	45	45	45
35 RESOURCE ACQUISITIONS 18/	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	8422	8758	8714	8802	8550	8662	8277	8321	8198	8321

Exhibit 1: Medium Loads (continued)

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

1999 WHITE BOOK: 12/31/99

OPERATING YEAR RUN DATE: 12/31/99

MEGAWATTS	2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
RESERVES MAINTENANCE AND TRANSMISSION LOSSES										
37 HYD SM THRM & MISC RES 19/	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES 20	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES 21/	0	0	0	0	0	0	0	0	0	0
40 FED HYDRO MAINTENANCE 22/	0	0	0	0	0	0	0	0	0	0
41 FED TRANSMISSION LOSSES 23/	-238	-247	-246	-248	-241	-244	-233	-235	-231	-235
42 NET RESOURCES	8185	8511	8468	8554	8309	8418	8044	8086	7967	8086
SURPLUS/DEFICITS										
43 FIRM SURPLUS/DEFICIT	-569	-1080	-1138	-1056	-1181	-1068	-1221	-1091	-1260	-1270

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.
A. BPA TO BURBANK: PS & C/N/X C. BPA TO PASADENA: PS & C/N/X
B. BPA TO GLENDALE: PS & C/N/X D. BPA TO SCE: PS & C/N/X
2. SCE TO BPA: OPTION ENERGY IS INCLUDED THROUGH 10/31/2004.
3. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH 10/31/2004.
4. 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

Exhibit 2: OY 2000-01

TABLE 2: FEDERAL SYSTEM SHEET 1 OF 2

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

M E D I U M L O A D S

1999 WHITE BOOK: 12/31/99

2000- 1 OPERATING YEAR RUN DATE: 12/31/99

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
NON-UTILITY LOADS															
1 FED AGENCIES 1981 PSC 1/	147	147	139	143	151	168	162	163	155	143	143	137	136	145	149
2 USBR 1981 PSC 1/	78	78	48	23	0	0	0	1	13	39	39	72	78	102	38
3 DSI 1981 PSC 1/	2486	2486	1962	2274	2273	2273	2168	1456	776	923	923	2097	2218	2629	1961
4 FED AGENCIES 2002 PSC 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 USBR 2002 PSC 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 DSI 2002 PSC 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 FIRM NON-UTILITY LOADS	2711	2711	2149	2440	2424	2441	2330	1620	944	1105	1105	2306	2432	2876	2148
UTILITY TRANSFERS OUT															
8 NGP 1981 PSC SALES 1/	2129	2132	1924	1899	2319	2501	2697	2530	2295	2253	2254	1962	2009	2096	2218
9 GPU 1981 PSC SALES 1/	1270	1282	1280	1510	1777	1878	2106	2046	1744	1519	1512	1417	1255	1322	1594
10 IOU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PUB 2002 PSC SALES 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 IOU 2002 PSC SALES 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 EXPORTS 3/	1654	1658	1607	1149	1028	1047	1147	1150	1079	1125	1124	1164	1371	1425	1246
14 INTRA-REG TRANSFERS OUT 4/	1234	1235	1231	1382	1618	1771	1570	1608	1462	1258	1259	1108	1279	1290	1401
15 SUPP & ENTITLE CAP OUT 5/	49	49	49	49	49	49	49	49	49	48	48	48	48	48	49
16 CSPE TO WEST GROUP UTIL 6/	99	99	99	99	99	99	99	99	99	95	95	95	95	95	98
17 FED DIVERSITY 7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 FIRM LOADS	9146	9166	8340	8528	9314	9786	9998	9102	7671	7403	7397	8100	8490	9152	8753
HYDRO RESOURCES															
19 REGULATED HYDRO	6806	5991	5732	6079	5899	7114	5826	6275	5113	5135	4953	7686	6269	7031	6206
20 INDEPENDENT HYDRO	415	423	350	374	299	231	170	191	269	426	508	705	749	444	389
21 SUS. PKNG. ADJUSTMENT 8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 NFD CER(CSPE) TO BPA 9/	22	22	22	22	22	22	22	22	22	21	21	21	21	21	22
23 NFD CER(CAN) TO BPA 10/	81	81	81	81	81	81	81	81	81	80	80	80	80	80	81
24 RESTORATION 11/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
25 TOTAL HYDRO	7298	6491	6159	6530	6275	7422	6073	6543	5459	5636	5536	8466	7093	7550	6671
OTHER RESOURCES															
26 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 RENEWABLES 12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27	29
29 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 IMPORTS 13/	249	250	280	255	267	336	453	551	488	489	173	82	174	205	306
31 INTRA-REG TRANSFERS IN 14/	549	552	742	618	617	520	387	387	454	400	401	289	401	375	478
32 SUPP & ENTITLE CAP IN 15/	48	48	48	48	48	48	48	48	48	47	47	47	47	47	48
33 LARGE THERMAL 16/	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	0	0	1000	1000	875
34 NON-UTILITY GENERATION 17/	5	5	13	13	16	19	19	19	17	16	16	15	16	13	15
35 RESOURCE ACQUISITIONS 18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	9176	8373	8269	8492	8252	9377	8012	8579	7497	7618	6203	8926	8758	9217	8422

Exhibit 2: OY 2000-01 (continued)

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

1999 WHITE BOOK: 12/31/99
2000- 1 OPERATING YEAR RUN DATE: 12/31/99

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 AND TRANSMISSION LOSSES															
37 HYD SM THRM & MISC RES 19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES 20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES 21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FED HYDRO MAINTENANCE 22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 FED TRANSMISSION LOSSES 23/	-259	-236	-233	-239	-233	-264	-226	-242	-211	-215	-175	-252	-247	-260	-238
42 NET RESOURCES	8917	8137	8036	8253	8020	9112	7786	8337	7286	7403	6028	8675	8511	8957	8185
SURPLUS/DEFICITS															
43 FIRM SURPLUS/DEFICIT	-229	-1029	-304	-276	-1294	-674	-2211	-765	-386	0	-1370	574	21	-195	-569

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.
A. BPA TO BURBANK: PS & C/N/X C. BPA TO PASADENA: PS & C/N/X
B. BPA TO GLENDALE: PS & C/N/X D. BPA TO SCE: PS & C/N/X
2. SCE TO BPA: OPTION ENERGY IS INCLUDED THROUGH 10/31/2004.
3. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH 10/31/2004.
4. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.
A. BGP TO BPA: SUPPLEMENTAL ENERGY B. SCE TO BPA: SUPPLEMENTAL ENERGY

Exhibit 3: OY 2004-05

TABLE 2: FEDERAL SYSTEM SHEET 1 OF 2

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

M E D I U M L O A D S

1999 WHITE BOOK: 12/31/99

2004- 5 OPERATING YEAR RUN DATE: 12/31/99

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
NON-UTILITY LOADS															
1 FED AGENCIES 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 USBR 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 DSI 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FED AGENCIES 2002 PSC 2/	116	116	112	107	124	141	146	149	125	119	119	111	116	113	123
5 USBR 2002 PSC 2/	78	78	48	23	0	0	0	1	13	39	39	72	78	102	38
6 DSI 2002 PSC 2/	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440
7 FIRM NON-UTILITY LOADS	1634	1634	1600	1570	1564	1581	1586	1590	1578	1598	1598	1623	1634	1655	1601
UTILITY TRANSFERS OUT															
8 NGP 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 GPU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 IOU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PUB 2002 PSC SALES 2/	3156	3156	4132	3734	4290	5272	6133	6293	5253	4968	4968	3105	2645	2549	4294
12 IOU 2002 PSC SALES 2/	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
13 EXPORTS 3/	1470	1470	1448	1364	1106	1132	1132	1126	1090	1213	1213	1255	1359	1257	1246
14 INTRA-REG TRANSFERS OUT 4/	1173	1173	1060	1138	1469	1618	1615	1551	1337	1269	1269	1148	1368	1434	1348
15 SUPP & ENTITLE CAP OUT 5/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 CSPE TO WEST GROUP UTIL 6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 FED DIVERSITY 7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 FIRM LOADS	8433	8433	9240	8806	9429	10603	11466	11560	10258	10048	10048	8131	8006	7895	9490
HYDRO RESOURCES															
19 REGULATED HYDRO	6854	6025	5764	6112	5939	7158	5873	6302	5140	5176	4993	7729	6303	7058	6242
20 INDEPENDENT HYDRO	437	445	371	388	307	242	179	199	277	440	522	727	771	466	404
21 SUS. PKNG. ADJUSTMENT 8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 NFD CER(CSPE) TO BPA 9/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 NFD CER(CAN) TO BPA 10/	142	142	142	142	142	142	142	142	142	140	140	140	140	140	141
24 RESTORATION 11/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
25 TOTAL HYDRO	7407	6586	6251	6616	6362	7516	6168	6617	5533	5730	5629	8570	7188	7638	6761
OTHER RESOURCES															
26 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 RENEWABLES 12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27	29
29 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 IMPORTS 13/	284	284	318	355	348	403	377	333	303	254	223	82	100	231	281
31 INTRA-REG TRANSFERS IN 14/	521	521	724	724	724	633	633	633	700	433	433	171	283	521	558
32 SUPP & ENTITLE CAP IN 15/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 LARGE THERMAL 16/	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	0	0	1000	1000	875
34 NON-UTILITY GENERATION 17/	43	43	44	42	47	50	50	49	48	46	46	37	47	44	45
35 RESOURCE ACQUISITIONS 18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	9282	8461	8364	8765	8510	9633	8260	8663	7615	7493	6361	8888	8645	9461	8550

Exhibit 3: OY 2004-05 (continued)

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

1999 WHITE BOOK: 12/31/99
2004- 5 OPERATING YEAR RUN DATE: 12/31/99

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 AND TRANSMISSION LOSSES															
37 HYD SM THRM & MISC RES 19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES 20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES 21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FED HYDRO MAINTENANCE 22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 FED TRANSMISSION LOSSES 23/	-262	-239	-236	-247	-240	-272	-233	-244	-215	-211	-179	-251	-244	-267	-241
42 NET RESOURCES	9020	8223	8128	8518	8270	9362	8027	8419	7400	7282	6182	8637	8401	9194	8309
SURPLUS/DEFICITS															
43 FIRM SURPLUS/DEFICIT	587	-210	-1112	-288	-1159	-1241	-3439	-3141	-2858	-2766	-3866	506	395	1299	-1181

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.
A. BPA TO BURBANK: PS & C/N/X C. BPA TO PASADENA: PS & C/N/X
B. BPA TO GLENDALE: PS & C/N/X D. BPA TO SCE: PS & C/N/X
2. SCE TO BPA: OPTION ENERGY IS INCLUDED THROUGH 10/31/2004.
3. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH 10/31/2004.
4. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.
A. BGP TO BPA: SUPPLEMENTAL ENERGY B. SCE TO BPA: SUPPLEMENTAL ENERGY

Exhibit 4: OY 2009-10

TABLE 2: FEDERAL SYSTEM SHEET 1 OF 2

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

M E D I U M L O A D S

1999 WHITE BOOK: 12/31/99

2009-10 OPERATING YEAR RUN DATE: 12/31/99

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
NON-UTILITY LOADS															
1 FED AGENCIES 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 USBR 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 DSI 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FED AGENCIES 2002 PSC 2/	118	118	115	110	127	144	150	152	128	122	122	113	118	116	126
5 USBR 2002 PSC 2/	78	78	48	23	0	0	0	1	13	39	39	72	78	102	38
6 DSI 2002 PSC 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 FIRM NON-UTILITY LOADS	196	196	163	133	127	144	150	153	141	161	161	185	196	218	164
UTILITY TRANSFERS OUT															
8 NGP 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 GPU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 IOU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PUB 2002 PSC SALES 2/	4401	4401	5275	4936	5654	6802	7722	7884	6642	6297	6297	4523	4097	3781	5668
12 IOU 2002 PSC SALES 2/	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
13 EXPORTS 3/	836	836	824	758	755	784	782	778	742	755	755	786	879	880	797
14 INTRA-REG TRANSFERS OUT 4/	350	350	355	407	683	753	734	694	535	498	498	301	484	541	528
15 SUPP & ENTITLE CAP OUT 5/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 CSPE TO WEST GROUP UTIL 6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 FED DIVERSITY 7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 FIRM LOADS	7983	7983	8817	8434	9419	10683	11588	11709	10260	9911	9911	7995	7856	7620	9356
HYDRO RESOURCES															
19 REGULATED HYDRO	6888	6050	5786	6135	5966	7188	5904	6321	5158	5205	5022	7760	6327	7077	6267
20 INDEPENDENT HYDRO	437	445	371	388	307	242	179	199	277	440	522	727	771	466	404
21 SUS. PKNG. ADJUSTMENT 8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 NFD CER(CSPE) TO BPA 9/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 NFD CER(CAN) TO BPA 10/	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
24 RESTORATION 11/	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
25 TOTAL HYDRO	7435	6605	6267	6633	6383	7540	6193	6630	5545	5755	5654	8597	7208	7653	6781
OTHER RESOURCES															
26 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 RENEWABLES 12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27	29
29 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 IMPORTS 13/	110	110	143	180	248	303	277	233	203	204	173	82	93	124	182
31 INTRA-REG TRANSFERS IN 14/	171	171	374	374	374	283	283	283	350	283	283	171	283	171	283
32 SUPP & ENTITLE CAP IN 15/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 LARGE THERMAL 16/	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
34 NON-UTILITY GENERATION 17/	43	43	44	42	47	50	50	49	48	46	46	37	47	44	45
35 RESOURCE ACQUISITIONS 18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	8786	7956	7855	8257	8081	9207	7835	8226	7177	7318	7186	9915	8658	9019	8321

Exhibit 4: OY 2009-10 (continued)

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

1999 WHITE BOOK: 12/31/99
2009-10 OPERATING YEAR RUN DATE: 12/31/99

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 AND TRANSMISSION LOSSES															
37 HYD SM THRM & MISC RES 19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES 20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES 21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FED HYDRO MAINTENANCE 22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 FED TRANSMISSION LOSSES 23/	-248	-224	-222	-233	-228	-260	-221	-232	-202	-206	-203	-280	-244	-254	-235
42 NET RESOURCES	8538	7732	7633	8024	7853	8948	7614	7994	6974	7112	6984	9635	8414	8765	8086
SURPLUS/DEFICITS															
43 FIRM SURPLUS/DEFICIT	555	-251	-1184	-410	-1566	-1735	-3974	-3715	-3286	-2799	-2927	1640	558	1145	-1270

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.
A. BPA TO BURBANK: PS & C/N/X C. BPA TO PASADENA: PS & C/N/X
B. BPA TO GLENDALE: PS & C/N/X D. BPA TO SCE: PS & C/N/X
2. SCE TO BPA: OPTION ENERGY IS INCLUDED THROUGH 10/31/2004.
3. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH 10/31/2004.
4. 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

Exhibit 5: Medium Loads

TABLE F-1: FEDERAL 50-HOUR SUSTAINED PEAKING

BASE CASE: EXISTING FEDERAL CONTRACTS

FEDERAL SYSTEM FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

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

1999 WHITE BOOK: 12/31/99
RUN DATE: 12/31/99

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
2000-01	2163	1412	1247	1403	-3	1932	-1453	6	885	1469	-762	2704	1559	2118
2001-02	2308	1616	761	1561	500	1456	-2699	-1414	93	15	-1285	4361	2366	3164
2002-03	2968	2250	787	1569	505	1447	-2412	-1114	397	-21	-2242	3414	2335	3270
2003-04	2934	2252	782	1541	507	1409	-2618	-857	206	-45	-1344	4619	2529	3420
2004-05	3099	2395	947	1712	917	1820	-2490	-1166	296	36	-1921	4066	3158	3871
2005-06	3500	2836	1415	2170	728	1584	-2602	-1268	285	172	-844	4803	3092	3780
2006-07	3389	2741	1315	2078	779	1533	-2683	-1247	411	627	-1349	4563	3696	3717
2007-08	3418	2786	1426	2094	804	1526	-2762	-815	430	606	-430	5557	3780	3771
2008-09	3490	2885	1499	2115	784	1454	-2857	-1390	332	520	-1438	4560	3713	3698
2009-10	3420	2816	1432	2036	619	1255	-3098	-1636	142	187	-848	5419	3524	3711

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. SCE TO BPA: OPTION ENERGY IS INCLUDED THROUGH 10/31/2004.
3. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH 10/31/2004.
4. 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

Exhibit 6: OY 2000-01

TABLE 2: FEDERAL SYSTEM SHEET 1 OF 2

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

M E D I U M L O A D S

1999 WHITE BOOK: 12/31/99

2000- 1 OPERATING YEAR RUN DATE: 12/31/99

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
NON-UTILITY LOADS														
1 FED AGENCIES 1981 PSC 1/	197	197	187	198	206	236	220	228	216	200	200	190	192	193
2 USBR 1981 PSC 1/	27	27	16	22	0	0	0	0	30	47	47	53	30	40
3 DSI 1981 PSC 1/	2496	2496	1970	2276	2275	2275	2170	1460	778	925	925	2221	2228	2687
4 FED AGENCIES 2002 PSC 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 USBR 2002 PSC 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 DSI 2002 PSC 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 FIRM NON-UTILITY LOADS	2720	2720	2173	2496	2481	2511	2390	1688	1024	1172	1172	2464	2450	2920
UTILITY TRANSFERS OUT														
8 NGP 1981 PSC SALES 1/	3177	3177	3150	3320	3771	3994	4252	4354	3919	3796	3796	3364	3174	3134
9 GPU 1981 PSC SALES 1/	1408	1357	1494	2066	2386	2684	2771	2805	2385	2116	2115	1934	1542	1358
10 IOU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PUB 2002 PSC SALES 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 IOU 2002 PSC SALES 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 EXPORTS 3/	3004	3004	2978	2221	1887	1894	1974	1977	1964	2027	2027	2138	2447	2460
14 INTRA-REG TRANSFERS OUT 4/	1997	1997	1968	2240	2533	2681	2498	2567	2441	2032	2032	1849	1990	1963
15 SUPP & ENTITLE CAP OUT 5/	86	86	86	86	86	86	86	86	86	84	84	84	84	84
16 CSPE TO WEST GROUP UTIL 6/	192	192	192	192	192	192	192	192	192	186	186	186	186	186
17 FED DIVERSITY 7/	-917	-911	-920	-972	-917	-691	-701	-716	-924	-841	-841	-913	-932	-899
18 FIRM LOADS	11667	11622	11120	11649	12419	13351	13461	12952	11087	10572	10571	11107	10940	11206
HYDRO RESOURCES														
19 REGULATED HYDRO	16253	16247	16285	16279	16594	18093	18139	17973	17484	17349	17335	17450	17702	16303
20 INDEPENDENT HYDRO	742	754	736	750	718	680	643	771	831	850	850	881	882	760
21 SUS. PKNG. ADJUSTMENT 8/	-100	-1452	-2300	-1282	-2330	-1483	-5372	-3804	-4422	-4128	-5470	-1320	-4065	-700
22 NFD CER(CSPE) TO BPA 9/	43	43	43	43	43	43	43	43	43	42	42	42	42	42
23 NFD CER(CAN) TO BPA 10/	141	139	146	146	146	151	145	142	140	149	138	142	138	148
24 RESTORATION 11/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 TOTAL HYDRO	17079	15731	14910	15936	15171	17484	13598	15125	14076	14262	12895	17195	14699	16553
OTHER RESOURCES														
26 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 RENEWABLES 12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27
29 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 IMPORTS 13/	209	209	239	153	209	263	467	423	435	438	165	75	93	109
31 INTRA-REG TRANSFERS IN 14/	475	475	566	341	341	250	0	0	0	25	25	25	25	100
32 SUPP & ENTITLE CAP IN 15/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 LARGE THERMAL 16/	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	0	0	1162	1162
34 NON-UTILITY GENERATION 17/	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35 RESOURCE ACQUISITIONS 18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	18953	17605	16905	17621	16913	19191	15260	16742	15705	15918	13116	17323	16007	17952

Exhibit 6: OY 2000-01 (continued)

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

1999 WHITE BOOK: 12/31/99

2000- 1 OPERATING YEAR RUN DATE: 12/31/99

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 AND TRANSMISSION LOSSES														
37 HYD SM THRM & MISC RES 19/	-851	-851	-852	-853	-867	-940	-941	-939	-917	-911	-911	-918	-931	-854
38 LARGE THERMAL RESERVES 2	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	0	0	-174	-174
39 SPINNING RESERVES 21/	-355	-334	-313	-339	-321	-397	-312	-338	-312	-313	-251	-359	-334	-353
40 FED HYDRO MAINTENANCE 22	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785
41 FED TRANSMISSION LOSSES 23	-479	-452	-429	-452	-430	-530	-416	-449	-415	-417	-340	-479	-433	-462
42 NET RESOURCES	13830	13034	12367	13051	12416	15283	12009	12958	11972	12042	9809	13810	12500	13324
SURPLUS/DEFICITS														
43 FIRM SURPLUS/DEFICIT	2163	1412	1247	1403	-3	1932	-1453	6	885	1469	-762	2704	1559	2118

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.
A. BPA TO BURBANK: PS & C/N/X C. BPA TO PASADENA: PS & C/N/X
B. BPA TO GLENDALE: PS & C/N/X D. BPA TO SCE: PS & C/N/X
2. SCE TO BPA: OPTION ENERGY IS INCLUDED THROUGH 10/31/2004.
3. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH 10/31/2004.
4. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.
A. BGP TO BPA: SUPPLEMENTAL ENERGY B. SCE TO BPA: SUPPLEMENTAL ENERGY

Exhibit 7: OY 2004-05

TABLE 2: FEDERAL SYSTEM SHEET 1 OF 2

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

M E D I U M L O A D S

1999 WHITE BOOK: 12/31/99

2004- 5 OPERATING YEAR RUN DATE: 12/31/99

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
NON-UTILITY LOADS														
1 FED AGENCIES 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 USBR 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 DSI 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FED AGENCIES 2002 PSC 2/	148	148	138	149	152	182	186	175	130	135	135	129	133	155
5 USBR 2002 PSC 2/	27	27	16	22	0	0	0	0	30	47	47	53	30	40
6 DSI 2002 PSC 2/	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440
7 FIRM NON-UTILITY LOADS	1615	1615	1594	1611	1592	1622	1626	1615	1600	1622	1622	1622	1603	1635
UTILITY TRANSFERS OUT														
8 NGP 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 GPU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 IOU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PUB 2002 PSC SALES 2/	4635	4635	5637	5747	6069	7650	8621	8344	6138	6152	6152	3984	3507	4027
12 IOU 2002 PSC SALES 2/	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
13 EXPORTS 3/	2620	2620	2612	2557	1967	1975	1979	1982	1967	2079	2079	2191	2217	2129
14 INTRA-REG TRANSFERS OUT 4/	1817	1817	1710	1847	2207	2370	2411	2383	2143	2040	2040	1909	2022	2036
15 SUPP & ENTITLE CAP OUT 5/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 CSPE TO WEST GROUP UTIL 6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 FED DIVERSITY 7/	-988	-988	-1103	-1049	-943	-784	-855	-833	-941	-933	-933	-843	-866	-938
18 FIRM LOADS	10699	10699	11450	11713	11892	13833	14782	14491	11907	11960	11960	9863	9483	9889
HYDRO RESOURCES														
19 REGULATED HYDRO	16253	16247	16285	16279	16594	18093	18139	17973	17484	17349	17335	17450	17702	16303
20 INDEPENDENT HYDRO	775	787	768	774	738	703	674	790	850	875	875	914	915	793
21 SUS. PKNG. ADJUSTMENT 8/	-100	-1332	-2217	-1180	-2202	-1376	-5402	-3720	-4440	-4151	-5494	-1278	-3985	-700
22 NFD CER(CSPE) TO BPA 9/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 NFD CER(CAN) TO BPA 10/	266	243	256	254	256	254	264	248	245	242	243	261	243	261
24 RESTORATION 11/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 TOTAL HYDRO	17194	15945	15092	16127	15386	17674	13675	15291	14139	14315	12959	17347	14875	16657
OTHER RESOURCES														
26 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 RENEWABLES 12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27
29 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 IMPORTS 13/	188	188	217	253	306	360	334	290	262	215	215	75	93	209
31 INTRA-REG TRANSFERS IN 14/	350	350	441	441	441	350	350	350	350	150	150	0	0	350
32 SUPP & ENTITLE CAP IN 15/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 LARGE THERMAL 16/	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	0	0	1162	1162
34 NON-UTILITY GENERATION 17/	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35 RESOURCE ACQUISITIONS 18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	18922	17673	16940	18012	17325	19578	15554	17125	15945	15873	13355	17450	16158	18406

Exhibit 7: OY 2004-05 (continued)

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

1999 WHITE BOOK: 12/31/99

2004- 5 OPERATING YEAR RUN DATE: 12/31/99

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 AND TRANSMISSION LOSSES														
37 HYD SM THRM & MISC RES 19/	-853	-853	-854	-854	-868	-941	-942	-940	-918	-913	-912	-920	-932	-856
38 LARGE THERMAL RESERVES 2	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	0	0	-174	-174
39 SPINNING RESERVES 21/	-356	-337	-316	-342	-324	-401	-312	-341	-312	-313	-251	-361	-337	-354
40 FED HYDRO MAINTENANCE 22	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785
41 FED TRANSMISSION LOSSES 23	-478	-454	-430	-465	-444	-543	-426	-462	-423	-416	-348	-483	-438	-477
42 NET RESOURCES	13798	13094	12397	13424	12809	15653	12292	13325	12203	11996	10039	13930	12641	13760
SURPLUS/DEFICITS														
43 FIRM SURPLUS/DEFICIT	3099	2395	947	1712	917	1820	-2490	-1166	296	36	-1921	4066	3158	3871

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.
A. BPA TO BURBANK: PS & C/N/X C. BPA TO PASADENA: PS & C/N/X
B. BPA TO GLENDALE: PS & C/N/X D. BPA TO SCE: PS & C/N/X
2. SCE TO BPA: OPTION ENERGY IS INCLUDED THROUGH 10/31/2004.
3. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH 10/31/2004.
4. THE FOLLOWING CONTRACTS ARE RESOURCE OPTIONS AND NOT INCLUDED THROUGH THE STUDY HORIZON.
A. BGP TO BPA: SUPPLEMENTAL ENERGY B. SCE TO BPA: SUPPLEMENTAL ENERGY

Exhibit 8: OY 2009-10

TABLE 2: FEDERAL SYSTEM SHEET 1 OF 2

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

M E D I U M L O A D S

1999 WHITE BOOK: 12/31/99

2009-10 OPERATING YEAR RUN DATE: 12/31/99

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
NON-UTILITY LOADS														
1 FED AGENCIES 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 USBR 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 DSI 1981 PSC 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FED AGENCIES 2002 PSC 2/	151	151	141	153	156	187	190	179	133	138	138	132	136	159
5 USBR 2002 PSC 2/	27	27	16	22	0	0	0	0	30	47	47	53	30	40
6 DSI 2002 PSC 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 FIRM NON-UTILITY LOADS	178	178	157	175	156	187	190	179	163	185	185	185	166	199
UTILITY TRANSFERS OUT														
8 NGP 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 GPU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 IOU 1981 PSC SALES 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PUB 2002 PSC SALES 2/	6280	6280	7075	7406	7843	9700	10710	10337	7691	7706	7706	5667	5284	5726
12 IOU 2002 PSC SALES 2/	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
13 EXPORTS 3/	1670	1670	1661	1604	1593	1604	1606	1612	1594	1597	1597	1674	1681	1694
14 INTRA-REG TRANSFERS OUT 4/	813	813	824	885	1176	1262	1243	1216	1079	1027	1027	785	934	953
15 SUPP & ENTITLE CAP OUT 5/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 CSPE TO WEST GROUP UTIL 6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 FED DIVERSITY 7/	-1228	-1228	-1331	-1277	-1138	-934	-1004	-975	-1110	-1107	-1107	-1054	-1112	-1175
18 FIRM LOADS	9913	9913	10586	10993	11830	14019	14945	14569	11617	11608	11608	9457	9153	9597
HYDRO RESOURCES														
19 REGULATED HYDRO	16253	16247	16285	16279	16594	18093	18139	17973	17484	17349	17335	17450	17702	16303
20 INDEPENDENT HYDRO	775	787	768	774	738	703	674	790	850	875	875	914	915	793
21 SUS. PKNG. ADJUSTMENT 8/	-100	-1266	-2147	-1121	-2122	-1307	-5402	-3665	-4440	-4151	-5494	-1244	-3939	-700
22 NFD CER(CSPE) TO BPA 9/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 NFD CER(CAN) TO BPA 10/	236	252	246	235	256	244	254	239	235	234	235	253	235	243
24 RESTORATION 11/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 TOTAL HYDRO	17164	16020	15152	16167	15466	17733	13665	15337	14129	14307	12951	17373	14913	16639
OTHER RESOURCES														
26 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 RENEWABLES 12/	27	27	27	28	29	31	32	31	31	30	30	27	27	27
29 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 IMPORTS 13/	88	88	117	153	206	260	234	190	162	165	165	75	93	109
31 INTRA-REG TRANSFERS IN 14/	0	0	91	92	91	0	0	0	0	0	0	0	0	0
32 SUPP & ENTITLE CAP IN 15/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 LARGE THERMAL 16/	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162
34 NON-UTILITY GENERATION 17/	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35 RESOURCE ACQUISITIONS 18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	18442	17298	16550	17603	16955	19187	15094	16721	15485	15665	14309	18638	16196	17938

Exhibit 8: OY 2009-10 (continued)

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

1999 WHITE BOOK: 12/31/99

2009-10 OPERATING YEAR RUN DATE: 12/31/99

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 AND TRANSMISSION LOSSES														
37 HYD SM THRM & MISC RES 19/	-853	-853	-854	-854	-868	-941	-942	-940	-918	-913	-912	-920	-932	-856
38 LARGE THERMAL RESERVES 2	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174	-174
39 SPINNING RESERVES 21/	-356	-339	-317	-343	-326	-402	-312	-342	-312	-313	-285	-396	-338	-354
40 FED HYDRO MAINTENANCE 22	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785
41 FED TRANSMISSION LOSSES 23	-462	-441	-417	-452	-432	-529	-411	-448	-408	-409	-373	-516	-439	-461
42 NET RESOURCES	13334	12729	12018	13028	12450	15273	11847	12933	11758	11795	10760	14875	12677	13308
SURPLUS/DEFICITS														
43 FIRM SURPLUS/DEFICIT	3420	2816	1432	2036	619	1255	-3098	-1636	142	187	-848	5419	3524	3711

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS POWER SALES THROUGH THE STUDY HORIZON.
A. BPA TO BURBANK: PS & C/N/X C. BPA TO PASADENA: PS & C/N/X
B. BPA TO GLENDALE: PS & C/N/X D. BPA TO SCE: PS & C/N/X
2. SCE TO BPA: OPTION ENERGY IS INCLUDED THROUGH 10/31/2004.
3. BPA TO SCE: OPTION CAPACITY IS INCLUDED THROUGH 10/31/2004.
4. 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 Federal agency, USBR, DSI, and public agency purchases under their 1981 power sales contracts. These contracts expire between June 30 and September 30, 2001.
2. BPA's Federal agency, USBR, DSI, IOU, and public agency estimated purchases under new 2002 power sales contracts. These contracts begin October 1, 2001, and area assumed to continue through the study horizon.
3. BPA's exports include: BPA to Azusa, capacity sale and power sale; BPA to Banning, capacity sale and power sale; BPA to BART, power sale; BPA to Burbank, power sale and capacity/energy exchange; BPA to Colton, power exchange and capacity sale; BPA to ECD entities, power sales; BPA to Farmington, power sale; BPA to Federal agencies, power sale; BPA to Glendale, power sale and capacity/energy exchange; BPA to M-S-R, power sale; BPA to other entities, power sales; BPA to Pasadena, power sale, capacity/energy exchange and seasonal energy exchange; BPA to Riverside, capacity/energy exchange, capacity sale and seasonal exchange; BPA to SCE, power sale, environmental storage and option capacity; BPA to Sierra Pacific for Harney and Wells; BPA to BC Hydro for Canadian Entitlement; and BPA's Northwest-Southwest Intertie losses.
4. BPA's intraregional transfers out include: BPA to AVWP, power sale, energy sale, deferred power exchange and WNP-3 settlement; BPA to Bandon, power sale; BPA to Big Bend Electric Cooperative, power sale and summer seasonal product; BPA to Central Electric Cooperative, summer seasonal product; BPA to the City of Ashland, power sale; BPA to Clatskanie, power sale; BPA to Columbia Basin Electric Cooperative, summer seasonal product; BPA to Columbia River PUD, power sale; BPA to Columbia Rural Electric Association, summer seasonal product; BPA to Cowlitz County PUD, power sale and presubscription power sale; BPA to Douglas County PUD, power sale; BPA to Eugene Water and Electric Board, power sale and presubscription power sale; BPA to City of Forest Grove, power sale; BPA to Harney Electric Cooperative, summer seasonal product; BPA to Inland Power and Light, summer seasonal product; BPA to the City of Idaho Falls, power sale; BPA to Lewis County PUD, power sale; BPA to Lower Valley, power sale; BPA to Mason County PUD #3, power sale; BPA to City of McMinnville, power sale; BPA to Midstate Electric Cooperative, summer seasonal product; BPA to Milton-Freewater, power sale; BPA to Mission Valley, summer seasonal product; BPA to Modern Electric Cooperative, power sale; BPA to Monmouth, power sale; BPA to Nespelem Valley Electric Cooperative, summer seasonal product; BPA to Northern Wasco Electric Cooperative, power sale; BPA to Okanogan, summer seasonal product; BPA to other entities, power sales; BPA to small and nongenerating public agencies, summer seasonal product and power sales; BPA to PP&L, capacity sale, seasonal power exchange, seasonal energy exchange, Southern Idaho exchange, and Centralia standby; BPA to PGE, capacity sale and power sale; BPA to PSE, Baker Head loss, power sale and WNP-3 settlement; BPA to Ravalli Electric Cooperative, power sale; BPA to Richland, Ormet power sale; BPA to Salem Electric Cooperative, green power sale; BPA to Snohomish County PUD, power sale; BPA to Springfield Utility Board, power sale and presubscription power sale; BPA to Surprise Valley, summer seasonal product; BPA to TPU, power sale; BPA to Tillamook County PUD, power sale; BPA to United Electric Cooperative, power sale; BPA to Umatilla Electric Cooperative, summer seasonal product; BPA to U.S. Bureau of Indian Affairs-Wapato, summer seasonal product; BPA to Vigilante Electric Cooperative, summer seasonal product; BPA to Wasco Electric Cooperative, summer seasonal product; and BPA to Western Oregon Cooperative, power sale.
5. BPA's supplemental and entitlement capacity sales consist of a capacity sale to a group of northwest utilities that expires April 1, 2003.

6. 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.
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. Sustained peaking adjustment is a percentage reduction applied to the Federal hydrosystem 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 Snake River and John Day hydro projects.
9. 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.
10. Canadian Entitlement Return non-Federal to Canada reflects the Federal system, public agencies' and IOUs' obligation of Canadian Entitlement allocation to Canada, which began April 1, 1998.
11. Restoration adjustments 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.
12. Federal renewable resources include: James River Wauna.
13. BPA's imports include: Colton to BPA, power exchange; other entities to BPA, power sales; PP&L (Wyoming Division) to BPA, for Southern Idaho; Pasadena to BPA, exchange energy, peak replacement energy, and seasonal replacement energy; Riverside to BPA, exchange energy, peak replacement energy, and seasonal exchange energy; Sierra Pacific to BPA for Harney and Wells; SCE to BPA, environmental storage, option energy, and option capacity peak replacement; and PowerEx to BPA for Azusa, Banning and Colton, peak replacement.
14. Federal intraregional transfers in include: AVWP to BPA, WNP-3 settlement; other entities to BPA, power sale; PP&L to BPA, seasonal power exchange, surplus energy exchange and peak replacement; PGE to BPA, peak replacement; and PSE to BPA, WNP-3 settlement.
15. BPA supplemental and entitlement capacity in is the off-peak replacement energy component of BPA's supplemental and entitlement capacity sale to a group of Northwest utilities, which expires April 1, 2001.
16. Federal large thermal includes the generation from WNP-2, operated by ENW.
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. Federal transmission losses are estimated assuming the total Federal resources less hydro reserves, thermal reserves, spinning reserves and hydro maintenance, multiplied by .0282 for energy and .0335 for peak.

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Exhibits 9 – 18

Federal System Energy Surpluses and Deficits for 50 Historical Water Conditions

Exhibit 9: OY 2000-01

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2000- 1 OPERATING YEAR RUN DATE: 12/31/99
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	2156	-570	-371	331	-1711	-715	-2234	-217	79	159	294	-906	1837	-149	-253
1930 FEDERAL ENERGY S/D	-662	-1092	-342	-311	-1031	-525	-2174	-677	-139	1145	3342	-1488	-549	106	-480
1931 FEDERAL ENERGY S/D	30	-566	-784	-427	-946	-325	-2840	-1908	-148	2405	-370	1221	2	281	-427
1932 FEDERAL ENERGY S/D	-430	-1427	-893	-342	-1039	-1060	-2794	-507	2978	6540	4690	3803	4116	1383	861
1933 FEDERAL ENERGY S/D	324	-105	-35	433	-1193	-479	4242	2396	865	4548	694	2007	6974	4800	1895
1934 FEDERAL ENERGY S/D	2201	2422	615	1667	947	4372	7443	5820	5055	8248	6221	4550	1133	-925	3352
1935 FEDERAL ENERGY S/D	-1499	-2073	-705	-643	-1554	-898	3641	1501	2088	5315	1608	1187	3094	1559	912
1936 FEDERAL ENERGY S/D	576	-1876	-594	4	-1393	-607	-1644	-17	581	943	5236	4509	1859	1032	514
1937 FEDERAL ENERGY S/D	-229	-1029	-304	-276	-1294	-674	-2211	-765	-386	0	-1370	574	21	-195	-569
1938 FEDERAL ENERGY S/D	-101	-892	-101	-163	-864	-92	2858	684	4427	4588	3114	4742	3963	558	1614
1939 FEDERAL ENERGY S/D	-522	-1728	-454	448	-1618	-836	-2164	2301	2408	3800	2837	1799	-674	1636	420
1940 FEDERAL ENERGY S/D	439	-1212	-335	382	-1223	-722	-1175	1082	4174	3802	2775	472	-1355	53	355
1941 FEDERAL ENERGY S/D	-187	-1437	35	563	-1336	-693	-1364	-625	1168	502	870	68	1477	-916	-146
1942 FEDERAL ENERGY S/D	-592	-1291	-454	445	-846	2106	2780	1635	41	2390	1477	1706	2645	2339	1116
1943 FEDERAL ENERGY S/D	2521	329	225	261	-1539	-741	3020	4029	4440	8309	6006	4403	4458	2641	2482
1944 FEDERAL ENERGY S/D	2057	607	-357	467	-1643	-706	-2151	71	-476	206	-111	-351	587	-970	-346
1945 FEDERAL ENERGY S/D	-417	-1481	-867	-209	-973	-1087	-2720	-1316	-106	650	490	2373	2307	1215	-147
1946 FEDERAL ENERGY S/D	137	-450	-189	-348	-1444	332	3974	1101	3486	4689	4631	5334	4279	1764	1899
1947 FEDERAL ENERGY S/D	1451	-1354	230	538	-1299	2115	5280	5152	3161	4200	3011	4032	3770	1347	2332
1948 FEDERAL ENERGY S/D	1273	-846	6	3166	241	459	5405	3611	2080	3132	3920	7123	9632	3666	3261
1949 FEDERAL ENERGY S/D	2300	2577	799	906	-1500	-831	1565	776	6446	5258	5306	4320	3622	-1246	1881
1950 FEDERAL ENERGY S/D	-1719	-2321	-450	-123	-1750	139	3888	3551	5528	7006	4604	3831	7933	3518	2488
1951 FEDERAL ENERGY S/D	1539	945	211	1751	864	3023	6360	6321	5064	7105	5507	5519	2885	2761	3526
1952 FEDERAL ENERGY S/D	2292	1161	169	2496	-824	1097	4879	2868	2725	7246	5429	6398	4216	858	2746
1953 FEDERAL ENERGY S/D	1331	-1186	-412	-11	-1555	-560	-1036	6121	3882	2086	1282	2393	5049	2805	1536
1954 FEDERAL ENERGY S/D	2413	1000	270	876	-1145	-384	2178	6832	2918	4512	2788	4519	6719	3751	2657
1955 FEDERAL ENERGY S/D	3148	2071	2988	1616	-360	-228	1231	1540	-195	2821	1623	692	5938	5092	1929
1956 FEDERAL ENERGY S/D	2168	1755	390	1401	72	2891	6612	5132	5225	6346	7035	7391	7732	2992	4041
1957 FEDERAL ENERGY S/D	2615	1133	80	1032	-1611	96	964	4695	3046	7159	2387	7043	5484	616	2341
1958 FEDERAL ENERGY S/D	324	-1037	-285	254	-1654	-737	1106	5995	1992	2916	3921	5706	4565	245	1688
1959 FEDERAL ENERGY S/D	236	-852	-295	738	-586	1100	6285	5275	3881	4888	1592	3605	5947	2947	2652
1960 FEDERAL ENERGY S/D	2346	812	2844	3992	1348	1483	4772	1858	3362	8843	4213	1772	3175	1747	2872
1961 FEDERAL ENERGY S/D	1821	-1157	-50	778	-994	-1205	3302	5916	3747	4414	530	4447	6667	1046	2205
1962 FEDERAL ENERGY S/D	1014	-764	-482	507	-1736	-981	3303	306	1161	6013	4699	2120	1860	2140	1140
1963 FEDERAL ENERGY S/D	2169	292	-324	1338	-381	1014	3907	2675	1379	3380	1999	1460	3279	1884	1679
1964 FEDERAL ENERGY S/D	1858	107	679	404	-1605	-1097	789	4702	558	4237	975	1935	6860	4165	1748
1965 FEDERAL ENERGY S/D	2389	1600	1102	1685	-943	3318	7350	5988	5168	4080	5780	4973	5230	1715	3543
1966 FEDERAL ENERGY S/D	2420	1262	257	1181	-875	-47	2781	3359	1352	6204	1966	1125	1018	2257	1528
1967 FEDERAL ENERGY S/D	2130	-963	-264	317	-1626	-570	4690	5093	3085	3804	-630	1923	6194	3948	2080
1968 FEDERAL ENERGY S/D	2462	1249	455	960	-1109	-141	3717	4984	3660	1178	393	-460	3442	1969	1676
1969 FEDERAL ENERGY S/D	2759	1290	1766	1829	201	740	6412	5317	4312	6356	5928	6843	5106	1827	3543
1970 FEDERAL ENERGY S/D	713	-1736	-310	888	-1644	-972	618	4967	2343	2036	1554	1980	4018	737	1159
1971 FEDERAL ENERGY S/D	807	-970	-470	170	-1727	317	6027	6908	5169	6737	4693	7180	6834	3434	3290
1972 FEDERAL ENERGY S/D	2748	2253	821	768	-1119	-135	5715	6563	9041	7906	2972	6764	7921	4516	4066
1973 FEDERAL ENERGY S/D	2922	2474	1014	947	-1486	616	712	980	1316	298	-546	-626	347	519	576
1974 FEDERAL ENERGY S/D	352	-1767	-747	-46	-942	2591	7999	7112	6921	7058	6434	6502	8979	5362	4147
1975 FEDERAL ENERGY S/D	2299	1665	467	218	-1653	-713	2648	3994	5069	4156	1868	3038	5534	4447	2337
1976 FEDERAL ENERGY S/D	882	206	-42	1492	501	4129	6600	5597	3547	7610	4398	6166	3303	3450	3441
1977 FEDERAL ENERGY S/D	4058	2906	4012	768	-1646	-632	-1781	470	-933	-78	272	-592	139	-947	203
1978 FEDERAL ENERGY S/D	-500	-1378	-1181	-466	-1079	-319	2052	772	4473	5452	2693	2640	1939	1543	1126

Exhibit 10: OY 2001-02

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2001- 2 OPERATING YEAR RUN DATE: 12/31/99
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	2137	-596	-997	435	-1579	-1265	-3399	-2369	-2149	-2230	-1124	-188	2096	1193	-761
1930 FEDERAL ENERGY S/D	-689	-1119	-968	-209	-902	-1074	-3345	-2834	-2368	-1242	1928	-764	-291	1452	-989
1931 FEDERAL ENERGY S/D	7	-593	-1411	-325	-821	-877	-4013	-4067	-2385	14	-1790	1946	260	1629	-937
1932 FEDERAL ENERGY S/D	-455	-1454	-1524	-237	-913	-1617	-3969	-2665	744	4155	3270	4530	4387	2736	352
1933 FEDERAL ENERGY S/D	299	-130	-659	536	-1067	-1033	3077	249	-1364	2162	-736	2732	7249	6165	1390
1934 FEDERAL ENERGY S/D	2180	2402	-9	1775	1076	3823	6290	3682	2835	5875	4808	5286	1394	420	2850
1935 FEDERAL ENERGY S/D	-1528	-2102	-1339	-541	-1429	-1455	2477	-648	-142	2931	175	1910	3361	2915	404
1936 FEDERAL ENERGY S/D	553	-1905	-1229	105	-1269	-1163	-2818	-2170	-1658	-1451	3808	5239	2127	2380	4
1937 FEDERAL ENERGY S/D	-251	-1057	-930	-173	-1169	-1227	-3383	-2924	-2625	-2395	-2800	1296	281	1150	-1080
1938 FEDERAL ENERGY S/D	-128	-920	-727	-62	-739	-644	1691	-1465	2198	2201	1686	5475	4229	1911	1107
1939 FEDERAL ENERGY S/D	-549	-1758	-1081	551	-1488	-1386	-3332	156	182	1415	1417	2526	-414	2987	-86
1940 FEDERAL ENERGY S/D	418	-1239	-961	483	-1095	-1275	-2340	-1073	1941	1413	1354	1197	-1095	1399	-154
1941 FEDERAL ENERGY S/D	-214	-1466	-593	663	-1209	-1246	-2534	-2785	-1069	-1890	-550	794	1736	428	-656
1942 FEDERAL ENERGY S/D	-619	-1319	-1084	546	-721	1562	1612	-513	-2194	-2	55	2430	2911	3693	608
1943 FEDERAL ENERGY S/D	2501	303	-402	365	-1413	-1295	1849	1881	2228	5934	4591	5138	4727	3993	1978
1944 FEDERAL ENERGY S/D	2034	581	-984	577	-1509	-1253	-3310	-2081	-2705	-2182	-1530	370	843	372	-852
1945 FEDERAL ENERGY S/D	-443	-1508	-1493	-105	-845	-1635	-3896	-3473	-2335	-1737	-935	3097	2572	2565	-655
1946 FEDERAL ENERGY S/D	111	-477	-814	-242	-1308	-212	2818	-1038	1268	2307	3216	6069	4548	3118	1399
1947 FEDERAL ENERGY S/D	1430	-1382	-395	643	-1163	1569	4122	3019	948	1818	1592	4761	4040	2698	1831
1948 FEDERAL ENERGY S/D	1248	-874	-619	3274	377	-89	4246	1476	-137	748	2502	7859	9917	5027	2762
1949 FEDERAL ENERGY S/D	2280	2559	176	1010	-1367	-1382	400	-1366	4229	2876	3891	5048	3889	100	1378
1950 FEDERAL ENERGY S/D	-1747	-2351	-1077	-25	-1623	-409	2723	1416	3318	4625	3189	4559	8212	4877	1986
1951 FEDERAL ENERGY S/D	1517	923	-413	1861	1004	2481	5212	4190	2855	4728	4094	6253	3150	4119	3029
1952 FEDERAL ENERGY S/D	2272	1139	-454	2608	-689	551	3726	729	511	4868	4013	7134	4485	2210	2246
1953 FEDERAL ENERGY S/D	1307	-1214	-1038	91	-1422	-1107	-2209	3983	1669	-292	-143	3120	5319	4160	1033
1954 FEDERAL ENERGY S/D	2392	975	-356	980	-1017	-934	1011	4699	706	2126	1365	5251	6997	5111	2156
1955 FEDERAL ENERGY S/D	3132	2055	2371	1721	-232	-778	65	-613	-2429	441	202	1414	6208	6457	1425
1956 FEDERAL ENERGY S/D	2148	1733	-235	1506	199	2345	5460	3004	3009	3967	5622	8130	8010	4348	3543
1957 FEDERAL ENERGY S/D	2593	1110	-547	1136	-1476	-454	-191	2558	824	4789	964	7779	5758	1965	1840
1958 FEDERAL ENERGY S/D	298	-1066	-912	356	-1521	-1288	-53	3858	-226	530	2501	6438	4836	1593	1184
1959 FEDERAL ENERGY S/D	211	-879	-922	842	-460	553	5124	3135	1659	2508	170	4335	6224	4303	2150
1960 FEDERAL ENERGY S/D	2327	787	2225	4100	1480	937	3609	-281	1144	6474	2798	2497	3442	3103	2371
1961 FEDERAL ENERGY S/D	1799	-1185	-676	880	-869	-1759	2136	3777	1521	2034	-897	5180	6947	2397	1701
1962 FEDERAL ENERGY S/D	992	-792	-1114	609	-1610	-1534	2136	-1842	-1065	3633	3283	2847	2126	3491	633
1963 FEDERAL ENERGY S/D	2149	267	-951	1442	-253	466	2742	527	-844	997	582	2183	3544	3239	1174
1964 FEDERAL ENERGY S/D	1836	80	54	508	-1479	-1647	-377	2565	-1660	1851	-449	2660	7136	5526	1245
1965 FEDERAL ENERGY S/D	2370	1578	480	1793	-813	2772	6203	3858	2953	1697	4367	5705	5499	3068	3044
1966 FEDERAL ENERGY S/D	2400	1239	-368	1294	-738	-592	1627	1221	-867	3825	546	1851	1286	3610	1027
1967 FEDERAL ENERGY S/D	2107	-990	-890	421	-1500	-1123	3528	2951	865	1424	-2057	2650	6468	5310	1577
1968 FEDERAL ENERGY S/D	2442	1225	-169	1067	-976	-690	2560	2851	1448	-1205	-1027	262	3710	3326	1176
1969 FEDERAL ENERGY S/D	2739	1268	1146	1943	338	197	5261	3190	2097	3971	4508	7581	5380	3181	3046
1970 FEDERAL ENERGY S/D	689	-1763	-936	993	-1517	-1523	-551	2827	128	-345	134	2704	4283	2086	654
1971 FEDERAL ENERGY S/D	784	-998	-1097	276	-1592	-230	4873	4781	2953	4363	3277	7916	7108	4791	2791
1972 FEDERAL ENERGY S/D	2730	2234	199	880	-984	-680	4561	4434	6840	5534	1552	7500	8199	5880	3571
1973 FEDERAL ENERGY S/D	2905	2457	392	1059	-1349	70	-447	-1161	-905	-2089	-1965	95	607	1867	73
1974 FEDERAL ENERGY S/D	327	-1796	-1375	57	-808	2048	6858	4989	4708	4681	5022	7237	9259	6726	3651
1975 FEDERAL ENERGY S/D	2280	1647	-154	327	-1520	-1261	1491	1856	2857	1772	446	3765	5804	5808	1837
1976 FEDERAL ENERGY S/D	860	181	-668	1602	639	3588	5452	3467	1333	5234	2983	6900	3568	4812	2943
1977 FEDERAL ENERGY S/D	4043	2890	3399	878	-1512	-1182	-2939	-1681	-3164	-2466	-1143	130	398	397	-301
1978 FEDERAL ENERGY S/D	-526	-1406	-1816	-369	-954	-872	883	-1379	2241	3077	1274	3369	2203	2896	618

Exhibit 11: OY 2002-03

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2002- 3 OPERATING YEAR RUN DATE: 12/31/99
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	2945	221	-1206	289	-1704	-1396	-3214	-2196	-1969	-2219	-2082	-1161	2098	1203	-819
1930 FEDERAL ENERGY S/D	114	-301	-1177	-355	-1024	-1204	-3162	-2661	-2187	-1231	970	-1734	-291	1462	-1047
1931 FEDERAL ENERGY S/D	810	225	-1619	-472	-945	-1006	-3831	-3895	-2205	25	-2748	977	261	1639	-995
1932 FEDERAL ENERGY S/D	350	-636	-1733	-384	-1036	-1748	-3786	-2493	927	4170	2313	3563	4392	2749	296
1933 FEDERAL ENERGY S/D	1103	689	-867	392	-1191	-1164	3265	429	-1180	2175	-1699	1763	7258	6185	1335
1934 FEDERAL ENERGY S/D	2986	3223	-216	1631	954	3697	6483	3866	3026	5895	3852	4323	1398	431	2798
1935 FEDERAL ENERGY S/D	-724	-1286	-1547	-686	-1552	-1585	2663	-468	45	2950	-788	940	3366	2930	349
1936 FEDERAL ENERGY S/D	1359	-1089	-1437	-40	-1394	-1292	-2636	-1995	-1476	-1442	2849	4271	2132	2393	-53
1937 FEDERAL ENERGY S/D	554	-240	-1139	-320	-1293	-1357	-3199	-2752	-2445	-2386	-3763	325	281	1160	-1138
1938 FEDERAL ENERGY S/D	675	-102	-936	-209	-862	-774	1876	-1287	2383	2214	725	4510	4235	1923	1051
1939 FEDERAL ENERGY S/D	254	-942	-1288	404	-1613	-1517	-3147	332	364	1427	456	1558	-416	2999	-144
1940 FEDERAL ENERGY S/D	1223	-422	-1170	338	-1219	-1406	-2154	-899	2123	1425	396	226	-1094	1411	-211
1941 FEDERAL ENERGY S/D	589	-649	-801	518	-1333	-1376	-2350	-2612	-887	-1880	-1508	-177	1737	438	-714
1942 FEDERAL ENERGY S/D	186	-501	-1293	401	-846	1435	1797	-335	-2010	8	-905	1460	2916	3707	552
1943 FEDERAL ENERGY S/D	3306	1121	-610	220	-1537	-1427	2034	2058	2416	5951	3633	4171	4731	4006	1922
1944 FEDERAL ENERGY S/D	2840	1400	-1192	431	-1634	-1384	-3125	-1907	-2525	-2172	-2488	-603	844	381	-910
1945 FEDERAL ENERGY S/D	361	-692	-1702	-252	-968	-1766	-3715	-3301	-2154	-1727	-1898	2125	2574	2576	-714
1946 FEDERAL ENERGY S/D	916	340	-1023	-388	-1432	-342	3004	-861	1452	2319	2258	5104	4554	3132	1343
1947 FEDERAL ENERGY S/D	2235	-564	-604	497	-1289	1440	4310	3198	1135	1832	632	3795	4047	2712	1776
1948 FEDERAL ENERGY S/D	2052	-57	-828	3132	256	-218	4433	1655	50	760	1543	6895	9931	5046	2709
1949 FEDERAL ENERGY S/D	3086	3380	-30	865	-1490	-1514	585	-1188	4413	2889	2934	4079	3893	111	1322
1950 FEDERAL ENERGY S/D	-946	-1534	-1285	-171	-1749	-540	2909	1593	3508	4641	2231	3592	8222	4893	1931
1951 FEDERAL ENERGY S/D	2322	1743	-620	1717	881	2351	5402	4371	3043	4745	3138	5288	3154	4135	2975
1952 FEDERAL ENERGY S/D	3079	1958	-662	2465	-813	421	3913	907	697	4883	3054	6169	4490	2223	2191
1953 FEDERAL ENERGY S/D	2111	-399	-1247	-55	-1546	-1237	-2027	4161	1856	-277	-1107	2151	5325	4175	976
1954 FEDERAL ENERGY S/D	3198	1794	-565	835	-1140	-1065	1198	4880	894	2138	404	4285	7007	5130	2102
1955 FEDERAL ENERGY S/D	3941	2877	2168	1577	-357	-908	251	-438	-2248	455	-760	443	6216	6477	1370
1956 FEDERAL ENERGY S/D	2954	2553	-442	1362	77	2215	5650	3187	3197	3983	4668	7167	8021	4364	3490
1957 FEDERAL ENERGY S/D	3400	1929	-754	992	-1601	-586	-5	2736	1007	4808	0	6815	5764	1976	1784
1958 FEDERAL ENERGY S/D	1101	-249	-1121	208	-1645	-1419	134	4037	-39	543	1542	5472	4842	1604	1128
1959 FEDERAL ENERGY S/D	1016	-63	-1130	697	-584	422	5313	3315	1848	2522	-791	3367	6234	4318	2095
1960 FEDERAL ENERGY S/D	3133	1606	2022	3959	1359	809	3797	-103	1330	6495	1840	1528	3447	3118	2317
1961 FEDERAL ENERGY S/D	2603	-368	-885	736	-992	-1891	2322	3959	1708	2050	-1860	4215	6958	2410	1646
1962 FEDERAL ENERGY S/D	1797	26	-1322	464	-1735	-1665	2322	-1664	-881	3647	2325	1878	2130	3503	577
1963 FEDERAL ENERGY S/D	2956	1085	-1160	1298	-376	338	2930	705	-659	1007	-377	1213	3548	3253	1119
1964 FEDERAL ENERGY S/D	2642	898	-153	363	-1603	-1778	-193	2743	-1477	1860	-1413	1690	7143	5545	1190
1965 FEDERAL ENERGY S/D	3177	2396	273	1649	-936	2643	6393	4039	3139	1709	3409	4738	5506	3082	2989
1966 FEDERAL ENERGY S/D	3207	2058	-576	1150	-862	-723	1814	1400	-684	3841	-414	882	1291	3624	972
1967 FEDERAL ENERGY S/D	2912	-173	-1099	275	-1624	-1253	3716	3131	1054	1438	-3020	1680	6476	5328	1522
1968 FEDERAL ENERGY S/D	3248	2045	-376	922	-1101	-822	2745	3031	1636	-1191	-1989	-710	3716	3340	1120
1969 FEDERAL ENERGY S/D	3546	2087	940	1799	215	68	5450	3373	2281	3987	3552	6618	5387	3196	2993
1970 FEDERAL ENERGY S/D	1494	-946	-1144	848	-1640	-1654	-367	3002	313	-331	-827	1733	4286	2100	598
1971 FEDERAL ENERGY S/D	1589	-182	-1307	130	-1716	-361	5060	4963	3139	4379	2319	6951	7116	4806	2736
1972 FEDERAL ENERGY S/D	3536	3055	-9	735	-1107	-812	4748	4617	7032	5552	592	6536	8208	5900	3518
1973 FEDERAL ENERGY S/D	3713	3280	186	914	-1474	-62	-265	-985	-724	-2079	-2927	-878	610	1877	16
1974 FEDERAL ENERGY S/D	1130	-980	-1584	-91	-932	1920	7050	5174	4895	4696	4065	6273	9271	6747	3598
1975 FEDERAL ENERGY S/D	3085	2469	-360	181	-1643	-1392	1679	2032	3046	1784	-517	2796	5811	5826	1782
1976 FEDERAL ENERGY S/D	1664	999	-877	1457	516	3459	5642	3647	1519	5250	2024	5937	3572	4830	2889
1977 FEDERAL ENERGY S/D	4851	3713	3197	734	-1637	-1314	-2754	-1509	-2983	-2456	-2101	-841	399	408	-358
1978 FEDERAL ENERGY S/D	278	-588	-2026	-515	-1077	-1003	1068	-1203	2426	3093	313	2401	2204	2910	561

Exhibit 12: OY 2003-04

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2003- 4 OPERATING YEAR RUN DATE: 12/31/99
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	2963	235	-1192	294	-1737	-1430	-3396	-2272	-2161	-2372	-1261	-70	2126	1218	-737
1930 FEDERAL ENERGY S/D	128	-288	-1163	-350	-1058	-1238	-3347	-2736	-2380	-1383	1794	-641	-264	1478	-965
1931 FEDERAL ENERGY S/D	826	240	-1606	-468	-977	-1040	-4017	-3969	-2396	-127	-1925	2071	289	1656	-913
1932 FEDERAL ENERGY S/D	365	-622	-1720	-379	-1069	-1780	-3972	-2568	739	4023	3137	4657	4426	2769	380
1933 FEDERAL ENERGY S/D	1118	703	-853	397	-1224	-1198	3085	359	-1366	2027	-881	2857	7294	6211	1420
1934 FEDERAL ENERGY S/D	3003	3241	-200	1639	922	3668	6310	3801	2843	5753	4679	5421	1429	447	2885
1935 FEDERAL ENERGY S/D	-711	-1272	-1533	-682	-1585	-1619	2484	-537	-142	2804	32	2033	3397	2952	433
1936 FEDERAL ENERGY S/D	1375	-1076	-1423	-36	-1427	-1326	-2822	-2066	-1668	-1594	3672	5367	2164	2411	30
1937 FEDERAL ENERGY S/D	569	-226	-1125	-314	-1324	-1391	-3383	-2827	-2636	-2537	-2943	1417	310	1176	-1056
1938 FEDERAL ENERGY S/D	690	-89	-922	-204	-895	-808	1694	-1356	2195	2066	1545	5608	4267	1942	1136
1939 FEDERAL ENERGY S/D	268	-929	-1276	410	-1647	-1552	-3330	261	173	1275	1277	2653	-386	3018	-61
1940 FEDERAL ENERGY S/D	1240	-409	-1156	344	-1251	-1440	-2337	-972	1933	1275	1218	1319	-1066	1426	-128
1941 FEDERAL ENERGY S/D	604	-636	-788	524	-1367	-1411	-2534	-2688	-1078	-2033	-686	919	1765	453	-632
1942 FEDERAL ENERGY S/D	199	-488	-1279	407	-878	1404	1615	-404	-2199	-145	-82	2553	2947	3728	636
1943 FEDERAL ENERGY S/D	3324	1136	-597	225	-1571	-1462	1851	1987	2231	5806	4457	5269	4764	4027	2007
1944 FEDERAL ENERGY S/D	2857	1414	-1178	437	-1668	-1419	-3307	-1983	-2718	-2325	-1667	488	870	397	-829
1945 FEDERAL ENERGY S/D	375	-678	-1689	-247	-1001	-1800	-3901	-3376	-2347	-1878	-1080	3218	2605	2594	-631
1946 FEDERAL ENERGY S/D	930	353	-1008	-383	-1465	-376	2820	-931	1264	2171	3081	6203	4587	3154	1428
1947 FEDERAL ENERGY S/D	2253	-551	-590	503	-1321	1406	4130	3131	950	1684	1454	4892	4081	2731	1861
1948 FEDERAL ENERGY S/D	2068	-44	-813	3141	224	-252	4253	1587	-137	610	2365	7994	9972	5070	2795
1949 FEDERAL ENERGY S/D	3102	3398	-14	871	-1524	-1549	403	-1259	4226	2739	3758	5174	3926	128	1407
1950 FEDERAL ENERGY S/D	-931	-1521	-1272	-168	-1784	-573	2727	1524	3323	4493	3053	4689	8260	4916	2016
1951 FEDERAL ENERGY S/D	2338	1761	-606	1725	849	2320	5224	4306	2860	4599	3963	6385	3186	4158	3061
1952 FEDERAL ENERGY S/D	3096	1973	-646	2474	-846	388	3732	837	511	4736	3877	7270	4523	2242	2277
1953 FEDERAL ENERGY S/D	2126	-387	-1234	-50	-1579	-1272	-2213	4090	1672	-424	-288	3246	5360	4197	1061
1954 FEDERAL ENERGY S/D	3216	1808	-550	841	-1172	-1100	1017	4814	710	1987	1222	5383	7045	5154	2188
1955 FEDERAL ENERGY S/D	3961	2894	2187	1584	-389	-941	69	-510	-2440	306	59	1535	6249	6503	1455
1956 FEDERAL ENERGY S/D	2971	2569	-427	1370	44	2184	5473	3121	3009	3836	5494	8268	8060	4385	3577
1957 FEDERAL ENERGY S/D	3417	1945	-740	998	-1635	-620	-186	2667	817	4665	819	7915	5799	1994	1869
1958 FEDERAL ENERGY S/D	1115	-237	-1107	214	-1678	-1455	-49	3968	-227	392	2363	6570	4876	1621	1212
1959 FEDERAL ENERGY S/D	1031	-49	-1117	703	-617	391	5136	3251	1662	2374	29	4465	6271	4339	2181
1960 FEDERAL ENERGY S/D	3151	1620	2040	3970	1329	776	3617	-171	1143	6353	2663	2623	3480	3139	2403
1961 FEDERAL ENERGY S/D	2620	-356	-872	741	-1025	-1927	2142	3895	1523	1903	-1041	5312	6996	2429	1732
1962 FEDERAL ENERGY S/D	1814	40	-1308	470	-1768	-1700	2140	-1734	-1072	3499	3148	2973	2161	3522	661
1963 FEDERAL ENERGY S/D	2973	1099	-1146	1304	-409	305	2750	636	-848	855	445	2306	3580	3274	1203
1964 FEDERAL ENERGY S/D	2659	911	-138	369	-1636	-1813	-375	2675	-1666	1710	-596	2784	7181	5569	1274
1965 FEDERAL ENERGY S/D	3194	2412	289	1657	-969	2610	6216	3974	2954	1558	4234	5836	5540	3102	3076
1966 FEDERAL ENERGY S/D	3225	2073	-562	1156	-895	-757	1633	1332	-873	3694	407	1975	1323	3643	1056
1967 FEDERAL ENERGY S/D	2929	-160	-1084	281	-1658	-1288	3536	3065	870	1291	-2203	2774	6513	5353	1608
1968 FEDERAL ENERGY S/D	3267	2060	-362	928	-1134	-856	2562	2963	1451	-1341	-1168	381	3748	3362	1204
1969 FEDERAL ENERGY S/D	3564	2103	957	1807	183	34	5271	3309	2094	3841	4377	7719	5423	3215	3080
1970 FEDERAL ENERGY S/D	1510	-932	-1130	854	-1673	-1690	-550	2930	127	-480	-6	2826	4317	2118	681
1971 FEDERAL ENERGY S/D	1605	-170	-1293	136	-1750	-396	4881	4900	2952	4234	3144	8052	7151	4829	2822
1972 FEDERAL ENERGY S/D	3554	3073	6	741	-1140	-847	4567	4552	6853	5408	1413	7636	8246	5926	3605
1973 FEDERAL ENERGY S/D	3733	3299	201	920	-1507	-97	-447	-1057	-913	-2231	-2105	213	638	1895	99
1974 FEDERAL ENERGY S/D	1144	-966	-1571	-86	-967	1889	6875	5112	4710	4550	4889	7372	9310	6771	3685
1975 FEDERAL ENERGY S/D	3104	2486	-345	187	-1678	-1427	1498	1962	2863	1635	303	3892	5844	5851	1868
1976 FEDERAL ENERGY S/D	1680	1014	-863	1463	485	3428	5465	3582	1334	5104	2846	7035	3603	4855	2976
1977 FEDERAL ENERGY S/D	4872	3733	3217	740	-1670	-1349	-2936	-1584	-3176	-2608	-1278	252	426	423	-275
1978 FEDERAL ENERGY S/D	292	-575	-2013	-510	-1110	-1039	884	-1274	2237	2949	1136	3496	2236	2930	645

Exhibit 13: OY 2004-05

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2004- 5 OPERATING YEAR RUN DATE: 12/31/99
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	2984	251	-1179	321	-1573	-1281	-3450	-2586	-2384	-2600	-2182	-984	2211	1340	-861
1930 FEDERAL ENERGY S/D	144	-273	-1151	-324	-892	-1089	-3405	-3050	-2602	-1611	875	-1549	-179	1602	-1089
1931 FEDERAL ENERGY S/D	845	257	-1593	-442	-813	-890	-4075	-4283	-2618	-354	-2844	1163	374	1781	-1037
1932 FEDERAL ENERGY S/D	383	-605	-1706	-352	-903	-1632	-4029	-2882	519	3800	2219	3751	4516	2895	256
1933 FEDERAL ENERGY S/D	1135	720	-841	423	-1059	-1050	3033	53	-1584	1802	-1805	1950	7390	6344	1299
1934 FEDERAL ENERGY S/D	3025	3263	-187	1667	1091	3822	6262	3499	2630	5534	3764	4520	1515	572	2765
1935 FEDERAL ENERGY S/D	-694	-1256	-1519	-655	-1419	-1471	2431	-846	-360	2584	-891	1124	3486	3081	310
1936 FEDERAL ENERGY S/D	1395	-1059	-1409	-8	-1262	-1176	-2878	-2376	-1890	-1822	2751	4461	2253	2536	-93
1937 FEDERAL ENERGY S/D	587	-210	-1112	-288	-1159	-1241	-3439	-3141	-2858	-2766	-3866	506	395	1299	-1181
1938 FEDERAL ENERGY S/D	707	-72	-909	-178	-729	-659	1641	-1665	1979	1842	623	4703	4355	2070	1013
1939 FEDERAL ENERGY S/D	285	-914	-1263	437	-1482	-1404	-3384	-49	-48	1048	354	1746	-301	3144	-185
1940 FEDERAL ENERGY S/D	1259	-391	-1143	371	-1086	-1292	-2389	-1285	1713	1050	298	411	-979	1551	-252
1941 FEDERAL ENERGY S/D	621	-620	-775	551	-1202	-1262	-2589	-3001	-1298	-2262	-1606	10	1852	575	-756
1942 FEDERAL ENERGY S/D	217	-472	-1267	433	-713	1556	1560	-713	-2419	-372	-1002	1644	3035	3856	513
1943 FEDERAL ENERGY S/D	3344	1153	-583	251	-1406	-1314	1795	1677	2018	5585	3537	4366	4854	4153	1885
1944 FEDERAL ENERGY S/D	2877	1433	-1165	463	-1504	-1270	-3361	-2298	-2941	-2553	-2587	-422	955	519	-953
1945 FEDERAL ENERGY S/D	392	-662	-1677	-222	-835	-1651	-3960	-3689	-2568	-2107	-2004	2310	2692	2720	-756
1946 FEDERAL ENERGY S/D	949	371	-995	-357	-1300	-228	2766	-1240	1046	1945	2160	5300	4678	3281	1305
1947 FEDERAL ENERGY S/D	2272	-534	-577	529	-1157	1556	4078	2824	736	1459	533	3986	4172	2858	1739
1948 FEDERAL ENERGY S/D	2087	-28	-800	3172	390	-102	4200	1279	-354	384	1444	7091	10070	5202	2674
1949 FEDERAL ENERGY S/D	3124	3419	1	899	-1358	-1402	348	-1568	4009	2515	2840	4267	4016	253	1285
1950 FEDERAL ENERGY S/D	-915	-1506	-1260	-140	-1621	-425	2676	1216	3110	4268	2134	3784	8356	5044	1894
1951 FEDERAL ENERGY S/D	2356	1781	-592	1754	1015	2472	5175	4002	2647	4377	3045	5483	3273	4287	2941
1952 FEDERAL ENERGY S/D	3116	1992	-632	2504	-682	537	3680	526	295	4513	2957	6367	4614	2370	2156
1953 FEDERAL ENERGY S/D	2144	-373	-1222	-24	-1415	-1123	-2270	3781	1456	-646	-1212	2339	5450	4326	938
1954 FEDERAL ENERGY S/D	3236	1825	-538	869	-1007	-951	963	4509	495	1760	298	4480	7139	5283	2067
1955 FEDERAL ENERGY S/D	3985	2916	2206	1614	-223	-792	17	-820	-2661	82	-863	627	6341	6637	1334
1956 FEDERAL ENERGY S/D	2993	2589	-412	1397	210	2334	5424	2817	2794	3613	4577	7367	8155	4515	3457
1957 FEDERAL ENERGY S/D	3438	1963	-726	1026	-1470	-472	-240	2359	598	4447	-104	7013	5892	2120	1748
1958 FEDERAL ENERGY S/D	1134	-221	-1094	240	-1514	-1307	-102	3661	-444	166	1441	5665	4967	1746	1090
1959 FEDERAL ENERGY S/D	1049	-33	-1104	730	-452	540	5084	2945	1448	2151	-893	3559	6365	4469	2060
1960 FEDERAL ENERGY S/D	3172	1639	2057	4001	1497	927	3565	-478	925	6134	1743	1715	3569	3269	2283
1961 FEDERAL ENERGY S/D	2640	-340	-858	768	-861	-1779	2089	3592	1307	1681	-1965	4409	7093	2556	1610
1962 FEDERAL ENERGY S/D	1832	58	-1296	497	-1604	-1552	2087	-2042	-1290	3275	2228	2067	2250	3649	538
1963 FEDERAL ENERGY S/D	2995	1116	-1132	1331	-244	455	2697	326	-1067	629	-474	1397	3668	3402	1081
1964 FEDERAL ENERGY S/D	2679	928	-125	395	-1472	-1666	-427	2367	-1884	1483	-1520	1876	7274	5701	1152
1965 FEDERAL ENERGY S/D	3215	2431	305	1686	-803	2759	6168	3670	2738	1332	3315	4933	5630	3230	2955
1966 FEDERAL ENERGY S/D	3246	2091	-548	1184	-729	-609	1580	1023	-1092	3471	-513	1069	1413	3771	934
1967 FEDERAL ENERGY S/D	2948	-143	-1071	308	-1492	-1139	3483	2761	656	1067	-3128	1868	6606	5486	1486
1968 FEDERAL ENERGY S/D	3288	2078	-347	957	-969	-708	2509	2659	1236	-1566	-2091	-528	3838	3490	1083
1969 FEDERAL ENERGY S/D	3585	2122	972	1835	348	184	5220	3007	1877	3619	3459	6817	5515	3343	2959
1970 FEDERAL ENERGY S/D	1528	-915	-1118	882	-1509	-1542	-606	2621	-89	-704	-927	1917	4405	2244	558
1971 FEDERAL ENERGY S/D	1624	-153	-1281	162	-1587	-247	4827	4596	2735	4013	2224	7150	7244	4958	2701
1972 FEDERAL ENERGY S/D	3576	3093	20	767	-976	-698	4515	4248	6644	5188	492	6734	8340	6060	3486
1973 FEDERAL ENERGY S/D	3755	3320	216	947	-1342	52	-503	-1368	-1134	-2459	-3026	-695	724	2019	-24
1974 FEDERAL ENERGY S/D	1163	-952	-1557	-60	-801	2040	6829	4811	4497	4328	3972	6470	9407	6905	3566
1975 FEDERAL ENERGY S/D	3126	2509	-329	213	-1514	-1280	1444	1653	2649	1409	-618	2984	5934	5982	1746
1976 FEDERAL ENERGY S/D	1698	1031	-851	1490	651	3580	5414	3277	1119	4882	1927	6133	3690	4987	2855
1977 FEDERAL ENERGY S/D	4895	3755	3237	767	-1506	-1201	-2990	-1898	-3398	-2837	-2197	-657	512	546	-398
1978 FEDERAL ENERGY S/D	310	-558	-1999	-485	-945	-891	828	-1584	2018	2726	216	2592	2322	3058	522

Exhibit 14: OY 2005-06

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2005- 6 OPERATING YEAR RUN DATE: 12/31/99
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	3100	362	-1061	438	-1735	-1466	-3494	-2636	-2377	-2440	-1047	-147	2177	1324	-749
1930 FEDERAL ENERGY S/D	257	-161	-1034	-208	-1053	-1274	-3451	-3099	-2595	-1451	2012	-710	-215	1587	-977
1931 FEDERAL ENERGY S/D	959	368	-1475	-327	-973	-1075	-4122	-4333	-2610	-192	-1708	2003	339	1767	-924
1932 FEDERAL ENERGY S/D	497	-493	-1589	-236	-1065	-1817	-4075	-2932	529	3965	3356	4592	4488	2883	370
1933 FEDERAL ENERGY S/D	1248	832	-722	540	-1219	-1235	2992	10	-1571	1967	-674	2791	7364	6339	1415
1934 FEDERAL ENERGY S/D	3139	3379	-67	1786	931	3640	6227	3461	2648	5705	4902	5365	1484	556	2883
1935 FEDERAL ENERGY S/D	-582	-1144	-1401	-540	-1582	-1655	2389	-889	-347	2751	240	1964	3456	3070	425
1936 FEDERAL ENERGY S/D	1510	-949	-1291	107	-1424	-1361	-2925	-2422	-1883	-1661	3885	5304	2223	2523	20
1937 FEDERAL ENERGY S/D	701	-99	-994	-172	-1320	-1427	-3485	-3190	-2851	-2606	-2733	1346	361	1283	-1068
1938 FEDERAL ENERGY S/D	820	40	-792	-61	-892	-845	1597	-1709	1991	2007	1756	5549	4326	2057	1128
1939 FEDERAL ENERGY S/D	396	-805	-1145	552	-1645	-1591	-3428	-94	-40	1210	1487	2587	-334	3131	-72
1940 FEDERAL ENERGY S/D	1374	-280	-1025	489	-1247	-1477	-2432	-1332	1724	1212	1434	1250	-1012	1536	-138
1941 FEDERAL ENERGY S/D	733	-510	-657	668	-1363	-1448	-2634	-3051	-1289	-2103	-471	850	1818	559	-644
1942 FEDERAL ENERGY S/D	329	-360	-1150	550	-874	1375	1516	-756	-2408	-213	132	2485	3005	3845	628
1943 FEDERAL ENERGY S/D	3460	1265	-466	368	-1568	-1501	1751	1632	2032	5751	4674	5210	4824	4142	2000
1944 FEDERAL ENERGY S/D	2992	1545	-1048	580	-1666	-1457	-3405	-2348	-2933	-2393	-1453	417	919	503	-841
1945 FEDERAL ENERGY S/D	505	-551	-1560	-106	-997	-1836	-4008	-3739	-2561	-1945	-873	3149	2660	2707	-644
1946 FEDERAL ENERGY S/D	1062	482	-876	-243	-1462	-413	2723	-1285	1057	2109	3297	6145	4649	3269	1420
1947 FEDERAL ENERGY S/D	2387	-423	-458	645	-1319	1372	4037	2783	750	1623	1667	4829	4144	2847	1855
1948 FEDERAL ENERGY S/D	2200	82	-682	3292	231	-287	4159	1235	-342	547	2579	7935	10050	5195	2791
1949 FEDERAL ENERGY S/D	3239	3534	121	1015	-1521	-1588	306	-1612	4021	2677	3977	5109	3986	239	1399
1950 FEDERAL ENERGY S/D	-804	-1396	-1142	-26	-1784	-610	2633	1173	3125	4433	3270	4624	8331	5035	2009
1951 FEDERAL ENERGY S/D	2470	1896	-473	1870	855	2288	5137	3961	2662	4542	4183	6328	3242	4278	3058
1952 FEDERAL ENERGY S/D	3231	2105	-513	2622	-843	353	3639	482	309	4678	4092	7213	4584	2358	2271
1953 FEDERAL ENERGY S/D	2258	-262	-1105	92	-1576	-1308	-2318	3737	1471	-481	-81	3181	5422	4315	1052
1954 FEDERAL ENERGY S/D	3351	1938	-420	986	-1170	-1137	921	4469	509	1921	1430	5323	7115	5277	2183
1955 FEDERAL ENERGY S/D	4102	3033	2329	1732	-383	-977	-27	-868	-2652	247	268	1465	6314	6632	1449
1956 FEDERAL ENERGY S/D	3107	2703	-294	1515	49	2150	5385	2779	2806	3780	5715	8214	8130	4504	3574
1957 FEDERAL ENERGY S/D	3553	2077	-608	1144	-1631	-657	-282	2315	608	4616	1026	7861	5865	2106	1863
1958 FEDERAL ENERGY S/D	1245	-111	-977	356	-1676	-1495	-145	3617	-430	328	2575	6509	4939	1732	1204
1959 FEDERAL ENERGY S/D	1162	77	-985	848	-614	355	5044	2906	1463	2316	239	4403	6339	4460	2176
1960 FEDERAL ENERGY S/D	3288	1751	2180	4122	1338	744	3524	-523	938	6305	2880	2557	3540	3259	2399
1961 FEDERAL ENERGY S/D	2754	-230	-741	885	-1023	-1964	2045	3551	1321	1848	-834	5253	7068	2542	1726
1962 FEDERAL ENERGY S/D	1947	169	-1178	614	-1765	-1739	2044	-2086	-1281	3439	3364	2908	2219	3637	653
1963 FEDERAL ENERGY S/D	3110	1228	-1015	1449	-406	271	2656	283	-1055	790	660	2238	3637	3391	1195
1964 FEDERAL ENERGY S/D	2794	1039	-7	512	-1634	-1852	-471	2324	-1872	1644	-389	2716	7249	5694	1267
1965 FEDERAL ENERGY S/D	3331	2544	423	1804	-965	2575	6130	3630	2752	1494	4453	5776	5601	3220	3071
1966 FEDERAL ENERGY S/D	3362	2205	-430	1302	-891	-794	1537	981	-1080	3637	620	1909	1383	3760	1049
1967 FEDERAL ENERGY S/D	3063	-32	-952	424	-1654	-1325	3442	2719	672	1230	-1999	2709	6579	5478	1602
1968 FEDERAL ENERGY S/D	3404	2191	-227	1073	-1131	-893	2466	2616	1251	-1402	-958	310	3809	3479	1197
1969 FEDERAL ENERGY S/D	3700	2236	1093	1954	188	0	5179	2968	1888	3784	4597	7664	5488	3332	3076
1970 FEDERAL ENERGY S/D	1641	-805	-1000	999	-1670	-1729	-651	2574	-77	-540	205	2757	4373	2230	671
1971 FEDERAL ENERGY S/D	1738	-43	-1163	279	-1749	-433	4786	4558	2748	4179	3361	7997	7217	4949	2817
1972 FEDERAL ENERGY S/D	3692	3207	139	884	-1138	-884	4473	4209	6665	5357	1626	7581	8316	6055	3603
1973 FEDERAL ENERGY S/D	3872	3437	336	1064	-1505	-134	-548	-1414	-1124	-2299	-1892	142	690	2005	89
1974 FEDERAL ENERGY S/D	1275	-841	-1440	55	-964	1858	6793	4775	4510	4495	5110	7315	9384	6900	3684
1975 FEDERAL ENERGY S/D	3242	2624	-210	329	-1676	-1466	1401	1607	2663	1572	513	3826	5906	5976	1861
1976 FEDERAL ENERGY S/D	1812	1143	-733	1607	490	3396	5376	3237	1133	5049	3062	6977	3659	4980	2971
1977 FEDERAL ENERGY S/D	5013	3871	3362	885	-1669	-1387	-3034	-1948	-3390	-2676	-1061	181	477	531	-285
1978 FEDERAL ENERGY S/D	424	-446	-1883	-370	-1107	-1078	783	-1629	2029	2893	1349	3432	2291	3047	635

Exhibit 15: OY 2006-07

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2006- 7 OPERATING YEAR RUN DATE: 12/31/99
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	3066	324	-1112	227	-1862	-1606	-3687	-2845	-2560	-2272	-1848	-743	2548	1175	-902
1930 FEDERAL ENERGY S/D	220	-199	-1084	-420	-1179	-1413	-3647	-3306	-2778	-1280	1213	-1304	155	1440	-1130
1931 FEDERAL ENERGY S/D	923	331	-1527	-540	-1099	-1213	-4317	-4540	-2794	-24	-2509	1410	710	1620	-1077
1932 FEDERAL ENERGY S/D	461	-531	-1641	-449	-1191	-1957	-4272	-3139	347	4138	2558	4001	4865	2739	218
1933 FEDERAL ENERGY S/D	1212	796	-773	330	-1346	-1375	2800	-192	-1751	2140	-1478	2199	7743	6202	1264
1934 FEDERAL ENERGY S/D	3105	3345	-117	1576	807	3506	6041	3264	2474	5883	4105	4778	1858	410	2735
1935 FEDERAL ENERGY S/D	-619	-1182	-1452	-751	-1707	-1794	2198	-1091	-525	2928	-563	1369	3831	2928	274
1936 FEDERAL ENERGY S/D	1474	-987	-1343	-104	-1551	-1500	-3121	-2627	-2068	-1492	3085	4714	2597	2377	-132
1937 FEDERAL ENERGY S/D	666	-137	-1046	-385	-1446	-1565	-3681	-3398	-3034	-2437	-3536	751	733	1136	-1221
1938 FEDERAL ENERGY S/D	783	2	-843	-274	-1018	-983	1405	-1911	1813	2179	955	4960	4700	1913	977
1939 FEDERAL ENERGY S/D	359	-843	-1197	340	-1771	-1731	-3621	-298	-222	1379	686	1994	37	2986	-224
1940 FEDERAL ENERGY S/D	1338	-318	-1077	277	-1372	-1617	-2624	-1539	1543	1383	633	657	-642	1388	-291
1941 FEDERAL ENERGY S/D	696	-548	-708	457	-1490	-1587	-2828	-3259	-1473	-1934	-1271	258	2188	410	-797
1942 FEDERAL ENERGY S/D	293	-398	-1203	339	-1001	1238	1323	-958	-2589	-43	-667	1890	3379	3702	476
1943 FEDERAL ENERGY S/D	3425	1228	-519	157	-1695	-1642	1556	1428	1857	5928	3874	4621	5199	3997	1849
1944 FEDERAL ENERGY S/D	2956	1508	-1101	368	-1793	-1597	-3598	-2557	-3117	-2225	-2254	-179	1289	354	-995
1945 FEDERAL ENERGY S/D	467	-589	-1612	-319	-1122	-1974	-4205	-3947	-2745	-1777	-1678	2556	3034	2561	-797
1946 FEDERAL ENERGY S/D	1026	443	-929	-455	-1588	-553	2530	-1488	879	2281	2498	5557	5024	3126	1269
1947 FEDERAL ENERGY S/D	2352	-461	-509	434	-1446	1234	3845	2582	573	1795	866	4238	4521	2701	1704
1948 FEDERAL ENERGY S/D	2164	43	-732	3084	106	-426	3967	1035	-520	719	1779	7347	10434	5055	2642
1949 FEDERAL ENERGY S/D	3204	3501	71	804	-1647	-1728	113	-1815	3842	2849	3178	4516	4360	92	1248
1950 FEDERAL ENERGY S/D	-842	-1436	-1194	-239	-1911	-749	2442	971	2951	4606	2470	4034	8712	4893	1859
1951 FEDERAL ENERGY S/D	2436	1860	-523	1661	730	2151	4948	3763	2487	4718	3385	5740	3617	4137	2909
1952 FEDERAL ENERGY S/D	3198	2070	-562	2413	-969	215	3448	279	133	4853	3292	6625	4960	2213	2122
1953 FEDERAL ENERGY S/D	2222	-302	-1156	-120	-1703	-1448	-2515	3535	1294	-307	-885	2588	5799	4172	901
1954 FEDERAL ENERGY S/D	3318	1901	-471	775	-1295	-1278	728	4269	334	2092	627	4735	7495	5137	2033
1955 FEDERAL ENERGY S/D	4070	2999	2283	1523	-508	-1116	-219	-1072	-2835	420	-533	871	6691	6495	1299
1956 FEDERAL ENERGY S/D	3073	2668	-345	1306	-76	2013	5198	2581	2628	3953	4918	7628	8511	4363	3426
1957 FEDERAL ENERGY S/D	3519	2041	-658	933	-1758	-798	-474	2113	426	4794	223	7273	6243	1961	1712
1958 FEDERAL ENERGY S/D	1208	-149	-1029	145	-1802	-1635	-339	3417	-609	499	1775	5920	5315	1585	1053
1959 FEDERAL ENERGY S/D	1127	39	-1038	637	-740	218	4855	2708	1287	2489	-562	3813	6719	4317	2027
1960 FEDERAL ENERGY S/D	3254	1715	2133	3916	1214	606	3334	-723	759	6483	2079	1963	3913	3118	2250
1961 FEDERAL ENERGY S/D	2719	-269	-793	673	-1148	-2104	1855	3353	1144	2022	-1638	4665	7450	2398	1576
1962 FEDERAL ENERGY S/D	1912	131	-1230	403	-1892	-1879	1851	-2288	-1462	3613	2564	2315	2593	3491	501
1963 FEDERAL ENERGY S/D	3077	1191	-1068	1238	-531	133	2463	81	-1236	961	-138	1643	4012	3247	1044
1964 FEDERAL ENERGY S/D	2760	1001	-57	300	-1761	-1993	-663	2122	-2053	1814	-1193	2123	7627	5554	1116
1965 FEDERAL ENERGY S/D	3297	2508	374	1596	-1091	2437	5941	3431	2575	1665	3654	5186	5977	3076	2922
1966 FEDERAL ENERGY S/D	3328	2168	-484	1091	-1018	-934	1346	778	-1261	3811	-181	1317	1759	3616	898
1967 FEDERAL ENERGY S/D	3027	-71	-1004	214	-1781	-1465	3251	2521	496	1404	-2803	2117	6958	5340	1452
1968 FEDERAL ENERGY S/D	3370	2156	-279	862	-1257	-1032	2274	2417	1075	-1230	-1759	-286	4183	3337	1047
1969 FEDERAL ENERGY S/D	3667	2199	1045	1744	63	-138	4990	2771	1711	3959	3800	7076	5867	3188	2927
1970 FEDERAL ENERGY S/D	1606	-843	-1052	788	-1797	-1869	-845	2370	-255	-368	-596	2163	4747	2086	520
1971 FEDERAL ENERGY S/D	1703	-82	-1216	66	-1876	-573	4594	4362	2570	4356	2562	7409	7595	4806	2667
1972 FEDERAL ENERGY S/D	3660	3173	89	673	-1265	-1024	4283	4011	6494	5534	825	6992	8696	5917	3455
1973 FEDERAL ENERGY S/D	3840	3404	286	853	-1631	-274	-742	-1618	-1308	-2129	-2694	-453	1062	1859	-63
1974 FEDERAL ENERGY S/D	1237	-880	-1492	-157	-1091	1721	6608	4580	4334	4669	4313	6728	9766	6762	3536
1975 FEDERAL ENERGY S/D	3208	2591	-259	117	-1803	-1606	1208	1404	2488	1742	-289	3234	6283	5836	1711
1976 FEDERAL ENERGY S/D	1776	1106	-784	1396	365	3259	5188	3039	956	5224	2263	6390	4033	4841	2822
1977 FEDERAL ENERGY S/D	4982	3839	3317	674	-1795	-1527	-3228	-2156	-3575	-2508	-1860	-413	848	382	-437
1978 FEDERAL ENERGY S/D	388	-485	-1936	-581	-1233	-1218	589	-1834	1849	3068	549	2842	2664	2903	484

Exhibit 16: OY 2007-08

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2007- 8 OPERATING YEAR RUN DATE: 12/31/99
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	2957	209	-1245	268	-1832	-1587	-3703	-2768	-2551	-2251	-853	273	2607	1242	-772
1930 FEDERAL ENERGY S/D	104	-315	-1217	-380	-1148	-1394	-3665	-3229	-2768	-1260	2210	-286	213	1509	-1000
1931 FEDERAL ENERGY S/D	809	215	-1660	-499	-1068	-1194	-4337	-4464	-2784	-2	-1512	2432	768	1690	-947
1932 FEDERAL ENERGY S/D	347	-646	-1773	-408	-1158	-1938	-4291	-3061	360	4162	3556	5022	4928	2810	350
1933 FEDERAL ENERGY S/D	1099	681	-906	371	-1316	-1356	2785	-109	-1735	2164	-486	3218	7809	6279	1397
1934 FEDERAL ENERGY S/D	2994	3234	-249	1619	840	3529	6032	3351	2492	5911	5105	5803	1918	477	2870
1935 FEDERAL ENERGY S/D	-734	-1299	-1584	-710	-1675	-1776	2183	-1008	-511	2954	429	2388	3892	3002	406
1936 FEDERAL ENERGY S/D	1362	-1103	-1476	-64	-1521	-1480	-3141	-2548	-2058	-1471	4080	5735	2660	2447	-1
1937 FEDERAL ENERGY S/D	553	-253	-1179	-344	-1414	-1546	-3699	-3321	-3025	-2416	-2544	1769	789	1203	-1091
1938 FEDERAL ENERGY S/D	668	-112	-977	-234	-986	-964	1387	-1830	1828	2203	1947	5983	4762	1984	1109
1939 FEDERAL ENERGY S/D	244	-961	-1330	381	-1740	-1712	-3640	-218	-211	1401	1678	3016	94	3057	-94
1940 FEDERAL ENERGY S/D	1227	-434	-1210	317	-1341	-1598	-2640	-1462	1554	1404	1627	1677	-583	1457	-160
1941 FEDERAL ENERGY S/D	583	-663	-840	498	-1459	-1569	-2846	-3182	-1462	-1915	-276	1277	2247	478	-666
1942 FEDERAL ENERGY S/D	177	-514	-1335	379	-970	1259	1306	-877	-2578	-22	327	2908	3441	3775	608
1943 FEDERAL ENERGY S/D	3314	1112	-650	196	-1665	-1624	1538	1508	1873	5953	4870	5645	5262	4069	1981
1944 FEDERAL ENERGY S/D	2844	1393	-1233	408	-1764	-1578	-3615	-2480	-3107	-2204	-1259	837	1346	421	-865
1945 FEDERAL ENERGY S/D	352	-705	-1744	-278	-1092	-1956	-4227	-3869	-2735	-1756	-687	3574	3094	2631	-667
1946 FEDERAL ENERGY S/D	911	328	-1061	-415	-1557	-534	2512	-1407	893	2304	3494	6582	5087	3199	1401
1947 FEDERAL ENERGY S/D	2239	-577	-641	474	-1415	1254	3831	2666	589	1819	1861	5260	4584	2773	1837
1948 FEDERAL ENERGY S/D	2050	-72	-866	3128	138	-406	3952	1117	-506	740	2772	8373	10505	5131	2776
1949 FEDERAL ENERGY S/D	3093	3390	-60	847	-1616	-1711	97	-1734	3855	2870	4175	5538	4422	161	1380
1950 FEDERAL ENERGY S/D	-958	-1552	-1326	-200	-1881	-730	2425	1053	2968	4629	3465	5056	8779	4968	1992
1951 FEDERAL ENERGY S/D	2323	1748	-657	1704	762	2170	4935	3847	2505	4743	4383	6764	3677	4211	3043
1952 FEDERAL ENERGY S/D	3086	1957	-694	2456	-939	234	3433	359	148	4876	4288	7651	5023	2285	2255
1953 FEDERAL ENERGY S/D	2108	-418	-1289	-80	-1671	-1430	-2534	3615	1311	-282	106	3610	5861	4245	1033
1954 FEDERAL ENERGY S/D	3205	1787	-604	817	-1263	-1259	713	4354	350	2114	1618	5758	7563	5212	2167
1955 FEDERAL ENERGY S/D	3962	2889	2156	1565	-476	-1095	-234	-993	-2824	444	460	1890	6755	6573	1433
1956 FEDERAL ENERGY S/D	2962	2553	-476	1348	-45	2033	5185	2666	2643	3978	5916	8653	8579	4436	3561
1957 FEDERAL ENERGY S/D	3408	1928	-792	975	-1727	-780	-490	2194	438	4823	1215	8299	6307	2030	1845
1958 FEDERAL ENERGY S/D	1094	-266	-1160	186	-1772	-1616	-354	3498	-594	520	2769	6943	5379	1654	1185
1959 FEDERAL ENERGY S/D	1012	-76	-1171	678	-709	237	4841	2793	1303	2514	430	4835	6785	4391	2160
1960 FEDERAL ENERGY S/D	3142	1600	2004	3960	1248	627	3319	-641	773	6514	3075	2984	3976	3191	2384
1961 FEDERAL ENERGY S/D	2606	-385	-925	715	-1117	-2086	1838	3440	1160	2048	-646	5687	7517	2470	1709
1962 FEDERAL ENERGY S/D	1799	16	-1362	444	-1862	-1860	1835	-2207	-1450	3635	3560	3336	2654	3562	633
1963 FEDERAL ENERGY S/D	2965	1076	-1199	1279	-499	153	2448	162	-1223	982	856	2662	4073	3319	1176
1964 FEDERAL ENERGY S/D	2647	887	-188	341	-1731	-1974	-680	2206	-2039	1834	-202	3143	7694	5631	1249
1965 FEDERAL ENERGY S/D	3185	2394	243	1639	-1060	2457	5929	3517	2589	1687	4651	6210	6041	3148	3056
1966 FEDERAL ENERGY S/D	3217	2055	-615	1133	-986	-915	1331	861	-1249	3836	813	2337	1822	3687	1031
1967 FEDERAL ENERGY S/D	2915	-187	-1136	255	-1750	-1446	3237	2605	514	1428	-1814	3136	7024	5416	1585
1968 FEDERAL ENERGY S/D	3259	2041	-410	903	-1226	-1014	2256	2501	1091	-1208	-767	732	4246	3410	1179
1969 FEDERAL ENERGY S/D	3555	2086	915	1787	95	-119	4976	2858	1725	3984	4798	8101	5930	3260	3062
1970 FEDERAL ENERGY S/D	1493	-959	-1184	830	-1766	-1852	-863	2450	-240	-344	397	3181	4808	2158	651
1971 FEDERAL ENERGY S/D	1590	-199	-1349	106	-1845	-554	4579	4448	2584	4382	3558	8435	7661	4881	2801
1972 FEDERAL ENERGY S/D	3548	3063	-43	714	-1234	-1006	4267	4096	6515	5562	1819	8017	8763	5993	3590
1973 FEDERAL ENERGY S/D	3730	3292	156	894	-1600	-256	-760	-1538	-1296	-2108	-1700	564	1122	1926	68
1974 FEDERAL ENERGY S/D	1123	-997	-1625	-116	-1061	1743	6597	4668	4350	4695	5310	7752	9834	6840	3671
1975 FEDERAL ENERGY S/D	3097	2480	-389	158	-1772	-1589	1193	1484	2505	1765	704	4255	6345	5913	1844
1976 FEDERAL ENERGY S/D	1662	992	-917	1437	397	3280	5175	3123	970	5249	3257	7414	4094	4916	2956
1977 FEDERAL ENERGY S/D	4872	3729	3191	716	-1764	-1508	-3245	-2080	-3565	-2488	-864	607	905	449	-306
1978 FEDERAL ENERGY S/D	274	-599	-2069	-541	-1202	-1200	571	-1753	1863	3095	1543	3862	2724	2976	616

Exhibit 17: OY 2008-09

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2008- 9 OPERATING YEAR RUN DATE: 12/31/99
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	3028	277	-1182	273	-1850	-1625	-3781	-2962	-2640	-2333	-1905	-773	2538	1176	-941
1930 FEDERAL ENERGY S/D	174	-246	-1154	-375	-1165	-1431	-3745	-3422	-2857	-1343	1158	-1330	143	1443	-1168
1931 FEDERAL ENERGY S/D	879	285	-1597	-493	-1086	-1231	-4417	-4657	-2873	-83	-2564	1387	699	1625	-1115
1932 FEDERAL ENERGY S/D	417	-576	-1709	-402	-1176	-1976	-4370	-3254	271	4082	2504	3979	4861	2746	182
1933 FEDERAL ENERGY S/D	1168	751	-843	376	-1334	-1393	2708	-299	-1822	2084	-1540	2174	7744	6218	1230
1934 FEDERAL ENERGY S/D	3065	3305	-184	1626	823	3493	5956	3162	2407	5833	4055	4761	1850	412	2703
1935 FEDERAL ENERGY S/D	-664	-1229	-1521	-704	-1693	-1814	2106	-1199	-598	2876	-624	1344	3825	2939	239
1936 FEDERAL ENERGY S/D	1434	-1034	-1412	-58	-1539	-1518	-3220	-2739	-2147	-1553	3027	4691	2592	2383	-169
1937 FEDERAL ENERGY S/D	623	-183	-1115	-338	-1432	-1583	-3778	-3514	-3114	-2497	-3597	723	721	1138	-1260
1938 FEDERAL ENERGY S/D	737	-43	-912	-228	-1004	-1001	1309	-2020	1740	2122	896	4941	4695	1920	941
1939 FEDERAL ENERGY S/D	314	-893	-1266	387	-1758	-1750	-3718	-408	-300	1319	625	1972	26	2993	-262
1940 FEDERAL ENERGY S/D	1298	-365	-1146	324	-1358	-1636	-2717	-1654	1465	1323	575	632	-652	1392	-328
1941 FEDERAL ENERGY S/D	651	-594	-778	505	-1477	-1607	-2925	-3376	-1550	-1996	-1327	233	2178	412	-835
1942 FEDERAL ENERGY S/D	247	-445	-1272	384	-988	1223	1227	-1067	-2666	-104	-724	1864	3372	3712	440
1943 FEDERAL ENERGY S/D	3384	1181	-587	203	-1683	-1662	1459	1317	1786	5873	3818	4603	5195	4006	1814
1944 FEDERAL ENERGY S/D	2914	1463	-1169	414	-1782	-1617	-3693	-2673	-3197	-2286	-2311	-208	1277	355	-1034
1945 FEDERAL ENERGY S/D	422	-637	-1681	-272	-1109	-1993	-4307	-4062	-2824	-1839	-1740	2529	3026	2566	-835
1946 FEDERAL ENERGY S/D	981	398	-997	-410	-1576	-571	2434	-1598	805	2223	2442	5540	5021	3135	1234
1947 FEDERAL ENERGY S/D	2310	-508	-577	481	-1434	1216	3752	2475	502	1739	808	4217	4518	2709	1670
1948 FEDERAL ENERGY S/D	2120	-4	-802	3136	121	-444	3875	926	-593	659	1721	7332	10439	5070	2609
1949 FEDERAL ENERGY S/D	3164	3461	5	852	-1635	-1750	18	-1925	3768	2790	3123	4494	4356	96	1212
1950 FEDERAL ENERGY S/D	-889	-1484	-1263	-194	-1900	-767	2347	862	2882	4549	2413	4013	8713	4906	1824
1951 FEDERAL ENERGY S/D	2393	1819	-592	1711	744	2133	4857	3658	2420	4663	3332	5722	3610	4149	2876
1952 FEDERAL ENERGY S/D	3157	2027	-630	2464	-957	197	3355	168	61	4795	3235	6609	4956	2221	2088
1953 FEDERAL ENERGY S/D	2179	-350	-1226	-74	-1689	-1467	-2615	3424	1224	-362	-948	2566	5795	4183	865
1954 FEDERAL ENERGY S/D	3277	1857	-540	823	-1282	-1297	634	4164	263	2032	565	4715	7498	5151	2000
1955 FEDERAL ENERGY S/D	4033	2960	2221	1572	-494	-1134	-313	-1184	-2913	364	-594	845	6689	6511	1265
1956 FEDERAL ENERGY S/D	3032	2625	-412	1355	-62	1995	5108	2477	2556	3897	4866	7612	8513	4372	3394
1957 FEDERAL ENERGY S/D	3478	1998	-728	980	-1745	-817	-568	2004	350	4745	161	7257	6241	1966	1678
1958 FEDERAL ENERGY S/D	1164	-197	-1097	191	-1790	-1654	-433	3308	-681	439	1716	5900	5312	1590	1017
1959 FEDERAL ENERGY S/D	1082	-6	-1106	684	-727	200	4764	2604	1217	2433	-622	3791	6720	4328	1993
1960 FEDERAL ENERGY S/D	3214	1670	2069	3968	1231	589	3241	-832	686	6436	2023	1940	3909	3128	2217
1961 FEDERAL ENERGY S/D	2676	-316	-862	720	-1136	-2124	1760	3251	1074	1968	-1700	4645	7453	2406	1542
1962 FEDERAL ENERGY S/D	1870	86	-1298	450	-1880	-1898	1757	-2397	-1538	3555	2508	2292	2587	3498	465
1963 FEDERAL ENERGY S/D	3036	1145	-1136	1286	-517	116	2371	-29	-1310	901	-195	1618	4005	3256	1009
1964 FEDERAL ENERGY S/D	2718	956	-125	347	-1749	-2013	-758	2015	-2127	1752	-1257	2099	7628	5570	1081
1965 FEDERAL ENERGY S/D	3257	2464	308	1646	-1077	2419	5853	3327	2502	1605	3599	5166	5974	3084	2889
1966 FEDERAL ENERGY S/D	3288	2125	-551	1138	-1004	-953	1253	671	-1336	3755	-239	1293	1754	3624	863
1967 FEDERAL ENERGY S/D	2985	-118	-1073	261	-1768	-1484	3160	2416	428	1347	-2868	2093	6958	5355	1418
1968 FEDERAL ENERGY S/D	3330	2112	-346	910	-1244	-1052	2177	2310	1005	-1289	-1820	-313	4179	3347	1012
1969 FEDERAL ENERGY S/D	3626	2157	980	1794	77	-156	4898	2669	1637	3904	3747	7060	5864	3196	2895
1970 FEDERAL ENERGY S/D	1563	-890	-1121	836	-1784	-1890	-943	2258	-328	-424	-655	2137	4740	2094	483
1971 FEDERAL ENERGY S/D	1660	-130	-1286	112	-1864	-592	4501	4259	2497	4302	2506	7393	7595	4818	2633
1972 FEDERAL ENERGY S/D	3620	3133	21	720	-1253	-1044	4189	3908	6430	5481	766	6975	8698	5932	3423
1973 FEDERAL ENERGY S/D	3803	3364	220	900	-1619	-294	-839	-1730	-1384	-2190	-2753	-481	1054	1862	-100
1974 FEDERAL ENERGY S/D	1193	-929	-1562	-112	-1079	1706	6521	4480	4263	4615	4258	6710	9769	6780	3504
1975 FEDERAL ENERGY S/D	3167	2551	-325	164	-1791	-1626	1115	1293	2419	1684	-350	3211	6278	5851	1676
1976 FEDERAL ENERGY S/D	1732	1062	-853	1444	379	3242	5097	2934	883	5169	2205	6372	4026	4855	2789
1977 FEDERAL ENERGY S/D	4944	3801	3256	722	-1783	-1546	-3323	-2273	-3654	-2570	-1916	-438	837	384	-474
1978 FEDERAL ENERGY S/D	344	-530	-2006	-536	-1221	-1239	492	-1945	1774	3015	490	2819	2656	2913	447

Exhibit 18: OY 2009-10

FEDERAL SYSTEM ENERGY ANALYSIS
FEDERAL SYSTEM ENERGY SURPLUS/DEFICIT
FOR THE 50 HISTORICAL WATER YEARS ON RECORD
(FEDERAL TABLE 2 LINE 43)

1999 WHITE BOOK: 12/31/99
2009-10 OPERATING YEAR RUN DATE: 12/31/99
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	2960	209	-1251	201	-1984	-1777	-3977	-3163	-2812	-2635	-1235	144	2374	1182	-951
1930 FEDERAL ENERGY S/D	106	-314	-1223	-447	-1299	-1583	-3941	-3623	-3029	-1645	1828	-413	-21	1449	-1179
1931 FEDERAL ENERGY S/D	811	217	-1666	-565	-1220	-1383	-4613	-4858	-3045	-385	-1894	2304	535	1631	-1125
1932 FEDERAL ENERGY S/D	349	-644	-1778	-474	-1310	-2128	-4566	-3455	99	3780	3174	4896	4697	2752	172
1933 FEDERAL ENERGY S/D	1100	683	-912	304	-1468	-1545	2512	-500	-1994	1782	-870	3091	7580	6224	1220
1934 FEDERAL ENERGY S/D	2997	3237	-253	1554	689	3341	5760	2961	2235	5531	4725	5678	1686	419	2693
1935 FEDERAL ENERGY S/D	-732	-1297	-1590	-776	-1827	-1966	1910	-1400	-770	2574	45	2261	3662	2945	229
1936 FEDERAL ENERGY S/D	1366	-1102	-1481	-130	-1673	-1670	-3416	-2940	-2319	-1855	3696	5608	2428	2389	-179
1937 FEDERAL ENERGY S/D	555	-251	-1184	-410	-1566	-1735	-3974	-3715	-3286	-2799	-2927	1640	558	1145	-1270
1938 FEDERAL ENERGY S/D	669	-111	-981	-300	-1138	-1153	1113	-2221	1568	1820	1565	5858	4531	1926	931
1939 FEDERAL ENERGY S/D	246	-961	-1335	315	-1892	-1902	-3914	-609	-472	1017	1295	2889	-138	2999	-272
1940 FEDERAL ENERGY S/D	1230	-433	-1215	252	-1492	-1788	-2913	-1855	1293	1021	1245	1549	-816	1398	-338
1941 FEDERAL ENERGY S/D	584	-662	-846	433	-1611	-1759	-3121	-3577	-1722	-2298	-657	1150	2014	419	-845
1942 FEDERAL ENERGY S/D	179	-513	-1341	312	-1122	1071	1031	-1268	-2838	-406	-55	2781	3209	3718	430
1943 FEDERAL ENERGY S/D	3316	1113	-656	131	-1817	-1814	1263	1116	1614	5571	4488	5520	5031	4012	1804
1944 FEDERAL ENERGY S/D	2846	1395	-1238	342	-1916	-1768	-3889	-2874	-3369	-2588	-1642	709	1113	361	-1044
1945 FEDERAL ENERGY S/D	354	-705	-1750	-344	-1243	-2145	-4503	-4263	-2996	-2141	-1070	3446	2863	2572	-845
1946 FEDERAL ENERGY S/D	913	330	-1066	-482	-1710	-723	2238	-1799	633	1921	3111	6457	4857	3142	1224
1947 FEDERAL ENERGY S/D	2242	-576	-646	409	-1568	1064	3557	2274	330	1437	1478	5134	4354	2715	1660
1948 FEDERAL ENERGY S/D	2052	-72	-871	3064	-13	-596	3679	725	-765	357	2390	8248	10276	5076	2599
1949 FEDERAL ENERGY S/D	3096	3393	-64	780	-1769	-1902	-178	-2126	3596	2488	3793	5411	4192	102	1202
1950 FEDERAL ENERGY S/D	-957	-1552	-1332	-266	-2034	-919	2151	661	2710	4247	3083	4930	8550	4912	1814
1951 FEDERAL ENERGY S/D	2325	1751	-661	1639	610	1981	4661	3457	2248	4361	4002	6639	3446	4155	2866
1952 FEDERAL ENERGY S/D	3089	1959	-699	2392	-1091	45	3159	-33	-111	4493	3904	7526	4793	2227	2078
1953 FEDERAL ENERGY S/D	2111	-418	-1294	-146	-1823	-1619	-2811	3223	1052	-664	-278	3483	5631	4189	855
1954 FEDERAL ENERGY S/D	3209	1789	-609	751	-1416	-1449	438	3963	91	1730	1235	5632	7334	5157	1990
1955 FEDERAL ENERGY S/D	3965	2893	2152	1500	-628	-1285	-509	-1385	-3085	62	76	1762	6525	6518	1255
1956 FEDERAL ENERGY S/D	2964	2557	-481	1283	-196	1843	4912	2276	2384	3595	5536	8529	8349	4379	3384
1957 FEDERAL ENERGY S/D	3410	1930	-797	908	-1879	-969	-764	1803	178	4443	831	8173	6077	1973	1668
1958 FEDERAL ENERGY S/D	1096	-265	-1166	119	-1924	-1806	-629	3107	-853	137	2386	6817	5148	1596	1007
1959 FEDERAL ENERGY S/D	1014	-74	-1175	612	-861	48	4568	2403	1045	2131	47	4708	6557	4334	1983
1960 FEDERAL ENERGY S/D	3146	1602	2000	3896	1097	438	3045	-1033	514	6134	2693	2857	3745	3134	2207
1961 FEDERAL ENERGY S/D	2608	-384	-931	648	-1270	-2276	1564	3050	902	1666	-1030	5562	7289	2412	1532
1962 FEDERAL ENERGY S/D	1802	18	-1367	378	-2014	-2050	1561	-2598	-1710	3253	3178	3209	2423	3504	455
1963 FEDERAL ENERGY S/D	2968	1077	-1205	1214	-651	-36	2175	-230	-1482	599	475	2535	3841	3262	999
1964 FEDERAL ENERGY S/D	2650	888	-194	275	-1883	-2165	-954	1814	-2299	1450	-587	3016	7464	5576	1071
1965 FEDERAL ENERGY S/D	3189	2396	239	1574	-1211	2267	5657	3126	2330	1303	4269	6083	5810	3090	2879
1966 FEDERAL ENERGY S/D	3220	2057	-620	1066	-1138	-1105	1057	470	-1508	3453	431	2210	1591	3630	853
1967 FEDERAL ENERGY S/D	2917	-186	-1142	189	-1902	-1636	2964	2215	256	1045	-2198	3009	6795	5361	1408
1968 FEDERAL ENERGY S/D	3262	2044	-415	838	-1378	-1204	1981	2109	833	-1591	-1150	604	4015	3353	1002
1969 FEDERAL ENERGY S/D	3558	2089	911	1722	-57	-308	4702	2468	1465	3602	4417	7977	5700	3202	2885
1970 FEDERAL ENERGY S/D	1495	-958	-1190	764	-1918	-2042	-1139	2057	-500	-726	14	3054	4576	2100	473
1971 FEDERAL ENERGY S/D	1592	-198	-1355	40	-1998	-744	4305	4058	2325	4000	3176	8310	7431	4824	2623
1972 FEDERAL ENERGY S/D	3552	3065	-48	648	-1387	-1196	3993	3707	6258	5179	1436	7892	8534	5938	3413
1973 FEDERAL ENERGY S/D	3735	3296	151	828	-1753	-446	-1035	-1931	-1556	-2492	-2083	436	890	1869	-110
1974 FEDERAL ENERGY S/D	1125	-997	-1631	-183	-1213	1554	6325	4279	4091	4313	4928	7626	9605	6786	3494
1975 FEDERAL ENERGY S/D	3100	2483	-394	92	-1925	-1778	919	1092	2247	1382	319	4128	6114	5857	1666
1976 FEDERAL ENERGY S/D	1664	994	-922	1372	246	3091	4901	2733	711	4867	2875	7289	3862	4861	2779
1977 FEDERAL ENERGY S/D	4876	3733	3187	650	-1917	-1698	-3519	-2474	-3826	-2872	-1246	479	673	390	-484
1978 FEDERAL ENERGY S/D	276	-598	-2075	-608	-1355	-1391	296	-2146	1603	2713	1160	3736	2492	2919	437

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Section 8: Regional System Exhibits

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Exhibit 19

Regional Annual Energy Analysis Under 1937 Water Conditions for 10 Operating Years

Exhibit 19: Medium Loads

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

1999 WHITE BOOK: 12/31/99

OPERATING YEAR RUN DATE: 12/31/99

MEGAWATTS	2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
FIRM LOADS										
1 REGIONAL FIRM LOADS 1/	21438	21532	21658	21802	21958	22076	22240	22436	22608	22798
2 EXPORTS 2/	1920	2062	2063	2042	1782	1554	1354	1157	1074	1072
3 FED DIVERSITY 3/	0	0	0	0	0	0	0	0	0	0
4 FIRM LOADS	23358	23593	23721	23844	23741	23630	23594	23594	23682	23870
NON-FIRM LOADS										
5 REGIONAL NON-FIRM LOADS 4/	0	0	0	0	0	0	0	0	0	0
6 TOTAL LOADS	23358	23593	23721	23844	23741	23630	23594	23594	23682	23870
HYDRO RESOURCES										
7 REGULATED HYDRO 5/	10375	10387	10395	10404	10410	10417	10428	10433	10436	10438
8 INDEPENDENT HYDRO 6/	1113	1120	1120	1121	1120	1120	1121	1121	1121	1122
9 SUS. PKNG. ADJUSTMENT 7/	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO	11488	11507	11514	11525	11529	11537	11549	11553	11557	11561
OTHER RESOURCES										
11 SMALL THERMAL & MISC 8/	53	52	52	53	52	52	53	53	53	54
12 COMBUSTION TURBINES 9/	688	689	688	683	691	689	688	689	688	683
13 RENEWABLES 10/	76	76	76	76	76	76	76	76	76	76
14 COGENERATION 11/	674	674	674	674	674	674	674	674	674	674
15 IMPORTS 12/	1737	1611	1650	1628	1452	1436	1390	1262	1263	1256
16 CENTRALIA	1204	1204	1204	1180	1180	1204	1204	1204	1204	1180
17 JIM BRIDGER	606	611	612	597	606	600	605	607	611	613
18 COLSTRIP 1 & 2	361	359	358	361	358	358	344	343	343	346
19 BOARDMAN	385	385	385	385	385	385	385	385	385	385
20 VALMY	195	195	195	195	195	195	195	195	195	195
21 COLSTRIP 3	514	561	560	514	560	560	514	562	562	515
22 WNP 2	875	1000	875	1000	875	1000	875	1000	875	1000
23 COLSTRIP 4	720	720	660	720	720	660	720	720	660	720
24 NON-UTILITY GENERATION 13/	1056	1026	1023	1031	1028	1019	1018	1017	1018	1018
25 FED RESOURCE ACQUIS 14/	0	0	0	0	0	0	0	0	0	0
26 TOTAL RESOURCES	20633	20671	20528	20622	20383	20446	20291	20342	20166	20276

Exhibit 19: Medium Loads (continued)

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA SHEET 2 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

1999 WHITE BOOK: 12/31/99

OPERATING YEAR RUN DATE: 12/31/99

MEGAWATTS	2000- 1 AVG	2001- 2 AVG	2002- 3 AVG	2003- 4 AVG	2004- 5 AVG	2005- 6 AVG	2006- 7 AVG	2007- 8 AVG	2008- 9 AVG	2009-10 AVG
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 REG 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 REG TRANSMISSION LOSSES 19/	-581	-583	-579	-581	-574	-576	-572	-573	-568	-571
32 NET RESOURCES	20039	20076	19937	20029	19796	19857	19707	19756	19585	19692
SURPLUS/DEFICITS										
33 FIRM SURPLUS/DEFICIT	-3319	-3517	-3784	-3815	-3945	-3773	-3887	-3837	-4097	-4178
34 TOTAL SURPLUS/DEFICIT	-3319	-3517	-3784	-3815	-3945	-3773	-3887	-3837	-4097	-4178

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Exhibits 20 – 22

Regional Monthly Energy Analysis Under Medium Loads for 1937 Water Conditions

Exhibit 20: OY 2000-01

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

1999 WHITE BOOK: 12/31/99
2000- 1 OPERATING YEAR RUN DATE: 12/31/99

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 REGIONAL FIRM LOADS 1/	20057	20057	19584	20275	22255	23779	24448	23403	22087	20793	20793	20158	20110	20311	21438
2 EXPORTS 2/	2556	2560	2463	1777	1622	1641	1726	1699	1621	1665	1664	1704	2226	2341	1920
3 FED DIVERSITY 3/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FIRM LOADS	22613	22617	22047	22051	23877	25420	26174	25101	23708	22458	22457	21862	22336	22652	23358
NON-FIRM LOADS															
5 REGIONAL NON-FIRM LOADS 4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 TOTAL LOADS	22613	22617	22047	22051	23877	25420	26174	25101	23708	22458	22457	21862	22336	22652	23358
HYDRO RESOURCES															
7 REGULATED HYDRO 5/	11008	9982	9071	10091	10141	11873	9433	10470	8522	9043	9006	12375	11487	11519	10375
8 INDEPENDENT HYDRO 6/	1082	1113	1034	1018	933	994	811	825	975	1235	1289	1579	1637	1192	1113
9 SUS. PKNG. ADJUSTMENT 7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO	12090	11095	10105	11109	11074	12867	10244	11295	9497	10278	10295	13954	13124	12711	11488
OTHER RESOURCES															
11 SMALL THERMAL & MISC 8/	71	73	59	59	55	52	52	51	47	46	46	58	17	66	53
12 COMBUSTION TURBINES 9/	708	708	713	725	762	765	766	766	729	726	726	165	726	710	688
13 RENEWABLES 10/	78	78	78	79	80	82	83	82	82	81	81	33	78	78	76
14 COGENERATION 11/	718	718	718	718	718	711	718	718	718	718	718	210	718	711	674
15 IMPORTS 12/	1706	1707	1315	1369	1815	1901	2088	2238	1953	1752	1436	1409	1668	1787	1737
16 CENTRALIA	1253	1253	1253	1253	1253	1253	1253	1253	1253	1253	1253	667	1253	1253	1204
17 JIM BRIDGER	638	638	637	638	637	638	638	637	602	478	467	478	621	638	606
18 COLSTRIP 1 & 2	411	414	384	385	363	357	359	355	360	358	357	191	405	399	361
19 BOARDMAN	401	401	401	401	401	401	401	401	401	401	401	207	401	401	385
20 VALMY	202	202	202	202	202	202	202	202	160	202	202	160	202	202	195
21 COLSTRIP 3	588	589	568	568	553	548	549	546	550	549	548	566	0	579	514
22 WNP 2	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	0	0	1000	1000	875
23 COLSTRIP 4	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720
24 NON-UTILITY GENERATION 13/	1198	1199	1121	1016	978	970	954	979	1005	1140	1140	868	1194	1251	1056
25 FED RESOURCE ACQUIS 14/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 TOTAL RESOURCES	21782	20795	19274	20242	20611	22467	20027	21242	19077	19701	18389	19686	22127	22506	20633

Exhibit 20: OY 2000-01 (continued)

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA SHEET 2 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

1999 WHITE BOOK: 12/31/99
2000- 1 OPERATING YEAR RUN DATE: 12/31/99

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 REG 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 REG TRANSMISSION LOSSES 19/	-613	-586	-543	-571	-581	-634	-565	-599	-538	-555	-518	-555	-624	-633	-581
32 NET RESOURCES	21137	20183	18722	19662	20026	21834	19462	20643	18534	19139	17863	19112	21488	21823	20039
SURPLUS/DEFICITS															
33 FIRM SURPLUS/DEFICIT	-1475	-2433	-3325	-2389	-3850	-3586	-6712	-4458	-5174	-3319	-4593	-2750	-847	-829	-3319
34 TOTAL SURPLUS/DEFICIT	-1475	-2433	-3325	-2389	-3850	-3586	-6712	-4458	-5174	-3319	-4593	-2750	-847	-829	-3319

Exhibit 21: OY 2004-05

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

1999 WHITE BOOK: 12/31/99
2004- 5 OPERATING YEAR RUN DATE: 12/31/99

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 REGIONAL FIRM LOADS 1/	20529	20529	20058	20747	22743	24274	25028	23984	22634	21321	21321	20686	20647	20849	21958
2 EXPORTS 2/	2290	2290	2223	1938	1645	1660	1527	1502	1461	1573	1573	1600	2013	1959	1782
3 FED DIVERSITY 3/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FIRM LOADS	22819	22819	22281	22685	24388	25933	26555	25486	24095	22894	22894	22285	22660	22807	23741
NON-FIRM LOADS															
5 REGIONAL NON-FIRM LOADS 4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 TOTAL LOADS	22819	22819	22281	22685	24388	25933	26555	25486	24095	22894	22894	22285	22660	22807	23741
HYDRO RESOURCES															
7 REGULATED HYDRO 5/	11048	10011	9102	10123	10181	11923	9486	10503	8549	9085	9047	12418	11502	11532	10410
8 INDEPENDENT HYDRO 6/	1087	1116	1048	1023	934	1005	819	833	975	1241	1294	1594	1640	1197	1120
9 SUS. PKNG. ADJUSTMENT 7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO	12135	11127	10150	11146	11115	12928	10305	11336	9524	10326	10341	14012	13142	12729	11529
OTHER RESOURCES															
11 SMALL THERMAL & MISC 8/	60	61	58	58	54	58	59	57	47	46	45	57	17	56	52
12 COMBUSTION TURBINES 9/	712	712	717	729	766	769	770	769	733	730	730	165	726	710	691
13 RENEWABLES 10/	78	78	78	79	80	82	83	82	82	81	81	33	78	78	76
14 COGENERATION 11/	718	718	718	718	718	711	718	718	718	718	718	210	718	711	674
15 IMPORTS 12/	1556	1556	1113	1140	1418	1708	1765	1734	1395	1322	1291	1224	1415	1646	1452
16 CENTRALIA	1253	1252	1252	1253	1253	1253	1253	1253	1192	626	626	1071	1252	1253	1180
17 JIM BRIDGER	638	638	637	638	637	638	638	637	576	425	319	592	637	638	606
18 COLSTRIP 1 & 2	388	390	383	384	362	370	372	369	359	358	356	191	382	379	358
19 BOARDMAN	401	401	401	401	401	401	401	401	401	401	401	207	401	401	385
20 VALMY	211	211	211	211	211	211	211	211	169	116	106	165	211	202	195
21 COLSTRIP 3	570	572	567	567	552	557	559	556	550	548	547	566	566	564	560
22 WNP 2	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	0	0	1000	1000	875
23 COLSTRIP 4	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720
24 NON-UTILITY GENERATION 13/	1167	1168	1088	981	943	937	930	955	977	1111	1111	855	1183	1210	1028
25 FED RESOURCE ACQUIS 14/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 TOTAL RESOURCES	21607	20604	19093	20025	20230	22343	19784	20798	18442	18528	17392	20068	22447	22297	20383

Exhibit 21: OY 2004-05 (continued)

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA SHEET 2 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

1999 WHITE BOOK: 12/31/99
2004- 5 OPERATING YEAR RUN DATE: 12/31/99

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 REG SPINNING RESERVES 17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE 18/	-31	-25	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 REG TRANSMISSION LOSSES 19/	-608	-580	-538	-564	-570	-630	-558	-587	-520	-522	-490	-565	-633	-627	-574
32 NET RESOURCES	20968	19998	18546	19451	19656	21713	19226	20211	17917	17998	16894	19483	21800	21619	19796
SURPLUS/DEFICITS															
33 FIRM SURPLUS/DEFICIT	-1851	-2821	-3735	-3233	-4733	-4221	-7329	-5275	-6177	-4896	-6000	-2802	-860	-1188	-3945
34 TOTAL SURPLUS/DEFICIT	-1851	-2821	-3735	-3233	-4733	-4221	-7329	-5275	-6177	-4896	-6000	-2802	-860	-1188	-3945

Exhibit 22: OY 2009-10

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

1999 WHITE BOOK: 12/31/99
2009-10 OPERATING YEAR RUN DATE: 12/31/99

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 REGIONAL FIRM LOADS 1/	21341	21341	20869	21563	23583	25137	25922	24868	23494	22144	22144	21505	21467	21683	22798
2 EXPORTS 2/	1197	1197	1132	1023	999	1025	1021	1007	957	1008	978	992	1248	1277	1072
3 FED DIVERSITY 3/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 FIRM LOADS	22538	22538	22001	22586	24581	26162	26943	25875	24451	23151	23121	22497	22715	22960	23870
NON-FIRM LOADS															
5 REGIONAL NON-FIRM LOADS 4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 TOTAL LOADS	22538	22538	22001	22586	24581	26162	26943	25875	24451	23151	23121	22497	22715	22960	23870
HYDRO RESOURCES															
7 REGULATED HYDRO 5/	11082	10035	9124	10147	10208	11954	9519	10523	8569	9113	9076	12463	11548	11552	10438
8 INDEPENDENT HYDRO 6/	1087	1117	1048	1024	935	1006	820	834	976	1242	1295	1602	1653	1198	1122
9 SUS. PKNG. ADJUSTMENT 7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 TOTAL HYDRO	12169	11152	10172	11171	11143	12960	10339	11357	9545	10355	10371	14065	13201	12750	11561
OTHER RESOURCES															
11 SMALL THERMAL & MISC 8/	61	62	59	59	55	58	60	58	47	47	46	66	17	57	54
12 COMBUSTION TURBINES 9/	706	706	711	723	760	764	764	764	727	724	724	112	728	712	683
13 RENEWABLES 10/	78	78	78	79	80	82	83	82	82	81	81	33	78	78	76
14 COGENERATION 11/	718	718	718	718	718	711	718	718	718	718	718	210	718	711	674
15 IMPORTS 12/	1299	1299	902	964	1326	1368	1414	1419	1346	1165	1134	1122	1314	1452	1256
16 CENTRALIA	1252	1253	1253	1253	1252	1253	1253	1253	1192	626	626	1071	1253	1253	1180
17 JIM BRIDGER	638	638	637	638	637	638	638	637	581	478	616	519	605	638	613
18 COLSTRIP 1 & 2	390	392	384	385	364	372	374	371	361	359	358	0	407	381	346
19 BOARDMAN	401	401	401	401	401	401	401	401	401	401	401	207	401	401	385
20 VALMY	211	211	211	211	211	211	211	211	169	116	105	165	211	202	195
21 COLSTRIP 3	572	573	568	569	553	558	561	558	551	550	549	579	0	566	515
22 WNP 2	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
23 COLSTRIP 4	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720
24 NON-UTILITY GENERATION 13/	1162	1162	1084	975	939	932	915	939	959	1094	1094	844	1173	1206	1018
25 FED RESOURCE ACQUIS 14/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 TOTAL RESOURCES	21377	20365	18898	19866	20159	22028	19451	20488	18398	18434	18543	20713	21825	22127	20276

Exhibit 22: OY 2009-10 (continued)

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA SHEET 2 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

1999 WHITE BOOK: 12/31/99
2009-10 OPERATING YEAR RUN DATE: 12/31/99

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 REG SPINNING RESERVES 17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE 18/	-31	-25	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 REG TRANSMISSION LOSSES 19/	-602	-574	-533	-560	-568	-621	-549	-578	-519	-520	-523	-584	-615	-623	-571
32 NET RESOURCES	20744	19766	18356	19297	19587	21407	18902	19910	17875	17907	18013	20110	21196	21454	19692
SURPLUS/DEFICITS															
33 FIRM SURPLUS/DEFICIT	-1794	-2772	-3645	-3289	-4995	-4755	-8041	-5964	-6577	-5244	-5109	-2387	-1520	-1506	-4178
34 TOTAL SURPLUS/DEFICIT	-1794	-2772	-3645	-3289	-4995	-4755	-8041	-5964	-6577	-5244	-5109	-2387	-1520	-1506	-4178

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Exhibit 23

Regional Monthly 50-Hour Capacity Surpluses and Deficits Under Medium Loads for 1937 Water Conditions

Exhibit 23: Medium Loads

TABLE R-1: REGIONAL 50-HOUR SUSTAINED PEAKING

BASE CASE: EXISTING REGIONAL CONTRACTS

REGIONAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

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

1999 WHITE BOOK: 12/31/99
RUN DATE: 12/31/99

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
2000-01	1956	1162	-134	644	-980	-362	-4279	-2853	-2456	-1311	-3517	-159	1394	2717
2001-02	2259	1524	93	455	-1440	-566	-4553	-3080	-3083	-1724	-3009	-22	1316	2439
2002-03	2202	1492	415	326	-1061	-691	-4402	-2915	-3054	-2060	-4544	-901	385	2084
2003-04	1654	965	-291	-280	-1663	-1304	-5026	-3537	-3609	-2691	-3975	449	529	1880
2004-05	1531	859	-418	-944	-2334	-1446	-5509	-3999	-4019	-2917	-4999	-286	1385	2392
2005-06	2074	1420	436	-166	-2052	-1428	-5507	-3907	-4126	-2326	-3348	-310	801	2373
2006-07	2002	1366	202	30	-1888	-1289	-5547	-4041	-3855	-2010	-4233	-805	1238	2497
2007-08	2090	1467	217	-119	-2238	-1463	-5962	-4371	-4342	-2218	-3240	-187	1970	2726
2008-09	2369	1758	776	-166	-2125	-1854	-6206	-4649	-4606	-2436	-4660	-939	1166	2586
2009-10	2145	1534	371	-408	-2380	-2126	-6491	-4939	-4484	-3363	-4242	103	1275	2323

Exhibits 24 – 26

Regional Monthly Capacity Analysis Under Medium Loads for 1937 Water Conditions

Exhibit 24: OY 2000-01

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

1999 WHITE BOOK: 12/31/99
2000- 1 OPERATING YEAR RUN DATE: 12/31/99

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 REGIONAL FIRM LOADS 1/	25559	25559	25374	27909	30088	32266	33023	32488	30221	28480	28480	26859	26105	25642
2 EXPORTS 2/	4313	4313	4233	3076	2723	2734	2809	2767	2744	2810	2810	2951	3690	3751
3 FED DIVERSITY 3/	-917	-911	-920	-972	-917	-691	-701	-716	-924	-841	-841	-913	-932	-899
4 FIRM LOADS	28954	28961	28687	30013	31893	34308	35131	34539	32041	30448	30449	28897	28864	28494
NON-FIRM LOADS														
5 REGIONAL NON-FIRM LOADS 4/	111	111	101	72	133	83	154	141	153	120	120	90	145	122
6 TOTAL LOADS	29065	29072	28788	30085	32026	34392	35284	34680	32194	30569	30569	28987	29008	28616
HYDRO RESOURCES														
7 REGULATED HYDRO 5/	26986	26955	26390	26721	27017	28343	28216	28118	27490	27630	27596	27185	28288	26982
8 INDEPENDENT HYDRO 6/	1945	1928	1907	1888	1845	1825	1769	1884	1981	2017	2042	2138	2172	2011
9 SUS. PKNG. ADJUSTMENT 7/	-100	-1452	-2300	-1282	-2330	-1483	-5372	-3804	-4422	-4128	-5470	-1320	-4065	-700
10 TOTAL HYDRO	28831	27431	25997	27327	26532	28685	24613	26198	25049	25519	24168	28003	26395	28293
OTHER RESOURCES														
11 SMALL THERMAL & MISC 8/	54	54	45	48	131	128	129	126	36	33	33	48	1	55
12 COMBUSTION TURBINES 9/	1052	1052	1053	1060	1518	1520	1518	1517	1062	1059	1059	315	1059	1054
13 RENEWABLES 10/	81	81	81	82	83	85	86	85	85	84	84	33	81	81
14 COGENERATION 11/	775	775	775	775	775	755	775	775	775	775	775	306	775	755
15 IMPORTS 12/	2075	2075	1633	2064	2400	2697	2988	3012	2743	1930	1657	1948	2125	2012
16 CENTRALIA	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340	670	1340	1340
17 JIM BRIDGER	707	707	707	707	706	707	706	707	707	530	530	530	707	707
18 COLSTRIP 1 & 2	414	414	396	402	387	381	383	376	378	371	371	202	431	417
19 BOARDMAN	546	546	546	546	546	546	546	546	546	546	546	546	546	546
20 VALMY	242	242	242	242	242	242	242	242	242	242	242	242	242	242
21 COLSTRIP 3	595	595	583	586	576	571	573	568	569	564	564	587	0	598
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 NON-UTILITY GENERATION 13/	1432	1432	1340	1237	1185	1170	1155	1180	1217	1366	1366	933	1341	1481
25 FED RESOURCE ACQUIS 14/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 TOTAL RESOURCES	40046	38646	36640	38318	38323	40729	36956	38574	36651	36261	33475	35103	36945	39483

Exhibit 24: OY 2000-01 (continued)

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA SHEET 2 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

1999 WHITE BOOK: 12/31/99
2000- 1 OPERATING YEAR RUN DATE: 12/31/99

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/	-1613	-1611	-1577	-1588	-1625	-1688	-1680	-1682	-1630	-1645	-1645	-1546	-1683	-1617
28 LARGE THERMAL RESERVES 16	-1030	-1030	-969	-994	-973	-1002	-1004	-1009	-1018	-948	-773	-721	-963	-1028
29 REG SPINNING RESERVES 17/	-815	-794	-764	-809	-807	-880	-790	-811	-762	-770	-709	-741	-791	-825
30 HYDRO MAINTENANCE 18/	-4607	-4044	-3787	-3208	-2935	-2037	-1561	-2288	-2631	-2751	-2483	-2360	-2202	-3721
31 REG TRANSMISSION LOSSES 19/	-1071	-1044	-990	-1063	-1071	-1177	-1069	-1098	-1025	-1010	-933	-996	-1049	-1082
32 NET RESOURCES	30910	30123	28553	30657	30913	33946	30851	31686	29585	29138	26932	28738	30257	31210
SURPLUS/DEFICITS														
33 FIRM SURPLUS/DEFICIT	1956	1162	-134	644	-980	-362	-4279	-2853	-2456	-1311	-3517	-159	1394	2717
34 TOTAL SURPLUS/DEFICIT	1845	1051	-235	572	-1113	-446	-4433	-2993	-2609	-1431	-3637	-249	1249	2595

Exhibit 25: OY 2004-05

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

1999 WHITE BOOK: 12/31/99
2004- 5 OPERATING YEAR RUN DATE: 12/31/99

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 REGIONAL FIRM LOADS 1/	26193	26193	26015	28585	30729	32934	33816	33245	30952	29207	29207	27582	26767	26360
2 EXPORTS 2/	3809	3809	3748	3335	2729	2726	2547	2523	2504	2613	2613	2735	3188	3148
3 FED DIVERSITY 3/	-988	-988	-1103	-1049	-943	-784	-855	-833	-941	-933	-933	-843	-866	-938
4 FIRM LOADS	29014	29014	28660	30871	32515	34876	35508	34935	32514	30887	30887	29474	29089	28570
NON-FIRM LOADS														
5 REGIONAL NON-FIRM LOADS 4/	131	131	104	71	134	84	151	101	148	109	109	94	135	122
6 TOTAL LOADS	29146	29146	28763	30942	32649	34960	35659	35035	32663	30996	30996	29568	29223	28692
HYDRO RESOURCES														
7 REGULATED HYDRO 5/	26969	26938	26390	26720	27016	28352	28225	28127	27490	27630	27596	27184	28269	26966
8 INDEPENDENT HYDRO 6/	1944	1927	1919	1892	1844	1839	1791	1894	1981	2024	2049	2153	2163	2010
9 SUS. PKNG. ADJUSTMENT 7/	-100	-1332	-2217	-1180	-2202	-1376	-5402	-3720	-4440	-4151	-5494	-1278	-3985	-700
10 TOTAL HYDRO	28813	27533	26092	27432	26658	28815	24614	26301	25031	25503	24151	28059	26447	28276
OTHER RESOURCES														
11 SMALL THERMAL & MISC 8/	44	44	45	47	130	134	134	132	35	32	32	48	1	47
12 COMBUSTION TURBINES 9/	1056	1056	1057	1064	1522	1524	1522	1521	1066	1063	1063	315	1059	1054
13 RENEWABLES 10/	82	82	82	83	84	86	87	86	86	85	85	34	82	82
14 COGENERATION 11/	775	775	775	775	775	755	775	775	775	775	775	306	775	755
15 IMPORTS 12/	1791	1791	1246	1214	1528	2054	2127	2154	1638	1423	1423	1682	1856	1851
16 CENTRALIA	1340	1340	1340	1340	1340	1340	1340	1340	1340	670	670	1340	1340	1340
17 JIM BRIDGER	707	707	707	707	707	707	707	707	706	530	354	707	707	706
18 COLSTRIP 1 & 2	395	395	395	400	385	392	393	388	377	371	371	201	407	400
19 BOARDMAN	546	546	546	546	546	546	546	546	546	546	546	546	546	546
20 VALMY	242	242	242	242	242	242	242	242	242	121	121	242	242	242
21 COLSTRIP 3	582	582	582	585	575	579	580	576	569	564	564	587	590	585
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 NON-UTILITY GENERATION 13/	1364	1364	1276	1173	1119	1106	1088	1114	1157	1307	1307	898	1298	1410
25 FED RESOURCE ACQUIS 14/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 TOTAL RESOURCES	39639	38359	36287	37510	37513	40182	36057	37784	35470	34892	32202	35705	37252	39196

Exhibit 25: OY 2004-05 (continued)

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA SHEET 2 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

1999 WHITE BOOK: 12/31/99
2004- 5 OPERATING YEAR RUN DATE: 12/31/99

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/	-1610	-1606	-1575	-1585	-1622	-1687	-1678	-1680	-1627	-1644	-1643	-1545	-1679	-1613
28 LARGE THERMAL RESERVES 16	-1008	-1008	-938	-940	-919	-987	-990	-995	-968	-813	-612	-832	-1032	-1005
29 REG SPINNING RESERVES 17/	-813	-795	-766	-812	-811	-883	-790	-814	-762	-745	-679	-767	-809	-822
30 HYDRO MAINTENANCE 18/	-4605	-4042	-3787	-3208	-2935	-2037	-1561	-2288	-2631	-2751	-2483	-2360	-2202	-3721
31 REG TRANSMISSION LOSSES 19/	-1059	-1035	-979	-1037	-1046	-1159	-1040	-1072	-988	-969	-897	-1012	-1056	-1073
32 NET RESOURCES	30545	29873	28242	29927	30181	33430	29998	30935	28495	27970	25888	29189	30473	30962
SURPLUS/DEFICITS														
33 FIRM SURPLUS/DEFICIT	1531	859	-418	-944	-2334	-1446	-5509	-3999	-4019	-2917	-4999	-286	1385	2392
34 TOTAL SURPLUS/DEFICIT	1400	727	-521	-1015	-2468	-1530	-5660	-4100	-4168	-3026	-5108	-379	1250	2270

Exhibit 26: OY 2009-10

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

1999 WHITE BOOK: 12/31/99
2009-10 OPERATING YEAR RUN DATE: 12/31/99

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 REGIONAL FIRM LOADS 1/	27289	27289	27109	29734	31852	34102	35035	34456	32134	30351	30351	28721	27721	27432
2 EXPORTS 2/	2165	2165	2069	1964	1938	1972	1981	1964	1936	1937	1937	2024	2151	2209
3 FED DIVERSITY 3/	-1228	-1228	-1331	-1277	-1138	-934	-1004	-975	-1110	-1107	-1107	-1054	-1112	-1175
4 FIRM LOADS	28226	28226	27847	30420	32653	35140	36011	35445	32960	31180	31180	29691	28759	28466
NON-FIRM LOADS														
5 REGIONAL NON-FIRM LOADS 4/	111	111	103	77	124	51	153	101	148	106	106	94	133	118
6 TOTAL LOADS	28337	28337	27951	30497	32777	35190	36164	35546	33108	31287	31287	29785	28893	28583
HYDRO RESOURCES														
7 REGULATED HYDRO 5/	26971	26940	26392	26722	27018	28355	28228	28130	27491	27633	27599	27200	28292	26968
8 INDEPENDENT HYDRO 6/	1947	1930	1922	1894	1846	1841	1794	1897	1985	2026	2051	2168	2189	2014
9 SUS. PKNG. ADJUSTMENT 7/	-100	-1266	-2147	-1121	-2122	-1307	-5402	-3665	-4440	-4151	-5494	-1244	-3939	-700
10 TOTAL HYDRO	28818	27604	26167	27495	26742	28889	24620	26362	25036	25508	24156	28124	26542	28282
OTHER RESOURCES														
11 SMALL THERMAL & MISC 8/	46	46	46	48	132	135	136	133	37	34	34	57	1	48
12 COMBUSTION TURBINES 9/	1050	1050	1051	1058	1516	1518	1516	1515	1060	1057	1057	315	1061	1056
13 RENEWABLES 10/	82	82	82	83	84	86	87	86	86	85	85	34	82	82
14 COGENERATION 11/	775	775	775	775	775	755	775	775	775	775	775	306	775	755
15 IMPORTS 12/	1595	1595	1152	1266	1616	1538	1612	1638	1643	1260	1260	1578	1763	1646
16 CENTRALIA	1340	1340	1340	1340	1340	1340	1340	1340	1340	670	670	1340	1340	1340
17 JIM BRIDGER	706	706	707	707	707	707	707	706	707	530	707	530	707	707
18 COLSTRIP 1 & 2	398	398	398	402	388	395	396	391	380	374	374	0	434	403
19 BOARDMAN	546	546	546	546	546	546	546	546	546	546	546	546	546	546
20 VALMY	242	242	242	242	242	242	242	242	242	121	121	242	242	242
21 COLSTRIP 3	584	584	584	587	576	581	583	579	571	566	566	600	0	587
22 WNP 2	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162	1162
23 COLSTRIP 4	740	740	740	740	740	740	740	740	740	740	740	740	740	740
24 NON-UTILITY GENERATION 13/	1357	1357	1269	1167	1112	1100	1082	1107	1138	1288	1288	886	1288	1403
25 FED RESOURCE ACQUIS 14/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 TOTAL RESOURCES	39441	38227	36261	37618	37678	39734	35544	37322	35463	34716	33541	36460	36683	38999

Exhibit 26: OY 2009-10 (continued)

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA SHEET 2 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

1999 WHITE BOOK: 12/31/99
2009-10 OPERATING YEAR RUN DATE: 12/31/99

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/	-1609	-1606	-1574	-1584	-1622	-1686	-1678	-1680	-1626	-1643	-1641	-1546	-1682	-1614
28 LARGE THERMAL RESERVES 16	-990	-990	-936	-961	-990	-968	-971	-975	-982	-795	-821	-934	-929	-985
29 REG SPINNING RESERVES 17/	-813	-797	-768	-813	-810	-885	-790	-816	-762	-746	-724	-793	-795	-823
30 HYDRO MAINTENANCE 18/	-4605	-4042	-3787	-3208	-2935	-2037	-1561	-2288	-2631	-2751	-2483	-2360	-2202	-3721
31 REG TRANSMISSION LOSSES 19/	-1053	-1032	-978	-1040	-1049	-1144	-1023	-1057	-987	-964	-934	-1033	-1041	-1067
32 NET RESOURCES	30372	29760	28218	30012	30272	33014	29520	30506	28476	27818	26939	29795	30034	30789
SURPLUS/DEFICITS														
33 FIRM SURPLUS/DEFICIT	2145	1534	371	-408	-2380	-2126	-6491	-4939	-4484	-3363	-4242	103	1275	2323
34 TOTAL SURPLUS/DEFICIT	2034	1423	267	-485	-2505	-2177	-6644	-5040	-4632	-3469	-4348	10	1141	2205

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. Regional exports include: BPA to Azusa, capacity sale and power sale; BPA to Banning, capacity sale and power sale; BPA to BART, power sale; BPA to Burbank, power sale and capacity/energy exchange; BPA to Colton, power exchange and capacity sale; BPA to ECD entities, power sales; BPA to Farmington, power sale; BPA to Federal agencies, power sale; BPA to Glendale, power sale and capacity/energy exchange; BPA to M-S-R, power sale; BPA to other entities, power sales; BPA to Pasadena, power sale, capacity/energy exchange and seasonal energy exchange; BPA to Riverside, capacity/energy exchange, capacity sale and seasonal exchange; BPA to SCE, power sale, environmental storage and option capacity; BPA to Sierra Pacific for Harney and Wells; BPA to BC Hydro for Canadian Entitlement; and BPA's Northwest-Southwest Intertie losses; AVWP to Modesto, power sale; AVWP to West Kootenai, capacity sale; City of Idaho Falls to UPC for Gem State; IPC to ABC, power sale; IPC to Sierra Pacific, power sale; IPC to UAMPS, power sale; IPC to the city of Washington, Utah, power sale; IPC to Truckee/Donner, 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; PSE to PG&E, seasonal power exchange; SCL to NCPA, seasonal power exchange; Snohomish County PUD to SMUD, power sale; and TPU to WAPA, power 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 10.0 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, and with SCE, are in power sales mode throughout the study period.
3. 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.
4. Total loads for the region include system firm loads plus Utah Power Company's interruptible load.
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 Corette; PSE: Crystal Mountain and Shuffleton; and SCL: Boundary.
9. Combustion turbines include: AVWP: Northeast units 1 and 2; Clark: River Road (Cogentrix); PGE: Beaver; and PSE: Whidbey Island, Whitehorn, Fredrickson, and Fredonia units 1 and 2.
10. Renewables include: AVWP: Kettle Falls; BPA: James River Wauna; Consumers: Coffin Butte; and Emerald County PUD: Short Mountain.
11. Cogeneration includes: EWEB: Weyerhaeuser's WEYCO Energy Center; PGE: Coyote Springs; and PP&L: Hermiston. Longview Fibre output is sold outside the region to WAPA.
12. Regional imports include: Colton to BPA, power exchange; other entities to BPA, power sales; PP&L (Wyoming Division) to BPA, for Southern Idaho; Pasadena to BPA, exchange energy, peak replacement energy, and seasonal replacement energy; Riverside to BPA, exchange energy, peak replacement energy, and seasonal exchange energy; Sierra Pacific to BPA for Harney and Wells; SCE to BPA, environmental storage, option energy, and option capacity peak replacement; and PowerEx to BPA for Azusa, Banning and Colton, peak replacement; BC Hydro to PSE, power sale; BC Hydro to SCL, for Ross; Basin Electric Cooperative to MPC, power sale; Glendale to PGE, seasonal power exchange; NCPA to SCL, seasonal power exchange; PG&E to PSE, seasonal power exchange; PowerEx to Benton REA, power sale; PowerEx to Clearwater Power Company, power sale; PowerEx to Cowlitz County PUD, power sale; PowerEx to EWEB, power sale; SCE to PP&L, power sale; and West Kootenai to AVWP, peak replacement energy.

    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 and Pasadena, and with SCE are in power sale mode, so exchanges and supplemental energy with these utilities are zero through the study horizon.
13. 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.
14. 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.
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. Regional transmission losses are estimated for the region assuming the total resources, less hydro reserves, thermal reserves, spinning reserves and hydro maintenance, multiplied by .0335 for peak and .0282 for energy.

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Exhibits 27 – 36

Regional Energy Surpluses and Deficits for 50 Historical Water Conditions

Exhibit 27: OY 2000-01

REGIONAL ENERGY ANALYSIS

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

1999 WHITE BOOK: 12/31/99

2000- 1 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	2232	-1481	-2916	-941	-3791	-3269	-6356	-4102	-4394	-2979	-2901	-4273	1749	-702	-2630
1930 REGIONAL ENERGY S/D	-2131	-2854	-3351	-2465	-3834	-3592	-6438	-3845	-4561	-2024	1495	-4921	-2483	-727	-3248
1931 REGIONAL ENERGY S/D	-1344	-2452	-3395	-2561	-3916	-3687	-7014	-6208	-4482	-1034	-3940	-1943	-1758	-919	-3356
1932 REGIONAL ENERGY S/D	-1945	-3334	-3569	-2625	-3861	-3843	-7219	-3955	210	5494	3856	2177	5041	1546	-1172
1933 REGIONAL ENERGY S/D	-947	-1337	-2772	-1131	-2555	-2509	3164	-425	-2993	3209	-1847	-260	9010	7630	558
1934 REGIONAL ENERGY S/D	2137	2519	-1562	1643	459	4324	8306	5427	3711	8150	6259	3241	238	-2289	2753
1935 REGIONAL ENERGY S/D	-3012	-4093	-3547	-2712	-3171	-3192	2807	-682	-1170	3136	-933	-1225	3745	1762	-820
1936 REGIONAL ENERGY S/D	-399	-3664	-3529	-1870	-3905	-3721	-5130	-3538	-3346	-2233	4349	3234	1755	394	-1719
1937 REGIONAL ENERGY S/D	-1475	-2433	-3325	-2389	-3850	-3586	-6712	-4458	-5174	-3319	-4593	-2750	-847	-829	-3319
1938 REGIONAL ENERGY S/D	-1845	-2555	-2923	-1943	-2341	-1959	1706	-2142	2040	2774	2132	4089	4700	577	171
1939 REGIONAL ENERGY S/D	-2308	-3538	-3264	-1136	-3806	-3289	-5667	-201	-709	1662	1317	-270	-2139	1260	-1721
1940 REGIONAL ENERGY S/D	-1147	-2915	-3296	-1325	-3735	-3245	-4478	-1232	1977	1718	1144	-2360	-3752	-1489	-1961
1941 REGIONAL ENERGY S/D	-1632	-3290	-2967	-1355	-3857	-3506	-5148	-4385	-2920	-3667	-2301	-3582	-180	-2293	-2970
1942 REGIONAL ENERGY S/D	-2627	-3444	-3376	-1366	-3402	790	468	-994	-4476	-976	-1102	-737	2728	2611	-986
1943 REGIONAL ENERGY S/D	1945	-1104	-2571	-1508	-3466	-2885	1530	2695	2215	8598	6183	3843	5673	4679	1502
1944 REGIONAL ENERGY S/D	1772	60	-3005	-930	-3778	-2932	-6033	-3333	-5055	-3225	-3545	-4188	-1090	-2149	-2913
1945 REGIONAL ENERGY S/D	-2292	-3620	-3280	-2410	-3820	-4075	-6664	-5127	-4463	-2869	-2416	372	2350	890	-2652
1946 REGIONAL ENERGY S/D	-1419	-2025	-2863	-2043	-3380	-1212	3381	-1244	1122	3365	4178	5248	5394	2447	741
1947 REGIONAL ENERGY S/D	838	-2772	-2211	-684	-2804	1400	4898	4634	731	2941	2227	2267	4085	1334	1272
1948 REGIONAL ENERGY S/D	359	-2318	-2527	3914	-503	-1171	5128	1914	-1711	885	3009	6833	12236	5182	2522
1949 REGIONAL ENERGY S/D	2190	2889	-1258	-30	-3288	-3360	-1124	-1793	5364	4006	5105	3488	4332	-2011	618
1950 REGIONAL ENERGY S/D	-2699	-4044	-3312	-1670	-3356	-1529	3153	2021	4223	6416	4297	2591	10440	6039	1715
1951 REGIONAL ENERGY S/D	1754	1032	-1976	1732	835	3237	6738	7319	3894	7046	5555	5151	3592	4180	3533
1952 REGIONAL ENERGY S/D	2001	744	-2040	2869	-2073	-36	3869	1652	-29	6273	5135	6196	5167	976	1969
1953 REGIONAL ENERGY S/D	579	-2789	-3168	-1814	-3787	-3292	-3047	5722	1365	-837	-655	1071	6473	4355	169
1954 REGIONAL ENERGY S/D	2399	505	-2174	-172	-2703	-2016	834	6687	647	3530	1180	3313	8481	6527	1936
1955 REGIONAL ENERGY S/D	3472	2426	1925	978	-1319	-2271	-1274	-994	-4595	419	-1026	-1941	7514	8081	729
1956 REGIONAL ENERGY S/D	2057	1537	-1980	1352	-334	2464	7139	4715	3731	6210	7509	7431	10789	4690	4055
1957 REGIONAL ENERGY S/D	2773	836	-2244	569	-3339	-1272	-1119	3996	723	6460	639	6960	6908	192	1394
1958 REGIONAL ENERGY S/D	-964	-2622	-3007	-1256	-3794	-3058	-396	5893	-1146	659	2645	5240	5520	-373	290
1959 REGIONAL ENERGY S/D	-1059	-2398	-2928	-460	-1565	-25	6239	4449	1346	3811	423	2158	7568	4497	1806
1960 REGIONAL ENERGY S/D	1926	291	2067	5219	1250	218	3426	-12	1037	9428	3796	1	3999	2292	2268
1961 REGIONAL ENERGY S/D	1548	-2246	-2634	-497	-2412	-3598	2123	5853	1423	2703	-2072	3004	8282	1109	1052
1962 REGIONAL ENERGY S/D	-128	-2154	-3332	-837	-3853	-3478	2030	-2808	-2498	4923	4419	286	2093	2263	-550
1963 REGIONAL ENERGY S/D	1733	-840	-3061	471	-1489	13	2721	1555	-2124	1460	128	-738	3856	1922	364
1964 REGIONAL ENERGY S/D	1112	-1250	-1710	-1004	-3335	-3422	-1288	2997	-3444	2699	-1395	181	9325	6612	458
1965 REGIONAL ENERGY S/D	2358	1534	-758	1008	-2491	2970	7968	6069	3311	2280	5866	4237	6491	2472	3108
1966 REGIONAL ENERGY S/D	2215	1169	-1970	220	-2558	-2105	1597	1057	-1970	5360	413	-1054	1110	2614	127
1967 REGIONAL ENERGY S/D	1685	-2286	-2946	-1166	-3617	-2448	4316	4257	94	2036	-2446	-10	8290	5710	998
1968 REGIONAL ENERGY S/D	1895	639	-2015	382	-2589	-2088	3163	4777	1782	-1577	-2137	-3281	4002	2482	502
1969 REGIONAL ENERGY S/D	2490	1096	243	1630	-480	-494	6351	4682	1986	5891	6119	6945	6272	2119	3088
1970 REGIONAL ENERGY S/D	-541	-3175	-2870	-137	-3677	-3315	-1524	4180	-806	-376	-720	352	4855	673	-390
1971 REGIONAL ENERGY S/D	-281	-2660	-3132	-1297	-3726	-1404	6498	7368	3638	6234	3900	7088	9240	5844	2810
1972 REGIONAL ENERGY S/D	3027	2361	-1283	-99	-2464	-1838	6019	7064	9894	8970	2579	6662	10822	7313	4213
1973 REGIONAL ENERGY S/D	3358	2656	-922	-82	-3311	-559	-1378	-2021	-2278	-3095	-2969	-3961	-1245	-636	-1368
1974 REGIONAL ENERGY S/D	-1378	-3671	-3304	-1998	-2713	2249	9414	7966	6278	7019	6521	6224	12253	8929	4129
1975 REGIONAL ENERGY S/D	2809	1762	-1711	-1289	-3570	-2545	1450	2280	2982	1832	-195	1818	7432	7042	1416
1976 REGIONAL ENERGY S/D	342	-102	-2330	1065	161	4671	7342	5523	1230	7087	3758	6000	4283	5376	3239
1977 REGIONAL ENERGY S/D	4979	3533	3302	-502	-3816	-3223	-5561	-2904	-5240	-3905	-3256	-4523	-2006	-2449	-2187
1978 REGIONAL ENERGY S/D	-2464	-3530	-3782	-2540	-3780	-2585	40	-2374	2214	4108	1312	1541	2226	2069	-605

Exhibit 28: OY 2001-02

REGIONAL ENERGY ANALYSIS

REGIONAL ENERGY SURPLUS/DEFICIT

FOR THE 50 HISTORICAL WATER YEARS ON RECORD

(REGION TABLE 1 LINE 35)

1999 WHITE BOOK: 12/31/99

2001- 2 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	2319	-1401	-2882	-1318	-4371	-3644	-6741	-4539	-4937	-3537	-2379	-3770	1792	-985	-2825
1930 REGIONAL ENERGY S/D	-2053	-2775	-3319	-2845	-4417	-3965	-6829	-4286	-5103	-2578	2021	-4412	-2442	-1007	-3443
1931 REGIONAL ENERGY S/D	-1262	-2371	-3363	-2940	-4502	-4061	-7406	-6652	-5035	-1594	-3420	-1432	-1716	-1199	-3553
1932 REGIONAL ENERGY S/D	-1864	-3254	-3540	-3003	-4446	-4224	-7613	-4397	-340	4939	4375	2689	5094	1271	-1368
1933 REGIONAL ENERGY S/D	-866	-1255	-2739	-1508	-3140	-2887	2779	-857	-3537	2654	-1338	251	9068	7367	366
1934 REGIONAL ENERGY S/D	2222	2606	-1529	1268	-124	3952	7935	5004	3177	7610	6785	3764	283	-2569	2564
1935 REGIONAL ENERGY S/D	-2936	-4015	-3521	-3091	-3758	-3572	2424	-1114	-1713	2583	-427	-716	3796	1492	-1014
1936 REGIONAL ENERGY S/D	-317	-3587	-3504	-2249	-4491	-4101	-5524	-3973	-3901	-2795	4861	3749	1806	116	-1916
1937 REGIONAL ENERGY S/D	-1393	-2353	-3294	-2768	-4436	-3962	-7103	-4901	-5728	-3883	-4085	-2242	-803	-1110	-3517
1938 REGIONAL ENERGY S/D	-1768	-2476	-2891	-2323	-2927	-2335	1320	-2575	1497	2216	2642	4608	4749	301	-22
1939 REGIONAL ENERGY S/D	-2229	-3461	-3231	-1517	-4387	-3662	-6055	-630	-1250	1109	1837	242	-2095	985	-1914
1940 REGIONAL ENERGY S/D	-1064	-2835	-3262	-1704	-4319	-3622	-4865	-1672	1428	1161	1662	-1850	-3708	-1768	-2157
1941 REGIONAL ENERGY S/D	-1554	-3211	-2938	-1734	-4441	-3881	-5538	-4829	-3471	-4227	-1781	-3072	-137	-2576	-3167
1942 REGIONAL ENERGY S/D	-2548	-3364	-3347	-1746	-3989	421	80	-1426	-5024	-1537	-585	-228	2778	2339	-1180
1943 REGIONAL ENERGY S/D	2030	-1023	-2538	-1884	-4052	-3260	1141	2263	1689	8054	6707	4363	5725	4405	1311
1944 REGIONAL ENERGY S/D	1855	142	-2973	-1301	-4355	-3303	-6413	-3769	-5598	-3781	-3025	-3682	-1049	-2431	-3106
1945 REGIONAL ENERGY S/D	-2213	-3539	-3248	-2789	-4402	-4446	-7060	-5569	-5005	-3424	-1901	881	2398	612	-2847
1946 REGIONAL ENERGY S/D	-1339	-1945	-2829	-2417	-3955	-1579	3004	-1667	590	2815	4703	5767	5446	2174	554
1947 REGIONAL ENERGY S/D	923	-2692	-2178	-1061	-3381	1030	4520	4216	202	2390	2748	2783	4138	1058	1084
1948 REGIONAL ENERGY S/D	439	-2238	-2494	3542	-1078	-1544	4749	1494	-2243	332	3529	7354	12305	4916	2336
1949 REGIONAL ENERGY S/D	2275	2979	-1223	-408	-3864	-3734	-1508	-2220	4833	3456	5630	4001	4383	-2290	428
1950 REGIONAL ENERGY S/D	-2621	-3967	-3281	-2050	-3939	-1901	2770	1600	3699	5867	4822	3104	10502	5771	1527
1951 REGIONAL ENERGY S/D	1837	1118	-1942	1364	263	2870	6370	6904	3370	6501	6083	5671	3641	3911	3349
1952 REGIONAL ENERGY S/D	2086	830	-2006	2501	-2650	-405	3496	1228	-558	5726	5658	6717	5219	702	1783
1953 REGIONAL ENERGY S/D	661	-2710	-3135	-2192	-4366	-3663	-3438	5300	838	-1382	-140	1585	6527	4083	-21
1954 REGIONAL ENERGY S/D	2484	587	-2141	-550	-3284	-2389	448	6268	120	2976	1696	3830	8543	6261	1748
1955 REGIONAL ENERGY S/D	3561	2515	1968	603	-1903	-2645	-1660	-1431	-5143	-130	-507	-1433	7569	7819	539
1956 REGIONAL ENERGY S/D	2142	1622	-1946	977	-917	2095	6767	4302	3200	5663	8036	7955	10851	4420	3870
1957 REGIONAL ENERGY S/D	2858	920	-2210	191	-3915	-1645	-1494	3575	188	5921	1155	7481	6965	-85	1206
1958 REGIONAL ENERGY S/D	-885	-2543	-2976	-1635	-4373	-3433	-775	5471	-1677	105	3166	5757	5575	-652	100
1959 REGIONAL ENERGY S/D	-978	-2317	-2895	-836	-2150	-396	5858	4024	810	3263	941	2674	7628	4226	1616
1960 REGIONAL ENERGY S/D	2012	373	2106	4848	671	-150	3043	-436	504	8892	4321	513	4050	2021	2081
1961 REGIONAL ENERGY S/D	1631	-2167	-2603	-874	-2998	-3975	1738	5430	881	2155	-1561	3523	8346	833	861
1962 REGIONAL ENERGY S/D	-46	-2073	-3305	-1217	-4438	-3855	1643	-3242	-3037	4374	4942	798	2143	1988	-744
1963 REGIONAL ENERGY S/D	1818	-758	-3029	94	-2073	-358	2336	1124	-2662	907	650	-228	3905	1651	172
1964 REGIONAL ENERGY S/D	1195	-1169	-1676	-1381	-3921	-3796	-1674	2576	-3978	2144	-881	690	9384	6346	268
1965 REGIONAL ENERGY S/D	2445	1619	-722	636	-3070	2601	7601	5655	2781	1729	6392	4754	6543	2199	2923
1966 REGIONAL ENERGY S/D	2300	1254	-1937	-148	-3132	-2473	1222	635	-2504	4812	930	-543	1162	2340	-61
1967 REGIONAL ENERGY S/D	1769	-2205	-2914	-1543	-4203	-2825	3934	3830	-441	1487	-1932	501	8348	5446	808
1968 REGIONAL ENERGY S/D	1980	722	-1981	7	-3167	-2461	2787	4360	1256	-2129	-1619	-2774	4054	2211	314
1969 REGIONAL ENERGY S/D	2574	1180	280	1263	-1054	-861	5979	4270	1456	5337	6638	7468	6330	1845	2903
1970 REGIONAL ENERGY S/D	-459	-3095	-2838	-514	-4263	-3688	-1913	3754	-1335	-925	-201	862	4903	397	-581
1971 REGIONAL ENERGY S/D	-199	-2580	-3100	-1671	-4303	-1773	6124	6956	3108	5690	4425	7610	9297	5575	2624
1972 REGIONAL ENERGY S/D	3114	2447	-1248	-470	-3039	-2207	5645	6651	9379	8430	3099	7183	10882	7051	4031
1973 REGIONAL ENERGY S/D	3448	2748	-885	-450	-3886	-928	-1759	-2446	-2814	-3649	-2448	-3455	-1200	-916	-1558
1974 REGIONAL ENERGY S/D	-1298	-3592	-3273	-2376	-3288	1884	9051	7559	5750	6473	7049	6744	12318	8668	3946
1975 REGIONAL ENERGY S/D	2896	1852	-1674	-1661	-4146	-2915	1074	1856	2456	1282	322	2331	7485	6777	1230
1976 REGIONAL ENERGY S/D	425	-20	-2296	693	-412	4307	6974	5108	702	6542	4283	6518	4332	5110	3054
1977 REGIONAL ENERGY S/D	5070	3624	3348	-873	-4392	-3596	-5939	-3340	-5784	-4462	-2733	-4016	-1963	-2731	-2378
1978 REGIONAL ENERGY S/D	-2385	-3449	-3756	-2923	-4366	-2963	-349	-2810	1667	3563	1833	2056	2273	1795	-800

Exhibit 29: OY 2002-03

REGIONAL ENERGY ANALYSIS

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

1999 WHITE BOOK: 12/31/99
2002- 3 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	2117	-1608	-2937	-1433	-4331	-3845	-6638	-4457	-4887	-3509	-3692	-5035	939	-1125	-3091
1930 REGIONAL ENERGY S/D	-2259	-2982	-3372	-2960	-4376	-4167	-6728	-4204	-5053	-2551	710	-5674	-3297	-1146	-3710
1931 REGIONAL ENERGY S/D	-1467	-2577	-3416	-3056	-4462	-4262	-7306	-6570	-4985	-1566	-4733	-2694	-2570	-1337	-3819
1932 REGIONAL ENERGY S/D	-2068	-3461	-3594	-3117	-4406	-4425	-7513	-4315	-288	4972	3065	1430	4245	1135	-1633
1933 REGIONAL ENERGY S/D	-1071	-1461	-2792	-1622	-3101	-3089	2885	-767	-3484	2685	-2654	-1011	8223	7238	102
1934 REGIONAL ENERGY S/D	2019	2403	-1580	1156	-82	3756	8046	5098	3235	7646	5476	2507	-568	-2710	2302
1935 REGIONAL ENERGY S/D	-3140	-4224	-3573	-3205	-3717	-3773	2528	-1026	-1659	2618	-1744	-1979	2946	1357	-1279
1936 REGIONAL ENERGY S/D	-519	-3795	-3558	-2364	-4452	-4302	-5424	-3887	-3851	-2769	3549	2490	956	-22	-2182
1937 REGIONAL ENERGY S/D	-1597	-2562	-3346	-2884	-4395	-4164	-7002	-4818	-5679	-3855	-5401	-3506	-1657	-1250	-3784
1938 REGIONAL ENERGY S/D	-1972	-2682	-2945	-2439	-2887	-2536	1423	-2488	1550	2248	1327	3351	3900	166	-287
1939 REGIONAL ENERGY S/D	-2436	-3670	-3285	-1632	-4348	-3864	-5952	-544	-1199	1137	522	-1019	-2950	847	-2181
1940 REGIONAL ENERGY S/D	-1267	-3043	-3317	-1819	-4279	-3824	-4760	-1588	1479	1189	349	-3112	-4561	-1908	-2423
1941 REGIONAL ENERGY S/D	-1759	-3418	-2991	-1848	-4402	-4083	-5436	-4746	-3421	-4200	-3093	-4333	-991	-2717	-3434
1942 REGIONAL ENERGY S/D	-2753	-3570	-3401	-1859	-3949	222	182	-1337	-4973	-1509	-1897	-1490	1928	2204	-1445
1943 REGIONAL ENERGY S/D	1828	-1229	-2592	-1999	-4013	-3464	1243	2349	1745	8086	5394	3105	4875	4269	1046
1944 REGIONAL ENERGY S/D	1653	-64	-3026	-1416	-4316	-3505	-6309	-3687	-5550	-3754	-4337	-4946	-1905	-2572	-3374
1945 REGIONAL ENERGY S/D	-2417	-3747	-3301	-2905	-4362	-4648	-6962	-5487	-4955	-3398	-3218	-382	1546	474	-3114
1946 REGIONAL ENERGY S/D	-1543	-2152	-2883	-2531	-3915	-1781	3107	-1581	643	2844	3390	4511	4597	2039	290
1947 REGIONAL ENERGY S/D	719	-2899	-2231	-1174	-3341	830	4625	4307	259	2422	1433	1524	3291	922	821
1948 REGIONAL ENERGY S/D	236	-2446	-2547	3431	-1036	-1745	4854	1583	-2187	361	2216	6098	11464	4785	2074
1949 REGIONAL ENERGY S/D	2072	2775	-1273	-521	-3825	-3936	-1404	-2132	4886	3486	4319	2740	3533	-2429	164
1950 REGIONAL ENERGY S/D	-2829	-4175	-3334	-2166	-3902	-2102	2875	1688	3757	5900	3509	1845	9657	5637	1263
1951 REGIONAL ENERGY S/D	1632	914	-1994	1250	303	2671	6479	6995	3427	6533	4772	4414	2789	3777	3086
1952 REGIONAL ENERGY S/D	1883	624	-2057	2388	-2610	-606	3602	1316	-502	5757	4345	5460	4370	565	1519
1953 REGIONAL ENERGY S/D	456	-2920	-3190	-2307	-4327	-3864	-3339	5386	894	-1350	-1457	322	5679	3948	-286
1954 REGIONAL ENERGY S/D	2280	382	-2195	-663	-3244	-2591	553	6359	176	3005	382	2573	7697	6130	1485
1955 REGIONAL ENERGY S/D	3361	2313	1919	491	-1863	-2846	-1556	-1346	-5093	-98	-1823	-2696	6721	7689	275
1956 REGIONAL ENERGY S/D	1939	1418	-1998	864	-877	1895	6874	4394	3255	5696	6727	6700	10006	4286	3607
1957 REGIONAL ENERGY S/D	2657	714	-2262	78	-3876	-1848	-1390	3662	238	5957	-161	6226	6116	-224	942
1958 REGIONAL ENERGY S/D	-1091	-2751	-3028	-1751	-4333	-3636	-671	5560	-1623	133	1853	4500	4726	-790	-164
1959 REGIONAL ENERGY S/D	-1182	-2526	-2949	-951	-2111	-596	5965	4115	867	3294	-374	1415	6782	4091	1353
1960 REGIONAL ENERGY S/D	1809	167	2057	4738	714	-350	3150	-348	558	8928	3009	-749	3201	1887	1818
1961 REGIONAL ENERGY S/D	1427	-2376	-2656	-989	-2957	-4178	1843	5522	937	2187	-2877	2265	7502	697	597
1962 REGIONAL ENERGY S/D	-248	-2280	-3360	-1331	-4399	-4058	1747	-3154	-2984	4405	3630	-463	1292	1850	-1009
1963 REGIONAL ENERGY S/D	1616	-964	-3082	-20	-2033	-557	2441	1211	-2609	935	-662	-1491	3055	1516	-92
1964 REGIONAL ENERGY S/D	993	-1376	-1728	-1494	-3880	-3998	-1569	2663	-3926	2171	-2198	-571	8538	6216	4
1965 REGIONAL ENERGY S/D	2242	1412	-775	523	-3031	2401	7710	5747	2836	1757	5081	3496	5695	2063	2659
1966 REGIONAL ENERGY S/D	2099	1048	-1989	-261	-3093	-2676	1328	723	-2452	4844	-382	-1804	312	2205	-325
1967 REGIONAL ENERGY S/D	1564	-2412	-2967	-1658	-4163	-3026	4039	3922	-384	1518	-3250	-759	7502	5316	544
1968 REGIONAL ENERGY S/D	1777	517	-2033	-107	-3128	-2662	2890	4450	1312	-2098	-2933	-4038	3204	2077	50
1969 REGIONAL ENERGY S/D	2373	976	230	1150	-1015	-1062	6086	4363	1509	5369	5329	6213	5482	1709	2641
1970 REGIONAL ENERGY S/D	-662	-3302	-2891	-628	-4223	-3891	-1811	3840	-1282	-895	-1514	-403	4051	259	-847
1971 REGIONAL ENERGY S/D	-403	-2789	-3154	-1786	-4263	-1976	6229	7049	3162	5724	3113	6354	8450	5442	2361
1972 REGIONAL ENERGY S/D	2912	2244	-1299	-583	-2999	-2411	5749	6743	9439	8464	1785	5928	10038	6920	3769
1973 REGIONAL ENERGY S/D	3247	2544	-936	-564	-3847	-1131	-1657	-2360	-2764	-3623	-3764	-4718	-2054	-1055	-1824
1974 REGIONAL ENERGY S/D	-1504	-3801	-3326	-2492	-3250	1684	9162	7654	5806	6505	5738	5488	11475	8538	3684
1975 REGIONAL ENERGY S/D	2693	1649	-1725	-1775	-4107	-3119	1179	1943	2513	1310	-994	1071	6637	6645	966
1976 REGIONAL ENERGY S/D	220	-226	-2351	580	-371	4107	7082	5199	757	6575	2969	5263	3480	4978	2791
1977 REGIONAL ENERGY S/D	4869	3423	3300	-986	-4354	-3799	-5836	-3258	-5735	-4436	-4044	-5278	-2818	-2870	-2644
1978 REGIONAL ENERGY S/D	-2589	-3655	-3811	-3038	-4326	-3166	-247	-2725	1719	3597	520	796	1421	1660	-1065

Exhibit 30: OY 2003-04

REGIONAL ENERGY ANALYSIS

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

1999 WHITE BOOK: 12/31/99
2003- 4 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	1916	-1814	-3297	-1671	-4541	-4052	-6847	-4678	-5167	-4209	-3069	-3537	1108	-1198	-3122
1930 REGIONAL ENERGY S/D	-2464	-3187	-3733	-3200	-4585	-4371	-6939	-4424	-5334	-3250	1335	-4173	-3129	-1215	-3741
1931 REGIONAL ENERGY S/D	-1671	-2783	-3777	-3296	-4670	-4467	-7518	-6789	-5264	-2264	-4108	-1192	-2402	-1403	-3849
1932 REGIONAL ENERGY S/D	-2273	-3665	-3955	-3358	-4614	-4631	-7724	-4536	-563	4277	3690	2933	4419	1069	-1662
1933 REGIONAL ENERGY S/D	-1276	-1665	-3152	-1862	-3309	-3295	2681	-982	-3759	1990	-2034	492	8399	7176	75
1934 REGIONAL ENERGY S/D	1816	2203	-1940	919	-288	3556	7848	4893	2965	6956	6105	4014	-396	-2775	2278
1935 REGIONAL ENERGY S/D	-3347	-4428	-3935	-3446	-3926	-3979	2323	-1238	-1933	1926	-1123	-478	3117	1292	-1307
1936 REGIONAL ENERGY S/D	-724	-4000	-3918	-2604	-4662	-4507	-5636	-4105	-4131	-3467	4174	3993	1128	-87	-2211
1937 REGIONAL ENERGY S/D	-1801	-2766	-3707	-3124	-4602	-4369	-7212	-5038	-5958	-4555	-4779	-2007	-1489	-1320	-3815
1938 REGIONAL ENERGY S/D	-2178	-2888	-3305	-2679	-3095	-2742	1215	-2702	1275	1553	1950	4856	4072	101	-315
1939 REGIONAL ENERGY S/D	-2641	-3875	-3646	-1872	-4557	-4070	-6162	-761	-1478	438	1145	484	-2781	780	-2211
1940 REGIONAL ENERGY S/D	-1470	-3247	-3677	-2058	-4487	-4029	-4968	-1807	1202	493	974	-1611	-4393	-1975	-2452
1941 REGIONAL ENERGY S/D	-1965	-3624	-3352	-2087	-4611	-4289	-5647	-4967	-3699	-4900	-2470	-2831	-822	-2783	-3464
1942 REGIONAL ENERGY S/D	-2959	-3777	-3761	-2100	-4157	20	-26	-1552	-5249	-2209	-1272	11	2099	2138	-1474
1943 REGIONAL ENERGY S/D	1625	-1434	-2953	-2238	-4222	-3671	1035	2133	1473	7394	6020	4610	5048	4203	1018
1944 REGIONAL ENERGY S/D	1450	-270	-3386	-1655	-4526	-3712	-6518	-3908	-5830	-4455	-3713	-3447	-1737	-2640	-3404
1945 REGIONAL ENERGY S/D	-2623	-3952	-3663	-3145	-4570	-4853	-7174	-5708	-5236	-4097	-2598	1118	1716	405	-3145
1946 REGIONAL ENERGY S/D	-1749	-2357	-3243	-2772	-4124	-1986	2900	-1796	368	2149	4015	6016	4771	1973	261
1947 REGIONAL ENERGY S/D	516	-3104	-2591	-1415	-3550	625	4421	4095	-14	1726	2057	3027	3465	856	793
1948 REGIONAL ENERGY S/D	31	-2652	-2907	3194	-1244	-1950	4651	1371	-2462	-335	2840	7604	11646	4723	2047
1949 REGIONAL ENERGY S/D	1870	2574	-1632	-760	-4034	-4143	-1612	-2348	4611	2788	4945	4242	3705	-2495	135
1950 REGIONAL ENERGY S/D	-3035	-4381	-3695	-2407	-4112	-2307	2669	1474	3486	5204	4134	3350	9835	5572	1235
1951 REGIONAL ENERGY S/D	1429	711	-2354	1013	95	2466	6276	6789	3157	5840	5399	5919	2962	3712	3060
1952 REGIONAL ENERGY S/D	1681	420	-2416	2152	-2818	-811	3397	1103	-775	5063	4970	6969	4544	501	1493
1953 REGIONAL ENERGY S/D	251	-3127	-3550	-2547	-4534	-4070	-3550	5172	622	-2044	-836	1826	5853	3883	-315
1954 REGIONAL ENERGY S/D	2079	176	-2554	-902	-3452	-2797	345	6148	-95	2307	1002	4079	7876	6067	1458
1955 REGIONAL ENERGY S/D	3161	2112	1565	254	-2070	-3051	-1762	-1563	-5372	-794	-1201	-1196	6895	7627	247
1956 REGIONAL ENERGY S/D	1737	1215	-2357	626	-1083	1691	6673	4187	2981	5001	7355	8209	10186	4219	3582
1957 REGIONAL ENERGY S/D	2454	511	-2622	-160	-4085	-2053	-1596	3449	-39	5267	458	7734	6292	-292	914
1958 REGIONAL ENERGY S/D	-1296	-2958	-3389	-1990	-4542	-3843	-879	5346	-1898	-565	2475	6005	4900	-856	-193
1959 REGIONAL ENERGY S/D	-1387	-2730	-3308	-1189	-2320	-801	5763	3909	595	2599	249	2919	6960	4025	1327
1960 REGIONAL ENERGY S/D	1608	-37	1702	4503	507	-554	2946	-557	284	8239	3633	753	3373	1821	1792
1961 REGIONAL ENERGY S/D	1223	-2582	-3017	-1228	-3166	-4385	1636	5313	665	1495	-2256	3771	7681	629	570
1962 REGIONAL ENERGY S/D	-452	-2485	-3720	-1570	-4608	-4264	1541	-3367	-3262	3709	4255	1040	1464	1781	-1038
1963 REGIONAL ENERGY S/D	1413	-1170	-3444	-258	-2241	-762	2237	999	-2885	236	-38	10	3226	1448	-121
1964 REGIONAL ENERGY S/D	789	-1583	-2088	-1733	-4090	-4205	-1778	2449	-4201	1473	-1578	931	8715	6152	-25
1965 REGIONAL ENERGY S/D	2040	1209	-1133	287	-3239	2196	7510	5541	2563	1059	5707	5001	5868	1996	2633
1966 REGIONAL ENERGY S/D	1897	844	-2349	-500	-3301	-2881	1124	510	-2728	4150	240	-302	485	2137	-353
1967 REGIONAL ENERGY S/D	1361	-2618	-3326	-1897	-4373	-3233	3835	3712	-655	823	-2632	742	7678	5252	517
1968 REGIONAL ENERGY S/D	1576	313	-2392	-345	-3336	-2869	2683	4238	1040	-2795	-2311	-2539	3377	2011	22
1969 REGIONAL ENERGY S/D	2171	772	-129	914	-1221	-1266	5884	4158	1235	4676	5956	7721	5658	1642	2615
1970 REGIONAL ENERGY S/D	-868	-3508	-3251	-866	-4431	-4097	-2020	3623	-1555	-1591	-891	1098	4222	191	-876
1971 REGIONAL ENERGY S/D	-606	-2996	-3515	-2025	-4473	-2182	6025	6844	2888	5032	3739	7862	8625	5375	2334
1972 REGIONAL ENERGY S/D	2711	2043	-1658	-822	-3209	-2616	5544	6534	9173	7773	2408	7434	10215	6859	3743
1973 REGIONAL ENERGY S/D	3047	2345	-1295	-803	-4055	-1338	-1865	-2578	-3042	-4322	-3140	-3220	-1884	-1124	-1853
1974 REGIONAL ENERGY S/D	-1709	-4007	-3687	-2733	-3459	1482	8963	7450	5534	5811	6364	6995	11654	8475	3659
1975 REGIONAL ENERGY S/D	2491	1448	-2083	-2014	-4317	-3325	973	1728	2242	612	-371	2573	6811	6582	938
1976 REGIONAL ENERGY S/D	16	-431	-2711	341	-579	3905	6881	4992	485	5881	3594	6769	3652	4915	2765
1977 REGIONAL ENERGY S/D	4670	3223	2947	-1224	-4562	-4005	-6044	-3478	-6016	-5135	-3419	-3777	-2649	-2937	-2673
1978 REGIONAL ENERGY S/D	-2794	-3861	-4171	-3278	-4534	-3371	-455	-2940	1444	2904	1143	2298	1591	1593	-1094

Exhibit 31: OY 2004-05

REGIONAL ENERGY ANALYSIS

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

1999 WHITE BOOK: 12/31/99
2004- 5 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	1858	-1877	-3326	-1780	-4672	-3904	-6960	-4914	-5386	-4550	-4288	-4335	1737	-1067	-3253
1930 REGIONAL ENERGY S/D	-2519	-3244	-3763	-3309	-4715	-4223	-7056	-4660	-5554	-3592	120	-4968	-2501	-1082	-3871
1931 REGIONAL ENERGY S/D	-1724	-2837	-3806	-3405	-4801	-4318	-7636	-7025	-5484	-2604	-5325	-1985	-1774	-1270	-3979
1932 REGIONAL ENERGY S/D	-2325	-3721	-3983	-3468	-4744	-4482	-7842	-4771	-781	3941	2475	2140	5053	1204	-1791
1933 REGIONAL ENERGY S/D	-1333	-1723	-3181	-1970	-3439	-3145	2568	-1210	-3972	1652	-3256	-302	9039	7317	-52
1934 REGIONAL ENERGY S/D	1764	2144	-1967	813	-416	3711	7740	4669	2754	6625	4891	3227	233	-2642	2153
1935 REGIONAL ENERGY S/D	-3401	-4486	-3964	-3554	-4056	-3830	2211	-1469	-2148	1592	-2343	-1273	3750	1430	-1435
1936 REGIONAL ENERGY S/D	-780	-4056	-3946	-2712	-4792	-4358	-5752	-4338	-4350	-3809	2955	3201	1761	47	-2340
1937 REGIONAL ENERGY S/D	-1851	-2821	-3735	-3233	-4733	-4221	-7329	-5275	-6177	-4896	-6000	-2802	-860	-1188	-3945
1938 REGIONAL ENERGY S/D	-2233	-2942	-3333	-2789	-3225	-2594	1101	-2933	1061	1215	730	4066	4704	236	-443
1939 REGIONAL ENERGY S/D	-2697	-3934	-3674	-1980	-4688	-3922	-6275	-992	-1696	98	-75	-309	-2152	914	-2340
1940 REGIONAL ENERGY S/D	-1522	-3302	-3706	-2166	-4616	-3882	-5082	-2042	985	154	-244	-2406	-3763	-1841	-2581
1941 REGIONAL ENERGY S/D	-2017	-3680	-3381	-2195	-4741	-4141	-5763	-5203	-3917	-5242	-3686	-3626	-193	-2652	-3594
1942 REGIONAL ENERGY S/D	-3010	-3831	-3791	-2208	-4288	172	-141	-1783	-5466	-2550	-2491	-784	2731	2274	-1602
1943 REGIONAL ENERGY S/D	1567	-1491	-2981	-2347	-4353	-3523	919	1901	1262	7059	4803	3821	5681	4337	891
1944 REGIONAL ENERGY S/D	1395	-331	-3416	-1764	-4657	-3564	-6633	-4145	-6050	-4795	-4931	-4244	-1110	-2509	-3535
1945 REGIONAL ENERGY S/D	-2676	-4009	-3693	-3254	-4701	-4706	-7293	-5942	-5454	-4437	-3820	324	2348	539	-3275
1946 REGIONAL ENERGY S/D	-1806	-2413	-3272	-2881	-4254	-1838	2786	-2028	153	1811	2797	5228	5405	2109	134
1947 REGIONAL ENERGY S/D	461	-3162	-2620	-1524	-3681	776	4309	3866	-226	1389	839	2236	4100	991	666
1948 REGIONAL ENERGY S/D	-27	-2712	-2937	3090	-1373	-1798	4537	1141	-2676	-675	1623	6815	12287	4862	1921
1949 REGIONAL ENERGY S/D	1815	2515	-1660	-868	-4164	-3996	-1727	-2579	4397	2451	3730	3450	4339	-2362	7
1950 REGIONAL ENERGY S/D	-3088	-4439	-3725	-2517	-4244	-2159	2556	1244	3275	4867	2916	2558	10474	5710	1108
1951 REGIONAL ENERGY S/D	1369	650	-2382	906	-34	2620	6168	6562	2946	5505	4184	5131	3594	3850	2935
1952 REGIONAL ENERGY S/D	1627	360	-2444	2046	-2949	-660	3285	871	-989	4727	3753	6180	5177	636	1365
1953 REGIONAL ENERGY S/D	195	-3185	-3580	-2656	-4666	-3922	-3668	4941	408	-2380	-2058	1033	6487	4020	-443
1954 REGIONAL ENERGY S/D	2021	116	-2584	-1009	-3582	-2649	232	5921	-308	1966	-220	3289	8515	6205	1331
1955 REGIONAL ENERGY S/D	3110	2058	1542	148	-2200	-2901	-1876	-1796	-5591	-1131	-2422	-1991	7530	7770	120
1956 REGIONAL ENERGY S/D	1684	1156	-2385	519	-1214	1843	6564	3962	2767	4666	6141	7422	10825	4358	3457
1957 REGIONAL ENERGY S/D	2395	451	-2651	-268	-4217	-1905	-1709	3219	-256	4936	-762	6946	6929	-158	787
1958 REGIONAL ENERGY S/D	-1353	-3014	-3418	-2099	-4673	-3695	-993	5117	-2112	-904	1257	5215	5535	-723	-321
1959 REGIONAL ENERGY S/D	-1441	-2787	-3338	-1298	-2450	-649	5652	3682	382	2263	-972	2128	7597	4163	1200
1960 REGIONAL ENERGY S/D	1555	-99	1678	4400	380	-401	2834	-787	68	7908	2417	-40	4006	1958	1665
1961 REGIONAL ENERGY S/D	1165	-2644	-3046	-1336	-3296	-4238	1523	5088	451	1159	-3478	2981	8320	762	442
1962 REGIONAL ENERGY S/D	-507	-2541	-3748	-1678	-4739	-4118	1427	-3597	-3480	3372	3038	248	2096	1916	-1166
1963 REGIONAL ENERGY S/D	1357	-1225	-3472	-367	-2371	-610	2124	767	-3102	-103	-1255	-785	3858	1586	-249
1964 REGIONAL ENERGY S/D	733	-1637	-2116	-1842	-4221	-4057	-1892	2220	-4417	1132	-2801	137	9353	6293	-153
1965 REGIONAL ENERGY S/D	1988	1148	-1159	181	-3369	2347	7401	5314	2349	720	4491	4211	6503	2132	2507
1966 REGIONAL ENERGY S/D	1845	782	-2378	-608	-3431	-2731	1011	280	-2944	3815	-978	-1095	1118	2273	-481
1967 REGIONAL ENERGY S/D	1303	-2679	-3355	-2005	-4503	-3084	3722	3485	-867	486	-3854	-50	8316	5393	390
1968 REGIONAL ENERGY S/D	1526	252	-2420	-453	-3466	-2719	2569	4011	827	-3133	-3531	-3334	4011	2148	-106
1969 REGIONAL ENERGY S/D	2115	711	-154	806	-1352	-1115	5772	3933	1020	4340	4740	6934	6293	1779	2489
1970 REGIONAL ENERGY S/D	-922	-3565	-3281	-974	-4563	-3950	-2135	3392	-1769	-1928	-2111	304	4853	325	-1005
1971 REGIONAL ENERGY S/D	-664	-3052	-3545	-2135	-4605	-2034	5911	6619	2674	4697	2522	7075	9262	5514	2207
1972 REGIONAL ENERGY S/D	2657	1984	-1686	-932	-3340	-2469	5432	6307	8966	7439	1189	6646	10854	7000	3618
1973 REGIONAL ENERGY S/D	2994	2291	-1321	-911	-4185	-1187	-1982	-2810	-3260	-4663	-4360	-4015	-1255	-992	-1982
1974 REGIONAL ENERGY S/D	-1766	-4064	-3717	-2842	-3590	1633	8857	7228	5321	5477	5150	6207	12294	8619	3534
1975 REGIONAL ENERGY S/D	2434	1391	-2110	-2125	-4448	-3178	859	1497	2030	273	-1591	1781	7445	6722	811
1976 REGIONAL ENERGY S/D	-44	-493	-2740	233	-708	4058	6769	4765	271	5547	2377	5981	4283	5056	2638
1977 REGIONAL ENERGY S/D	4618	3170	2924	-1333	-4694	-3855	-6158	-3714	-6235	-5476	-4635	-4573	-2020	-2806	-2802
1978 REGIONAL ENERGY S/D	-2845	-3916	-4201	-3388	-4665	-3225	-571	-3173	1228	2570	-75	1506	2222	1728	-1222

Exhibit 32: OY 2005-06

REGIONAL ENERGY ANALYSIS

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

1999 WHITE BOOK: 12/31/99
2005- 6 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	2138	-1602	-2827	-1406	-4425	-3900	-6948	-4930	-5385	-3869	-2523	-4106	943	-1059	-3081
1930 REGIONAL ENERGY S/D	-2243	-2967	-3262	-2936	-4467	-4219	-7046	-4674	-5553	-2911	1885	-4736	-3296	-1073	-3698
1931 REGIONAL ENERGY S/D	-1447	-2560	-3307	-3033	-4551	-4313	-7626	-7041	-5482	-1923	-3559	-1752	-2567	-1259	-3806
1932 REGIONAL ENERGY S/D	-2046	-3445	-3485	-3093	-4496	-4479	-7831	-4786	-778	4626	4241	2374	4265	1217	-1617
1933 REGIONAL ENERGY S/D	-1056	-1445	-2681	-1596	-3191	-3141	2585	-1219	-3967	2336	-1496	-69	8253	7338	123
1934 REGIONAL ENERGY S/D	2043	2424	-1465	1188	-165	3719	7763	4664	2767	7315	6659	3464	-558	-2633	2330
1935 REGIONAL ENERGY S/D	-3123	-4208	-3464	-3182	-3809	-3825	2226	-1479	-2142	2280	-581	-1041	2960	1444	-1261
1936 REGIONAL ENERGY S/D	-500	-3782	-3447	-2340	-4544	-4354	-5743	-4350	-4349	-3128	4719	3436	972	59	-2167
1937 REGIONAL ENERGY S/D	-1574	-2545	-3237	-2860	-4484	-4217	-7317	-5290	-6176	-4216	-4238	-2572	-1654	-1179	-3773
1938 REGIONAL ENERGY S/D	-1957	-2666	-2835	-2414	-2978	-2590	1115	-2943	1067	1900	2494	4303	3916	249	-269
1939 REGIONAL ENERGY S/D	-2421	-3660	-3176	-1607	-4441	-3920	-6262	-1004	-1696	780	1687	-75	-2945	926	-2167
1940 REGIONAL ENERGY S/D	-1243	-3026	-3207	-1792	-4368	-3878	-5066	-2054	990	836	1521	-2173	-4558	-1832	-2408
1941 REGIONAL ENERGY S/D	-1739	-3405	-2881	-1820	-4493	-4137	-5749	-5218	-3915	-4563	-1922	-3393	-986	-2643	-3421
1942 REGIONAL ENERGY S/D	-2733	-3554	-3292	-1834	-4039	179	-127	-1792	-5462	-1870	-727	-553	1941	2287	-1428
1943 REGIONAL ENERGY S/D	1848	-1214	-2483	-1973	-4105	-3521	932	1890	1270	7747	6569	4058	4892	4351	1066
1944 REGIONAL ENERGY S/D	1674	-54	-2917	-1391	-4409	-3561	-6619	-4160	-6048	-4115	-3166	-4014	-1906	-2501	-3363
1945 REGIONAL ENERGY S/D	-2397	-3732	-3194	-2882	-4452	-4702	-7284	-5959	-5454	-3757	-2059	556	1556	550	-3103
1946 REGIONAL ENERGY S/D	-1528	-2137	-2773	-2508	-4007	-1833	2800	-2038	158	2494	4564	5465	4616	2123	308
1947 REGIONAL ENERGY S/D	739	-2886	-2119	-1149	-3433	781	4323	3859	-218	2072	2603	2471	3312	1005	841
1948 REGIONAL ENERGY S/D	250	-2438	-2436	3468	-1122	-1794	4554	1132	-2671	8	3387	7052	11506	4880	2098
1949 REGIONAL ENERGY S/D	2096	2795	-1157	-494	-3918	-3994	-1711	-2589	4402	3133	5497	3684	3549	-2351	182
1950 REGIONAL ENERGY S/D	-2812	-4164	-3225	-2144	-3997	-2155	2571	1235	3284	5551	4683	2793	9689	5725	1284
1951 REGIONAL ENERGY S/D	1648	930	-1882	1281	215	2625	6185	6556	2955	6192	5951	5368	2803	3866	3111
1952 REGIONAL ENERGY S/D	1906	638	-1943	2423	-2701	-655	3300	860	-981	5413	5518	6419	4388	649	1541
1953 REGIONAL ENERGY S/D	474	-2910	-3082	-2283	-4417	-3918	-3658	4931	416	-1695	-297	1266	5699	4034	-269
1954 REGIONAL ENERGY S/D	2301	393	-2084	-635	-3335	-2645	246	5915	-299	2648	1543	3526	7729	6222	1507
1955 REGIONAL ENERGY S/D	3392	2338	2046	523	-1951	-2896	-1862	-1809	-5589	-447	-660	-1760	6743	7790	296
1956 REGIONAL ENERGY S/D	1964	1434	-1885	894	-964	1848	6583	3956	2774	5351	7910	7661	10040	4372	3634
1957 REGIONAL ENERGY S/D	2676	730	-2152	107	-3968	-1902	-1695	3208	-252	5626	999	7184	6141	-146	962
1958 REGIONAL ENERGY S/D	-1076	-2739	-2919	-1726	-4426	-3694	-978	5108	-2105	-221	3020	5452	4747	-712	-147
1959 REGIONAL ENERGY S/D	-1164	-2512	-2839	-922	-2202	-645	5669	3676	390	2949	791	2363	6812	4178	1376
1960 REGIONAL ENERGY S/D	1835	179	2181	4778	630	-395	2850	-797	75	8599	4183	194	3217	1974	1842
1961 REGIONAL ENERGY S/D	1444	-2369	-2546	-962	-3048	-4234	1537	5082	459	1846	-1717	3217	7535	775	618
1962 REGIONAL ENERGY S/D	-229	-2265	-3250	-1303	-4491	-4114	1441	-3608	-3476	4057	4803	480	1305	1928	-992
1963 REGIONAL ENERGY S/D	1638	-949	-2974	9	-2123	-606	2140	758	-3096	578	508	-552	3067	1599	-74
1964 REGIONAL ENERGY S/D	1012	-1362	-1616	-1468	-3974	-4056	-1878	2211	-4413	1814	-1040	368	8568	6310	22
1965 REGIONAL ENERGY S/D	2268	1425	-659	556	-3121	2353	7420	5309	2357	1402	6257	4448	5713	2147	2683
1966 REGIONAL ENERGY S/D	2126	1060	-1878	-231	-3184	-2727	1025	271	-2939	4500	785	-863	329	2286	-306
1967 REGIONAL ENERGY S/D	1582	-2403	-2855	-1632	-4255	-3080	3738	3478	-858	1169	-2094	182	7530	5411	565
1968 REGIONAL ENERGY S/D	1806	529	-1919	-79	-3219	-2715	2584	4003	835	-2449	-1768	-3105	3222	2163	69
1969 REGIONAL ENERGY S/D	2395	989	347	1183	-1102	-1110	5789	3929	1025	5027	6508	7173	5506	1792	2666
1970 REGIONAL ENERGY S/D	-645	-3289	-2781	-600	-4314	-3948	-2124	3380	-1763	-1244	-349	535	4062	337	-831
1971 REGIONAL ENERGY S/D	-385	-2778	-3047	-1761	-4357	-2031	5928	6614	2680	5384	4289	7313	8475	5528	2383
1972 REGIONAL ENERGY S/D	2938	2263	-1186	-557	-3093	-2465	5447	6303	8981	8129	2952	6885	10070	7020	3796
1973 REGIONAL ENERGY S/D	3275	2573	-821	-537	-3939	-1184	-1969	-2822	-3256	-3982	-2596	-3786	-2048	-981	-1809
1974 REGIONAL ENERGY S/D	-1489	-3788	-3218	-2469	-3342	1640	8878	7226	5330	6163	6917	6444	11512	8637	3712
1975 REGIONAL ENERGY S/D	2715	1671	-1608	-1750	-4200	-3175	874	1485	2038	956	171	2014	6657	6738	986
1976 REGIONAL ENERGY S/D	235	-217	-2241	607	-460	4064	6789	4759	280	6233	4143	6217	3492	5073	2815
1977 REGIONAL ENERGY S/D	4900	3451	3430	-957	-4446	-3852	-6146	-3731	-6235	-4796	-2871	-4342	-2816	-2797	-2629
1978 REGIONAL ENERGY S/D	-2567	-3640	-3703	-3016	-4417	-3221	-558	-3184	1231	3256	1689	1740	1431	1742	-1049

Exhibit 33: OY 2006-07

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

1999 WHITE BOOK: 12/31/99
2006- 7 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	2018	-1727	-3105	-1486	-4448	-3919	-7052	-4987	-5281	-3603	-3522	-4862	1355	-1146	-3196
1930 REGIONAL ENERGY S/D	-2366	-3093	-3541	-3017	-4488	-4237	-7153	-4731	-5446	-2643	888	-5488	-2884	-1159	-3813
1931 REGIONAL ENERGY S/D	-1570	-2686	-3586	-3116	-4574	-4331	-7733	-7098	-5376	-1656	-4558	-2502	-2156	-1344	-3921
1932 REGIONAL ENERGY S/D	-2170	-3570	-3763	-3175	-4518	-4498	-7938	-4844	-670	4898	3245	1625	4683	1135	-1730
1933 REGIONAL ENERGY S/D	-1180	-1570	-2959	-1676	-3213	-3161	2483	-1270	-3856	2609	-2497	-819	8673	7262	12
1934 REGIONAL ENERGY S/D	1921	2304	-1743	1109	-186	3705	7666	4618	2882	7592	5665	2719	-142	-2719	2221
1935 REGIONAL ENERGY S/D	-3248	-4335	-3742	-3262	-3829	-3843	2124	-1529	-2031	2556	-1583	-1794	3376	1364	-1373
1936 REGIONAL ENERGY S/D	-623	-3907	-3725	-2420	-4567	-4373	-5849	-4403	-4244	-2861	3720	2687	1388	-25	-2281
1937 REGIONAL ENERGY S/D	-1697	-2671	-3515	-2941	-4507	-4235	-7425	-5347	-6070	-3948	-5240	-3324	-1242	-1265	-3887
1938 REGIONAL ENERGY S/D	-2082	-2792	-3112	-2497	-3000	-2608	1012	-2994	1179	2171	1493	3557	4331	166	-381
1939 REGIONAL ENERGY S/D	-2546	-3786	-3454	-1688	-4464	-3940	-6367	-1056	-1588	1048	687	-825	-2534	843	-2281
1940 REGIONAL ENERGY S/D	-1365	-3151	-3486	-1872	-4390	-3898	-5170	-2111	1097	1106	522	-2925	-4145	-1918	-2522
1941 REGIONAL ENERGY S/D	-1864	-3531	-3159	-1901	-4516	-4156	-5855	-5275	-3809	-4296	-2920	-4145	-574	-2730	-3535
1942 REGIONAL ENERGY S/D	-2857	-3680	-3572	-1915	-4063	163	-232	-1843	-5354	-1602	-1725	-1304	2356	2206	-1541
1943 REGIONAL ENERGY S/D	1726	-1339	-2762	-2054	-4128	-3542	826	1838	1384	8022	5572	3311	5308	4268	953
1944 REGIONAL ENERGY S/D	1552	-179	-3196	-1471	-4433	-3581	-6723	-4218	-5943	-3848	-4167	-4768	-1494	-2587	-3478
1945 REGIONAL ENERGY S/D	-2524	-3858	-3473	-2963	-4474	-4720	-7394	-6015	-5348	-3489	-3062	-195	1970	466	-3218
1946 REGIONAL ENERGY S/D	-1652	-2262	-3050	-2591	-4029	-1853	2696	-2090	268	2765	3567	4720	5033	2042	196
1947 REGIONAL ENERGY S/D	617	-3012	-2397	-1231	-3455	764	4221	3810	-106	2343	1604	1723	3730	921	730
1948 REGIONAL ENERGY S/D	126	-2564	-2714	3390	-1143	-1812	4451	1083	-2559	278	2388	6306	11933	4802	1987
1949 REGIONAL ENERGY S/D	1973	2673	-1434	-575	-3939	-4013	-1816	-2640	4513	3405	4500	2934	3965	-2437	69
1950 REGIONAL ENERGY S/D	-2938	-4291	-3504	-2226	-4021	-2173	2468	1184	3399	5823	3684	2044	10111	5645	1172
1951 REGIONAL ENERGY S/D	1526	807	-2159	1202	195	2608	6085	6508	3071	6466	4955	4623	3217	3787	3001
1952 REGIONAL ENERGY S/D	1785	516	-2219	2344	-2724	-674	3197	808	-869	5685	4519	5673	4805	566	1430
1953 REGIONAL ENERGY S/D	350	-3037	-3359	-2364	-4441	-3938	-3766	4880	530	-1421	-1300	517	6116	3953	-381
1954 REGIONAL ENERGY S/D	2179	269	-2362	-716	-3356	-2667	143	5866	-185	2918	541	2779	8151	6144	1396
1955 REGIONAL ENERGY S/D	3273	2218	1774	444	-1973	-2914	-1965	-1863	-5483	-175	-1660	-2512	7161	7714	184
1956 REGIONAL ENERGY S/D	1842	1311	-2162	815	-986	1831	6484	3910	2885	5624	6915	6917	10462	4292	3524
1957 REGIONAL ENERGY S/D	2554	606	-2429	26	-3991	-1921	-1798	3158	-145	5903	-3	6440	6560	-231	850
1958 REGIONAL ENERGY S/D	-1201	-2865	-3198	-1806	-4448	-3714	-1083	5057	-1993	49	2021	4704	5164	-798	-259
1959 REGIONAL ENERGY S/D	-1287	-2638	-3117	-1003	-2224	-663	5568	3629	504	3221	-209	1616	7233	4098	1265
1960 REGIONAL ENERGY S/D	1713	54	1906	4702	611	-413	2748	-846	187	8877	3185	-557	3631	1894	1731
1961 REGIONAL ENERGY S/D	1321	-2496	-2826	-1042	-3071	-4253	1434	5035	571	2120	-2720	2471	7959	692	507
1962 REGIONAL ENERGY S/D	-352	-2389	-3527	-1384	-4514	-4134	1337	-3659	-3366	4329	3805	-269	1722	1845	-1104
1963 REGIONAL ENERGY S/D	1517	-1073	-3251	-72	-2145	-624	2037	707	-2986	848	-489	-1304	3483	1516	-187
1964 REGIONAL ENERGY S/D	890	-1487	-1894	-1550	-3997	-4075	-1982	2160	-4303	2083	-2043	-382	8987	6233	-90
1965 REGIONAL ENERGY S/D	2147	1302	-935	478	-3143	2334	7320	5261	2469	1672	5261	3700	6132	2065	2573
1966 REGIONAL ENERGY S/D	2004	935	-2159	-313	-3206	-2747	922	220	-2832	4773	-215	-1612	745	2204	-419
1967 REGIONAL ENERGY S/D	1459	-2529	-3135	-1712	-4278	-3100	3636	3431	-744	1442	-3098	-567	7949	5334	454
1968 REGIONAL ENERGY S/D	1685	407	-2197	-159	-3241	-2736	2480	3953	949	-2178	-2769	-3858	3637	2082	-43
1969 REGIONAL ENERGY S/D	2272	865	72	1102	-1123	-1127	5689	3883	1138	5301	5513	6428	5926	1710	2556
1970 REGIONAL ENERGY S/D	-768	-3415	-3060	-680	-4337	-3968	-2229	3326	-1651	-973	-1349	-216	4477	254	-945
1971 REGIONAL ENERGY S/D	-508	-2904	-3325	-1843	-4380	-2051	5825	6569	2793	5658	3292	6569	8895	5448	2272
1972 REGIONAL ENERGY S/D	2817	2141	-1463	-638	-3115	-2484	5346	6256	9100	8405	1953	6140	10490	6944	3686
1973 REGIONAL ENERGY S/D	3156	2451	-1097	-617	-3962	-1204	-2075	-2875	-3149	-3714	-3595	-4538	-1635	-1066	-1922
1974 REGIONAL ENERGY S/D	-1614	-3915	-3497	-2551	-3366	1624	8782	7182	5443	6437	5921	5700	11935	8561	3602
1975 REGIONAL ENERGY S/D	2594	1550	-1884	-1832	-4223	-3194	770	1433	2153	1227	-830	1264	7075	6660	874
1976 REGIONAL ENERGY S/D	111	-342	-2519	527	-481	4048	6690	4712	392	6508	3145	5472	3907	4996	2705
1977 REGIONAL ENERGY S/D	4781	3331	3160	-1038	-4469	-3873	-6250	-3787	-6129	-4528	-3869	-5094	-2403	-2883	-2742
1978 REGIONAL ENERGY S/D	-2690	-3765	-3982	-3097	-4439	-3242	-664	-3238	1341	3531	689	991	1845	1660	-1162

Exhibit 34: OY 2007-08

REGIONAL ENERGY ANALYSIS

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

1999 WHITE BOOK: 12/31/99

2007- 8 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	1925	-1824	-3237	-1643	-4774	-4029	-7247	-5262	-5494	-3871	-2402	-3929	1952	-996	-3145
1930 REGIONAL ENERGY S/D	-2465	-3192	-3672	-3174	-4813	-4347	-7351	-5005	-5660	-2912	2011	-4552	-2288	-1008	-3762
1931 REGIONAL ENERGY S/D	-1666	-2783	-3718	-3273	-4899	-4441	-7933	-7371	-5590	-1923	-3436	-1566	-1559	-1191	-3870
1932 REGIONAL ENERGY S/D	-2265	-3667	-3894	-3332	-4842	-4609	-8138	-5117	-880	4633	4368	2562	5285	1288	-1679
1933 REGIONAL ENERGY S/D	-1277	-1666	-3091	-1832	-3539	-3271	2287	-1539	-4066	2343	-1380	118	9277	7422	65
1934 REGIONAL ENERGY S/D	1828	2210	-1873	955	-511	3598	7476	4354	2677	7331	6789	3661	456	-2567	2276
1935 REGIONAL ENERGY S/D	-3345	-4433	-3872	-3418	-4155	-3956	1928	-1797	-2240	2293	-465	-858	3976	1520	-1321
1936 REGIONAL ENERGY S/D	-716	-4004	-3857	-2577	-4893	-4482	-6049	-4675	-4457	-3130	4841	3625	1988	127	-2230
1937 REGIONAL ENERGY S/D	-1792	-2770	-3647	-3098	-4831	-4345	-7622	-5621	-6284	-4217	-4122	-2390	-645	-1115	-3837
1938 REGIONAL ENERGY S/D	-2178	-2888	-3245	-2654	-3326	-2719	814	-3264	969	1905	2611	4497	4931	320	-329
1939 REGIONAL ENERGY S/D	-2642	-3885	-3584	-1844	-4790	-4050	-6565	-1328	-1800	781	1806	112	-1937	996	-2230
1940 REGIONAL ENERGY S/D	-1460	-3250	-3617	-2029	-4716	-4008	-5366	-2384	885	838	1643	-1989	-3547	-1766	-2471
1941 REGIONAL ENERGY S/D	-1960	-3628	-3290	-2057	-4841	-4267	-6053	-5549	-4022	-4566	-1801	-3208	23	-2579	-3485
1942 REGIONAL ENERGY S/D	-2954	-3778	-3704	-2071	-4388	55	-429	-2113	-5565	-1871	-604	-369	2956	2362	-1489
1943 REGIONAL ENERGY S/D	1633	-1436	-2893	-2210	-4454	-3653	628	1566	1177	7758	6692	4251	5909	4422	1006
1944 REGIONAL ENERGY S/D	1458	-276	-3328	-1627	-4760	-3692	-6920	-4492	-6157	-4117	-3046	-3834	-897	-2437	-3428
1945 REGIONAL ENERGY S/D	-2620	-3956	-3604	-3120	-4801	-4831	-7593	-6289	-5562	-3759	-1946	739	2569	619	-3168
1946 REGIONAL ENERGY S/D	-1748	-2361	-3181	-2748	-4355	-1963	2498	-2361	58	2499	4687	5661	5635	2196	248
1947 REGIONAL ENERGY S/D	523	-3109	-2529	-1387	-3783	655	4027	3542	-313	2078	2723	2661	4332	1075	782
1948 REGIONAL ENERGY S/D	31	-2661	-2846	3237	-1468	-1923	4256	814	-2769	11	3508	7249	12542	4961	2041
1949 REGIONAL ENERGY S/D	1878	2580	-1564	-730	-4265	-4126	-2013	-2911	4301	3135	5621	3871	4565	-2286	121
1950 REGIONAL ENERGY S/D	-3036	-4389	-3635	-2383	-4348	-2283	2271	915	3194	5557	4805	2983	10718	5802	1225
1951 REGIONAL ENERGY S/D	1431	713	-2290	1047	-130	2498	5893	6242	2864	6201	6078	5562	3817	3943	3055
1952 REGIONAL ENERGY S/D	1691	420	-2349	2191	-3050	-785	3003	538	-1076	5420	5640	6615	5407	720	1483
1953 REGIONAL ENERGY S/D	255	-3136	-3491	-2521	-4766	-4049	-3967	4609	321	-1686	-184	1454	6719	4108	-330
1954 REGIONAL ENERGY S/D	2086	172	-2494	-871	-3683	-2777	-53	5600	-392	2649	1658	3719	8757	6302	1449
1955 REGIONAL ENERGY S/D	3182	2125	1648	289	-2298	-3025	-2161	-2133	-5695	-440	-542	-1577	7765	7875	237
1956 REGIONAL ENERGY S/D	1748	1215	-2292	660	-1310	1722	6292	3646	2677	5360	8038	7860	11069	4449	3579
1957 REGIONAL ENERGY S/D	2461	511	-2561	-129	-4316	-2032	-1994	2889	-356	5642	1115	7381	7164	-79	902
1958 REGIONAL ENERGY S/D	-1298	-2965	-3329	-1963	-4774	-3825	-1279	4789	-2203	-220	3141	5644	5767	-646	-208
1959 REGIONAL ENERGY S/D	-1383	-2735	-3248	-1158	-2550	-773	5375	3364	297	2955	909	2554	7838	4254	1319
1960 REGIONAL ENERGY S/D	1619	-42	1780	4550	288	-521	2553	-1115	-24	8616	4306	379	4233	2050	1785
1961 REGIONAL ENERGY S/D	1226	-2594	-2957	-1198	-3396	-4365	1238	4770	364	1855	-1602	3411	8565	845	560
1962 REGIONAL ENERGY S/D	-446	-2487	-3658	-1540	-4840	-4245	1141	-3927	-3579	4062	4926	667	2321	1999	-1053
1963 REGIONAL ENERGY S/D	1424	-1171	-3382	-227	-2470	-732	1842	437	-3198	579	632	-369	4083	1672	-134
1964 REGIONAL ENERGY S/D	796	-1585	-2024	-1705	-4323	-4187	-2178	1893	-4514	1813	-926	555	9592	6392	-38
1965 REGIONAL ENERGY S/D	2053	1206	-1066	323	-3469	2225	7128	4996	2260	1404	6384	4640	6734	2220	2626
1966 REGIONAL ENERGY S/D	1911	840	-2289	-467	-3532	-2857	727	-49	-3042	4508	906	-676	1347	2358	-367
1967 REGIONAL ENERGY S/D	1364	-2628	-3265	-1867	-4604	-3211	3441	3164	-949	1177	-1982	370	8554	5493	508
1968 REGIONAL ENERGY S/D	1592	310	-2327	-315	-3567	-2846	2282	3688	742	-2446	-1650	-2923	4239	2239	10
1969 REGIONAL ENERGY S/D	2179	770	-57	949	-1447	-1237	5494	3619	927	5036	6635	7369	6529	1865	2610
1970 REGIONAL ENERGY S/D	-863	-3513	-3191	-834	-4662	-4080	-2427	3055	-1861	-1239	-229	719	5077	408	-893
1971 REGIONAL ENERGY S/D	-603	-3003	-3457	-2000	-4707	-2162	5629	6304	2582	5396	4412	7510	9499	5605	2325
1972 REGIONAL ENERGY S/D	2725	2048	-1593	-794	-3442	-2596	5150	5990	8896	8142	3073	7081	11096	7104	3740
1973 REGIONAL ENERGY S/D	3064	2359	-1227	-772	-4288	-1315	-2274	-3147	-3361	-3983	-2476	-3605	-1036	-915	-1872
1974 REGIONAL ENERGY S/D	-1710	-4014	-3628	-2707	-3693	1517	8592	6920	5234	6173	7044	6641	12542	8722	3657
1975 REGIONAL ENERGY S/D	2500	1458	-2014	-1988	-4549	-3307	574	1163	1947	958	288	2202	7676	6820	927
1976 REGIONAL ENERGY S/D	16	-438	-2652	371	-805	3938	6497	4446	183	6243	4264	6412	4506	5153	2758
1977 REGIONAL ENERGY S/D	4689	3239	3034	-1193	-4796	-3984	-6447	-4063	-6344	-4799	-2746	-4159	-1806	-2734	-2692
1978 REGIONAL ENERGY S/D	-2786	-3863	-4113	-3253	-4765	-3353	-862	-3508	1130	3267	1810	1929	2444	1815	-1110

Exhibit 35: OY 2008-09

REGIONAL ENERGY ANALYSIS

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

1999 WHITE BOOK: 12/31/99

2008- 9 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	2170	-1583	-2837	-1576	-4730	-4230	-7435	-5437	-5756	-3947	-3790	-5223	1109	-1171	-3405
1930 REGIONAL ENERGY S/D	-2222	-2950	-3273	-3108	-4768	-4547	-7541	-5180	-5921	-2988	622	-5846	-3133	-1181	-4022
1931 REGIONAL ENERGY S/D	-1423	-2541	-3318	-3205	-4854	-4641	-8122	-7547	-5851	-1999	-4825	-2858	-2402	-1364	-4130
1932 REGIONAL ENERGY S/D	-2024	-3425	-3495	-3266	-4798	-4809	-8326	-5292	-1142	4559	2979	1270	4444	1116	-1938
1933 REGIONAL ENERGY S/D	-1034	-1425	-2691	-1765	-3495	-3471	2101	-1710	-4324	2269	-2771	-1174	8438	7253	-193
1934 REGIONAL ENERGY S/D	2072	2453	-1472	1023	-465	3400	7291	4184	2420	7259	5402	2371	-387	-2740	2018
1935 REGIONAL ENERGY S/D	-3103	-4190	-3473	-3352	-4110	-4156	1743	-1971	-2499	2220	-1856	-2150	3135	1349	-1579
1936 REGIONAL ENERGY S/D	-473	-3764	-3457	-2511	-4849	-4682	-6237	-4849	-4719	-3205	3451	2334	1147	-44	-2489
1937 REGIONAL ENERGY S/D	-1549	-2528	-3247	-3031	-4786	-4545	-7811	-5796	-6545	-4292	-5512	-3683	-1488	-1288	-4097
1938 REGIONAL ENERGY S/D	-1935	-2647	-2844	-2586	-3281	-2919	627	-3436	711	1831	1222	3206	4090	148	-587
1939 REGIONAL ENERGY S/D	-2402	-3645	-3186	-1778	-4745	-4251	-6753	-1500	-2062	705	416	-1180	-2780	823	-2490
1940 REGIONAL ENERGY S/D	-1217	-3008	-3217	-1962	-4669	-4208	-5552	-2559	624	763	254	-3282	-4391	-1939	-2730
1941 REGIONAL ENERGY S/D	-1719	-3388	-2891	-1991	-4797	-4468	-6241	-5725	-4282	-4641	-3188	-4501	-820	-2754	-3745
1942 REGIONAL ENERGY S/D	-2713	-3536	-3304	-2005	-4344	-144	-617	-2285	-5826	-1947	-1993	-1662	2115	2191	-1748
1943 REGIONAL ENERGY S/D	1875	-1195	-2493	-2143	-4410	-3854	441	1394	919	7685	5304	2961	5068	4251	747
1944 REGIONAL ENERGY S/D	1700	-33	-2928	-1561	-4715	-3892	-7107	-4668	-6419	-4192	-4436	-5127	-1742	-2612	-3688
1945 REGIONAL ENERGY S/D	-2378	-3716	-3205	-3053	-4755	-5030	-7783	-6463	-5823	-3834	-3336	-555	1727	446	-3427
1946 REGIONAL ENERGY S/D	-1507	-2118	-2782	-2681	-4310	-2162	2311	-2533	-202	2424	3299	4371	4794	2026	-10
1947 REGIONAL ENERGY S/D	767	-2868	-2128	-1321	-3738	455	3841	3370	-571	2004	1334	1370	3492	903	524
1948 REGIONAL ENERGY S/D	274	-2421	-2446	3307	-1422	-2123	4069	641	-3028	-64	2118	5959	11701	4791	1784
1949 REGIONAL ENERGY S/D	2122	2824	-1163	-663	-4221	-4327	-2200	-3083	4043	3061	4233	2579	3724	-2458	-138
1950 REGIONAL ENERGY S/D	-2794	-4149	-3236	-2317	-4305	-2483	2085	743	2935	5483	3417	1691	9878	5632	967
1951 REGIONAL ENERGY S/D	1673	956	-1890	1114	-86	2299	5707	6071	2607	6128	4691	4272	2976	3773	2797
1952 REGIONAL ENERGY S/D	1934	663	-1950	2258	-3005	-984	2817	365	-1336	5346	4250	5324	4565	548	1225
1953 REGIONAL ENERGY S/D	497	-2896	-3091	-2454	-4721	-4249	-4155	4436	63	-1760	-1575	162	5878	3938	-588
1954 REGIONAL ENERGY S/D	2328	414	-2094	-804	-3637	-2977	-240	5428	-650	2574	268	2427	7917	6133	1191
1955 REGIONAL ENERGY S/D	3426	2369	2048	357	-2253	-3224	-2347	-2308	-5957	-514	-1933	-2871	6924	7706	-21
1956 REGIONAL ENERGY S/D	1992	1459	-1892	728	-1266	1522	6105	3474	2418	5285	6651	6570	10228	4278	3321
1957 REGIONAL ENERGY S/D	2704	753	-2160	-63	-4272	-2232	-2181	2716	-617	5569	-276	6091	6323	-250	644
1958 REGIONAL ENERGY S/D	-1056	-2723	-2930	-1896	-4730	-4025	-1466	4616	-2461	-294	1751	4351	4926	-819	-466
1959 REGIONAL ENERGY S/D	-1141	-2494	-2848	-1092	-2505	-972	5189	3193	39	2881	-480	1263	6998	4083	1061
1960 REGIONAL ENERGY S/D	1864	199	2182	4619	334	-720	2367	-1288	-283	8545	2917	-913	3392	1879	1528
1961 REGIONAL ENERGY S/D	1468	-2353	-2557	-1132	-3351	-4566	1052	4600	105	1781	-2993	2121	7727	674	302
1962 REGIONAL ENERGY S/D	-203	-2245	-3260	-1474	-4796	-4445	955	-4101	-3838	3988	3537	-625	1479	1826	-1312
1963 REGIONAL ENERGY S/D	1667	-929	-2983	-160	-2425	-932	1655	263	-3456	505	-756	-1661	3241	1501	-393
1964 REGIONAL ENERGY S/D	1039	-1343	-1625	-1638	-4279	-4387	-2365	1719	-4773	1737	-2318	-738	8752	6223	-296
1965 REGIONAL ENERGY S/D	2297	1448	-664	391	-3424	2025	6943	4824	2001	1328	4995	3348	5893	2047	2368
1966 REGIONAL ENERGY S/D	2154	1083	-1889	-401	-3487	-3057	540	-221	-3302	4433	-483	-1968	505	2187	-625
1967 REGIONAL ENERGY S/D	1607	-2387	-2866	-1801	-4559	-3410	3256	2993	-1208	1102	-3373	-923	7714	5323	249
1968 REGIONAL ENERGY S/D	1834	553	-1927	-247	-3523	-3046	2095	3514	483	-2521	-3040	-4217	3397	2067	-249
1969 REGIONAL ENERGY S/D	2423	1013	344	1017	-1403	-1437	5308	3448	669	4963	5248	6079	5689	1692	2352
1970 REGIONAL ENERGY S/D	-620	-3271	-2791	-768	-4618	-4280	-2616	2881	-2120	-1313	-1619	-574	4234	235	-1152
1971 REGIONAL ENERGY S/D	-361	-2762	-3058	-1932	-4663	-2362	5443	6132	2324	5322	3024	6219	8659	5434	2067
1972 REGIONAL ENERGY S/D	2969	2291	-1193	-726	-3397	-2796	4963	5819	8641	8070	1683	5790	10256	6934	3483
1973 REGIONAL ENERGY S/D	3309	2604	-826	-706	-4243	-1515	-2461	-3320	-3621	-4058	-3865	-4899	-1880	-1087	-2130
1974 REGIONAL ENERGY S/D	-1469	-3772	-3229	-2642	-3648	1317	8407	6749	4977	6099	5656	5350	11702	8553	3399
1975 REGIONAL ENERGY S/D	2744	1701	-1613	-1921	-4505	-3507	387	989	1688	884	-1103	909	6836	6650	669
1976 REGIONAL ENERGY S/D	258	-196	-2251	439	-761	3739	6310	4275	-77	6169	2876	5122	3664	4985	2500
1977 REGIONAL ENERGY S/D	4935	3483	3436	-1126	-4751	-4183	-6635	-4237	-6604	-4874	-4135	-5452	-2650	-2906	-2950
1978 REGIONAL ENERGY S/D	-2544	-3621	-3714	-3188	-4720	-3554	-1050	-3682	871	3193	420	638	1601	1645	-1369

Exhibit 36: OY 2009-10

REGIONAL ENERGY ANALYSIS

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

1999 WHITE BOOK: 12/31/99

2009-10 OPERATING YEAR RUN DATE: 12/31/99

ENERGY IN AVERAGE MEGA\	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	1925	-1828	-3235	-1835	-4938	-4440	-7665	-5606	-5788	-4899	-3388	-3927	1077	-1388	-3487
1930 REGIONAL ENERGY S/D	-2466	-3195	-3670	-3367	-4976	-4757	-7771	-5349	-5954	-3939	1025	-4550	-3165	-1399	-4104
1931 REGIONAL ENERGY S/D	-1667	-2785	-3716	-3464	-5063	-4851	-8352	-7716	-5883	-2950	-4422	-1562	-2434	-1583	-4211
1932 REGIONAL ENERGY S/D	-2267	-3669	-3893	-3523	-5006	-5020	-8556	-5461	-1173	3608	3383	2565	4412	898	-2019
1933 REGIONAL ENERGY S/D	-1278	-1668	-3089	-2024	-3702	-3681	1871	-1879	-4357	1318	-2367	122	8406	7035	-275
1934 REGIONAL ENERGY S/D	1828	2209	-1869	764	-673	3190	7061	4015	2387	6307	5806	3667	-419	-2958	1937
1935 REGIONAL ENERGY S/D	-3347	-4435	-3870	-3611	-4319	-4366	1513	-2139	-2531	1269	-1453	-854	3103	1132	-1660
1936 REGIONAL ENERGY S/D	-717	-4007	-3855	-2768	-5057	-4893	-6467	-5018	-4751	-4157	3854	3629	1115	-263	-2570
1937 REGIONAL ENERGY S/D	-1794	-2772	-3645	-3289	-4995	-4755	-8041	-5964	-6577	-5244	-5109	-2387	-1520	-1506	-4178
1938 REGIONAL ENERGY S/D	-2180	-2891	-3242	-2845	-3490	-3128	397	-3605	678	880	1626	4502	4059	-70	-669
1939 REGIONAL ENERGY S/D	-2645	-3889	-3584	-2036	-4954	-4461	-6983	-1670	-2094	-247	819	116	-2812	606	-2571
1940 REGIONAL ENERGY S/D	-1461	-3252	-3615	-2220	-4878	-4419	-5782	-2727	592	-188	658	-1986	-4422	-2157	-2811
1941 REGIONAL ENERGY S/D	-1963	-3631	-3289	-2248	-5006	-4679	-6471	-5894	-4314	-5593	-2785	-3205	-853	-2971	-3827
1942 REGIONAL ENERGY S/D	-2956	-3781	-3702	-2263	-4552	-354	-848	-2454	-5858	-2899	-1590	-366	2083	1973	-1829
1943 REGIONAL ENERGY S/D	1632	-1439	-2891	-2401	-4618	-4065	210	1224	886	6734	5706	4256	5036	4033	666
1944 REGIONAL ENERGY S/D	1456	-278	-3326	-1820	-4924	-4103	-7337	-4837	-6451	-5144	-4032	-3832	-1774	-2830	-3769
1945 REGIONAL ENERGY S/D	-2622	-3960	-3603	-3312	-4964	-5241	-8014	-6633	-5856	-4786	-2933	741	1695	229	-3509
1946 REGIONAL ENERGY S/D	-1750	-2363	-3180	-2939	-4518	-2373	2081	-2703	-235	1473	3703	5667	4762	1808	-92
1947 REGIONAL ENERGY S/D	522	-3112	-2526	-1579	-3946	244	3611	3201	-603	1053	1737	2666	3460	685	443
1948 REGIONAL ENERGY S/D	29	-2665	-2843	3048	-1631	-2333	3839	472	-3061	-1015	2522	7255	11670	4574	1702
1949 REGIONAL ENERGY S/D	1878	2581	-1560	-922	-4429	-4537	-2431	-3253	4010	2110	4635	3875	3692	-2676	-219
1950 REGIONAL ENERGY S/D	-3039	-4393	-3634	-2575	-4513	-2693	1855	573	2903	4532	3820	2986	9846	5413	885
1951 REGIONAL ENERGY S/D	1430	712	-2288	856	-293	2088	5477	5902	2574	5177	5094	5568	2944	3555	2716
1952 REGIONAL ENERGY S/D	1690	418	-2347	2000	-3214	-1195	2587	196	-1368	4394	4654	6621	4534	330	1144
1953 REGIONAL ENERGY S/D	254	-3140	-3489	-2712	-4930	-4459	-4385	4267	31	-2712	-1171	1458	5847	3720	-670
1954 REGIONAL ENERGY S/D	2085	170	-2492	-1063	-3846	-3188	-470	5259	-683	1622	671	3724	7885	5915	1110
1955 REGIONAL ENERGY S/D	3182	2125	1651	98	-2461	-3435	-2578	-2477	-5989	-1465	-1530	-1575	6892	7488	-102
1956 REGIONAL ENERGY S/D	1747	1215	-2290	470	-1474	1312	5875	3306	2385	4334	7053	7865	10196	4060	3240
1957 REGIONAL ENERGY S/D	2460	510	-2558	-321	-4480	-2442	-2411	2548	-649	4618	127	7387	6292	-468	563
1958 REGIONAL ENERGY S/D	-1299	-2968	-3327	-2155	-4938	-4236	-1696	4447	-2494	-1247	2154	5648	4894	-1037	-548
1959 REGIONAL ENERGY S/D	-1385	-2737	-3247	-1350	-2714	-1183	4959	3024	6	1930	-78	2559	6966	3865	979
1960 REGIONAL ENERGY S/D	1620	-44	1784	4361	126	-931	2137	-1456	-315	7593	3321	384	3360	1661	1446
1961 REGIONAL ENERGY S/D	1225	-2597	-2954	-1390	-3560	-4776	821	4430	73	830	-2590	3417	7695	456	221
1962 REGIONAL ENERGY S/D	-448	-2488	-3658	-1731	-5004	-4656	724	-4270	-3871	3037	3941	671	1447	1608	-1393
1963 REGIONAL ENERGY S/D	1423	-1174	-3380	-418	-2633	-1142	1425	95	-3489	-447	-353	-365	3209	1282	-474
1964 REGIONAL ENERGY S/D	795	-1588	-2022	-1897	-4487	-4597	-2595	1550	-4806	786	-1914	558	8719	6005	-378
1965 REGIONAL ENERGY S/D	2053	1204	-1062	132	-3631	1814	6713	4655	1969	377	5398	4644	5860	1829	2287
1966 REGIONAL ENERGY S/D	1910	839	-2286	-660	-3695	-3267	310	-389	-3334	3482	-80	-672	474	1969	-706
1967 REGIONAL ENERGY S/D	1363	-2630	-3263	-2060	-4767	-3621	3026	2825	-1240	151	-2970	373	7682	5105	168
1968 REGIONAL ENERGY S/D	1591	309	-2324	-506	-3731	-3257	1865	3345	451	-3472	-2637	-2921	3366	1850	-330
1969 REGIONAL ENERGY S/D	2180	769	-53	758	-1611	-1647	5078	3279	636	4011	5651	7376	5657	1475	2271
1970 REGIONAL ENERGY S/D	-864	-3516	-3189	-1027	-4826	-4491	-2846	2713	-2152	-2264	-1216	723	4202	17	-1234
1971 REGIONAL ENERGY S/D	-604	-3005	-3455	-2191	-4871	-2573	5213	5963	2292	4371	3428	7516	8627	5216	1986
1972 REGIONAL ENERGY S/D	2725	2047	-1591	-985	-3605	-3007	4733	5651	8609	7118	2086	7086	10225	6716	3402
1973 REGIONAL ENERGY S/D	3065	2359	-1224	-964	-4452	-1725	-2691	-3489	-3653	-5010	-3463	-3603	-1911	-1305	-2212
1974 REGIONAL ENERGY S/D	-1712	-4017	-3626	-2900	-3856	1107	8177	6581	4944	5148	6058	6646	11670	8335	3318
1975 REGIONAL ENERGY S/D	2500	1457	-2011	-2179	-4713	-3717	157	821	1656	-68	-700	2206	6804	6432	587
1976 REGIONAL ENERGY S/D	14	-441	-2649	180	-969	3528	6080	4106	-108	5218	3280	6418	3632	4767	2418
1977 REGIONAL ENERGY S/D	4691	3239	3038	-1385	-4959	-4394	-6865	-4406	-6637	-5826	-3732	-4156	-2682	-3125	-3032
1978 REGIONAL ENERGY S/D	-2789	-3866	-4112	-3447	-4929	-3765	-1280	-3851	839	2242	824	1935	1570	1427	-1451

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Section 9: Administrator's Record of Decision on the 1999 Pacific Northwest Loads and Resources Study

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Section 9: Administrator's Record of Decision on the 1999 Pacific Northwest Loads and Resources Study (The White Book)

1. Introduction

The 1999 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 is not an operational planning guide, nor is it used for BPA rate setting purposes under section 7(i) of the Northwest Power Act. The White Book includes Federal system loads and resources and regional loads and resources with detailed technical appendices. This White Book updates the 1998 Pacific Northwest Loads and Resources Study, published in July 1999. The 1999 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 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 develop and execute offers of new power sales contracts to provide power service beginning October 1, 2001. These contracts will be finalized in the subscription process for execution on or before October 31, 2000.

2. 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. §839c(g).*

Sections 5(b) of the Northwest Power Act obligates BPA to serve, in accordance with the terms of contracts, the net firm power load requirements of utilities in the Pacific Northwest, including public bodies, cooperatives, and investor-owned utilities (IOUs), and under section 5(d) authorizes BPA to serve up to a defined amount of the firm power load 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 the firm regional loads of a customer in excess of the firm resources, if any, which the customer must dedicate to use or has dedicated to use for service of its own regional firm loads. *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 resource, if a customer's dedicated resource is no longer available to serve its loads due to obsolescence, retirement or loss of the resource, or loss of contract rights.

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) and 5(d) 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 contract obligations. *16 U.S.C. §a839c(b); §839c(d)*.

BPA's current contracts with utility and DSI customers and new " subscription" contracts contain provisions that implement the above statutory directives.

3. White Book and the 1981 Utility Power Sales Contract

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 submission to BPA of a utility's Firm Resource Exhibit (FRE) under section 12 of the current, pre-2001 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. Aside from its importance to the 1981 and other contracts, the White Book will continue to be used in conjunction with future contracts with BPA's regional customers.

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)(1). *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 it plans to serve. Section 5(a) of the contract restates BPA's statutory obligation to plan and acquire enough resources 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, and July 31, 2001, respectively. BPA's power sales contract obligations to its public agency customers are determined by each customer's load and its dedicated resources. These dedicated resources are categorized as either 5(b)(1)(A) or 5(b)(1)(B) resources. Section 5(b)(1)(A) requires a customer to dedicate any firm resources it used or had planned to use in the year prior to enactment of the Act on December 5, 1980. Section 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.

D. The 2002 Utility Power Sales Contract

BPA expects that most of its utility and DSI customers will enter into new contracts for service during the post-2001 period. Customers may request contracts of varying lengths, for example, from 3 years to up to 10 years. Unless customers have been granted the Administrator's consent to remove their 5(b)(1)(A) or 5(b)(1)(B) resources, or their use is permanently discontinued due to obsolescence, retirement or loss of the resource, or loss of contracts rights, customers will continue the use of such resources during the next period. Although BPA will make specific determinations of the regional net requirement load obligation for each utility customer as part of its process for new contracts, this White Book will use a forecast based on the assumptions described below. The post-2001 contracts provide our customers with a range of choices in the products they may purchase for their load service. Since those contracts have not yet been executed, the actual extent of the power supply obligations which BPA may have under the new contracts is yet to be decided.

BPA's 1999 White Book includes the change in Federal firm loads and obligations resulting from the 1996 amendatory agreements and 1996 new contracts and also shows projections of Federal firm regional load obligations and resources for the 10-year period ending July 31, 2010. The firm load obligations projected for the study period are based in part on current firm contract obligations and the following assumptions:

- BPA's public load obligations reflect the 1981 power sales contracts until they expire between June 30 and September 30, 2001. Beginning October 1, 2001, and continuing through the remainder of the study period, BPA's public obligations estimates are based on the new 2002 power sales contracts. These obligations range from 4,071 average megawatts in OY 2002 to 5,668 average megawatts in OY 2010;

- BPA had only small IOU load obligations, 250 average megawatts declining to zero in 1993, and has no current load obligations under their 1981 power sales contract. The agency's IOU obligation begins October 1, 2001, under the new 2002 power sales contracts and ranges from 833 to 1,000 average megawatts in OY 2006, increasing to 2,200 average megawatts in 2007 through the end of the study period;

- BPA's current power sales contract obligations with its DSI customers are assumed to end when they expire September 30, 2001. New 2002 DSI power sales contract obligations of 1,440 average megawatts are assumed to begin October 1, 2001, and continue through OY 2006. This White Book analysis makes no assumption regarding DSI firm power sales after OY 2006, and BPA may ultimately decide to make post-2006 firm DSI power sales. The DSI loads reflect only the 5-year duration of the DSI subscription contracts and do not represent a decision by BPA on post-2006 firm DSI power sales; and

- Federal System transmission losses are treated as a resource reduction.

BPA has based these assumptions on all known terms and conditions for serving its regional obligations and believes it is reasonable to use them. BPA's public load obligations reflect the 2002 rate case estimates and will be finalized in the subscription process. Based on data finalized for the 1999 White Book analysis on December 31, 1999, BPA recognizes that, by OY 2010, its firm public requirements obligation to its public agency customers under the new contracts could range from a low of 150 average megawatts if public agencies seek other power producers, to as much as 5,668 average megawatts if all public load less their current dedicated resources is placed on BPA. BPA may also serve firm nonrequirements obligations through sales of surplus power or excess Federal power in the region under new contracts to the extent such power is available. BPA's total regional firm power obligations may be a combination of both sales of requirements and sales of excess Federal power in the next contracts. Table R-1 shows BPA's potential public agency firm obligations using a comparative range of possible requirements service. BPA's estimated annual obligation to public agencies and cooperatives based on BPA's current 1981 power sales contracts, 1996 amendments, and signed presubscription power sales contracts ranges from 4,071 average megawatts in OY 2002 to 5,668 average megawatts in OY 2010. Actual contract obligations under new power sales contracts for OY 2002 through 2010 may be higher.

Table R-1

Range of Potential Federal System Public Obligations for OY 2001-02 Through OY 2009-10
Energy in Average Megawatts

Operating Year	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Federal Minimum Public Obligations[1] (Already Signed Post-2001 Public Contracts)	838	961	965	969	902	264	163	162	150
2. 1999 White Book Estimated Federal Public Obligations	4,071	4,092	4,222	4,294	4,448	5,220	5,418	5,525	5,668
3. Public Federal Maximum Obligation (Maximum Public Obligation Including Public Load Growth)	4,641	4,549	4,665	4,672	4,625	5,281	5,421	5,525	5,668

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

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 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 Public Law (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.

CONCLUSIONS:

For the foregoing reasons the methodology and the assumptions in the 1999 White Book are approved.

Issued in Portland, Oregon on September 20, 2000.

/s/ Judi Johansen
Judith A. Johansen
Administrator and Chief Executive Officer

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Section 10: 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. (One average megawatt is 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.

Canadian Entitlement Return – Public agencies' obligation to return the Canadian Entitlement allocation to Canada, which began April 1, 1998.

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 maximum power rating of the machine or equipment.

Cogeneration – The sequential production of more than one form of energy, such as heat and electricity. Large industrial plants often are sources of electricity cogenerated as a byproduct of a heating process.

Columbia Storage Power Exchange (CSPE) – These are the sales to Northwest utilities of the Canadian share of downstream benefits created by the Canadian storage projects in the Columbia basin. These contracts expire April 1, 2003.

Conservation – Any reduction in electrical power 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.

Export – Electricity generated in the Pacific Northwest that is sold to another region, such as California.

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 the Washington Public Power Supply System (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 2000 is October 1, 1999, through September 30, 2000.

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.
Independent Hydro – The output from hydropower plants that are not part of the regulated system. These plants are generally run-of-river. Examples are Cowlitz Falls or other smaller hydro plants who's output is used to serve load in the utility service territory in which it is located.
Import – Electricity that comes to the Pacific Northwest from another region. Examples would be purchases within the region from PowerEx, California, or western Montana.
Interruptible Loads – Loads that can be interrupted in the event of a power deficiency on the supplying system.
Intra-regional Transfer – Sales of power between two parties within the Pacific Northwest region. Sales from an IOU to a public utility within the region are intra-regional transfers, as well as FPS sales from BPA to public utilities. These also include SSP and chase product sales.
Load Diversity – An adjustment applied to peak loads to reflect the fact that all peaking electrical demands do not occur simultaneously across the region.
Megawatt (MW)– A unit of electrical power equal to 1 million watts or 1,000 kilowatts.
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 le.
Non-utility Generation – generation that is owned by a third party that is not a utility, such as an industrial customer or an independent power producer.
Operating Year – For this study, operating year (OY) is the 12-month period August 1 through July 31. For example, OY 1999-2000 is August 1, 1999, through July 31, 2000.
Peak Load – The maximum demand for power during a specified period of time.
Power Sales Contract Obligation – Capacity and energy the Federal system is required to provide to public agencies and IOUs under their 1981 or 2002 power sales contracts with BPA.
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.
Regulated Hydro – Hydropower plants that are part of the Columbia River hydro system that is operated jointly by BPA, the Corps, and the Bureau. Most of these are part of the mainstem system on the Columbia and Snake rivers.
Renewable Resources – Resources that use solar, wind, hydro, geothermal, biomass, or a similar source of energy that is converted into electricity.
Resource Acquisitions – Conservation or generating resources acquired in order to meet projected firm energy deficits.
Restoration – The obligation of public agencies that gained generation from the addition of Canadian storage to utilities that lost generation from it, according to the terms of the PNCA.
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 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.
Thermal Resources – Resources that burn coal, natural gas, or oil, or use nuclear fusion, to create heat which is then converted into electricity.

Acronyms

aMW	Average megawatt
AVWP	Avista Corporation, Washington Water Power Division (formerly Washington Water Power)
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
ENW	Energy Northwest (formerly Washington Public Power Supply System)
EWEB	Eugene Water and Electric Board
ENI	Energy Northwest, Inc.
FCRPS	Federal Columbia River Power System
FERC	Federal Energy Regulatory Commission
FRE	Firm Resource Exhibit
FPS	Federal Power System
FY	Fiscal Year
ICP	Intercompany Pool (PGE)
IOU	Investor-owned utility
IPC	Idaho Power Company
IPP	Independent power producer
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 resources
OY	Operating Year
PGE	Portland General Electric
PG&E	Pacific Gas and Electric Company
PNGC	Pacific Northwest Generating Company
PNUCC	Pacific Northwest Utilities Conference Committee
PP&L	Pacific Power and Light Company
PSE	Puget Sound Energy
PUD	Public Utility District
PURPA	Public Utility Regulatory Policies Act
RCP	Resource Contingency Plan
SCE	Southern California Edison Company
SCL	Seattle City Light Company
SDG&E	San Diego Gas and Electric Company
SMUD	Sacramento Municipal Utility District
TPU	Tacoma Public Utilities
UPC	Utah Power Company
USBR	United States Bureau of Reclamation
WAPA	Western Area Power Administration
WNP	Washington Nuclear Power

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DOE/BP–3242 SEPTEMBER 2000 500