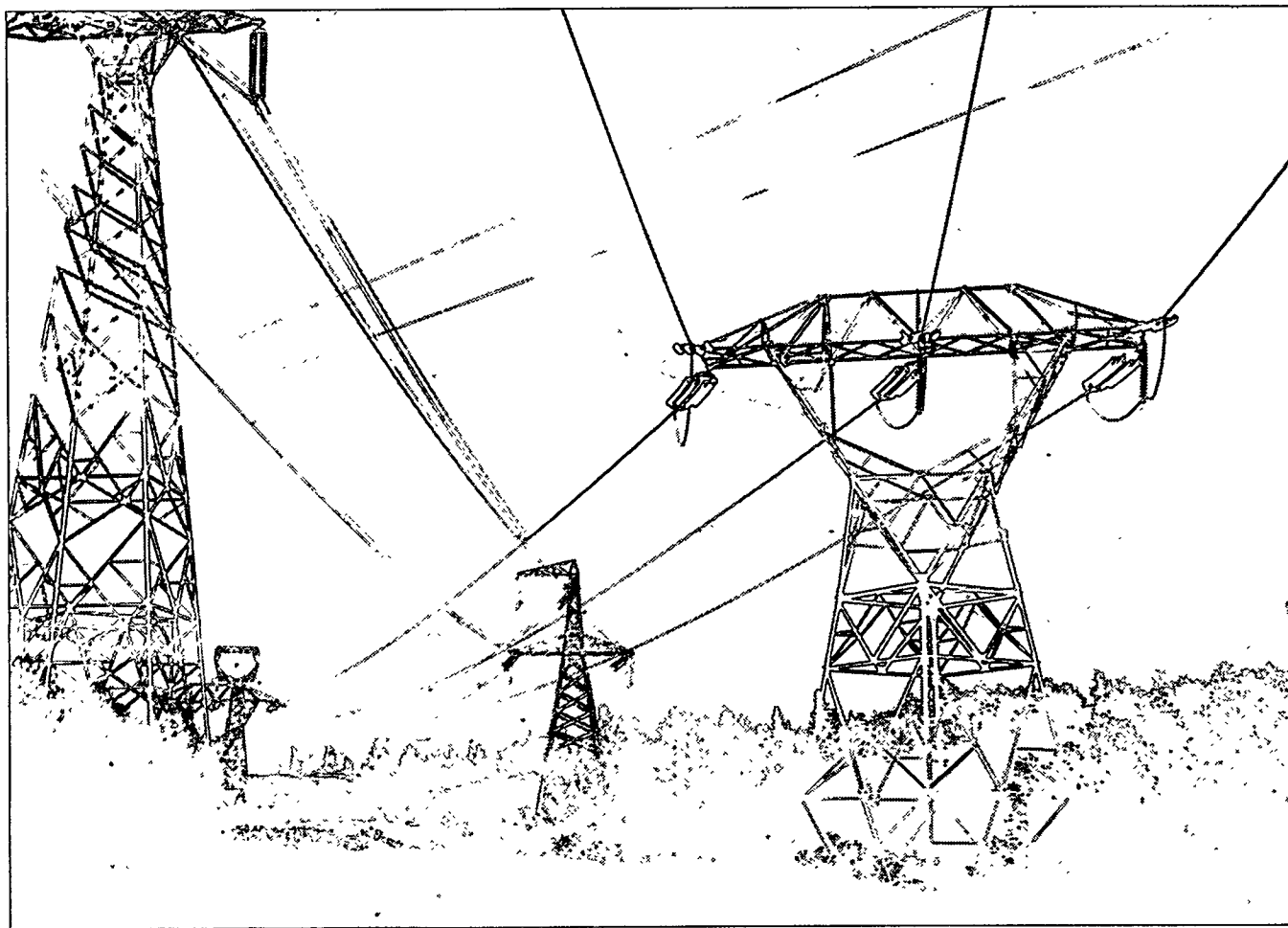


1995 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

DOE/BP-2790



DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

MASTER



1995 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

THE WHITE BOOK

BONNEVILLE POWER ADMINISTRATION
December 1995

*Cover: Morro Transmission Line near Madras, Oregon
BPA Photo*

ACKNOWLEDGMENTS

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

Marketing Support Group

Market Forecasting & Segment Analysis

Customer & Competitor Analysis

Resource Optimization Group

Hydro system regulation study and data collection

Pacific Northwest Utilities Conference Committee

Loads and resources data collection

TABLE OF CONTENTS

	Page
Section I: Introduction	1
Description of the White Book	1
Section II: Background	3
Pacific Northwest Planning Area	3
The 1995 NMFS Biological Opinion	3
Load Forecasting	4
Pacific Northwest Hydro and Thermal Resources	6
Analysis of Federal System Firm Loads and Resources	7
Analysis of Regional Firm Loads and Resources	7
Canadian Treaty Downstream Benefits	8
Canadian Entitlement to Columbia Storage Power Exchange (CSPE) Through March 31, 2003	8
Canadian Entitlement to Canada, Beginning April 1, 1998	8
Major Sources of Uncertainty	9
Section III: Changes in the 1995 Pacific Northwest Loads and Resources Study	11
Firm Load Changes	11
Firm Resource Changes	11
Firm Contract Changes	13
Firm Resource Exhibit (FRE) Changes	13
Section IV: Federal System Analysis	14
Federal System Firm Energy Loads	15
Federal System Firm Peak Loads	16
Existing Federal System Firm Resources	17
Federal System Firm Energy Surpluses/Deficits	20
Section V: Resource Planning Alternatives	23
BPA's Resource Strategy	23
Federal System Firm Capacity Surpluses/Deficits	25
Federal System Loads and Resources Comparison—Energy	28
Federal System Loads and Resources Comparison-Capacity	31
Section VI: Regional Analysis	33
Regional Firm Energy Loads	33
Regional Firm Peak Loads	35
Regional Firm Resources	36
Regional Firm Energy Surpluses/Deficits	37
Regional Firm Capacity Surpluses/Deficits	39

Section VII: Federal System Exhibits	41
Federal System Critical Period Energy Analysis for 10 Operating Years	43
Exhibit 1. Medium Load	44
Monthly Firm Energy Surpluses/Deficits Under Medium Loads for 1937 Water Conditions	47
Exhibit 2. OY 1996-97	48
Exhibit 3. OY 2000-01	50
Exhibit 4. OY 2005-06	52
Federal System Monthly 50-Hour Capacity Surplus/Deficit Under Medium Loads for 1937 Water Conditions for 10 Operating Years	55
Exhibit 5. Medium Loads	56
Federal System Monthly Capacity Analysis Under Medium Loads for 1937 Water Conditions	57
Exhibit 6. OY 1996-97	58
Exhibit 7. OY 2000-01	60
Exhibit 8. OY 2005-06	62
Footnotes For Exhibits 1 through 8	64
Federal Monthly Energy Surpluses/Deficits Under 50 Historical Water Conditions	67
Exhibit 9. OY 1996-97	68
Exhibit 10. OY 1997-98	69
Exhibit 11. OY 1998-1999	70
Exhibit 12. OY 1999-2000	71
Exhibit 13. OY 2000-01	72
Exhibit 14. OY 2001-02	73
Exhibit 15. OY 2002-03	74
Exhibit 16. OY 2003-04	75
Exhibit 17. OY 2004-05	76
Exhibit 18. OY 2005-06	77
Section VIII: Pacific Northwest Regional Exhibits	79
Regional Critical Period Energy Analysis for 10 Operating Years:	81
Exhibit 19. Medium Loads	82
Regional Monthly Analysis Under Medium Loads for 1937 Water Conditions	85
Exhibit 20. OY 1996-97	86
Exhibit 21. OY 2000-01	88
Exhibit 22. OY 2005-06	90
Regional Monthly 50-Hour Capacity Surplus/Deficit Under Medium Loads for 1937 Water Conditions for 10 Operating Years	93
Exhibit 23. Medium Loads	94

Regional Monthly Capacity Analysis Under Medium Loads for 1937 Water Conditions	95
Exhibit 24. OY 1996-97	96
Exhibit 25. OY 2000-01	98
Exhibit 26. OY 2005-06	100
Footnotes For Exhibits 19 through 26	102
Regional Monthly Energy Surpluses/Deficits Under 50 Historical Water Conditions	105
Exhibit 27. OY 1996-97	106
Exhibit 28. OY 1997-98	107
Exhibit 29. OY 1998-99	108
Exhibit 30. OY 1999-2000	109
Exhibit 31. OY 2000-01	110
Exhibit 32. OY 2001-02	111
Exhibit 33. OY 2002-03	112
Exhibit 34. OY 2003-04	113
Exhibit 35. OY 2004-05	114
Exhibit 36. OY 2005-06	115
Section IX: Administrator's Record of Decision on the 1995 Pacific Northwest Loads and Resources Study (The White Book)	117
Section X: Glossary and Acronyms	133

FIGURES

Page

Figure 1. Differences Between the Monthly Federal Firm Hydro Energy From the 1995 White Book and the 1994 White Book for OY 1996-97	12
Figure 2. Federal Firm Energy Loads, 1995 BPA Forecast	15
Figure 3. Federal Monthly Firm Peak Loads Under Extreme Weather Conditions OY 1996-97, 2000-01, and 2005-06	16
Figure 4. Federal Firm Annual Energy Surpluses/Deficits	21
Figure 5. Federal Monthly Firm Energy Loads and Resources for OY 1996-97 Assuming 1936-37 Water Conditions	22
Figure 6. Federal System Monthly Capacity Loads and Resources Under Extreme Weather Conditions for OY 1996-97	25
Figure 7. Federal System Monthly Capacity Surpluses/Deficits Under Extreme Weather Conditions	27
Figure 8. Regional Firm Annual Energy Loads, 1995 BPA Forecast	34
Figure 9. Regional Firm Peak Loads for OY 1996-97, 2000-01, and 2005-06 Under Extreme Weather Conditions	35
Figure 10. Regional Firm Annual Energy Surpluses/Deficits	38
Figure 11. Regional Monthly Firm Capacity Surpluses/Deficits Under Extreme Weather Conditions	40

TABLES

Table 1. Conservation Savings, Cumulative From FY 1995	5
Table 2. Canadian Entitlement to Canada, Energy and Capacity Obligations Beginning April 1, 1998	9
Table 3. Federal System Hydroelectric Projects	18
Table 4. Non-Federally Owned BPA Resources and Contracts	19
Table 5. Federal System Firm Resources for OY 1996-97 Based on 1936-37 Water Conditions	20
Table 6. Federal System Firm Energy Surpluses/Deficits Assuming Existing Loads, Resources, and Contracts, 1936-37 Water Conditions	21
Table 7. Existing Federal System Alternate Contractual Resources	24
Table 8. Energy Analysis: Difference Between the 1995 White Book and the 1994 White Book Under 1937 Water Conditions	30
Table 9. Capacity Analysis: Difference Between the 1995 White Book and the 1994 White Book Under 1937 Water Conditions	32
Table 10. Regional Firm Resources for OY 1996-97 Based on 1936-37 Water Conditions	36
Table 11. Regional Firm Energy Surpluses/Deficits Assuming Existing Loads, Resources, and Contracts	37

I. INTRODUCTION

Description of the White Book

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

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

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

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

Furthermore, the White Book is not an operational planning guide. Operation of the Federal Columbia River Power System (FCRPS) is based on a set of criteria different from that used for resource planning/expansion decisions. Operational planning criteria 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

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

Additionally, BPA took comments from its customers on its draft study. These comments and BPA's responses to them are contained in Section IX, page 117.

The White Book is presented in three documents: 1) this summary of Federal system and Pacific Northwest region loads and resources; 2) a technical appendix detailing the loads and resources for each major Pacific Northwest generating utility; and 3) a regional non-utility generation supplement detailing Pacific Northwest non-utility generating (NUG) resources. This analysis updates the 1994 Pacific Northwest Loads and Resources Study, published in December 1994.

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

In this loads and resources study, resource availability is compared with a medium forecast of electricity consumption. The forecasted future electricity demands—firm loads—are subtracted from the projected capability of existing and “contracted for” resources to determine

whether BPA and the region will be surplus or deficit. If resources are greater than loads in any particular year or month, there is a surplus of energy and/or capacity, which BPA may use or market to increase revenues. Conversely, if firm loads exceed available resources, there is a deficit of energy and/or capacity, and BPA would add conservation, contract purchases, or generating resources as needed to meet its firm loads.

This document analyzes the Pacific Northwest's projected loads and available generating resources in two parts: 1) the loads and resources of the Federal system, for which BPA is the marketing agency; and 2) the larger Pacific Northwest regional power system, which includes loads and resources in addition to the Federal system.

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

This study presents the Federal system and regional analyses for the medium load forecast. This analysis projects the yearly average energy consumption and resource availability for Operating Years (OY)¹ 1996-97 through 2005-06. The study shows the Federal system's and the region's monthly estimated maximum electricity demand, monthly energy demand, and monthly maximum generating capability—capacity—for OY 1996-97, 2000-01, and 2005-06. The Federal system and regional monthly capacity surpluses/deficits are summarized for 10 operating years.

To demonstrate the monthly energy variability resulting from implementing the National Marine Fisheries Service (NMFS) 1995 Biological Opinion, dated March 2,

1995, this analysis includes the monthly Federal system and regional firm energy surpluses and deficits for OYs 1997 through 2006 for each of the 50 historical water years on record. These are found in Section VIII, Exhibits 9 through 18, pages 68 through 77, and Exhibits 27 through 36, pages 106 through 115. These exhibits were added to show the effects of the 1995 NMFS Biological Opinion on the ability of the hydro system to shift and shape water flows to meet firm energy loads in any given month. Large monthly surpluses or deficits may occur under any water condition.

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

The Federal system analysis is presented in Section IV, beginning on page 14. The analysis for the Pacific Northwest region is presented in Section VI, page 33.

BPA's responds to customer comments received during the White Book public comment period are contained in the *Administrator's Record of Decision on the 1995 Pacific Northwest Loads and Resources Study*, Exhibit IX, page 117.

The glossary of terms and a list of acronyms are included in Section X, page 133.

Additional copies of this summary, along with copies of the 1995 Pacific Northwest Loads and Resources Study Technical Appendix: Volume 1 (available March 1996), and the 1995 Pacific Northwest Loads and Resources Study: Non-Utility Generation Supplement (available April 1996) can be obtained 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 1996-97 is August 1, 1996 through July 31, 1997.

II. BACKGROUND

Pacific Northwest Planning Area

The Pacific Northwest regional planning area is defined by the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act), enacted in December 1980. It includes Oregon, Washington, Idaho, Montana west of the Continental Divide, and portions of Nevada, Utah, and Wyoming that lie within the Columbia River drainage basin. In addition, any rural electric cooperative customers not in the geographic area described above that were served by BPA on the effective date of the Northwest Power Act are included in BPA planning for resources to meet its load.

The 1995 NMFS Biological Opinion

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

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

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

These changes indicate that a change may be necessary in the way loads and resources in the Pacific Northwest are analyzed to more accurately reflect generation capability. This would involve estimating the potential risks of moving away from traditional critical water planning and toward managing resource availability risks. For this reason, this document presents the Federal system and regional firm surpluses and deficits for OYs 1997 through 2006 for each of the 50 historical water conditions on record (1929 through 1978 water conditions) in Exhibits 9 through 18, pages 68 through 77, for the Federal system and Exhibits 27 through 36, pages 106 through 115, for the region. The information presented in these tables shows the monthly variability of the surpluses and deficits over the 50 water conditions. For example, in January 1997, the Federal system is energy surplus 40 out of the 50 water conditions; thus, 80 percent of time, the Federal system would be energy surplus in January.

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

Load Forecasting

This loads and resources analysis used BPA's medium case load forecast that was prepared in September 1995. Loads for each of the following customer groups were estimated separately: non-generating public agencies, generating public agencies, aluminum DSIs, non-aluminum DSIs, IOUs, Federal agencies, and the USBR. In general, BPA's load forecasts are designed to respond to and reflect factors such as employment, electricity prices, aluminum prices, smelter production costs, and planned conservation actions. The forecast of conservation savings reflects the shift of financial responsibility for conservation, and hence savings, from BPA-funded

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

Table 1

**Conservation Savings
Cumulative From FY 1995
Energy in Average Megawatts**

FISCAL YEAR¹	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
BPA Programmatic Conservation										
Residential	7.8	8.3	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Commercial	31.6	37.3	43.0	47.4	51.8	51.8	51.8	51.8	51.8	51.8
Industrial	13.1	14.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
Additional Conservation & Conservation Reinvention										
Conservation Transfers	0.0	0.0	0.0	0.0	6.0	6.0	6.0	6.0	6.0	6.0
Billing Credits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Competitive Acquisitions	7.1	10.8	14.5	18.2	21.9	21.9	21.9	21.9	21.9	21.9
Power Plants	14.1	20.4	26.7	33.0	39.3	39.3	39.3	39.3	39.3	39.3
Assumed Market Transformation	2.5	5.5	9.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5
MCS & Improved Building Codes	31.0	41.0	51.0	61.0	71.0	71.0	71.0	71.0	71.0	71.0
Adjustments for New Codes & Standards	19.0	25.0	31.0	37.0	43.0	43.0	43.0	43.0	43.0	43.0
SUB-TOTAL	73.7	102.7	132.7	162.7	198.7	198.7	198.7	198.7	198.7	198.7
Customer-Funded Conservation	49.8	67.7	85.6	103.5	121.4	121.4	121.4	121.4	121.4	121.4
TOTAL LOAD REDUCTION FOR CONSERVATION SAVINGS	182.1	236.2	291.3	343.6	401.9	401.9	401.9	401.9	401.9	401.9

¹ BPA's Fiscal Year is October 1 through September 30. For example, FY 1997 is October 1996 through September 30, 1997.

Pacific Northwest Hydro and Thermal Resources

Hydro Resources

Energy Capability. This study uses 1937 water conditions (the 12-month period from August 1936 through July 1937) to estimate the firm hydro capability in a historical sequence of low water conditions. This is a change from previous studies, which used a 42-month (September 1929 through February 1932) critical period. 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. This change is due to the implementation of the streamflow requirements described in the NMFS 1995 Biological Opinion.

Capacity. The monthly instantaneous capacity of hydro projects is defined as the full-gate-flow maximum available generation at each project, based on the average monthly elevation resulting from 1936-37 water reservoir levels. BPA assumes 1936-37 water levels to estimate the regional hydro capacity because that year approximates a peaking capability that is consistent with the reliability criteria set forth in the Pacific Northwest Coordination Agreement.

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

BPA's planning projections reduce the estimated instantaneous hydro capacity to reflect a Federal sustained peaking level of 50 hours per week. This level provides estimated firm hydro capacity that can be maintained each day and continued for weeks at a time. This definition of firm capacity provides a better measure of resource peak capability. The hydro generation also is adjusted to allow for scheduled hydro maintenance, spinning reserves, and forced outage reserves.

Multiple-Use Planning. Pacific Northwest hydro projects have many uses besides power generation. The projects may provide flood control, supply irrigation for farming, assist in river navigation and recreation, and contribute to municipal water supplies. In addition, constraints also are in place to protect and enhance resident and anadromous fish populations. These non-power uses place operating requirements on the reservoirs and may reduce or increase hydroelectric power production. BPA's resource planning takes into account all presently known nonpower operating requirements in assessing regional hydro system capability.

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

The Council, BPA, and other Pacific Northwest entities will continue to evaluate new ways to enhance fisheries and wildlife. Future proposals could include additional amendments to the Council's Columbia River Basin Fish and Wildlife Program, recommendations arising from the SOR, and/or implementation of additional programs in support of the Endangered Species Act. The impacts of future proposals are unknown. These proposals, however, most likely will increase non-power requirements on the hydro system and change operating flexibility, change the monthly shape of streamflows, and change the availability of sustained Federal capacity. Future studies will incorporate any known impacts.

Thermal Resources

The expected output of regional thermal resources is based on the energy and capacity capabilities submitted to BPA by the project owners. The output of all thermal plants is reduced to allow for scheduled maintenance, spinning reserves, and forced outage reserves.

Analysis of Federal System Firm Loads and Resources

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

The Federal system loads are made up of BPA's sales to other Federal agencies, its regional public agencies, and other contractual obligations to deliver power. This study also includes firm DSI loads under the new DSI power sales contracts signed through December 31, 1995.

The hydro resources of the Federal system include 30 dams owned and operated by the USBR and the COE, plus hydroelectric projects owned by the city of Idaho Falls, Washington Public Power Supply System (WPPSS), and Lewis County Public Utility District (PUD). BPA has the exclusive right to sell power generated by USBR and COE hydroelectric projects. BPA also markets the thermal generation from the WNP-2 nuclear plant, operated by WPPSS.

The Federal system analysis is shown in Section IV, beginning on page 14.

Analysis of Regional Firm Loads and Resources

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

The regional analysis is presented in Section VI, beginning on page 33.

Canadian Treaty Downstream Benefits

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

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

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

Canadian Entitlement to Canada, Beginning April 1, 1998

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

Table 2

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

Energy in Average Megawatts

OPERATING YEAR ¹	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Investor-Owned Utilities	0	2	25	53	51	51	66	94	93	84
Public Agencies	0	3	6	39	39	38	47	65	65	73
Federal System	0	12	96	215	209	208	262	371	370	368
TOTAL ENERGY OBLIGATION	0	17	137	307	299	297	375	530	528	525

January Capacity in Megawatts

OPERATING YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Investor-Owned Utilities	0	0	21	132	132	132	132	241	241	241
Public Agencies	0	0	17	98	98	98	98	179	179	206
Federal System	0	0	88	538	538	538	538	980	980	980
TOTAL CAPACITY OBLIGATION	0	0	126	768	768	768	768	1,400	1,400	1,400

¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1996-97 is August 1, 1996 through July 31, 1997.

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:

- ◆ BPA's future marketing efforts and/or revised resources acquisition, including conservation;
- ◆ Possible increases in resource acquisitions by BPA's public agency customers, which would decrease their purchases from BPA, particularly after contracts expire in 2001;
- ◆ Deviation from the forecasted rate of load growth;
- ◆ Failure of existing or contracted generating resources to operate at anticipated times and levels; and

- ◆ Changes in existing hydro system operation in response to programs developed to address the Endangered Species Act or other environmental considerations.

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

Contractual Uncertainty

BPA's contractual obligation to serve future regional load growth is uncertain because there is no precise way to predict the amount of load growth regional utilities will place on BPA in coming years. This study assumes that the following contracts, though they are subject to change as noted, will extend throughout the 10-year study period. What occurs when these contracts expire, which will be at varying times during the 10-year study period, may affect the

Federal system and regional loads and resources balances:

- ◆ BPA's power sales contracts with its public agency and IOU customers expire June 30, 2001, and with its DSI customers on September 30, 2001. Renegotiation of these contracts may result in new or different Federal obligations.
- ◆ The Pacific Northwest Coordination Agreement will expire June 30, 2003. BPA expects this agreement, which coordinates operation of the Pacific Northwest power system and that of Canada, will be replaced with a new agreement. The provisions of a new agreement may be different from the existing agreement.

III. CHANGES IN THE 1995 PACIFIC NORTHWEST LOADS AND RESOURCES STUDY

This section describes the major changes in the assumptions of the 1995 Pacific Northwest Loads and Resources Study compared to the 1994 study. Other changes are reflected in the data for each utility contained in the 1995 Pacific Northwest Loads and Resources Study Technical Appendix.

Firm Load Changes

Load Changes. The 1995 White Book analysis uses load projections that incorporate the following changes since last year's analysis:

- ◆ **1995 BPA Load Forecast:** This analysis uses the 1995 BPA medium load forecast of Federal agencies, public agencies, and investor-owned utilities that was completed in September 1995.
- ◆ **New DSI Power Sales Contracts:** This study includes BPA's new DSI power sales contracts and DSI block sales agreements signed through December 31, 1995. The new DSI contracts continue through September 30, 2001. In OY 2002 and beyond, the DSI load is reduced from forecasted projections to show a zero Federal system loads and resources balance based on the fact that BPA has no commitment to serve the DSI load after OY 2001. Additionally, the new DSI contracts changed some

capacity planning criteria. The new contracts provide real-time operating reserve criteria that is shorter in duration than the DSI planning reserves modeled in prior studies. Since the duration of the DSI real-time operating reserves is much less than the 50 hours per week used in capacity loads and resources planning, it was removed from the Federal system and regional loads and resources balances in this analysis.

Firm Resource Changes

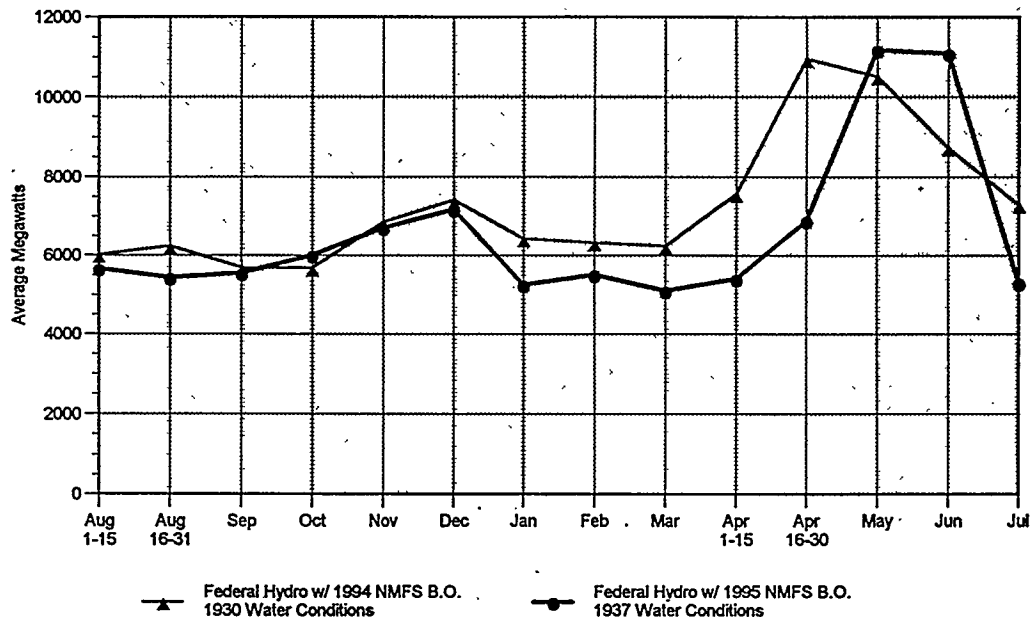
Resource Changes. The 1995 White Book analysis reflects the following resource changes compared to last year's study:

- ◆ **Implementation of the 1995 NMFS Biological Opinion:** The hydroregulation study used in this analysis incorporates the guidelines used in the 1995 NMFS Biological Opinion. Streamflow requirements of the 1995 NMFS Biological Opinion incorporate storing water in reservoirs in the months of January through March for later release in the months of May through July for purposes of implementing fish recovery measures.

Figure 1, page 12, shows the monthly impact of the 1995 NMFS Biological

Figure 1

**Difference Between the Monthly Federal Firm Hydro Energy
From the 1995 White Book and the 1994 White Book
for OY 1996-97**



Opinion on the Federal system hydro energy capability compared to last year's analysis.

- ◆ **1937 Water Conditions and 12-Month Annual Average Generation for Hydro Projects:** The 1995 NMFS Biological Opinion also resulted in the need to change the traditional critical period from the 42-months of September 1928 through February 1932 which no longer reflects system capability. BPA will change to the 8-month period of September 1936 through April 1937 water conditions and calculate an annual average number based on firm generation in all 12 months. This analysis estimates hydro energy generating capabilities by assuming the 12-month annual average of energy under 1936-37 water conditions.

- ◆ **Removal of May and June Columbia River Flow Augmentation Adjustments:** This analysis assumes that all monthly firm resources will be used in the calculation of the Federal system energy surpluses and deficits in any operating year. Therefore, the 12-month annual average of energy for each operating year includes the total firm energy production capability for the months of May and June in the calculation. In last year's study, the Federal system loads and resources analysis did not treat the months of May and June the same as other months in the operating year. The Federal system had reductions in those months (May and June Flow Augmentation) which reduced the firm Federal hydro generation in those months. Using existing

agreements for off-system storage and exchanges permits BPA to reshape monthly amounts of generation off of its system.

- ◆ **Removal of Tenaska and SDS Lumber:** In last year's analysis, BPA included the gas-fired resources of Tenaska and SDS Lumber. Since that analysis, BPA determined that it is excused from any further obligations under the Tenaska and SDS Lumber agreements; therefore, those projects have been removed from the 1995 White Book.

Firm Contract Changes

Contract Changes. The 1995 White Book analysis uses the following contract changes versus last year's study:

- ◆ **Exports:** The 1995 White Book analysis includes the following new or changed Federal exports: BPA to Azusa, seasonal exchange; BPA to Burbank, capacity/energy exchange; BPA to Glendale, capacity/energy exchange; BPA to Imperial, diversity exchange; BPA to Palo Alto, capacity sale; BPA to Palo Alto, seasonal energy; BPA to Pasadena, capacity/energy exchange; BPA to the Southern California Edison Company (SCE), capacity/energy exchange; and BPA to Vernon, seasonal exchange.
- ◆ **Contracts Out:** This analysis has the following new or updated BPA intra-regional contracts out: BPA to Cowlitz County PUD, power sale; BPA to Eugene Water and Electric Board (EWEB), power sale; BPA to Lewis County PUD, power sale; BPA to Lower Valley Power and Light Incorporated, power sale; BPA

to Portland General Electric (PGE), power sale; BPA to Washington Water Power (WWP), power sale (Clark); BPA to WWP, power sale (Riverside); BPA to WWP, power sale; and BPA to West Oregon Electric Cooperative, power sale.

- ◆ **Imports:** This analysis has the following new or updated BPA imports: Azusa to BPA, exchange energy; Burbank, Glendale, and Pasadena to BPA, supplemental energy; Burbank to BPA, exchange energy; Glendale to BPA supplemental energy; Imperial to BPA, seasonal exchange; Pasadena to BPA, exchange energy; SCE to BPA, Exchange energy; SCE to BPA, supplemental energy; and SCE to BPA, option energy.
- ◆ **Contracts In:** This analysis has the following new BPA intra-regional contracts in: BPA to unspecified entities, power sale.

Firm Resource Exhibit (FRE) Changes

FRE Resource Changes. The 1995 White Book analysis assumes all 1994 FRE resource changes approved by BPA. These include Canby Utility Board, Clark Public Utilities, EWEB, Seattle City Light, Springfield Utility Board, and Snohomish County PUD. Because information concerning the amount, size, supplier, and type of resource was not available at the time of this publication, the following FRE resource changes were accepted but not included in this analysis: Emerald County PUD, Inland Power and Light Company, and Forest Grove Light and Power Department.

IV. FEDERAL SYSTEM ANALYSIS

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

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

- ◆ Capacity surplus/deficit values do not reflect potential nighttime return problems on the Federal system;
- ◆ The region experiences medium load growth;
- ◆ The Pacific Northwest Coordination Agreement, which expires June 30, 2003, is replaced with a like agreement;
- ◆ BPA's power sales contracts with Pacific Northwest Federal and public agencies and IOUs, which expire June 30, 2001, and with its DSI customers, which expire September 30, 2001, are renewed with like agreements;
- ◆ All existing Federal contractual arrangements not included under Pacific Northwest power sales contracts expire and are not renewed;
- ◆ Federal surplus firm power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, and Pasadena, and with SCE, are shown in capacity/energy exchange mode throughout the study period.
- ◆ BPA purchases supplemental energy from the cities of Burbank, Glendale, and Pasadena, and from SCE, beginning in OY 2000 and continuing through the end of the study period.
- ◆ BPA purchases option energy from SCE in OYs 2000 and 2001.
- ◆ BPA's surplus firm power sale to the M-S-R Public Power Agency (M-S-R), whose members include the Modesto Irrigation District and the cities of Santa Clara and Redding, California, remains a power sale through October 31, 2009, then converts to a capacity/energy exchange until it expires;
- ◆ BPA's surplus firm power sale to Puget Sound Power and Light terminates and converts to a seasonal power exchange beginning in OY 2001-02, per the terms of the contract;
- ◆ Sustained capacity limits are 50 hours per week.
- ◆ BPA serves all of the Pacific Northwest public agencies' net firm load requirements not served by their dedicated resources;
- ◆ Extreme weather adjustments are assumed for the months of November through February. These adjustments vary monthly from 1,400 to 1,900 peak megawatts under the medium load forecast; and
- ◆ The IOUs do not make new long-term BPA purchases.

Federal System Firm Energy Loads

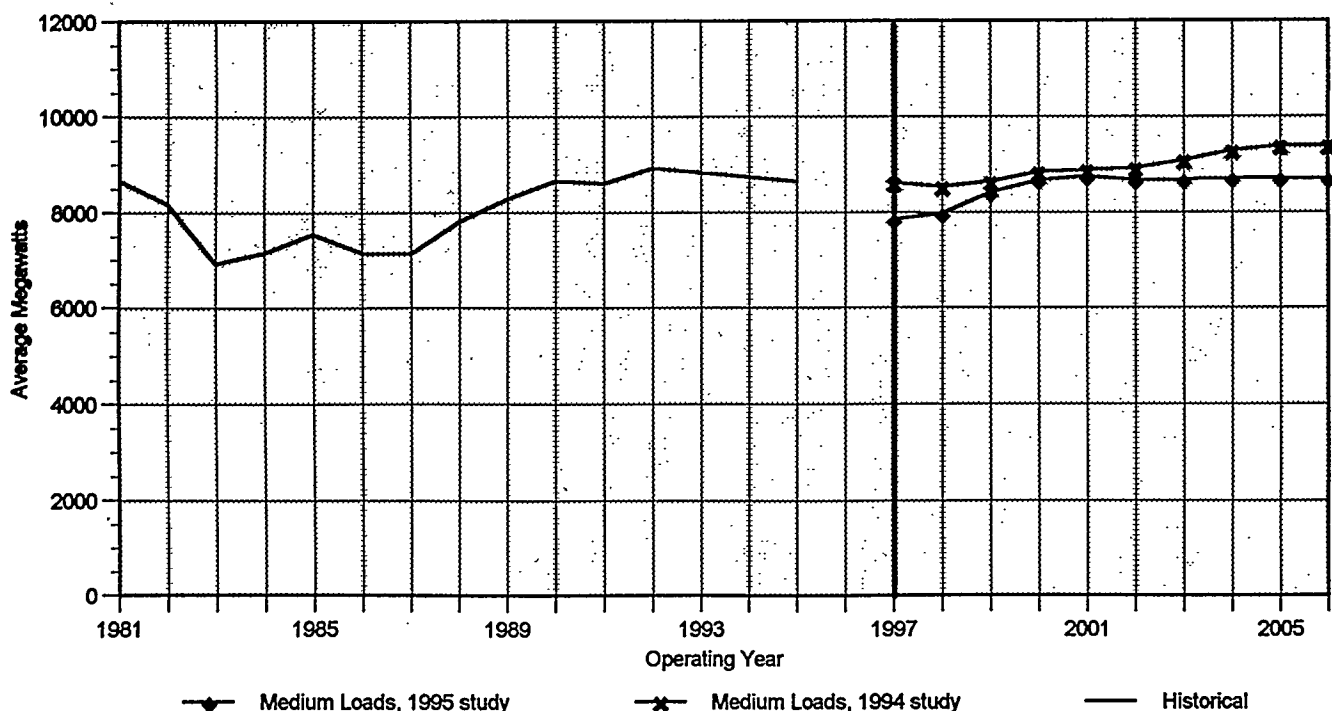
The Federal system firm loads include BPA's firm DSI load,¹ sales to Federal agencies, current obligations to regional public agencies and IOUs under their power sales contracts, and other inter- and intra-regional contractual obligations.

¹ This study includes the Federal DSI firm loads through OY 2001, per contracts signed through December 31, 1995. In OY 2002 and beyond, the Federal DSI load was reduced to maintain Federal loads and resources balances due to lack of DSI commitments after OY 2001. Any loads removed from the Federal DSI loads were added to the non-Federal DSI load forecast to maintain accurate regional DSI load levels.

The Federal system firm energy loads under the medium load forecast for OY 1996-97 through 2005-06 are shown in Figure 2, below. The methods and assumptions used to complete this year's load forecast are discussed under *Load Forecasting*, page 4.

The Federal loads include all intra-regional contracts made within the Pacific Northwest, called contracts out, and inter-regional contracts or exports of firm surplus power to Southwest utilities. The Federal firm energy loads under the medium load forecast are presented on line 15 of Exhibit 1, page 44, and monthly for the medium load forecast for OY 1996-97, 2000-01, and 2005-06 assuming 1937 water conditions in Exhibits 2 through 4, pages 48 through 53.

Figure 2
Federal Firm Energy Loads
1995 BPA Forecast
Medium Loads



Federal System Firm Peak Loads

Figure 3, below, shows the Federal firm peak loads for OY 1996-97, 2000-01, and 2005-06 under the medium load forecast. The figure shows the expected 1-hour monthly demand under the 1995 BPA load forecast, and includes extreme weather adjustments. Extreme weather conditions were assumed for the months of November through February and estimate a 5-percent probability that the actual peak load will be exceeded. The extreme weather adjustment includes possible increased obligations on BPA by the public agencies during extreme weather conditions. In the remaining months of March through October, the peak loads estimate normal weather con-

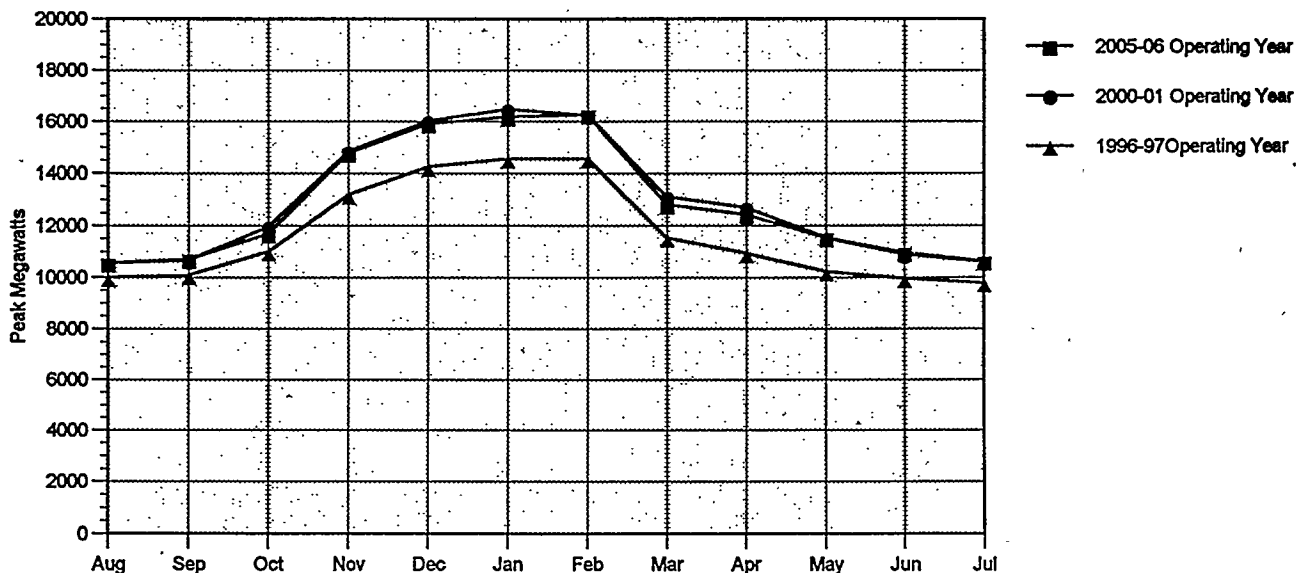
ditions with a 50-percent probability that the actual peak load will be exceeded. The peak load projections are reduced by a diversity component to address the fact that all peak electrical demands do not occur simultaneously throughout the region.

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

The monthly Federal firm peak loads are presented on line 15, and the monthly extreme weather obligations are presented on lines 44 and 47 of Exhibits 6 through 8, pages 58 through 63, for the medium load forecast for OY 1996-97, 2000-01, and 2005-06, assuming Federal obligations under 1937 water conditions.

Figure 3

Federal Monthly Firm Peak Loads Under Extreme Weather Conditions for OY 1996-97, 2000-01, and 2005-06 Medium Loads



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

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

Existing Federal System Firm Resources

The Federal system hydro resources from which BPA markets power are shown in Table 3, page 18. In addition, BPA markets power purchased from non-Federally owned resources. BPA's capacity/energy exchange contracts provide energy to BPA as payment for the capacity BPA delivers.

The non-Federally owned resources, return energy associated with BPA's existing capacity/energy exchanges, contractual resources, and other BPA hydro-related contracts are shown in Table 4, page 19.

Combined, these resources represent BPA's available firm resources. A detailed listing of all Federal generating resources is contained in the 1995 Pacific Northwest Loads and Resources Technical Appendix: Volume 1 (available March 1996).

Table 3**Federal System Hydroelectric Projects**

Project	Initial Year of Service	Number of Units	Name-plate Rating (MW)	Instantaneous Generating Capacity ¹ (peak MW)	Firm Energy ² (aMW)
U.S. BUREAU OF RECLAMATION HYDROELECTRIC PROJECTS					
Grand Coulee	1941	27	6,187.5	6,134	1,813
Grand Coulee Pump Gen.	1973	6	314.0	314	0
Hungry Horse	1952	4	392.0	354	82
Palisades	1957	4	142.2	122	66
Anderson Ranch	1950	2	27.0	36	16
Minidoka	1909	7	13.4	13	8
Roza	1958	1	11.3	4	6
Black Canyon	1925	2	8.0	9	8
Chandler	1956	2	12.0	10	9
TOTAL U.S. BUREAU OF RECLAMATION PROJECTS		55	7,107.4	6,996	2,008
U.S. ARMY CORPS OF ENGINEERS HYDROELECTRIC PROJECTS					
Chief Joseph	1955	27	2,069.0	2,543	1,123
John Day	1968	16	2,160.0	2,080	874
The Dalles	1957	22	1,780.0	2,074	568
Bonneville	1938	18	1,050.0	1,147	439
McNary	1953	14	980.0	985	658
Lower Granite	1975	6	810.0	815	212
Lower Monumental	1969	6	810.0	799	214
Little Goose	1970	6	810.0	797	200
Ice Harbor	1961	6	603.0	567	151
Libby	1975	5	525.0	567	168
Dworshak	1974	3	400.0	445	132
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	22	30
Hills Creek	1962	2	30.0	30	27
Cougar	1964	2	25.0	25	16
Foster	1968	2	20.0	22	12
Big Cliff	1954	1	18.0	21	11
Dexter	1955	1	15.0	17	9
TOTAL CORPS OF ENGINEERS PROJECTS		149	12,496.6	13,216	4,978
HYDRO EFFICIENCY IMPROVEMENTS³		0	0	0	45
TOTAL USBR AND COE PROJECTS		204	19,604.0	20,212	6,986

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

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

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

Table 4

Non-Federally Owned BPA Resources and Contracts
Capacity based on January 1997

Project	Type	Operator	Date in Service	OY 1996-97 Capacity (peak MW)	OY 1996-97 Firm Energy (aMW)
Existing Non-Federally Owned BPA Resources					
WNP-2	Nuclear	WPPSS	1984	1,170 ¹	821 ¹
Packwood Lake	Hydro	WPPSS	1964	30	9
Idaho Falls Bulb Projects	Hydro	City of Idaho Falls	1982	18	18
Cowlitz Falls	Hydro	Lewis County PUD	1994	13 ²	16
Big Creek Hydro Unit	Hydro	Mission Valley	1981	1	0
TOTAL NON-FEDERALLY OWNED BPA RESOURCES				1,232	864
Firm Contracts					
Canadian Entitlement (CSPE)				115	53
Restoration, Columbia River Treaty w/Canada				0	-26
Pacific Southwest Imports				45	232
Eastern Imports				285	155
Pacific Northwest Purchase				69	339
Non-Utility Generation				1	13
TOTAL BPA FIRM CONTRACTED RESOURCES				515	765
TOTAL NON-FEDERALLY OWNED BPA RESOURCE CONTRACTS				1,747	1,629

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

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

Table 5, page 20, summarizes the Federal system firm energy resources and contracts available to meet Federal firm loads for OY 1996-97. Federal system firm energy

resources are comprised as follows: 83 percent from hydroelectric power, 10 percent from one nuclear power plant, and 7 percent from BPA's firm contracts.

Table 5

Federal System¹ Firm Resources for OY 1996-97 ²
Based on 1936-37 Water Conditions
Capacity based on January 1997

Project Type	Sustained Peak Capacity (MW)	Generating Peaking Capacity % of Total	Firm Energy (aMW) 12-Month Average	Firm Energy % of Total
Hydro	13,842	88	7,122	82
Nuclear	1,170	8	821	9
Firm Contracts	400	4	739	9
TOTAL FEDERAL RESOURCES	15,412	100	8,682	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 1996-97 is August 1, 1996, through July 31, 1997.

Federal System Firm Energy Surpluses/Deficits

This analysis includes all operating requirements currently adopted by the hydroelectric project owners and the firm planning assumptions for assured resource capability in PNCA and from the 1995 NMFS Biological Opinion.

The Federal firm energy surpluses/deficits under the medium load forecast for OY 1996-97 through 2005-06 are presented in Table 6, page 21, and graphically shown in Figure 4, page 21. Under the medium forecast, the Federal system is energy surplus for the first four years of the study period, then slightly deficit in OY 2001. In OY 2002 and beyond, the Federal DSI loads were reduced to maintain a balance in Federal loads and

resources due to the lack of commitment from the DSIs after OY 2001. Any load removed from the Federal DSI was added to the non-Federal DSIs to accurately reflect regional DSI load levels.

The components of the 10-year critical period average Federal energy loads and resources balances under the medium load scenario are presented in Exhibit 1, line 42, page 44.

To show the monthly variability of the loads and resources study, the monthly Federal system energy components assuming medium loads under 1937 water conditions for OY 1996-97, 2000-01, and 2005-06 are shown in Exhibits 2 through 4, pages 48 through 53.

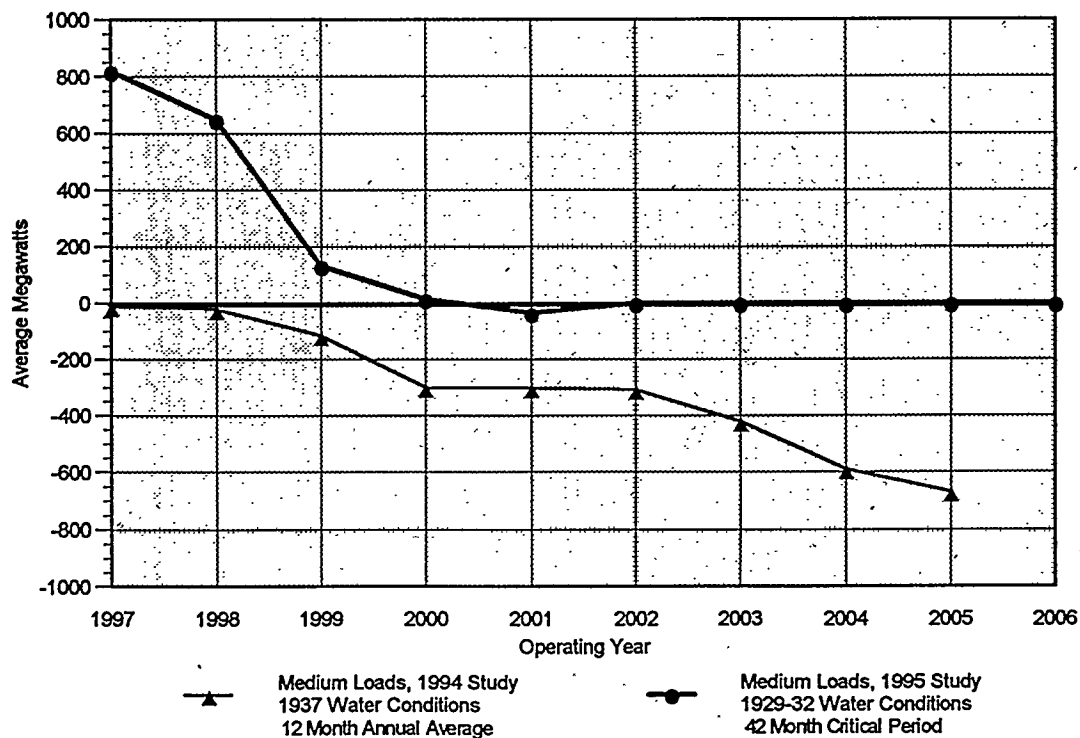
Table 6

**Federal System Firm Energy Surpluses/Deficits
Assuming Existing Loads, Resources, and Contracts¹
1936-37 Water Conditions
Energy In Average Megawatts**

Medium Load Scenario	OPERATING YEAR ²									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	821	648	132	15	-36	0	0	0	0	0

Figure 4

Federal Firm Annual Energy Surpluses/Deficits



^{1/} In OY 2002 and beyond, the Federal DSI loads were reduced from the Federal DSI forecast to show a zero Federal System loads resources balance. The zero surplus/deficit acts as a place holder based on the fact that BPA has no commitment to serve the DSI loads after OY 2001.

¹The Federal DSI loads were reduced in OY 2002 through the end of the study period to maintain Federal loads and resources balance due to the lack of commitment from the DSIs after 2001. Any load removed from the Federal DSI loads was added to the non-Federal DSI load forecast to maintain accurate regional DSI load levels.

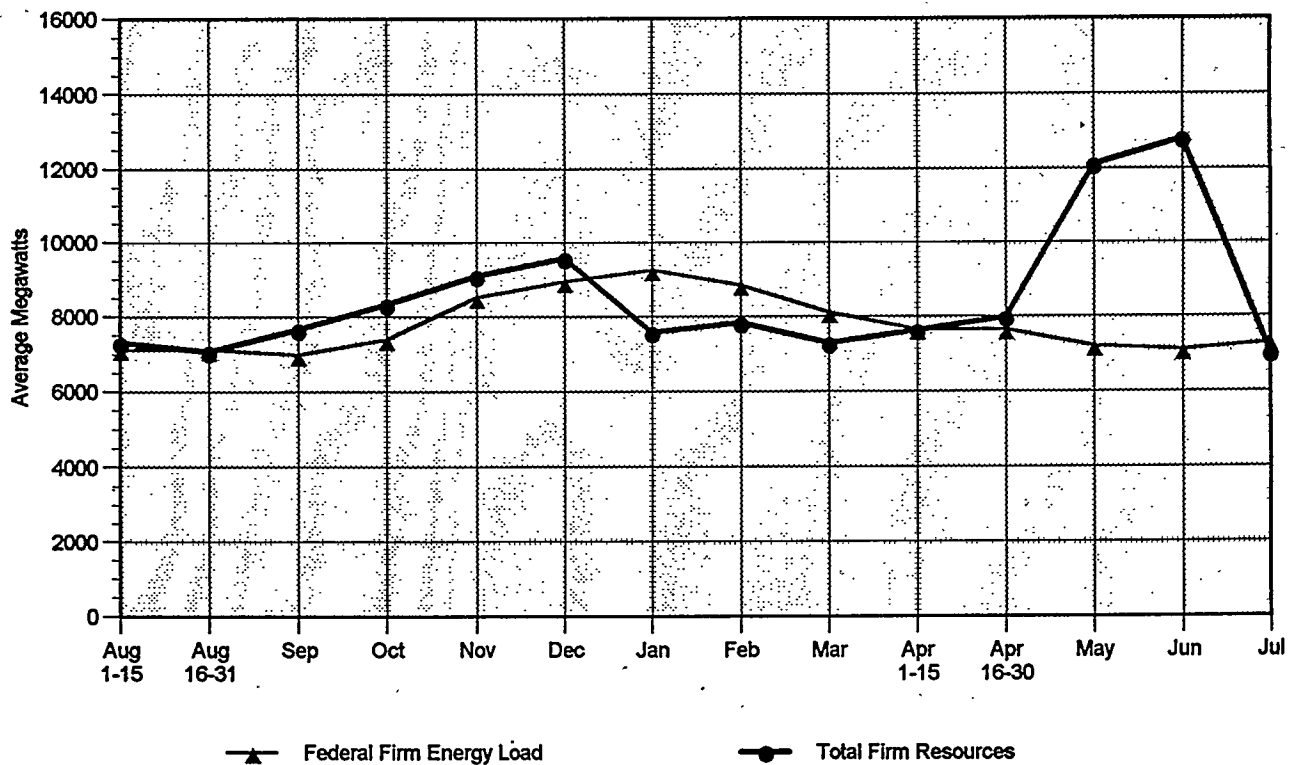
² Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1996-97 is August 1, 1996, through July 31, 1997.

Figure 5, below, shows the monthly Federal system firm energy loads and resources for OY 1996-97. This figure illustrates the timing of Federal system monthly surpluses and deficits in any operating year created by incorporating the 1995 NMFS Biological Opinion.

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

Figure 5

Federal Monthly Firm Energy Loads and Resources for OY 1996-97¹
Assuming 1936-37 Water Conditions
 Medium Load Forecast



¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1996-97 is August 1, 1996, through July 31, 1997.

V. RESOURCE PLANNING ALTERNATIVES

BPA's Resource Strategy

As previously discussed, Federal hydro system operations have changed due to the 1995 NMFS Biological Opinion. In response to these changes, BPA has changed its traditional least cost resource planning approach by adopting a new resource strategy. For the immediate future, BPA's resource strategy is to rely on available power purchases, off-system storage, or exchanges to serve any incremental power needs should loads exceed resources within a month. BPA has conducted a generation reliability study that shows that BPA can comfortably rely on serving firm load with surplus power beyond OY 2004. Information on this resource strategy is contained in BPA's Interim Resource Strategy (September 1995). In contrast, the White Book analysis differs from BPA's resource strategy because provisions of the current utility power sales contract do not allow BPA to count "uncommitted" purchase power as a resource available to serve firm load. The following alternatives are being considered as possible means of meeting BPA's future load commitments:

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

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

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

Use the Resource Contingency Program (RCP) Option Resources. This alternative would include the RCP options as resources in OY 1998. BPA has contracted rights for the output of three combustion turbines, which carry a combined 854 average megawatt (911 peak megawatt) resource potential available within three years. The RCP resources are shown in line 1, Table 7, page 24.

Non-Treaty Storage. On July 9, 1990, BC Hydro and BPA signed an agreement increasing United States-Canadian coordination of the Columbia River system. This agreement cooperatively manages 4.5 million acre-feet of non-treaty hydro storage through June 30, 2003. Studies on the increased coordination indicate a possible increase of 300 average megawatts in firm energy for the combined Canadian and Pacific Northwest systems. Fifty percent of

the benefit, 150 average megawatts, is available to the United States. The Federal system share is 115 average megawatts. This energy, however, is not as valuable as a firm resource because non-treaty storage has a lower refill priority than primary storage reservoirs. Therefore, BPA intends to use the non-treaty storage as a resource which will increase flexibility in operating the hydro system when needed. Since this energy may not be available in every year, BPA needs to use probability methods for its inclusion as a firm resource, but has not

done so for this loads and resources study. However, it may be included as a firm resource in future studies. The Federal system share of non-treaty storage energy is shown in Table 7, line 2, below.

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

Table 7

**Existing Federal System Alternate Contractual Resources
Energy In Average Megawatts**

OPERATING YEAR ¹	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1. Resource Contingency Program (RCP) Resources ²	0	0	0	854	854	854	854	854	854	854
2. Non-Treaty Storage	115	115	115	115	115	115	105	0	0	0
TOTAL CONTRACTUAL OPTIONS	115	115	115	969	969	969	959	854	854	854

¹ Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1996-97 is August 1, 1996, through July 31, 1997.

² These resources are assumed to be available by August 1999. Resource potential is 854 average megawatts.

Federal System Firm Capacity Surpluses/Deficits

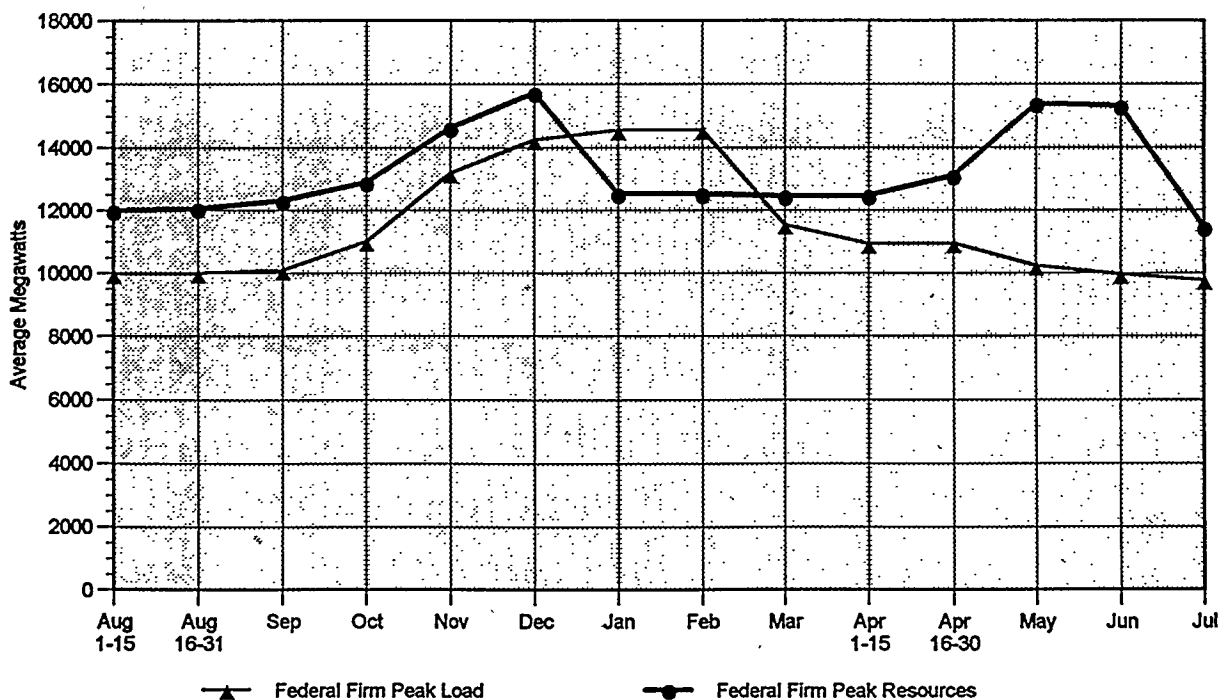
Figure 6, below, shows the monthly Federal system peak loads and resources for OY 1996-97 under 1937 water conditions assuming extreme weather conditions during the months of November through February. This figure illustrates the timing and magnitude of the Federal system capacity surpluses and deficits in any operating year and impacts created during extreme winter weather.

Since last year's study, BPA signed new DSI contracts containing different provisions and real-time operating reserves.

The DSI real-time operating reserve criteria is shorter in duration than the DSI reserves modeled in prior studies and is much less than the 50 hours per week used in capacity loads and resources planning. It was removed from the Federal system and regional capacity loads and resources balances in the 1995 White Book. The monthly capacity surpluses/deficits incorporate the Federal System assumptions noted on pages 14 and 15.

Figure 6

Federal System Monthly Capacity Loads and Resources Under Extreme Weather Conditions¹ for OY 1996-97²



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

² Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1996-97 is August 1, 1996, through July 31, 1997.

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

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

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

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

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

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

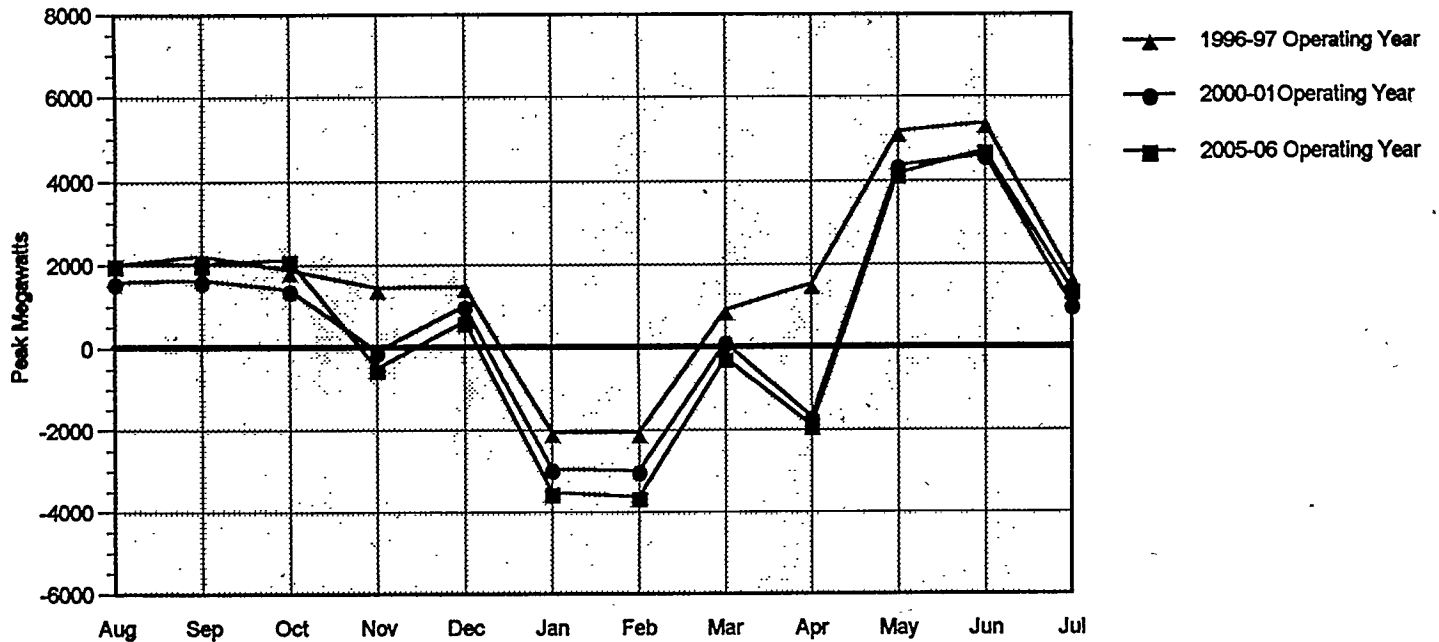
As BPA acquires future resources, the added capacity will increase capacity available to the Federal System.

Figure 7, page 27, shows the Federal firm capacity surpluses/deficits under the medium load forecast for OY 1996-97, 2000-01, and 2005-06. This analysis incorporates all operating requirements currently adopted by the hydroelectric project owners and the firm planning assumptions from the 1995 NMFS Biological Opinion.

A 10-year summary of Federal capacity surpluses/deficits under the medium load forecast, assuming extreme weather conditions, is presented in Exhibit 5, page 56. The monthly variability of the Federal system capacity components that comprise the loads and resources study, and assuming medium loads for extreme weather under 1937 water conditions for OY 1996-97, 2000-01, and 2005-06, are shown on line 48 in Exhibits 6 through 8, pages 58 through 65.

Figure 7

**Federal System Monthly Capacity Surpluses/Deficits
Under Extreme Weather Conditions¹**



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

Federal System Loads and Resources Comparison-Energy

Table 8 page 30, shows changes in the energy analysis of the 1995 Pacific Northwest Loads and Resources Study compared to the 1994 Study for OY 1996-97 through 2004-05. The table lists the Federal firm energy surpluses/deficits for the 1994 study and changes since last year to obtain the current firm energy surplus under the medium load forecast. 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. Federal planned resource acquisitions for which BPA has not yet contracted are not included as firm resources. However, in this analysis, BPA considered it's Pacific Southwest contracts as recallable firm resources to meet its loads when the Federal system was not in loads and resources balance. This is a change from last year's study, but consistent with prior White Book studies.

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

1995 BPA Load Forecast

This analysis uses the 1995 BPA medium load forecast of Federal agencies, public agencies, and IOUs completed September 1995. The 1995 load forecast is generally lower than last year's analysis.

DSI Federal Firm Loads

This study assumes the new DSI power sales contracts and block sales signed through December 31, 1995. The DSI loads are generally lower in the early years compared to last year's study. In OY 2002

and beyond, the Federal DSI loads are reduced from forecasted projections to show a zero Federal system loads and resource balance based on the fact that BPA has no commitment to serve the DSI load after OY 2001.

Public Agencies' Power Sales Contract Purchases

The small and non-generating public agencies' energy purchases and generating public agencies' purchases are generally lower than last year's study due to the 1995 BPA public agency load forecast. This is mainly due to load reductions of current and planned BPA conservation program savings; Federal system load reductions resulting from FRE resource additions pursuant to section 12(b)14 for Canby Utility Board, Clark Public Utilities, EWEB, and Snohomish County PUD; and a Federal system load reduction resulting from self-generation from Longview Fibre on Cowlitz County PUD. This study also includes 1994 FRE resource additions for Cowlitz County PUD, Springfield Utility Board, and West Oregon Electric Cooperative.

Exports

The 1995 White Book analysis includes the following new Federal exports: BPA to Azusa, seasonal exchange; BPA to Imperial, diversity exchange; BPA to Palo Alto, capacity sale and seasonal energy; and BPA to Vernon, seasonal exchange. 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 capacity/energy exchange mode through the study horizon. This change nets a decrease in exports when compared to the 1994 White Book analysis.

Contracts Out

Federal contracts out are higher in all years due to new intra-regional contracts signed since last year's analysis. These include BPA to Cowlitz, power sale; BPA to EWEB, power sale; BPA to Lewis County PUD, power sale; BPA to Lower Valley Power and Light Incorporated, power sale; BPA to PGE, power sale; BPA to WWP, three power sales; and BPA to West Oregon Electric Cooperative, power sale.

Regulated Hydro

This year's study assumes the 12-month annual average, consistent with PNCA monthly assured capability for Federal resources, using 1937 water conditions under the 1995 NMFS Biological Opinion when analyzing the Federal system firm hydro capability. The 1994 study used a 10-month annual average. The 1995 NMFS Biological Opinion reduced the firm capability of the hydro system compared to the 42-month hydro average used in the 1994 analysis.

Independent Hydro

Independent hydro generation increased when compared to last year's study. This is due mainly to the change in the critical period to 1937 water conditions.

Removal of May and June Flow Augmentation

In prior studies, the Federal system loads and resources analysis did not treat the months of May and June the same as other months in the operating year. The Federal system firm hydro capability was reduced in those months for Columbia River Flow Augmentation (CRFA) to aid fish migration. In this year's analysis, May and June streamflows are based upon PNCA agreement for monthly assured capability of hydro resources during all months and are not decreased to accommodate CRFA.

Thus, in this year's study, the firm hydro energy capability of the Federal system is increased.

Removal of Tenaska and SDS Lumber

BPA determined that it will not complete acquisition of firm capability under the Tenaska and SDS Lumber agreements; therefore, those projects have been removed from the 1995 White Book. BPA included the gas-fired resources of Tenaska and SDS Lumber in last year's study.

Imports

This analysis includes several new contracts or contract changes that increase BPA's imports versus last year's study. The 1995 study includes the following new contracts: Azusa to BPA, exchange energy; Imperial to BPA, seasonal exchange; and Vernon to BPA, seasonal exchange. 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 capacity/energy exchange mode; therefore, it includes exchange energy from the cities of Burbank, Glendale, and Pasadena, and from SCE, through the end of the study period. In addition, this study considers returned energy or energy purchased under those contracts as contracted firm resources available to meet firm loads. Thus, this study includes supplemental energy from the cities of the Burbank, Glendale, and Pasadena, and from SCE, beginning OY 2000 through the end of the study period and option energy from SCE in OY 2000 and 2001.

Contracts In

BPA signed surplus power sales contracts with unspecified entities through September 1998.

Table 8

Energy Analysis
Difference Between the 1995 White Book and 1994 White Book ^{1/}
Under 1937 Water Conditions

Energy in Average Megawatts

Operating Year	1997	1998	1999	2000	2001	2002	2003	2004	2005
1. 1994 White Book Federal Firm S/D	-12	-22	-114	-301	-303	-309	-422	-590	-669
2. Firm Load Changes for the 1995 White Book									
(+ Indicates Load Increase - Indicates Load Decrease)									
a) DSI Loads as of 12/31/95 ^{2/}	-614	-395	-207	-121	-26	-28	-118	-244	-278
b) Small & Non-Gen Public Purchase	-284	-289	-62	-80	-103	-124	-140	-168	-191
c) Exports ^{3/}	-143	-147	-159	-152	-159	-158	-159	-158	-163
d) Contracts Out	524	515	443	443	249	140	121	122	117
e) Generating Public Agencies Purchase	-243	-245	-245	-260	-88	-83	-98	-124	-141
f) Miscellaneous	0	0	-1	-2	-3	-2	-3	-3	-6
Total Load Change	-760	-561	-231	-172	-130	-255	-397	-575	-662
3. Resource Changes for the 1995 White Book									
(+ Indicates Resource Increase - Indicates Resource Decrease)									
a) Regulated Hydro (1937 12-Month Average) ^{4/}	-459	-417	-424	-392	-390	-390	-390	-390	-390
b) Independent Hydro (1937 12-Month Average) ^{4/}	83	82	82	82	82	82	82	82	82
c) Removal of May and June Flow Augmentation ^{5/}	407	425	399	387	381	368	337	321	313
d) Removal of Tenaska and SDS Lumber	-162	-168	-168	-168	-168	-168	-168	-168	-168
e) Imports ^{6/}	130	127	118	229	229	158	158	158	158
f) Canadian Entitlement Return to Canada Adj. ^{7/}	0	0	5	14	12	12	15	21	21
g) Contracts In	73	61	4	-8	-8	-9	-9	-9	-9
h) Miscellaneous	1	-1	-1	0	-1	1	0	0	0
Total Resource Changes	73	109	15	144	137	54	25	15	7
4. 1995 White Book Federal Firm S/D (Line 1 - Line 2 + line 3)	821	648	132	15	-36	0	0	0	0

^{1/} The 1994 White Book assumes 1929-32 water conditions using a 42-month critical period; The 1995 White Book assumes a 12-month annual average under 1937 water conditions.

^{2/} The DSI loads were reduced in OY 2002 through 2005 to maintain a load-resource balance due to the lack of commitments from the DSIs after OY 2001.

^{3/} Exports include: power sales-capacity/energy exchange contracts with the cities of Burbank, Glendale, and Pasadena, and with SCE, in capacity/energy exchange mode through the end of the study period.

^{4/} Difference reflects the 1994 White Book 1929-32 water conditions, a 42-month critical period, and the 12-month annual average of 1937 water conditions.

^{5/} Removal of May and June Columbia River Flow Augmentation reductions over the multi-year year critical period increases generation.

^{6/} Imports include: exchange energy from the cities of Burbank, Glendale, and Pasadena, and from SCE, through the study horizon; supplemental energy from the cities of Burbank, Glendale, and Pasadena, and from SCE, beginning OY 2000; and option energy from SCE in OYs 2000 and 2001.

^{7/} The Canadian Entitlement to Canada adjustment, which begins in OY 1998, shows the long-standing contract terms. In last year's study, the Canadian Entitlement Return to Canada assumed a Memorandum of Agreement between the United States and BC Hydro that BPA subsequently chose not to ratify.

Federal System Loads and Resources Comparison—Capacity

Table 9, page 32, shows changes in the capacity analysis of the 1995 Pacific Northwest Loads and Resources Study compared to the 1994 Study for OY 1996-97. A major change from the 1994 study is that the capacity analysis presented in the 1995 study assumes 1937 water conditions. In last year's analysis, the capacity analysis assumed 1930 water conditions. The table lists the Federal system firm 50-hours-per-week capacity surpluses/deficits for the 1994 study and changes since last year to obtain the current firm 50-hours-per-week capacity surpluses/deficits under the medium load forecast. For "Load Changes," Table 9, line 2, positive values indicate load increases and negative values show load decreases. Similarly, for "Resource Changes," Table 9, line 3, positive values indicate additional resource availability and negative values show decreases in resource availability.

Changes were based on those previously discussed in "Federal System Loads and Resources Comparison—Energy," pages 28 and 29, plus the following changes, which pertain only to the capacity analysis.

Federal System Diversity

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

Extreme Weather Adjustment

The extreme weather adjustments changed slightly compared to the 1994 study mainly due to decreases in BPA's obligation to public agencies under their power sales contracts.

Sustained Peaking Adjustment

The 50-hours-per-week sustained peaking adjustment in this year's analysis decreased the regional capacity surplus in the hydro regulation versus the 1994 study. This is due to changes in the shaping of the hydro system due to 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.

DSI Reserves

Unlike prior studies, the capacity credit given to the DSIs for DSI reserves was removed from the Federal system and regional capacity loads and resources analysis for this study. Since last year's study, the DSIs have signed new contracts containing different provisions and real-time operating reserves. The DSI real-time operating reserve criteria is shorter in duration than the DSI planning modeled in the prior studies. Since the duration of the DSI real-time operating reserves is much less than the 50 hours per week used in capacity loads and resources planning, it was removed from the Federal system and region loads and resources balances.

Table 9

Capacity Analysis

Difference Between the 1995 White Book and 1994 White Book 1/ For Operating Year 1996-97 Under 1937 Water Conditions

Peak in Megawatts

Operating Year 1996-97	Aug 1	Aug 2	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 2	May	Jun	Jul
1. 1994 White Book Federal Firm Capacity S/D	2,727	3,057	2,033	1,551	1,450	1,864	-1,472	-1,124	1,163	4,402	4,791	5,599	4,497	4,734
2. Firm Load Changes for the 1995 White Book														
(+ Indicates Load Increase - Indicates Load Decrease)														
a) DSI Loads 12/31/95 2/	-554	-554	-575	-584	-585	-589	-622	-670	-674	-672	-672	-673	-671	-659
b) Small & Non-Gen Public Purch.	-451	-451	-446	-659	-799	-773	-945	-487	-719	-604	-567	-508	-475	-594
c) Exports 3/	56	56	56	55	-269	-269	-269	-268	-270	-268	-269	-129	128	128
d) Contracts Out	457	457	393	515	671	727	735	704	726	554	554	601	511	595
e) Gen Public Agencies Purch.	-217	-173	-226	-152	-174	-379	-406	-452	-303	-263	-447	-165	-353	-370
g) Federal Diversity	28	22	37	37	31	30	44	17	30	32	47	9	42	49
h) Federal Losses	-5	-5	-4	-11	-11	-10	-16	2	-8	-10	-10	-6	-5	-8
i) Federal Extreme Weather Adj.	0	0	0	0	10	-18	36	125	0	0	0	0	0	0
Total Load Change	-686	-648	-765	-799	-1,126	-1,281	-1,443	-1,029	-1,218	-1,231	-1,364	-871	-823	-859
3. Resource Changes for the 1995 White Book														
(+ Indicates Resource Increase - Indicates Resource Decrease)														
a) Regulated Hydro (1937 WY) 1/	-1,541	-1,962	-1,270	-1,228	-1,257	-1,401	-1,212	-964	-961	-843	-974	-851	-962	-1,045
b) Independent Hydro (1937 WY) 1/	22	40	19	24	19	15	-18	-19	36	27	26	157	166	57
c) Sustained Peaking Adjustment	627	751	1,211	1,515	885	473	72	-101	345	-2,731	-2,506	18	1,497	-2,398
d) Remove Tenaska & SDS Lmbr	0	0	0	-303	-303	-303	-303	-303	-303	-55	-55	-55	-55	-55
e) Imports 4/	75	75	75	150	150	150	45	45	45	75	75	75	75	75
f) Can. Ent. Return to Can. Adj. 5/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
g) Contracts In	69	69	69	61	61	61	61	61	61	61	61	61	61	61
h) Hydro Reserves	76	96	62	75	77	85	77	64	62	44	50	38	43	52
i) Large Thermal Reserves	-1	-1	-1	0	-1	-1	0	-1	0	-1	0	0	0	-1
j) Spinning Reserves	21	27	0	-8	7	21	26	24	14	86	83	10	-23	83
k) Remove DSI Reserves 6/	-750	-750	-757	-761	-764	-756	-761	-766	-766	-765	-765	-764	-762	-758
l) Miscellaneous	0	0	-1	0	0	0	1	2	-1	0	1	0	0	0
Total Resource Changes	-1,402	-1,655	-593	-475	-1,126	-1,656	-2,012	-1,958	-1,468	-4,102	-4,004	-1,311	40	-3,929
4. 1995 White Book Federal Firm Capacity S/D (Line 1 - Line 2 + Line 3)	2,011	2,050	2,205	1,875	1,450	1,489	-2,041	-2,053	913	1,531	2,151	5,159	5,360	1,664

1/ The 1994 White Book assumes 1930 water conditions and the 1995 White Book assumes 1937 water conditions.

2/ Federal DSI loads signed through December 31, 1995.

3/ Exports include: power sales-capacity/energy exchange contracts with the cities of Burbank, Glendale, and Pasadena, and with SCE. In capacity/energy exchange mode through the study horizon.

4/ Imports include: exchange energy from the cities of Burbank, Glendale, and Pasadena, and from SCE, through the study horizon; supplemental energy from the cities of Burbank, Glendale, and Pasadena, and from SCE, beginning OY 2000; and option energy from SCE in OYs 2000 and 2001.

5/ The Canadian Entitlement to Canada adjustment, which begins in OY 1998, shows the long-standing contract terms. In last year's study, the Canadian Entitlement Return to Canada assumed a Memorandum of Agreement that BPA chose not to rally.

6/ DSI reserves are removed from this analysis because the new DSI power sales contracts contain operational reserves whose duration is much less than used in capacity planning.

VI. REGIONAL ANALYSIS

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

- ◆ Capacity surplus/deficit values do not reflect potential nighttime return problems on the Federal system;
- ◆ The region experiences medium load growth;
- ◆ The Pacific Northwest Coordination Agreement, which expires June 30, 2003, is replaced with a like agreement;
- ◆ BPA's power sales contracts with Pacific Northwest Federal and public agencies and IOUs, which expire June 30, 2001, and with its DSI customers, which expire September 30, 2001, are renewed with like agreements;
- ◆ Federal surplus firm power sales and capacity/energy exchange agreements with the cities of Burbank, Glendale, and Pasadena, and with SCE, are shown in capacity/energy exchange mode throughout the study period.
- ◆ BPA purchases supplemental energy from the cities of Burbank, Glendale, and Pasadena, and from SCE, beginning in OY 2000 and continuing through the end of the study period.
- ◆ BPA purchases option energy from SCE in OYs 2000 and 2001.
- ◆ BPA's surplus firm power sale to the M-S-R Public Power Agency (M-S-R), whose members include the Modesto Irrigation District and the cities of Santa Clara and Redding, California, remains a power sale through October 31, 2009, then converts to a capacity/energy exchange until it expires;
- ◆ BPA's surplus firm power sale to Puget Sound Power and Light terminates and converts to a seasonal power exchange beginning in OY 2001-02, per the terms of the contract;
- ◆ Sustained capacity limits are 50 hours per week; and
- ◆ Extreme weather adjustments are assumed for the months of November through February. These adjustments vary monthly from 3,700 to 4,300 peak megawatts under the medium load forecast.

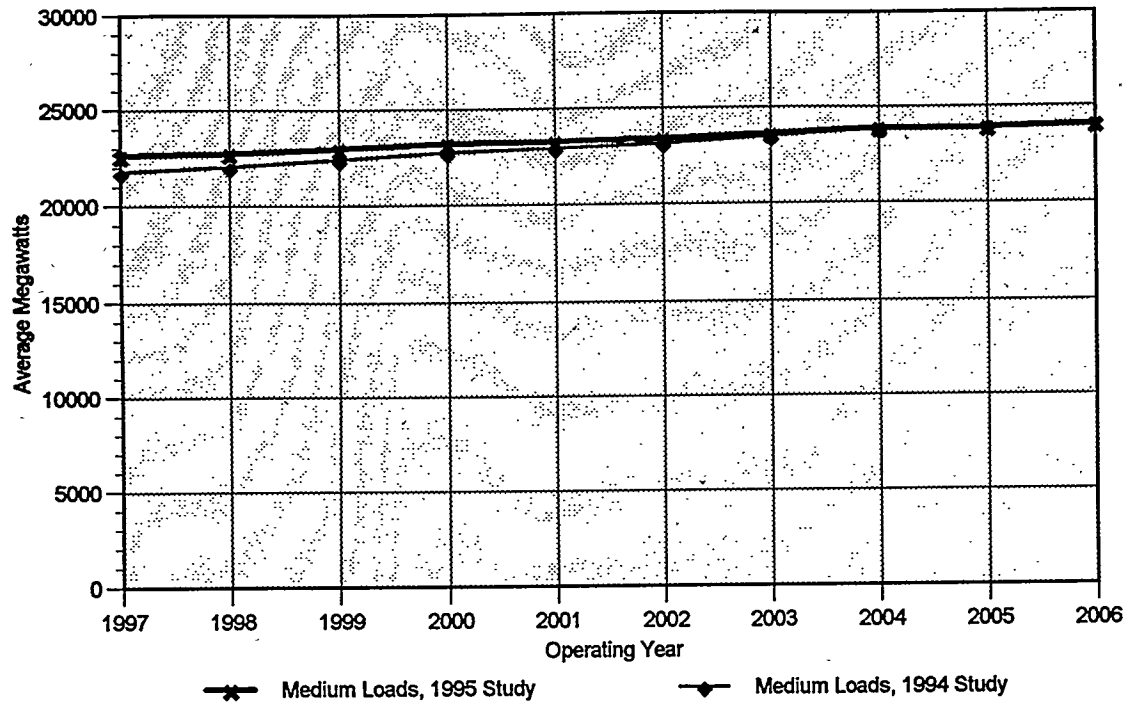
This analysis includes current operating requirements adopted by the hydroelectric project owners, and incorporates the 1995 NMFS Biological Opinion.

Regional Firm Energy Loads

Regional firm energy loads for OY 1996-97 through 2005-06 based on BPA's 1994 medium load forecast are shown in Figure 8, page 34. The load projections also include all intra-regional contracts made by Pacific Northwest utilities and the Federal system. The regional firm energy load for the medium load forecast is presented on line 4 in Exhibit 19, page 82, and the monthly firm loads for OY 1996-97, 2000-01, and 2005-06 under the medium load forecast are presented in Exhibits 20 through 22, pages 86 through 91.

Figure 8

**Regional Firm Annual Energy Loads
1995 BPA Forecast**



Regional Firm Peak Loads

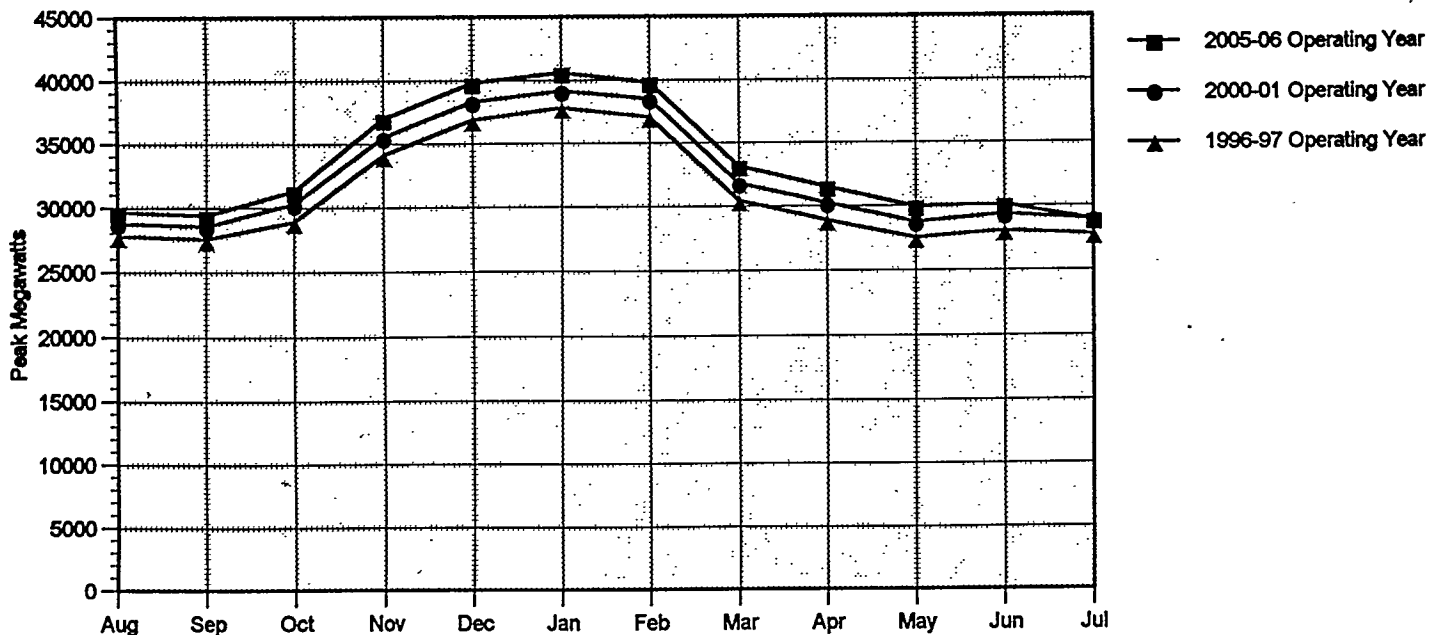
Figure 9, below, illustrates the regional firm peak loads under the medium load forecast for OY 1996-97, 2000-01, and 2005-06. The figures show the expected 1-hour monthly demand under the 1995 BPA load forecast and include extreme weather adjustments. Extreme weather conditions were assumed for the months of November through February and estimate a 5-percent probability that the forecasted peak load will be exceeded. In the months of March through October, the peak loads estimate normal weather conditions with a

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

The monthly regional firm peak loads are presented on line 4, and the extreme weather adjustments to the regional peak loads are presented on line 34, of Exhibits 24 through 26, pages 96 through 101, for the medium load forecast.

Figure 9

Regional Firm Peak Loads for OY 1996-97, 2000-01, and 2005-06 Under Extreme Weather Conditions¹ Medium Loads



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

Regional Firm Resources

Table 10, below, summarizes the regional system resources for OY 1996-97. Hydro-electric resources make up a smaller percentage of the regional resources than of the Federal system resources because most of the thermal resources are owned by

investor-owned utilities in the region. These thermal resources are composed primarily of IOU-owned coal, gas and oil-fired projects and WPPSS's WNP-2 nuclear plant. A detailed listing of all regional generating resources is contained in the 1995 Pacific Northwest Loads and Resources Technical Appendix: Volume 1 (available March 1996).

Table 10

Regional Firm Resources for OY 1996-97¹ Based on 1936-37 Water Conditions

Capacity based on January 1997

Project Type	Sustained Peak Capacity (MW)	Generating Peak Capacity % of Total	Firm Energy (aMW) 12-Month Average	Firm Energy % of Total
Hydro	24,893	68	12,218	59
Coal	4,466	12	3,909	19
Nuclear	1,170	3	821	4
Imports	2,899	8	1,834	9
Combustion Turbines	1,417	4	569	3
Non-Utility Generation	1,177	3	1,055	5
Miscellaneous	558	2	401	1
TOTAL RESOURCES	36,580	100	20,807	100

¹Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1996-97 is August 1, 1996 through July 31, 1997.

Regional Firm Energy Surpluses/Deficits

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

The regional firm energy surpluses/deficits for the medium load forecast for OY 1996-97 through 2005-06 assuming 1936-37 water conditions are presented in

Table 11, below, and depicted graphically in Figure 10, page 38. The region experiences firm energy deficits in OY 1996-97 under the medium load forecast.

The components of the regional energy loads and resources balances for the medium load scenario is presented on line 35 in Exhibit 19, page 82. Monthly regional firm energy loads under the medium load forecast for OY 1996-97, 2000-01, and 2005-06 are presented in Exhibits 20 through 22, on pages 86 through 91.

Table 11

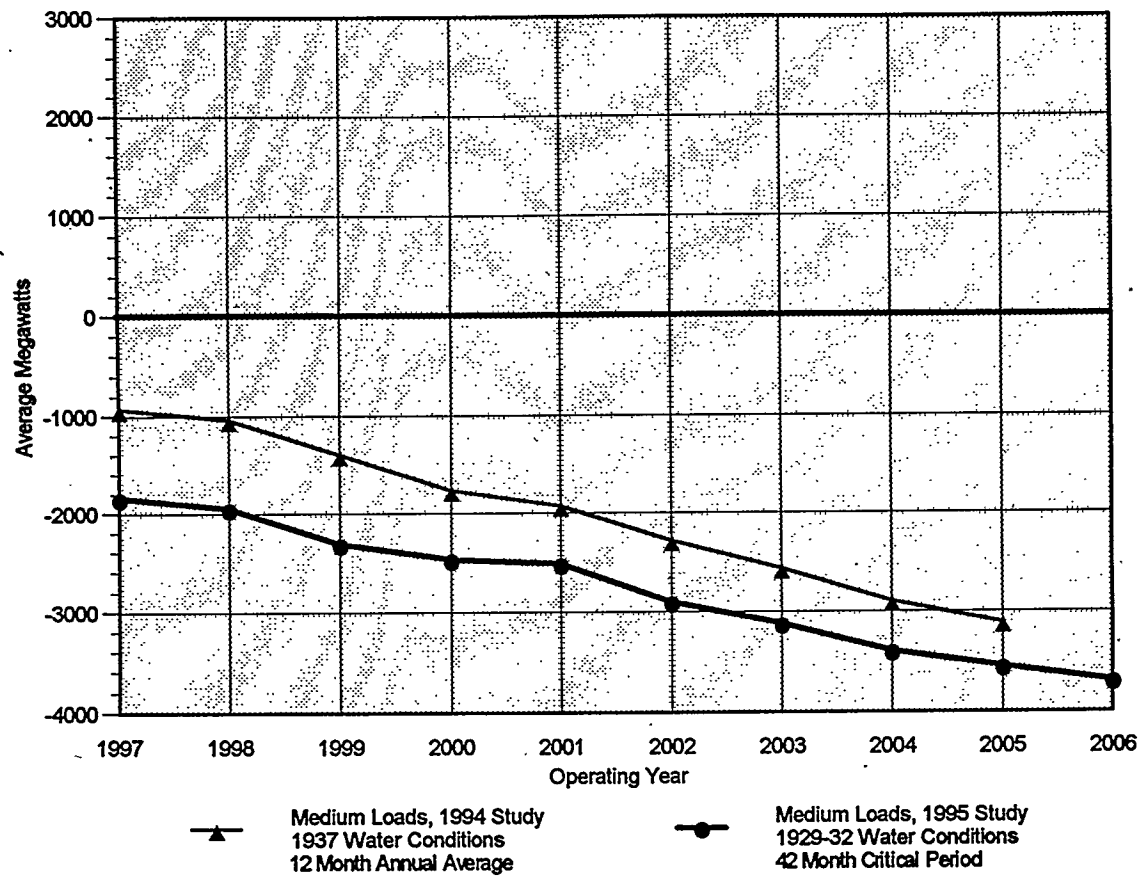
Regional Firm Energy Surpluses/Deficits Assuming Existing Loads, Resources, and Contracts Energy In Average Megawatts

Medium Load Scenario	OPERATING YEAR ¹									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	-1,843	-1,948	-2,315	-2,475	-2,522	-2,902	-3,126	-3,396	-3,550	-3,696

¹Operating Year (OY) is the 12-month period August 1 through July 31. For example, OY 1996-97 is August 1, 1996, through July 31, 1997.

Figure 10

Regional Firm Annual Energy Surpluses/Deficits



Regional Firm Capacity Surpluses/Deficits

Figure 11, page 40, shows the region's firm 50-hours-per-week capacity surpluses/deficits under the medium load forecast for OY 1996-97, 2000-01, and 2005-06. This analysis incorporates all operating restrictions currently adopted by the hydroelectric project owners and the firm planning assumptions from the 1995 NMFS Biological Opinion.

Since last year's study, BPA signed new DSI contracts containing different provisions and real-time operating reserves. The DSI real-time operating reserve criteria is shorter in duration than the DSI reserves modeled in prior studies and is much less than the 50 hours per week used in capacity loads and resources planning. It was removed from the regional capacity loads and resources balances in the 1995 White Book.

The regional firm capacity surpluses/deficits incorporate the regional assumptions on page 33.

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:

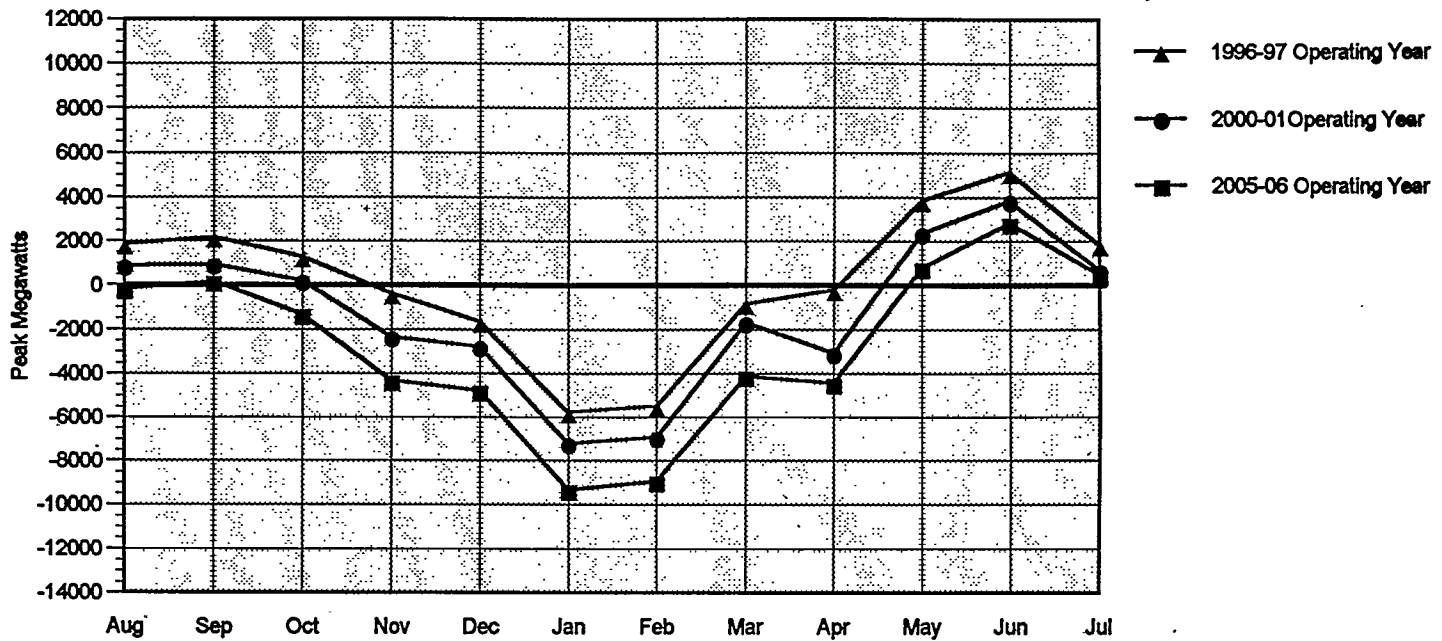
- ◆ Low regional system loads;
- ◆ Nonpower hydro requirements that dictate minimum streamflows; and
- ◆ The inability of the region's thermal resources to cycle from day to night.

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 surpluses/deficits for the medium load forecast is shown in Exhibit 23, page 94. Monthly firm capacity surpluses/deficits under the medium forecast for OY 1996-97, 2000-01, and 2005-06 are presented in Exhibits 24 through 26 on pages 96 through 101.

Figure 11

**Regional Monthly Firm Capacity Surpluses/Deficits
Under Extreme Weather Conditions¹**



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

SECTION VII

FEDERAL SYSTEM EXHIBITS

THIS PAGE INTENTIONALLY LEFT BLANK

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

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

MEGAWATTS	LOADS	OPERATING YEAR										1995 FINAL WHITEBOOK:	
		1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	RUN DATE:	01/22/96
		AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG		01/22/96
1	FEDERAL AGENCIES	145	146	147	148	149	150	151	152	152	153		
2	FEDERAL & GEN PUBLIC LOSSES	166	168	169	169	171	172	173	174	174	175		
3	USBR	67	67	68	68	68	68	68	68	68	68		
4	DSI ALUMINUM FIRM	1353	1567	1726	1788	1863	1861	1782	1673	1643	1533		
5	DSI NON-ALUM FIRM	207	207	214	216	216	214	205	191	188	174		
6	DSI FIRM LOSSES	44	50	54	57	58	58	55	52	51	48		
7	SM & NON GEN PUB PURCH	2973	2833	3074	3114	3135	3154	3184	3213	3239	3271		
8	FIRM SYSTEM LOAD	4955	5039	5453	5560	5660	5677	5618	5523	5516	5423		
TRANSFERS OUT													
9	EXPORTS	135	129	237	407	399	397	475	630	614	611		
10	CONTRACTS OUT	896	909	838	835	614	481	462	463	458	458		
11	CSPE TO WEST GROUP UTIL	251	236	178	102	98	94	62	0	0	0		
12	GEN PUB AGEN PSC PURCH	1625	1662	1715	1768	1980	2017	2065	2098	2127	2212		
13	IOU PSC PURCHASE	0	0	0	0	0	0	0	0	0	0		
14	FED DIVERSITY	0	0	0	0	0	0	0	0	0	0		
15	FIRM LOADS	7862	7975	8420	8671	8751	8666	8682	8714	8714	8703		
NON-FIRM LOADS													
16	DSI ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0		
17	DSI NON-ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0		
18	TOP QUARTILE LOSSES	0	0	0	0	0	0	0	0	0	0		
19	TOTAL LOADS	7862	7975	8420	8671	8751	8666	8682	8714	8714	8703		
HYDRO RESOURCES													
20	REGULATED HYDRO	6715	6757	6750	6782	6784	6784	6784	6784	6784	6784		
21	INDEPENDENT HYDRO	380	380	380	380	380	380	380	380	380	380		
22	SUS. PKNG. ADJUSTMENT	0	0	0	0	0	0	0	0	0	0		
23	CAN. ENT. NON-FED(CSPE)	53	50	38	23	22	21	14	0	0	0		
24	CAN. ENT. NON-FED(CNDA)	0	5	41	92	90	89	112	159	158	157		
25	RESTORATION	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26		
26	TOTAL HYDRO	7122	7165	7182	7251	7249	7248	7264	7297	7296	7295		

EXHIBIT 1

TABLE 2: FEDERAL SYSTEM (CONTINUED)

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

M E D I U M L O A D S

MEGAWATTS		OPERATING YEAR										1995 FINAL WHITEBOOK:	
		1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	RUN DATE:	01/22/96
		AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG		01/22/96
OTHER RESOURCES													
27 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0		0
28 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0		0
29 RENEWABLES		0	0	0	0	0	0	0	0	0	0		0
30 COGENERATION		0	0	0	0	0	0	0	0	0	0		0
31 IMPORTS		387	309	279	352	352	281	281	281	281	281		272
32 CONTRACTS IN	13/	339	291	234	222	220	243	243	243	243	243		243
33 LARGE THERMAL	14/	821	842	842	845	878	878	878	878	878	878		878
34 NON-UTILITY GENERATION	15/	13	15	15	15	15	15	15	15	15	15		15
35 RESOURCE ACQUISITIONS	16/	0	0	0	0	0	0	0	0	0	0		0
36 TOTAL RESOURCES		8682	8622	8552	8686	8715	8666	8682	8715	8713	8704		
RESERVES & MAINTENANCE													
37 HYD, SM THRM & MISC RES	17/	0	0	0	0	0	0	0	0	0	0		0
38 LARGE THERMAL RESERVES	18/	0	0	0	0	0	0	0	0	0	0		0
39 SPINNING RESERVES	19/	0	0	0	0	0	0	0	0	0	0		0
40 FEDERAL HYDRO MAINT	20/	0	0	0	0	0	0	0	0	0	0		0
41 NET RESOURCES		8682	8622	8552	8686	8715	8666	8682	8715	8713	8704		
SURPLUS/DEFICITS													
42 FIRM SURPLUS/DEFICIT		821	648	132	15	-36	0	0	0	0	0		0
43 TOTAL SURPLUS/DEFICIT		821	648	132	15	-36	0	0	0	0	0		0
44 EXTREME WEATHER ADJ.	21/	0	0	0	0	0	0	0	0	0	0		0
45 FIRM S/D W/EXT WEATHER ADJ.		821	648	132	15	-36	0	0	0	0	0		0
46 TOTAL S/D W/EXT WTHR. ADJ.		821	648	132	15	-36	0	0	0	0	0		0
47 POSS FED EXT WTHR. OBLG	22/	0	0	0	0	0	0	0	0	0	0		0
48 FIRM S/D W/EXT WTHR. OBLG		821	648	132	15	-36	0	0	0	0	0		0
49 TOTAL S/D W/EXT WTHR. OBLG		821	648	132	15	-36	0	0	0	0	0		0

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS CAPACITY/ENERGY EXCHANGES THROUGH THE STUDY HORIZON.

- A. BPA TO BURBANK, PS & C/N/X
 B. BPA TO GLENDALE, PS & C/N/X
 C. BPA TO PASADENA, PS & C/N/X
 D. BPA TO SCE, PS & C/N/X
 2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2001-02.
 3. THE FOLLOWING CONTRACTS ARE INCLUDED AS FIRM RESOURCES BEGINNING OY 1999-2000.
 A. BGP TO BPA, SUPPLEMENTAL ENERGY
 B. SCE TO BPA, SUPPLEMENTAL ENERGY
 C. SCE TO BPA, OPTION ENERGY (OYS 2000 & 2001 ONLY)
 4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2001.
 5. THE FOLLOWING EXCHANGE ENERGY CONTRACTS ARE SHOWN THROUGH THE STUDY HORIZON.
 A. BURBANK TO BPA, EXCHANGE ENERGY
 B. GLENDALE TO BPA, EXCHANGE ENERGY
 C. PASADENA TO BPA, EXCHANGE ENERGY
 D. SCE TO BPA, EXCHANGE ENERGY

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBITS 2 - 4
FEDERAL SYSTEM MONTHLY ENERGY ANALYSIS
UNDER MEDIUM LOADS FOR 1937 WATER
CONDITIONS

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

1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS	AUG 1-15 16-31	AUG 16-31	1996-97 OPERATING YEAR												1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96			
			SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG			
LOADS																		
1 FEDERAL AGENCIES	143	143	136	139	148	164	158	159	151	139	139	134	133	142	145			
2 FEDERAL & GEN PUBLIC LOSSES	133	133	138	166	197	221	212	192	165	152	152	139	135	137	166			
3 USBR	161	161	108	42	2	2	2	2	4	50	50	117	151	168	67			
4 DSI ALUMINUM FIRM	1399	1399	1398	1399	1398	1370	1350	1320	1320	1320	1320	1320	1320	1320	1353			
5 DSI NON-ALUM FIRM	207	207	207	207	207	207	207	207	207	207	207	207	207	207	207			
6 DSI FIRM LOSSES	42	42	42	43	47	48	48	47	44	43	43	41	41	40	44			
7 SM & NON GEN PUB PURCH	2792	2790	2606	2683	3057	3388	3529	3299	2997	2928	2945	2776	2740	2872	2973			
8 FIRM SYSTEM LOAD	4877	4875	4635	4679	5056	5400	5506	5226	4888	4839	4856	4734	4727	4886	4955			
TRANSFERS OUT																		
9 EXPORTS	237	237	244	117	79	54	56	46	46	46	83	210	242	219	135			
10 CONTRACTS OUT	439	439	477	802	1302	1395	1384	1312	1087	827	827	552	568	606	896			
11 CSPE TO WEST GROUP UTIL	254	254	254	254	254	254	254	254	254	246	246	246	246	246	251			
12 GEN PUB AGEN PSC PURCH	1326	1310	1370	1540	1823	1830	2052	2004	1822	1678	1633	1447	1308	1328	1625			
13 IOU PSC PURCHASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
14 FED DIVERSITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
15 FIRM LOADS	7133	7115	6980	7391	8515	8933	9252	8842	8097	7637	7646	7188	7091	7285	7862			
NON-FIRM LOADS																		
16 DSI ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
17 DSI NON-ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
18 TOP QUARTILE LOSSES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
19 TOTAL LOADS	7133	7115	6980	7391	8515	8933	9252	8842	8097	7637	7646	7188	7091	7285	7862			
HYDRO RESOURCES																		
20 REGULATED HYDRO	5665	5441	5548	6000	6704	7167	5261	5512	5097	5414	6878	11187	11093	5306	6714			
21 INDEPENDENT HYDRO	410	408	345	371	297	226	168	189	267	420	499	685	720	425	380			
22 SUS. PKNG. ADJUSTMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
23 CAN. ENT. NON-FED(CSPE)	54	54	54	54	54	54	54	54	54	52	52	52	52	52	53			
24 CAN. ENT. NON-FED(CNDA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
25 RESTORATION	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26			
26 TOTAL HYDRO	6103	5877	5921	6399	7029	7421	5457	5729	5392	5860	7403	11898	11839	5757	7122			

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

1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS	AUG 1-15 16-31	1996-97 OPERATING YEAR												1995 FINAL WHITEBOOK:		JUL 12 MO AVG
		AUG 1-15 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	MAY	JUN	JUL			
OTHER RESOURCES																
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	13/ 14/ 15/ 16/	108 98 983 0	409 349 983 1	499 429 983 7	620 451 983 16	744 408 983 19	676 437 983 19	632 466 983 18	400 484 983 16	297 463 983 12	82 98 0 15	100 349 0 15	129 98 1010 13	0	0	0
32 CONTRACTS IN																
33 LARGE THERMAL																
34 NON-UTILITY GENERATION																
35 RESOURCE ACQUISITIONS																
36 TOTAL RESOURCES		7293	7067	7663	8317	9099	9575	7572	7828	7275	7615	7958	12093	12794	7007	8682
RESERVES & MAINTENANCE																
37 HYD, SM THRM & MISC RES	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES	18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES	19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FEDERAL HYDRO MAINT	20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NET RESOURCES		7293	7067	7663	8317	9099	9575	7572	7828	7275	7615	7958	12093	12794	7007	8682
SURPLUS/DEFICITS																
42 FIRM SURPLUS/DEFICIT		160	-48	683	926	584	642	-1680	-1014	-822	-22	312	4905	5703	-278	821
43 TOTAL SURPLUS/DEFICIT		160	-48	683	926	584	642	-1680	-1014	-822	-22	312	4905	5703	-278	821
44 EXTREME WEATHER ADJ.	21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 FIRM S/D W/EXT WEATHER ADJ.		160	-48	683	926	584	642	-1680	-1014	-822	-22	312	4905	5703	-278	821
46 TOTAL S/D W/EXT WTHR. ADJ.		160	-48	683	926	584	642	-1680	-1014	-822	-22	312	4905	5703	-278	821
47 POSS FED EXT WTHR. OBLG	22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48 FIRM S/D W/EXT WTHR. OBLIG		160	-48	683	926	584	642	-1680	-1014	-822	-22	312	4905	5703	-278	821
49 TOTAL S/D W/EXT WTHR. OBLIG		160	-48	683	926	584	642	-1680	-1014	-822	-22	312	4905	5703	-278	821

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS CAPACITY/ENERGY EXCHANGES THROUGH THE STUDY HORIZON.

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

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

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

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

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2001-02.

3. THE FOLLOWING CONTRACTS ARE INCLUDED AS FIRM RESOURCES BEGINNING OY 1999-2000.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2001.

5. THE FOLLOWING EXCHANGE ENERGY CONTRACTS ARE SHOWN THROUGH THE STUDY HORIZON.

A. BURBANK TO BPA, EXCHANGE ENERGY

B. GLENDALE TO BPA, EXCHANGE ENERGY

C. PASADENA TO BPA, EXCHANGE ENERGY

D. SCE TO BPA, EXCHANGE ENERGY

TABLE 2: FEDERAL SYSTEM

SHEET 1 OF 2

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

M E D I U M L O A D S

1937 WATER YEAR		1995 FINAL WHITEBOOK: 01/22/96														
ENERGY IN AVERAGE MEGAWATTS		RUN DATE: 01/22/96														
		2000- 1 OPERATING YEAR														
		AUG 1-15 16-31	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	APR 16-30	MAY	JUN	JUL	12 MO AVG
LOADS																
1	FEDERAL AGENCIES	147	147	139	143	151	168	162	163	155	143	143	137	136	146	149
2	FEDERAL & GEN PUBLIC LOSSES	138	138	143	173	205	229	220	199	170	157	157	143	138	140	171
3	USBR	162	162	109	42	2	2	2	2	4	49	49	117	151	169	68
4	DSI ALUMINUM FIRM	1796	1796	1796	1876	1876	1876	1876	1876	1876	1876	1876	1876	1876	1876	1863
5	DSI NON-ALUM FIRM	216	216	216	216	216	216	216	216	216	216	216	216	216	216	216
6	DSI FIRM LOSSES	52	52	52	56	61	65	64	65	61	59	59	56	58	52	58
7	SM & NON GEN PUB PURCH	2934	2934	2754	2826	3267	3574	3725	3493	3200	3059	3097	2910	2858	2999	3135
8	FIRM SYSTEM LOAD	5445	5445	5209	5332	5778	6130	6265	6014	5682	5559	5597	5455	5431	5598	5660
TRANSFERS OUT																
9	EXPORTS															
10	CONTRACTS OUT	414	414	422	416	378	353	355	345	345	345	382	453	486	457	399
11	CSPE TO WEST GROUP UTIL	399	399	276	466	1001	1072	1043	995	724	564	564	261	277	296	614
12	GEN PUB AGEN PSC PURCH	99	99	99	99	99	99	99	99	99	95	95	95	95	95	98
13	IOU PSC PURCHASE	1581	1559	1739	1912	2202	2246	2441	2373	2166	2009	1992	1790	1649	1666	1980
14	FED DIVERSITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	FIRM LOADS	7938	7916	7745	8226	9458	9900	10203	9826	9016	8573	8631	8054	7938	8112	8751
NON-FIRM LOADS																
16	DSI ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	DSI NON-ALUM NON-FIRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	TOP QUARTILE LOSSES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	TOTAL LOADS	7938	7916	7745	8226	9458	9900	10203	9826	9016	8573	8631	8054	7938	8112	8751
HYDRO RESOURCES																
20	REGULATED HYDRO	6025	5533	5403	6213	6542	7519	4616	4544	4940	5354	4844	11210	13762	5776	6784
21	INDEPENDENT HYDRO	410	408	345	371	297	226	168	189	267	420	499	685	720	425	380
22	SUS. PKNG. ADJUSTMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	CAN. ENT. NON-FED(CSPE)	22	22	22	22	22	22	22	22	22	21	21	21	21	21	22
24	CAN. ENT. NON-FED(CNDA)	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
25	RESTORATION	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26	-26
26	TOTAL HYDRO	6521	6027	5834	6670	6925	7831	4870	4819	5293	5859	5428	11980	14567	6286	7249

SHEET 2 OF 2

TABLE 2: FEDERAL SYSTEM (CONTINUED)

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

M E D I U M L O A D S

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	1995 FINAL WHITEBOOK: RUN DATE: 01/22/96
OTHER RESOURCES																
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	13/	111	166	214	380	549	665	764	681	592	175	82	100	132	352	
32 CONTRACTS IN'	14/	29	287	287	287	287	287	287	285	287	287	29	287	1054	220	
33 LARGE THERMAL	15/	1054	1054	1054	1054	1054	1054	1054	1054	1054	1054	0	527	1054	878	
34 NON-UTILITY GENERATION	16/	12	13	13	16	19	19	18	16	12	11	15	15	13	15	
35 RESOURCE ACQUISITIONS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
36 TOTAL RESOURCES	7727	7233	7354	8238	8662	9740	6895	6942	7329	7804	5901	12106	15496	7485	8715	
RESERVES & MAINTENANCE																
37 HYD, SM THRM & MISC RES	17/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES	18/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES	19/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FEDERAL HYDRO MAINT	20/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NET RESOURCES	7727	7233	7354	8238	8662	9740	6895	6942	7329	7804	5901	12106	15496	7485	8715	
SURPLUS/DEFICITS																
42 FIRM SURPLUS/DEFICIT	-211	-683	-391	12	-796	-160	-3308	-2884	-1687	-769	-2730	4052	7558	-627	-36	
43 TOTAL SURPLUS/DEFICIT	-211	-683	-391	12	-796	-160	-3308	-2884	-1687	-769	-2730	4052	7558	-627	-36	
44 EXTREME WEATHER ADJ.	21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45 FIRM S/D W/EXT WEATHER ADJ.	21/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
46 TOTAL S/D W/EXT WTHR. ADJ.	-211	-683	-391	12	-796	-160	-3308	-2884	-1687	-769	-2730	4052	7558	-627	-36	
47 POSS FED EXT WTHR. OBLIG	22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
48 FIRM S/D W/EXT WTHR. OBLIG	22/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
49 TOTAL S/D W/EXT WTHR. OBLIG	-211	-683	-391	12	-796	-160	-3308	-2884	-1687	-769	-2730	4052	7558	-627	-36	

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS CAPACITY/ENERGY EXCHANGES THROUGH THE STUDY HORIZON.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1995 FINAL WHITEBOOK: 01/22/96																
RUN DATE: 01/22/96																
2005- 6 OPERATING YEAR																

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

MEDIUM LOADS

1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96															
2005- 6 OPERATING YEAR															
1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
OTHER RESOURCES															
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	111	111	166	214	364	517	491	447	395	322	176	82	100	132	272
32 CONTRACTS IN	150	150	408	408	258	258	258	258	256	258	258	0	258	150	243
33 LARGE THERMAL	1054	1054	1054	1054	1054	1054	1054	1054	1053	1053	0	0	527	1054	878
34 NON-UTILITY GENERATION	12	12	13	13	16	19	19	18	16	12	11	15	15	13	15
35 RESOURCE ACQUISITIONS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	7893	7399	7520	8404	8662	9724	6737	6641	7058	7550	5919	12123	15513	7681	8704
RESERVES & MAINTENANCE															
37 HYD, SM THRM & MISC RES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LARGE THERMAL RESERVES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 SPINNING RESERVES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 FEDERAL HYDRO MAINT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NET RESOURCES	7893	7399	7520	8404	8662	9724	6737	6641	7058	7550	5919	12123	15513	7681	8704
SURPLUS/DEFICITS															
42 FIRM SURPLUS/DEFICIT	-65	-537	-272	351	-792	-166	-3455	-3175	-1813	-1066	-2626	4161	7650	-340	0
43 TOTAL SURPLUS/DEFICIT	-65	-537	-272	351	-792	-166	-3455	-3175	-1813	-1066	-2626	4161	7650	-340	0
44 EXTREME WEATHER ADJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 FIRM S/D W/EXT WEATHER ADJ.	-65	-537	-272	351	-792	-166	-3455	-3175	-1813	-1066	-2626	4161	7650	-340	0
46 TOTAL S/D W/EXT WTHR. ADJ.	-65	-537	-272	351	-792	-166	-3455	-3175	-1813	-1066	-2626	4161	7650	-340	0
47 POSS FED EXT WTHR. OBLG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48 FIRM S/D W/EXT WTHR. OBLIG	-65	-537	-272	351	-792	-166	-3455	-3175	-1813	-1066	-2626	4161	7650	-340	0
49 TOTAL S/D W/EXT WTHR. OBLIG	-65	-537	-272	351	-792	-166	-3455	-3175	-1813	-1066	-2626	4161	7650	-340	0

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS CAPACITY/ENERGY EXCHANGES THROUGH THE STUDY HORIZON.

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

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

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

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

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2001-02.

3. THE FOLLOWING CONTRACTS ARE INCLUDED AS FIRM RESOURCES BEGINNING OY 1999-2000.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

C. SCE TO BPA, OPTION ENERGY (OYS 2000 & 2001 ONLY)

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2001.

5. THE FOLLOWING EXCHANGE ENERGY CONTRACTS ARE SHOWN THROUGH THE STUDY HORIZON.

A. BURBANK TO BPA, EXCHANGE ENERGY

B. GLENDALE TO BPA, EXCHANGE ENERGY

C. PASADENA TO BPA, EXCHANGE ENERGY

D. SCE TO BPA, EXCHANGE ENERGY

THIS PAGE INTENTIONALLY LEFT BLANK

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

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

FEDERAL SYSTEM FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT
INCLUDING EXTREME WEATHER ADJUSTMENTS DURING NOVEMBER THROUGH FEBRUARY

20 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

1995 FINAL WHITEBOOK: 01/22/96
RUN DATE: 01/22/96

1937 WATER YEAR

	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
PEAK IN MEGAWATTS														
1996-97	2011	2050	2206	1875	1450	1489	-2041	-2053	913	1531	2151	5159	5360	1664
1997-98	2432	2352	2674	1383	1059	1288	-2212	-2283	727	1295	1597	4941	5189	1444
1998-99	1960	2022	1974	1238	-332	1497	-2844	-3076	219	555	1230	4340	4606	2617
1999-00	2174	1419	1490	1112	-180	862	-3146	-3183	11	705	-1718	4322	4566	1039
2000-01	2341	1584	1645	1398	-77	1023	-2942	-2993	143	750	-1670	4350	4604	1014
2001-02	2859	2102	2134	2324	23	1134	-3055	-3108	113	569	-1504	4486	5000	1630
2002-03	3001	2245	2268	2353	53	1167	-3021	-3233	152	236	-1837	4147	4669	1326
2003-04	2708	1952	1971	2070	-268	847	-3336	-3410	-24	288	-1786	4201	4726	1393
2004-05	2681	1924	1937	2033	-314	805	-3373	-3458	-204	353	-1772	4255	4789	1458
2005-06	2776	2020	2027	2118	-473	650	-3521	-3617	-225	95	-1885	4161	4704	1375

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS CAPACITY/ENERGY EXCHANGES THROUGH THE STUDY HORIZON.

- A. BPA TO BURBANK, PS & C/N/X
- B. BPA TO GLENDALE, PS & C/N/X
- C. BPA TO PASADENA, PS & C/N/X
- D. BPA TO SCE, PS & C/N/X
2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2001-02.
3. THE FOLLOWING CONTRACTS ARE INCLUDED AS FIRM RESOURCES BEGINNING OY 1999-2000.
- A. BGP TO BPA, SUPPLEMENTAL ENERGY
- B. SCE TO BPA, SUPPLEMENTAL ENERGY
- C. SCE TO BPA, OPTION ENERGY (OYS 2000 & 2001 ONLY)
4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2001.
5. THE FOLLOWING EXCHANGE ENERGY CONTRACTS ARE SHOWN THROUGH THE STUDY HORIZON.
- A. BURBANK TO BPA, EXCHANGE ENERGY
- B. GLENDALE TO BPA, EXCHANGE ENERGY
- C. PASADENA TO BPA, EXCHANGE ENERGY
- D. SCE TO BPA, EXCHANGE ENERGY

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

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

1937 WATER YEAR PEAK IN MEGAWATTS		M E D I U M L O A D S												1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96		
		1996-97 OPERATING YEAR														
		AUG 1-15 16-31	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	APR 16-30	MAY	JUN	JUL	
LOADS																
1	FEDERAL AGENCIES	192	192	183	193	201	230	215	222	211	196	196	186	187	188	
2	FEDERAL & GEN PUBLIC LOSSES	197	197	230	290	336	373	381	358	307	277	277	240	207	199	
3	USBR	199	199	156	76	7	4	4	3	9	99	99	169	197	204	
4	DSI ALUMINUM FIRM	1420	1420	1420	1420	1420	1391	1370	1340	1340	1340	1340	1340	1340	1340	
5	DSI NON-ALUM FIRM	230	230	230	230	230	230	230	230	230	230	230	230	230	230	
6	DSI FIRM LOSSES	48	48	49	52	58	60	62	60	56	54	54	51	46	46	
7	SM & NON GEN PUB PURCH	3821	3821	3838	4205	4580	5017	5168	5271	4744	4608	4668	4339	4016	3922	
8	FIRM SYSTEM LOAD	6107	6107	6106	6466	6832	7305	7430	7484	6897	6804	6864	6555	6223	6129	
TRANSFERS OUT																
9	EXPORTS															
10	CONTRACTS OUT	2/	1217	1217	893	226	227	227	227	226	227	278	517	1032	1032	
11	CSP TO WEST GROUP UTIL	3/	2116	2116	2651	3277	3445	3435	3360	3082	2571	2571	2225	2235	2274	
12	GEN PUB AGEN PSC PURCH	4/	486	486	486	486	486	486	486	486	471	471	471	471	471	
13	IOU PSC PURCHASE	5/	1094	1101	1171	1636	2004	2056	2121	1915	1848	1747	1543	1059	897	
14	FED DIVERSITY	6/	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	FIRM LOADS	7/	-1028	-1029	-1049	-1135	-809	-822	-827	-1075	-997	-993	-1081	-1063	-1034	
16	NON-FIRM LOADS															
17	DSI ALUM NON-FIRM	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	DSI NON-ALUM NON-FIRM	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	TOTAL LOADS		9992	9998	10093	10997	11685	12658	12812	12851	11532	10924	10938	9957	9770	
HYDRO RESOURCES																
20	REGULATED HYDRO	18728	18532	19254	19353	19688	19514	19672	19880	19707	19203	18739	18614	18711	18591	
21	INDEPENDENT HYDRO	709	721	703	718	693	651	614	741	801	819	818	847	849	726	
22	SUS. PKNG. ADJUSTMENT	9/	-4170	-4452	-4985	-3269	-2819	-6559	-6355	-6263	-5641	-3703	-1200	-1500	-5121	
23	CAN. ENT. NON-FED(CSPE)	10/	115	115	115	115	115	115	115	115	110	110	110	110	110	
24	CAN. ENT. NON-FED(CNDA)	11/	0	0	0	0	0	0	0	0	0	0	0	0	0	
25	RESTORATION	12/	0	0	0	0	0	0	0	0	0	0	0	0	0	
26	TOTAL HYDRO		15382	14916	15087	15516	17227	17461	13842	14381	14360	14491	15964	18371	18170	14306

TABLE 2: FEDERAL SYSTEM (CONTINUED)

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

		M E D I U M L O A D S												1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96	
1937 WATER YEAR PEAK IN MEGAWATTS		1996-97 OPERATING YEAR													
		AUG 1-15 16-31	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	APR 16-30	MAY	JUN	JUL
OTHER RESOURCES															
27 SMALL THERMAL & MISC		0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES		0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES		0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 COGENERATION		0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	13/	88	88	213	354	407	461	330	286	258	260	164	75	93	109
32 CONTRACTS IN	14/	69	69	69	69	69	69	69	69	69	69	69	69	69	69
33 LARGE THERMAL	15/	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	0	0	1170
34 NON-UTILITY GENERATION		1	1	1	1	1	1	1	1	1	1	1	1	1	1
35 RESOURCE ACQUISITIONS	16/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES		16710	16244	16540	17110	18874	19162	15412	15907	15858	15991	16198	18516	18333	15655
RESERVES & MAINTENANCE															
37 HYD, SM THRM & MISC RES	17/	-972	-963	-998	-1004	-1019	-1008	-1014	-1031	-1025	-1001	-978	-973	-978	-966
38 LARGE THERMAL RESERVES	18/	-176	-176	-176	-175	-176	-176	-175	-176	-176	-176	-176	0	0	-176
39 SPINNING RESERVES	19/	-295	-296	-297	-307	-351	-378	-302	-300	-297	-297	-326	-397	-402	-295
40 FEDERAL HYDRO MAINT	20/	-3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785
41 NET RESOURCES		12003	12048	12299	12872	14623	15734	12513	12517	12445	12456	13089	15389	15317	11433
SURPLUS/DEFICITS															
42 FIRM SURPLUS/DEFICIT		2011	2050	2206	1875	2938	3076	-299	-333	913	1531	2151	5159	5360	1664
43 TOTAL SURPLUS/DEFICIT		2011	2050	2206	1875	2938	3076	-299	-333	913	1531	2151	5159	5360	1664
44 EXTREME WEATHER ADJ.	21/	0	0	0	0	-4	-5	-4	-4	0	0	0	0	0	0
45 FIRM S/D W/EXT WEATHER ADJ.		2011	2050	2206	1875	2934	3071	-303	-337	913	1531	2151	5159	5360	1664
46 TOTAL S/D W/EXT WTHR. ADJ.		2011	2050	2206	1875	2934	3071	-303	-337	913	1531	2151	5159	5360	1664
47 POSS FED EXT WTHR. OBLG 22/		0	0	0	0	-1484	-1582	-1739	-1716	0	0	0	0	0	0
48 FIRM S/D W/EXT WTHR. OBLIG		2011	2050	2206	1875	1450	1489	-2041	-2053	913	1531	2151	5159	5360	1664
49 TOTAL S/D W/EXT WTHR. OBLIG		2011	2050	2206	1875	1450	1489	-2041	-2053	913	1531	2151	5159	5360	1664

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS CAPACITY/ENERGY EXCHANGES 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

BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2001-02.

3. THE FOLLOWING CONTRACTS ARE INCLUDED AS FIRM RESOURCES BEGINNING OY 1999-2000.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

C. SCE TO BPA, OPTION ENERGY (OYS 2000 & 2001 ONLY)

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2001.

5. THE FOLLOWING EXCHANGE ENERGY CONTRACTS ARE SHOWN THROUGH THE STUDY HORIZON.

A. BURBANK TO BPA, EXCHANGE ENERGY

B. GLENDALE TO BPA, EXCHANGE ENERGY

C. PASADENA TO BPA, EXCHANGE ENERGY

D. SCE TO BPA, EXCHANGE ENERGY

TABLE 2: FEDERAL SYSTEM

SHEET 1 OF 2

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

M E D I U M L O A D S

1937 WATER YEAR PEAK IN MEGAWATTS		1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96													
		2000- 1 OPERATING YEAR													
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
LOADS															
1	FEDERAL AGENCIES	197	197	187	198	206	236	221	228	216	201	201	190	192	193
2	FEDERAL & GEN PUBLIC LOSSES	194	194	227	289	337	376	380	357	305	274	274	235	199	193
3	USBR	199	199	157	76	7	4	4	3	9	100	100	170	198	205
4	DSI ALUMINUM FIRM	1823	1823	1823	1904	1905	1905	1904	1904	1904	1904	1904	1904	1904	1904
5	DSI NON-ALUM FIRM	240	240	240	240	240	240	240	240	240	240	240	240	240	240
6	DSI FIRM LOSSES	60	60	62	68	75	80	83	82	78	73	73	71	64	60
7	SM & NON GEN PUB PURCH	4062	4062	4098	4468	4969	5379	5526	5647	5131	4847	4907	4578	4238	4140
8	FIRM SYSTEM LOAD	6775	6775	6794	7243	7739	8220	8358	8461	7883	7639	7699	7388	7035	6935
TRANSFERS OUT															
9	EXPORTS	1687	1687	1686	1671	997	997	997	997	997	997	1048	1223	1738	1738
10	CONTRACTS OUT	3/ 1631	1631	1513	1857	2422	2500	2472	2430	2179	1860	1860	1498	1510	1426
11	CSPE TO WEST GROUP UTIL	4/ 192	192	192	192	192	192	192	192	192	187	187	187	187	187
12	GEN PUB AGEN PSC PURCH	5/ 1246	1247	1461	2090	2326	2580	2667	2645	2356	2256	2152	1937	1447	1213
13	IOU PSC PURCHASE	6/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	FED DIVERSITY	7/ -978	-978	-998	-1091	-1045	-788	-802	-805	-1038	-963	-958	-1035	-1011	-956
15	FIRM LOADS	10553	10554	10648	11962	12631	13701	13884	13920	12569	11977	11988	11198	10907	10543
NON-FIRM LOADS															
16	DSI ALUM NON-FIRM	8/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	DSI NON-ALUM NON-FIRM	8/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	TOP QUARTILE LOSSES	8/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	TOTAL LOADS	10553	10554	10648	11962	12631	13701	13884	13920	12569	11977	11988	11198	10907	10543
HYDRO RESOURCES															
20	REGULATED HYDRO	18804	18640	19254	19348	19680	19511	19670	19833	19408	18768	18531	18684	18820	18612
21	INDEPENDENT HYDRO	709	721	703	718	693	651	615	741	801	819	818	847	849	726
22	SUS. PKNG. ADJUSTMENT	-3422	-4555	-4985	-4050	-3628	-2003	-6557	-6310	-5979	-5228	-6442	-1200	-1500	-5110
23	CAN. ENT. NON-FED(CSPE)	10/ 43	43	43	43	43	43	43	43	43	42	42	42	42	42
24	CAN. ENT. NON-FED(CNDA)	11/ 230	230	230	230	230	230	230	230	230	230	230	230	230	230
25	RESTORATION	12/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	TOTAL HYDRO	16364	15079	15245	16289	17018	18432	14001	14537	14503	14631	13179	18603	18441	14500

TABLE 2: FEDERAL SYSTEM (CONTINUED)

SHEET 2 OF 2

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

1937 WATER YEAR PEAK IN MEGAWATTS	M E D I U M L O A D S												1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96		
	2000-1 OPERATING YEAR												APR 1-15	APR 16-30	MAY JUN JUL
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY			
OTHER RESOURCES															
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 RENEWABLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 IMPORTS	13/	88	117	153	206	260	464	420	435	437	164	75	93	109	
32 CONTRACTS IN	14/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 LARGE THERMAL	15/	1170	1170	1170	1170	1170	1170	1170	1170	1170	0	0	0	0	1170
34 NON-UTILITY GENERATION		1	1	1	1	1	1	1	1	1	1	1	1	1	1
35 RESOURCE ACQUISITIONS	16/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 TOTAL RESOURCES	17623	16338	16533	17613	18395	19863	15636	16128	16109	16239	13344	18679	18535	15780	
RESERVES & MAINTENANCE															
37 HYD, SM THRM & MISC RES	17/	-976	-968	-1003	-1019	-1008	-1014	-1029	-1010	-979	-967	-976	-984	-967	
38 LARGE THERMAL RESERVES	18/	-175	-175	-175	-176	-176	-175	-176	-175	-175	-175	-175	-175	-175	
39 SPINNING RESERVES	19/	-315	-296	-322	-342	-398	-302	-300	-297	-297	-254	-399	-405	-296	
40 FEDERAL HYDRO MAINT	20/	-3263	-2761	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785	
41 NET RESOURCES		12894	12138	12293	13361	14153	12737	12740	12712	12727	10318	15548	15511	11557	
SURPLUS/DEFICITS															
42 FIRM SURPLUS/DEFICIT	2341	1584	1645	1398	1522	2714	-1147	-1180	143	750	-1670	4350	4604	1014	
43 TOTAL SURPLUS/DEFICIT	2341	1584	1645	1398	1518	2709	-1151	-1185	143	750	-1670	4350	4604	1014	
44 EXTREME WEATHER ADJ.	21/	0	0	0	-4	-5	-4	-5	0	0	0	0	0	0	
45 FIRM S/D W/EXT WTHR. ADJ.	2341	1584	1645	1398	1518	2709	-1151	-1185	143	750	-1670	4350	4604	1014	
46 TOTAL S/D W/EXT WTHR. ADJ.	2341	1584	1645	1398	1518	2709	-1151	-1185	143	750	-1670	4350	4604	1014	
47 POSS FED EXT WTHR. OBLG 22/	0	0	0	0	-1595	-1687	-1791	-1808	0	0	0	0	0	0	
48 FIRM S/D W/EXT WTHR. OBLG	2341	1584	1645	1398	-77	1023	-2942	-2993	143	750	-1670	4350	4604	1014	
49 TOTAL S/D W/EXT WTHR. OBLG	2341	1584	1645	1398	-77	1023	-2942	-2993	143	750	-1670	4350	4604	1014	

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS CAPACITY/ENERGY EXCHANGES THROUGH THE STUDY HORIZON.

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

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

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

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

2. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2001-02.

3. THE FOLLOWING CONTRACTS ARE INCLUDED AS FIRM RESOURCES BEGINNING OY 1999-2000.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

C. SCE TO BPA, OPTION ENERGY (OYS 2000 & 2001 ONLY)

4. BPA TO SCE, OPTION CAPACITY IS INCLUDED THROUGH OY 2001.

5. THE FOLLOWING EXCHANGE ENERGY CONTRACTS ARE SHOWN THROUGH THE STUDY HORIZON.

A. BURBANK TO BPA, EXCHANGE ENERGY

B. GLENDALE TO BPA, EXCHANGE ENERGY

C. PASADENA TO BPA, EXCHANGE ENERGY

D. SCE TO BPA, EXCHANGE ENERGY

TABLE 2: FEDERAL SYSTEM

SHEET 1 OF 2

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

M E D I U M L O A D S

1995 FINAL WHITEBOOK: 01/22/96
RUN DATE: 01/22/961937 WATER YEAR
PEAK IN MEGAWATTS

2005- 6 OPERATING YEAR

		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL
LOADS															
1 FEDERAL AGENCIES		203	203	193	204	212	244	227	235	223	206	206	197	197	199
2 FEDERAL & GEN PUBLIC LOSSES		194	194	221	292	340	380	384	352	307	276	276	237	202	195
3 USBR		200	200	158	76	7	4	4	3	9	100	100	170	199	205
4 DSI ALUMINUM FIRM		1561	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561
5 DSI NON-ALUM FIRM		198	198	198	198	198	198	198	198	198	198	198	198	198	198
6 DSI FIRM LOSSES		50	50	51	58	65	70	73	72	67	63	63	60	53	50
7 SM & NON GEN PUB PURCH	1/	4290	4290	4380	4758	5245	5634	5787	5935	5429	5183	5161	4864	4507	4392
8 FIRM SYSTEM LOAD		6696	6696	6762	7147	7628	8091	8234	8356	7794	7587	7565	7287	6917	6800
TRANSFERS OUT															
9 EXPORTS															
10 CONTRACTS OUT	2/	2040	2040	2040	2025	1629	1629	1629	1629	1629	1629	1629	1783	2040	2040
11 CSPE TO WEST GROUP UTIL	3/	1183	1183	1216	1260	2125	2202	2174	2133	1583	1565	1565	1178	1189	1206
12 GEN PUB AGEN PSC PURCH	5/	1619	1620	1697	2316	2718	2977	3135	3134	2843	2721	2570	2345	1842	1566
13 IOU PSC PURCHASE	6/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 FED DIVERSITY	7/	-974	-974	-1002	-1060	-1064	-801	-819	-825	-1038	-995	-978	-1058	-1032	-983
15 FIRM LOADS		10565	10566	10713	11689	13036	14098	14352	14427	12810	12507	12351	11534	10956	10629
NON-FIRM LOADS															
16 DSI ALUM NON-FIRM	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 DSI NON-ALUM NON-FIRM	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 TOP QUARTILE LOSSES	8/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 TOTAL LOADS		10565	10566	10713	11689	13036	14098	14352	14427	12810	12507	12351	11534	10956	10629
HYDRO RESOURCES															
20 REGULATED HYDRO		18804	18640	19254	19348	19680	19511	19670	19833	19408	18768	18531	18684	18820	18612
21 INDEPENDENT HYDRO		709	721	703	718	693	651	615	741	801	819	818	847	849	726
22 SUS. PKNG. ADJUSTMENT	9/	-3422	-4555	-4985	-4050	-3628	-2003	-6557	-6310	-5978	-5228	-6441	-1200	-1500	-5110
23 CAN. ENT. NON-FED(CSPE)	10/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 CAN. ENT. NON-FED(CNDA)	11/	420	420	420	420	420	420	420	420	420	420	420	420	420	420
25 RESTORATION	12/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 TOTAL HYDRO		16511	15226	15392	16436	17165	18579	14148	14684	14651	14779	13328	18751	18589	14648

EXHIBIT 8

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

1995 FINAL WHITEBOOK: 01/22/96															
RUN DATE: 01/22/96															
M E D I U M L O A D S															
2005- 6 OPERATING YEAR															
1937 WATER YEAR															
PEAK IN MEGAWATTS															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	
OTHER RESOURCES															
27 SMALL THERMAL & MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28 COMBUSTION TURBINES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29 RENEWABLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30 COGENERATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31 IMPORTS	88	88	117	153	206	260	234	190	162	164	164	75	93	109	
32 CONTRACTS IN	14/ 300	300	300	300	0	0	0	0	0	0	0	0	0	300	
33 LARGE THERMAL	15/ 1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	0	0	0	1170	
34 NON-UTILITY GENERATION	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
35 RESOURCE ACQUISITIONS	16/	0	0	0	0	0	0	0	0	0	0	0	0	0	
36 TOTAL RESOURCES	18070	16785	16980	18060	18542	20010	15553	16045	15984	16114	13493	18827	18683	16228	
RESERVES & MAINTENANCE															
37 HYD, SM THRM & MISC RES	17/ -976	-968	-998	-1003	-1019	-1008	-1014	-1029	-1011	-979	-968	-977	-983	-967	
38 LARGE THERMAL RESERVES	18/ -175	-175	-175	-176	-176	-176	-175	-175	-176	-175	0	0	0	-176	
39 SPINNING RESERVES	19/ -315	-296	-297	-322	-342	-398	-302	-300	-297	-297	-254	-399	-405	-296	
40 FEDERAL HYDRO MAINT	20/ -3263	-2761	-2770	-2752	-2705	-1866	-1408	-1883	-1915	-2061	-1805	-1756	-1635	-2785	
41 NET RESOURCES	13341	12585	12740	13807	14300	16562	12654	12658	12585	12602	10466	15695	15660	12004	
SURPLUS/DEFICITS															
42 FIRM SURPLUS/DEFICIT	2776	2020	2027	2118	1264	2463	-1698	-1769	-225	95	-1885	4161	4704	1375	
43 TOTAL SURPLUS/DEFICIT	2776	2020	2027	2118	1264	2463	-1698	-1769	-225	95	-1885	4161	4704	1375	
44 EXTREME WEATHER ADJ.	21/ 0	0	0	0	-4	-5	-5	-5	0	0	0	0	0	0	
45 FIRM S/D W/EXT WEATHER ADJ.	2776	2020	2027	2118	1260	2458	-1703	-1774	-225	95	-1885	4161	4704	1375	
46 TOTAL S/D W/EXT WTHR. ADJ.	2776	2020	2027	2118	1260	2458	-1703	-1774	-225	95	-1885	4161	4704	1375	
47 POSS FED EXT WTHR. OBLG	22/ 0	0	0	0	-1734	-1809	-1818	-1844	0	0	0	0	0	0	
48 FIRM S/D W/EXT WTHR. OBLIG	2776	2020	2027	2118	-473	650	-3521	-3617	-225	95	-1885	4161	4704	1375	
49 TOTAL S/D W/EXT WTHR. OBLIG	2776	2020	2027	2118	-473	650	-3521	-3617	-225	95	-1885	4161	4704	1375	

NOTE: 1. THE FOLLOWING CONTRACTS ARE SHOWN AS CAPACITY/ENERGY EXCHANGES 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

E. BPA TO PSP&L, PS & SPX CONVERTS TO A SEASONAL POWER EXCHANGE OY 2001-02.

2. THE FOLLOWING CONTRACTS ARE INCLUDED AS FIRM RESOURCES BEGINNING OY 1999-2000.

A. BGP TO BPA, SUPPLEMENTAL ENERGY

B. SCE TO BPA, SUPPLEMENTAL ENERGY

C. SCE TO BPA, OPTION ENERGY (OYS 2000 & 2001 ONLY)

D. SCE TO BPA, EXCHANGE ENERGY

3. THE FOLLOWING EXCHANGE ENERGY CONTRACTS ARE SHOWN THROUGH THE STUDY HORIZON.

A. BURBANK TO BPA, EXCHANGE ENERGY

B. GLENDALE TO BPA, EXCHANGE ENERGY

C. PASADENA TO BPA, EXCHANGE ENERGY

D. SCE TO BPA, EXCHANGE ENERGY

FEDERAL SYSTEM FOOTNOTES

For Exhibits 1 through 8

1. BPA's small and nongenerating public agencies' purchases are requirements these agencies place on BPA under their power sales contracts and BPA's partnership program. BPA's obligation is each agency's net firm load requirement not served by its own dedicated resources. These contracts actually expire June 30, 2001; however, they are assumed to remain in effect through the study period.
2. BPA's exports include: BPA to Anaheim, capacity sale and capacity/energy exchange; BPA to Azusa, seasonal exchange; BPA to Burbank, capacity/energy exchange; BPA to Glendale, capacity/energy exchange; BPA to Imperial, diversity exchange; BPA to M-S-R, power sale; BPA to Palo Alto, capacity sale and capacity/energy exchange; BPA to Pasadena, two capacity/energy exchanges; BPA to Riverside, two capacity/energy exchanges and a diversity exchange; BPA to SDG&E energy exchange; BPA to SMUD, energy exchange; BPA to SCE, capacity/energy exchange, environmental storage, and option capacity; BPA to Vernon, seasonal exchange; BPA to BC Hydro for Canadian Entitlement beginning April 1, 1998; and BPA's Northwest-Southwest Intertie losses.
3. BPA's contracts out include Canadian Entitlement capacity and supplemental capacity to Pacific Northwest public agencies and IOUs, which expire March 31, 2003; BPA to Clark, Packwood Lake and surplus power; BPA to Cowlitz, surplus power; BPA to EWEB, power sale; BPA to IPC, for Harney and Wells; BPA to Lewis County PUD, Packwood Lake and surplus power; BPA to Lower Valley, surplus power; BPA to Mason #3, surplus power; BPA to MPC, capacity/energy exchange; BPA to PP&L, capacity sale, Southern Idaho exchange and WNP-3 settlement; BPA to PGE, capacity sale, power sale and WNP-3 settlement; BPA to PSP&L, Baker head loss, power sale and seasonal power exchange, and WNP-3 settlement; BPA to WWP, capacity sale, power exchange, three power sales, and WNP-3 settlement.
4. Columbia Storage Power Exchange (CSPE) is the sale of the Canadian share of downstream benefits under the Columbia River Treaty with Canada to a group of Northwest utilities, expiring April 1, 2003.
5. BPA's generating public agencies' purchases are requirements which these agencies place on BPA under their power sales contracts and BPA's partnership program. BPA's obligation is each agency's net firm load requirement not served by its own dedicated resources. These contracts actually expire June 30, 2001; however, they are assumed to remain in effect through the study period.
6. Currently, there are no investor-owned utility power sales contract purchases through the 10-year study period.

7. Federal diversity is a percentage reduction applied to the Federal system non-coincidental peak utility requirements. This is due to the fact that all peaking electrical loads do not occur simultaneously throughout the region.
8. This study uses new DSI contracts which do not contain non-firm loads and are zero through the 10-year study period.
9. Sustained peaking adjustment is a percentage reduction applied to the Federal hydro system to meet a capacity load of 50 hours per week. This adjustment also includes reductions for Federal hydro maintenance, spinning reserves, forced outage reserves, and summer flow augmentation on the Lower Snake River and John Day hydro projects.
10. Canadian Entitlement Return non-Federal to the Columbia River Storage Exchange (CSPE) reflects the public agencies' and IOUs' obligation of Canadian Entitlement allocation to the Northwest entities of the CSPE, which expires March 31, 2003.
11. Canadian Entitlement Return non-Federal to Canada reflects the Federal system, public agencies', and IOUs' obligation of Canadian Entitlement allocation to Canada, which begins April 1, 1998.
12. Restoration adjusts for the losses and gains of the hydro system due to Canadian storage under the terms of the Pacific Northwest Coordination Agreement. It is an obligation to those utilities that gained generation from the addition of Canadian storage, and a resource gain to utilities that lost generation from Canadian storage.
13. BPA's imports include: Anaheim to BPA, exchange energy; Azusa to BPA, seasonal exchange; Burbank to BPA, exchange energy and supplemental energy; Glendale to BPA, exchange energy and supplemental energy; Imperial to BPA, seasonal exchange; Pasadena to BPA, two exchange energy contracts and a seasonal exchange; Riverside to BPA; two exchange energy contracts and a diversity exchange; SMUD to BPA, deferred energy return; SDG&E to BPA, exchange energy and deferred energy return; Sierra to BPA, for Harney and Wells; SCE to BPA, exchange energy, supplemental energy, option energy, and environmental storage; Basin Electric to BPA, power sale; BC Hydro to BPA, for PGE ICP; PP&L (Wyoming) to BPA, Southern Idaho transfer; and Trans Alta to BPA, power sale.
14. Federal contracts in include: MPC to BPA, exchange energy and power sale; Other Entities to BPA, power sale; PP&L to BPA, WNP-3 settlement; PGE to BPA, WNP-3 settlement; PSP&L to BPA, power sale, seasonal power exchange, and WNP-3 settlement; and WWP to BPA, deferred power exchange and WNP-3 settlement.
15. Federal large thermal includes the generation from WNP-2, operated by WPPSS.
16. 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.
17. Hydro, small thermal and miscellaneous resources, and combustion turbine reserve requirements are estimated at 5 percent of the Federal capacity of these resources.
18. Large thermal reserve requirements are estimated at 15 percent of the WNP-2 nuclear project.

19. Federal spinning reserve is the reserve generating capacity maintained to provide a regulating margin for the automatic generation and frequency control of power generation.
20. 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.
21. Extreme weather adjustment for BPA's directly served loads.
22. Possible Federal extreme weather adjustment is the possible load on BPA by public agencies customers having the right to place this obligation on BPA.

EXHIBITS 9-18
FEDERAL SYSTEM ENERGY SURPLUSES AND
DEFICITS FOR 50 HISTORICAL WATER CONDITIONS

EXHIBIT 9

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

ENERGY IN AVERAGE MEGAWATTS		1996-97 OPERATING YEAR												1995 FINAL WHITEBOOK: 01/22/96				
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG 12 MO AVG		
1929	FEDERAL	FIRM SURPLUS/DEFICIT	1774	-406	880	1716	144	1170	-37	-513	1516	500	-232	6268	3930	-497	1283	
1930	FEDERAL	FIRM SURPLUS/DEFICIT	-1869	-744	-288	1464	337	-128	-210	284	476	255	1837	4701	3380	-300	788	
1931	FEDERAL	FIRM SURPLUS/DEFICIT	-321	-298	-326	1534	314	430	-717	-535	-466	1364	-365	5930	2590	365	776	
1932	FEDERAL	FIRM SURPLUS/DEFICIT	-212	-183	35	1238	91	136	-1694	-1070	3945	6494	6645	6500	9082	4402	2420	
1933	FEDERAL	FIRM SURPLUS/DEFICIT	1149	754	1037	948	-179	899	5238	3941	5052	6494	6645	6500	9082	4402	2420	
1934	FEDERAL	FIRM SURPLUS/DEFICIT	4419	3460	741	1788	3499	6959	9745	6565	5052	9890	4685	5237	9606	6350	3614	
1935	FEDERAL	FIRM SURPLUS/DEFICIT	-750	-501	323	732	124	692	2716	2652	1759	1473	8134	7932	6362	136	5265	
1936	FEDERAL	FIRM SURPLUS/DEFICIT	1849	47	747	922	574	58	-733	-912	2273	2175	3990	6468	7359	3949	2407	
1937	FEDERAL	FIRM SURPLUS/DEFICIT	160	-48	683	926	584	642	-1680	-1014	-822	4266	7211	8195	7826	3401	3068	
1938	FEDERAL	FIRM SURPLUS/DEFICIT	-2032	-548	965	986	268	28	3543	2930	1921	1947	3291	7178	6205	1672	1776	
1939	FEDERAL	FIRM SURPLUS/DEFICIT	1201	204	1057	983	155	115	-843	-456	1921	1947	3291	7178	6205	1672	1776	
1940	FEDERAL	FIRM SURPLUS/DEFICIT	946	162	670	1064	547	681	-241	-477	2664	3747	3510	5441	6815	1452	1940	
1941	FEDERAL	FIRM SURPLUS/DEFICIT	-767	-999	850	1103	666	162	539	39	1354	1091	808	4752	5351	-25	1238	
1942	FEDERAL	FIRM SURPLUS/DEFICIT	-1206	-853	392	994	710	2463	3075	2098	1870	2411	9616	4306	6962	4805	2513	
1943	FEDERAL	FIRM SURPLUS/DEFICIT	1145	1038	721	895	173	1031	5254	4455	5195	9203	9265	6818	9268	4674	4067	
1944	FEDERAL	FIRM SURPLUS/DEFICIT	2127	179	769	725	247	972	-859	-171	1019	243	-874	4839	3042	-388	907	
1945	FEDERAL	FIRM SURPLUS/DEFICIT	-950	-638	375	1010	420	8	-1728	-706	-695	243	-324	6427	8668	1770	1226	
1946	FEDERAL	FIRM SURPLUS/DEFICIT	-1192	240	549	813	193	256	1792	4454	5634	5634	7696	8574	7880	1770	1226	
1947	FEDERAL	FIRM SURPLUS/DEFICIT	894	99	812	763	455	3973	5695	5293	5916	6027	7696	8574	7880	1770	1226	
1948	FEDERAL	FIRM SURPLUS/DEFICIT	1502	-173	874	2735	2481	2181	6927	5141	6508	4217	7157	7770	7159	3360	3989	
1949	FEDERAL	FIRM SURPLUS/DEFICIT	4804	4823	356	841	2714	4726	7725	7843	7178	8725	7846	9206	7203	3758	4883	
1950	FEDERAL	FIRM SURPLUS/DEFICIT	-823	-953	568	1899	1450	2413	5413	4990	4299	8048	9048	9285	7203	3758	4883	
1951	FEDERAL	FIRM SURPLUS/DEFICIT	4076	2431	618	2499	1450	2413	5413	4990	4299	8048	9048	9285	7203	3758	4883	
1952	FEDERAL	FIRM SURPLUS/DEFICIT	1822	-183	657	889	406	1056	5213	6366	5633	2851	3721	6014	9922	5256	3172	
1953	FEDERAL	FIRM SURPLUS/DEFICIT	3040	538	860	1127	753	1056	5213	6366	5633	2851	3721	6014	9922	5256	3172	
1954	FEDERAL	FIRM SURPLUS/DEFICIT	5445	5022	3107	2061	2116	1256	3465	1776	2676	2502	2076	4015	10214	7548	4251	
1955	FEDERAL	FIRM SURPLUS/DEFICIT	4813	986	605	1252	1957	4334	8027	5953	6372	6701	4561	8208	10257	2170	3967	
1956	FEDERAL	FIRM SURPLUS/DEFICIT	4780	1244	607	1310	311	2060	3585	4076	6372	6701	4561	8208	10257	2170	3967	
1957	FEDERAL	FIRM SURPLUS/DEFICIT	916	-287	749	880	293	735	3265	5120	4441	4130	5758	8369	7509	2189	3234	
1958	FEDERAL	FIRM SURPLUS/DEFICIT	786	-69	755	745	861	2566	7891	6417	6290	6844	5039	6320	10040	5253	4453	
1959	FEDERAL	FIRM SURPLUS/DEFICIT	4968	1036	2340	5347	4059	3421	4825	2734	6239	8766	5948	5467	7666	4618	4756	
1960	FEDERAL	FIRM SURPLUS/DEFICIT	2644	-269	748	994	737	630	4583	6258	6599	5206	3290	7204	10872	1699	3813	
1961	FEDERAL	FIRM SURPLUS/DEFICIT	1051	509	252	744	407	888	2166	2111	3197	6245	7975	6516	7256	3883	3215	
1962	FEDERAL	FIRM SURPLUS/DEFICIT	1442	300	703	1261	1466	2630	3254	4790	3039	3221	4321	5391	7339	3940	3215	
1963	FEDERAL	FIRM SURPLUS/DEFICIT	1665	605	982	802	137	752	4206	2431	3319	4800	4321	5391	7339	3940	3215	
1964	FEDERAL	FIRM SURPLUS/DEFICIT	4980	1507	639	1990	1416	4829	8256	8018	6526	6730	8445	7416	9021	3944	5240	
1965	FEDERAL	FIRM SURPLUS/DEFICIT	3797	2484	701	1371	862	1443	3986	1416	2441	5129	3543	5919	6938	4118	3056	
1966	FEDERAL	FIRM SURPLUS/DEFICIT	1094	-58	606	918	284	833	5605	5395	5063	4117	1861	5336	11296	5786	3719	
1967	FEDERAL	FIRM SURPLUS/DEFICIT	5418	1839	917	1220	804	1068	4266	3892	6664	1896	2198	5164	8233	4320	3352	
1968	FEDERAL	FIRM SURPLUS/DEFICIT	3052	1430	1241	2242	2439	2498	8094	5817	6500	9751	2040	8678	7209	4417	5064	
1969	FEDERAL	FIRM SURPLUS/DEFICIT	563	-275	484	1163	494	899	2382	2966	3371	1234	2516	6746	9903	2133	2713	
1970	FEDERAL	FIRM SURPLUS/DEFICIT	452	242	595	698	219	1075	7184	8594	7812	7280	7231	8504	11205	5333	4902	
1971	FEDERAL	FIRM SURPLUS/DEFICIT	4909	3921	587	1038	548	1706	6339	8019	10213	9780	5618	8308	4154	362	1988	
1972	FEDERAL	FIRM SURPLUS/DEFICIT	5320	5717	710	1711	768	1999	704	1402	834	1197	1416	4384	4154	362	1988	
1973	FEDERAL	FIRM SURPLUS/DEFICIT	19	-635	197	895	224	3612	10190	9107	9410	8814	8613	8474	11571	8397	5874	
1974	FEDERAL	FIRM SURPLUS/DEFICIT	4788	5229	652	858	330	1129	4278	2779	5956	3742	6924	8024	9019	6123	4006	
1975	FEDERAL	FIRM SURPLUS/DEFICIT	3037	2019	667	1674	2486	6146	7898	6790	6450	8909	6924	8024	9019	6123	4006	
1976	FEDERAL	FIRM SURPLUS/DEFICIT	5653	4944	3485	1608	586	1223	588	100	771	-113	-1517	4103	2542	-1207	1524	
1977	FEDERAL	FIRM SURPLUS/DEFICIT	-487	-231	-307	806	-294	648	119	2752	5427	7482	6201	6504	7851	4215	2850	
1978	FEDERAL	FIRM SURPLUS/DEFICIT																

EXHIBIT 10

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

ENERGY IN AVERAGE MEGAWATTS	1997-98 OPERATING YEAR												1995 FINAL				WHITEBOOK: 01/22/96			
	AUG 16-31		SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG					
	AUG 1-15																			
1929	FEDERAL	1794	-411	1074	882	-935	716	-174	-211	725	265	-38	6104	3788	-492	1024				
1930	FEDERAL	-83	-100	-807	662	-333	-169	-785	168	409	-21	1640	4537	4456	-1091	647				
1931	FEDERAL	-246	-280	-593	850	-408	396	-1462	-1009	139	927	-564	5902	3344	-64	585				
1932	FEDERAL	148	-349	-186	632	-468	100	-2030	-1462	3504	6257	6473	6389	8930	4226	2142				
1933	FEDERAL	1239	718	1053	498	-523	550	4797	4124	4207	3707	4528	5075	9452	6486	3401				
1934	FEDERAL	4403	3568	975	1139	1901	6796	9428	6832	6472	9340	7964	7795	7200	-894	5024				
1935	FEDERAL	-124	135	-122	382	-364	176	3229	2716	911	1169	3492	6276	6836	3798	2181				
1936	FEDERAL	1839	130	890	453	31	-286	-486	-1286	1500	1963	6665	8384	6656	1613	1897				
1937	FEDERAL	279	296	763	439	92	294	-2225	-1392	-638	-263	-40	4748	5598	-45	648				
1938	FEDERAL	-1936	797	797	503	-68	-626	5611	471	3820	4016	7039	7926	7645	3191	2807				
1939	FEDERAL	1252	459	1003	524	-297	-570	-667	-396	1024	1961	3203	6942	6081	1516	1550				
1940	FEDERAL	901	419	743	515	-118	388	205	106	2660	3168	2876	5273	6540	827	1735				
1941	FEDERAL	-74	-672	622	732	-76	-538	757	-440	594	898	615	4591	5483	481	1049				
1942	FEDERAL	1611	-644	361	651	329	1864	2631	1864	1791	2180	4083	6631	9119	4175	2253				
1943	FEDERAL	2150	1085	912	519	-534	789	4582	4040	5377	8921	9081	4680	9119	4537	740				
1944	FEDERAL	-622	-763	572	597	-587	923	-1491	-219	330	-297	-1055	4680	9119	-768	962				
1945	FEDERAL	-818	185	450	360	-191	101	3176	3259	4836	5021	7419	8306	7733	4257	3183				
1946	FEDERAL	926	129	955	211	-300	3508	5529	5652	5251	5685	6207	7593	7016	3418	3776				
1947	FEDERAL	1598	158	842	2022	1014	2051	6750	5444	6169	4006	7024	8906	11429	4786	4651				
1948	FEDERAL	4844	5051	1009	457	-416	510	1196	1670	6098	6330	7379	8389	7695	1002	3284				
1949	FEDERAL	-570	-145	902	1039	1222	4655	7578	8035	6436	7531	6925	6838	10472	6560	4005				
1950	FEDERAL	4325	3144	902	1039	1222	4655	7578	8035	6436	7531	6925	6838	10472	6560	4005				
1951	FEDERAL	4621	2077	817	1891	-150	2462	5337	4643	4298	7817	8874	9121	7060	2973	5211				
1952	FEDERAL	2169	968	985	478	-402	745	5062	6391	5486	5489	5640	8194	9314	4692	4048				
1953	FEDERAL	3109	487	968	1210	454	1124	4232	2461	1818	2058	1902	3851	10070	7246	3607				
1954	FEDERAL	5463	4986	3612	1210	454	1124	4232	2461	1818	2058	1902	3851	10070	7246	3607				
1955	FEDERAL	4798	1019	813	524	555	4308	7737	6520	7421	7892	9100	9683	11056	4414	5370				
1956	FEDERAL	4888	1241	785	424	-502	1597	3512	4568	5571	6435	4552	8049	10345	2142	3754				
1957	FEDERAL	1068	269	610	404	-374	510	3257	5232	3244	3895	5584	8154	7553	1771	2981				
1958	FEDERAL	1155	288	829	364	-225	2204	7684	6454	5952	6590	4731	6152	9895	5522	4268				
1959	FEDERAL	5083	1035	2830	4518	-2408	3289	4995	3566	5503	8528	5777	5303	7522	4446	4549				
1960	FEDERAL	2819	5	851	525	-411	289	4929	6498	6074	4883	3097	7022	10687	2041	3609				
1961	FEDERAL	1100	506	442	351	-442	635	4329	1986	1782	5875	7699	6300	7082	3770	2733				
1962	FEDERAL	1621	291	863	670	-78	2476	4281	4840	2414	2992	3823	5344	7186	3623	2999				
1963	FEDERAL	1688	638	1085	309	-622	514	3984	3164	2131	4417	3981	5267	9970	7007	3181				
1964	FEDERAL	4997	1512	967	1279	-158	4594	8048	8055	6198	6510	8452	5654	7186	3503	5005				
1965	FEDERAL	3829	2487	849	535	-138	1067	4705	1571	1885	4856	3370	5654	7186	3503	2841				
1966	FEDERAL	1111	16	741	374	-496	663	5354	5302	4567	4148	1897	5158	10574	6839	3555				
1967	FEDERAL	5404	1876	1084	440	-439	852	4416	4940	3837	1830	2024	5000	8018	3875	3133				
1968	FEDERAL	3023	1428	1735	1379	792	2365	7925	6271	6094	9466	8878	8529	7064	4541	4841				
1969	FEDERAL	587	16	719	515	-395	457	3846	2166	2323	718	2187	6541	9743	2230	2492				
1970	FEDERAL	711	662	453	316	-640	969	7136	8239	6645	7114	7059	8478	11059	5684	4673				
1971	FEDERAL	4901	4139	757	316	-591	1496	6257	7893	10159	9404	5441	8172	11232	8012	5471				
1972	FEDERAL	5448	5693	1132	950	-417	1698	2266	364	334	968	1124	4233	3966	169	1776				
1973	FEDERAL	412	123	-136	534	-138	2995	9768	9330	8252	8510	8287	8404	11423	8798	5658				
1974	FEDERAL	4775	5258	935	421	-724	861	4174	2776	5586	3504	4330	6606	9900	6057	3794				
1975	FEDERAL	3058	2348	802	837	-1162	5987	7617	7096	6376	8675	6728	7785	8874	5088	5169				
1976	FEDERAL	5670	4939	3969	757	-424	1079	458	-384	258	-362	-1788	3796	7699	-1139	1329				
1977	FEDERAL	-1270	-103		613	-718	324	487	1828	5132	7157	6002	6325		4065	2635				
1978	FEDERAL																			

EXHIBIT 11

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

ENERGY IN AVERAGE MEGAWATTS		1998-99 OPERATING YEAR												1995 FINAL WHITEBOOK:					01/22/96 12 MO AVG	
														RUN DATE:						
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL					
1929	FEDERAL FIRM SURPLUS/DEFICIT	1593	-652	-102	529	-1809	-309	-908	-1154	-1075	-291	-938	5739	5030	-220	465				
1930	FEDERAL FIRM SURPLUS/DEFICIT	-1628	-856	-1295	295	-1418	-136	-2089	-945	-633	-574	1041	4110	6317	-1270	161				
1931	FEDERAL FIRM SURPLUS/DEFICIT	-787	-898	-1113	410	-1964	187	-1895	-851	-1599	368	1097	5430	4209	-162	121				
1932	FEDERAL FIRM SURPLUS/DEFICIT	-169	-405	-1132	-80	-1441	-1414	-2599	-1824	3522	5705	5940	5948	8499	3219	1520				
1933	FEDERAL FIRM SURPLUS/DEFICIT	1789	1077	140	155	-859	-91	4102	3483	3724	3089	3998	4634	9009	6053	2944				
1934	FEDERAL FIRM SURPLUS/DEFICIT	4172	3616	423	387	807	6096	8835	6505	5943	8794	7445	7355	7045	-859	4546				
1935	FEDERAL FIRM SURPLUS/DEFICIT	-1370	-922	-494	44	-706	-437	2698	2193	233	557	2926	5850	6577	3301	1455				
1936	FEDERAL FIRM SURPLUS/DEFICIT	1803	-349	-159	145	-878	-935	-277	-1742	825	1112	6130	7912	6908	1171	1443				
1937	FEDERAL FIRM SURPLUS/DEFICIT	-893	-509	-193	172	-764	-139	-3553	-1635	-1657	-808	4319	5609	254	132					
1938	FEDERAL FIRM SURPLUS/DEFICIT	-598	-1451	-313	104	-1161	-998	3916	902	3502	3475	6505	7403	7073	2570	2255				
1939	FEDERAL FIRM SURPLUS/DEFICIT	649	-220	324	146	-1109	-1217	-427	-972	271	1989	2363	6487	6414	314	1052				
1940	FEDERAL FIRM SURPLUS/DEFICIT	864	-312	-355	213	-935	-145	-265	91	2227	2614	2343	4832	6290	778	1291				
1941	FEDERAL FIRM SURPLUS/DEFICIT	-1337	-1191	-388	314	-825	-737	-373	-1825	-28	416	602	4149	6649	371	546				
1942	FEDERAL FIRM SURPLUS/DEFICIT	-1351	-925	73	191	-660	851	1781	839	1426	1626	3535	3511	6519	3796	1648				
1943	FEDERAL FIRM SURPLUS/DEFICIT	1867	753	-321	200	-1204	175	4173	2914	4920	8486	8626	6385	8683	4146	3328				
1944	FEDERAL FIRM SURPLUS/DEFICIT	2247	431	-96	-26	-1512	349	-2488	-1466	-1375	-857	-1569	4234	5760	378	324				
1945	FEDERAL FIRM SURPLUS/DEFICIT	-1530	-1146	-505	129	-1055	-1542	-2653	-1662	-1432	-565	-1584	5822	8069	1172	328				
1946	FEDERAL FIRM SURPLUS/DEFICIT	-1432	-235	7	8	-1320	-269	2845	3047	4432	4636	7778	7835	7301	3779	2715				
1947	FEDERAL FIRM SURPLUS/DEFICIT	1765	-331	188	-57	-898	2106	4975	5144	4921	4929	5741	8465	10998	3729	3527				
1948	FEDERAL FIRM SURPLUS/DEFICIT	4525	-572	56	1635	-107	1362	6200	5061	5773	3727	6491	8465	10998	3729	3527				
1949	FEDERAL FIRM SURPLUS/DEFICIT	-948	-1366	-845	-90	-1039	63	3907	5645	6338	6840	7163	8714	7033	6201	4154				
1950	FEDERAL FIRM SURPLUS/DEFICIT	3845	2921	248	573	-649	1197	4782	4914	3522	7246	8341	8679	6629	2806	4715				
1951	FEDERAL FIRM SURPLUS/DEFICIT	4945	-367	-211	1068	-1173	-1000	3968	2415	2649	2064	2735	5393	9346	4540	3639				
1952	FEDERAL FIRM SURPLUS/DEFICIT	2100	-367	-211	1068	-1173	-1000	3968	2415	2649	2064	2735	5393	9346	4540	3639				
1953	FEDERAL FIRM SURPLUS/DEFICIT	3443	729	183	126	-744	-217	4228	5872	5010	4916	5100	7744	9021	4264	3548				
1954	FEDERAL FIRM SURPLUS/DEFICIT	5261	4712	2464	673	-232	363	3721	2624	1384	1460	1369	3410	9641	6735	3099				
1955	FEDERAL FIRM SURPLUS/DEFICIT	4569	992	-63	21	-560	3312	7247	5952	7065	7565	8568	9267	10649	4385	4844				
1956	FEDERAL FIRM SURPLUS/DEFICIT	4912	1021	236	-91	-1006	17	2959	4113	5258	5818	4082	7613	10204	1627	3237				
1957	FEDERAL FIRM SURPLUS/DEFICIT	874	-804	-122	97	-1181	-101	2598	4825	3415	3346	5051	7662	7098	1255	3237				
1958	FEDERAL FIRM SURPLUS/DEFICIT	693	-804	-122	97	-1181	-101	2598	4825	3415	3346	5051	7662	7098	1255	3237				
1959	FEDERAL FIRM SURPLUS/DEFICIT	4959	-960	-199	96	-532	731	7098	5840	5654	6280	4421	5697	9464	4017	3758				
1960	FEDERAL FIRM SURPLUS/DEFICIT	2696	-665	89	3978	1727	2536	4475	3613	5085	7976	5243	4862	10382	4017	3758				
1961	FEDERAL FIRM SURPLUS/DEFICIT	895	267	-736	166	-700	-386	3706	5890	5395	4134	2412	6649	10382	4017	3758				
1962	FEDERAL FIRM SURPLUS/DEFICIT	1756	51	-156	35	-1106	7	2675	1765	1094	5529	7177	5871	6650	1742	4050				
1963	FEDERAL FIRM SURPLUS/DEFICIT	1628	392	434	334	-574	1415	3729	2654	1705	2137	3288	4898	6751	3248	2214				
1964	FEDERAL FIRM SURPLUS/DEFICIT	4795	1462	434	-39	-819	-358	3361	2654	1669	5581	3311	4806	9511	3248	2214				
1965	FEDERAL FIRM SURPLUS/DEFICIT	3629	2253	306	491	-685	3604	7530	7728	5917	5831	7923	6996	8443	6531	2684				
1966	FEDERAL FIRM SURPLUS/DEFICIT	1102	-455	-261	174	-688	132	4024	1363	1220	4179	2793	5070	6912	3023	2530				
1967	FEDERAL FIRM SURPLUS/DEFICIT	5170	1675	-270	50	-1048	101	4718	4789	3886	3600	1799	4715	10107	6616	3058				
1968	FEDERAL FIRM SURPLUS/DEFICIT	2983	1188	557	848	-93	1696	7421	5738	5695	8957	8334	8071	6799	3445	2620				
1969	FEDERAL FIRM SURPLUS/DEFICIT	507	-804	81	107	-994	66	3411	1793	1688	93	1572	5985	9321	1752	4325				
1970	FEDERAL FIRM SURPLUS/DEFICIT	238	-379	-487	7	-1313	203	6529	1793	6710	6493	6511	8041	10635	5178	1991				
1971	FEDERAL FIRM SURPLUS/DEFICIT	4677	4557	196	-70	-1058	33	5413	7417	9570	8843	4915	7669	10970	7852	4149				
1972	FEDERAL FIRM SURPLUS/DEFICIT	5376	5101	277	196	-961	663	2484	-1054	317	727	663	7928	4153	884	1246				
1973	FEDERAL FIRM SURPLUS/DEFICIT	-183	-1523	-742	186	-613	2282	9119	8870	8367	8134	7766	3928	10996	8445	5161				
1974	FEDERAL FIRM SURPLUS/DEFICIT	4556	5232	391	-82	-1178	-81	3259	2963	4410	3234	3988	6163	9451	5973	3315				
1975	FEDERAL FIRM SURPLUS/DEFICIT	2864	2312	257	240	-97	5286	7126	6612	6157	8119	6195	7343	8441	4785	4658				
1976	FEDERAL FIRM SURPLUS/DEFICIT	5637	4699	2800	242	-1042	382	435	-1984	-1538	-914	-2321	3390	4045	-354	827				
1977	FEDERAL FIRM SURPLUS/DEFICIT	-1697	-1512	-1014	55	-1715	-236	141	1125	4689	6610	5225	5873	7273	3655	2013				
1978	FEDERAL FIRM SURPLUS/DEFICIT																			

EXHIBIT 12

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

ENERGY IN AVERAGE MEGAWATTS		1999-00 OPERATING YEAR												1995 FINAL WHITEBOOK:				01/22/96	
		1999-00 OPERATING YEAR												1995 FINAL WHITEBOOK:				01/22/96	
		AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	APR	APR	APR	MAY	JUN	JUL	AUG	01/22/96	01/22/96
		1-15	16-31								1-15	16-30					AVG		
1929	FEDERAL	1360	-1025	496	-1728	-7	-477	-2496	-1257	-160	-160	-1884	5540	5281	5281	-308	326		
1930	FEDERAL	-1539	-1187	383	-1282	-826	-814	-1909	-1400	-444	-444	-156	3978	5474	5474	282	59		
1931	FEDERAL	-1517	-1187	-80	-1400	-863	-480	-2842	-1646	283	283	-2314	5333	5051	5051	-753	-156		
1932	FEDERAL	-1373	-1060	51	-1044	-1074	-2691	-1976	-2858	5861	5861	5711	5776	8381	8381	3709	1444		
1933	FEDERAL	603	480	25	-955	-76	2500	1775	4323	3535	3535	4022	4724	8867	8867	7273	2716		
1934	FEDERAL	3714	3470	264	870	5769	8863	4859	5866	8937	8937	7151	7439	7630	7630	-603	4389		
1935	FEDERAL	-1368	-1421	-105	-895	-401	986	2086	1466	739	739	2721	707	6284	6284	3115	1475		
1936	FEDERAL	1539	-786	48	-984	-763	-1626	-2426	1768	1260	1260	5920	7796	6037	6037	1362	1243		
1937	FEDERAL	-179	-652	-7	-784	-163	-3306	-2873	-1653	-714	-714	-2634	4195	7674	7674	-454	15		
1938	FEDERAL	-1016	-2288	-40	-952	-1225	2238	863	4794	3599	3599	6284	7300	7163	7163	2710	2126		
1939	FEDERAL	127	-507	-91	-1100	-1164	-1671	-1619	1338	2061	2061	2168	6291	6732	6732	243	903		
1940	FEDERAL	-105	-593	73	-870	-88	-1549	-1104	2668	2906	2906	2234	4707	7157	7157	687	1118		
1941	FEDERAL	-1660	-1762	169	-919	-996	1873	1276	1245	1779	1779	3332	3379	7333	7333	2668	1507		
1942	FEDERAL	-1939	-1189	72	-1452	249	2557	3346	5731	8633	8633	8388	6161	8576	8576	4183	3174		
1943	FEDERAL	876	335	96	-1521	241	-1812	-2243	-1653	-679	-679	-1564	4106	5583	5583	-145	155		
1944	FEDERAL	-1691	-1706	61	-920	-1514	-2726	-2506	-1446	-474	-474	-2393	4967	7945	7945	1160	124		
1945	FEDERAL	-2140	-1706	-164	-1230	-628	1418	2506	5097	4996	4996	6339	7796	7143	7143	3796	2565		
1946	FEDERAL	-469	-627	-206	-1074	1990	4004	2561	5747	5135	5135	5758	7253	6967	6967	4018	3115		
1947	FEDERAL	1874	-486	1506	-5	1017	5806	2430	6037	3893	3893	6470	8426	11320	11320	4835	3923		
1948	FEDERAL	1951	-744	-78	-1097	-318	1880	4645	7470	7058	7058	6162	6280	10096	10096	6136	3315		
1949	FEDERAL	3779	4775	-77	-825	26	3623	5707	7471	8437	8437	7111	8634	6786	6786	3999	4468		
1950	FEDERAL	-1340	-1653	-183	-790	1103	3524	2713	5568	7634	7634	8235	8578	6514	6514	3226	3556		
1951	FEDERAL	3385	2778	1029	-1117	-1050	1948	3323	3329	2208	2208	2564	5275	9247	9247	4569	2337		
1952	FEDERAL	4490	-173	-412	-87	-623	3885	3820	4813	5085	5085	5121	7703	9457	9457	4617	3284		
1953	FEDERAL	2437	338	544	-347	113	2505	271	2999	1882	1882	1125	3282	9509	9509	7659	2912		
1954	FEDERAL	4869	4309	-82	-629	3194	6646	3275	7724	7724	7724	8447	9201	10904	10904	4931	4617		
1955	FEDERAL	4113	840	-217	-1147	28	1698	1534	6060	5989	5989	3854	7894	10446	10446	2227	3006		
1956	FEDERAL	4546	840	-134	-1194	21	493	3335	4380	3780	3780	4846	7623	7618	7618	1712	2309		
1957	FEDERAL	639	-345	-21	-698	677	6370	3703	5928	6446	6446	4216	5764	10026	10026	5933	3567		
1958	FEDERAL	547	-508	3845	1611	2191	3401	1208	6502	8391	8391	5376	4733	6974	6974	4355	3820		
1959	FEDERAL	4503	808	-220	-1240	-625	3500	3564	5568	4211	4211	2221	6839	10800	10800	1768	2916		
1960	FEDERAL	3483	-855	-133	-842	60	691	1075	2772	5670	5670	6952	5740	6579	6579	3448	2057		
1961	FEDERAL	526	-104	196	-706	1085	2598	3158	3274	2512	2512	3472	4797	6677	6677	3796	2349		
1962	FEDERAL	1611	-317	-190	-1269	-418	1959	54	3348	3783	3783	3126	4726	9997	9997	7201	2486		
1963	FEDERAL	1495	21	-32	-1223	56	2875	-191	2479	4285	4285	2694	5162	7196	7196	3066	2247		
1964	FEDERAL	4355	1301	368	-793	3383	6915	5367	7105	6366	6366	7736	6885	8325	8325	3850	2472		
1965	FEDERAL	4527	2630	20	-815	56	2875	2825	3393	3761	3761	1615	4606	10621	10621	4099	2843		
1966	FEDERAL	868	-854	-147	-933	117	4675	2859	4769	1252	1252	1221	4493	7982	7982	4099	2439		
1967	FEDERAL	4703	1324	725	-22	1350	6625	3172	6336	9121	9121	8209	8196	7957	7957	4280	4143		
1968	FEDERAL	3277	817	-43	-1111	-205	2102	1265	2813	266	266	1368	5884	9237	9237	1941	4843		
1969	FEDERAL	126	-660	-159	-1188	211	4728	7098	7237	6541	6541	6444	7804	10623	10623	5769	4011		
1970	FEDERAL	4219	4064	-213	-1218	70	5352	6163	9803	9063	9063	4707	7784	10959	10959	7623	4772		
1971	FEDERAL	4705	5013	140	-1092	555	-81	-671	511	159	159	299	3761	6522	6522	-505	1185		
1972	FEDERAL	-991	-1195	26	-808	2184	7839	7678	8930	8197	8197	7573	7877	10884	10884	8765	4920		
1973	FEDERAL	4089	5071	-210	-1044	-77	1219	1917	6335	3326	3326	3564	6055	9374	9374	5681	3102		
1974	FEDERAL	2438	2132	147	-168	4956	6269	4533	6546	8281	8281	6158	7535	8716	8716	5771	4485		
1975	FEDERAL	5379	4329	104	-1150	344	-2589	-1931	-4682	-756	-756	-2377	3668	3952	3952	163	706		
1976	FEDERAL	-1702	-1444	111	-1266	-432	-358	38	4682	6740	6740	-5123	5759	7197	7197	3602	1884		
1977	FEDERAL																		
1978	FEDERAL																		

EXHIBIT 13

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

ENERGY IN AVERAGE MEGAWATTS		2000-1 OPERATING YEAR												1995 FINAL WHITEBOOK:				01/22/96	
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG			
1929	FEDERAL FIRM SURPLUS/DEFICIT	1523	-1057	-301	459	-1730	11	-467	-2506	-1291	-215	-1980	5397	5165	-481	283			
1930	FEDERAL FIRM SURPLUS/DEFICIT	-1571	-1219	-1540	346	-1284	-808	-804	-1919	-1434	-499	-252	3835	5358	109	-208			
1931	FEDERAL FIRM SURPLUS/DEFICIT	-1549	-1743	-1590	-117	-1402	-845	-470	-2852	-1680	228	-2410	5190	4935	-926	1392			
1932	FEDERAL FIRM SURPLUS/DEFICIT	-1405	-1092	-1256	14	-1046	-1056	-2681	-1986	2824	5806	5615	5633	8265	3536	2664			
1933	FEDERAL FIRM SURPLUS/DEFICIT	571	448	-178	43	-924	-47	2482	1707	4250	3475	3925	4581	8750	7100	4337			
1934	FEDERAL FIRM SURPLUS/DEFICIT	3682	3438	199	221	716	5787	8873	4849	5832	8882	7055	7296	7514	2942	14222			
1935	FEDERAL FIRM SURPLUS/DEFICIT	-1400	-1453	-912	-60	-878	-379	902	2067	1428	1204	5824	7619	5921	1189	1192			
1936	FEDERAL FIRM SURPLUS/DEFICIT	1507	-816	-293	89	-989	-766	-1623	-2436	-2884	-769	2730	4052	7558	2537	-36			
1937	FEDERAL FIRM SURPLUS/DEFICIT	-211	-683	-391	12	-796	-160	-3308	-2884	-1687	2006	2031	6125	6615	69	2073			
1938	FEDERAL FIRM SURPLUS/DEFICIT	-1089	-2320	-660	54	-953	-1253	-2337	-927	4759	3544	6188	7133	6837	2537	851			
1939	FEDERAL FIRM SURPLUS/DEFICIT	95	-536	-70	115	-1158	-1148	-1667	-1635	1303	2006	2031	6125	6615	69	1068			
1940	FEDERAL FIRM SURPLUS/DEFICIT	-138	-625	-515	115	-873	-106	-1551	-1118	2634	2851	2138	4564	7041	514	343			
1941	FEDERAL FIRM SURPLUS/DEFICIT	-1748	-1794	-549	186	-924	-876	-917	-2277	-76	1724	3236	3215	7197	2495	1451			
1942	FEDERAL FIRM SURPLUS/DEFICIT	-1971	-1221	-507	93	-698	876	1837	1252	1212	1724	3236	3215	7197	2495	1451			
1943	FEDERAL FIRM SURPLUS/DEFICIT	844	303	-507	124	-1455	265	2566	3305	5691	8568	6012	8460	4010	3123	103			
1944	FEDERAL FIRM SURPLUS/DEFICIT	1659	28	-264	-148	-1579	287	-1852	-2255	-1689	-529	-2489	4824	7829	987	72			
1945	FEDERAL FIRM SURPLUS/DEFICIT	-2171	-1738	-110	67	-945	-1516	-2716	-1644	-1480	4941	6243	7109	6851	3845	3065			
1946	FEDERAL FIRM SURPLUS/DEFICIT	-501	-654	-110	-175	-1008	1987	4013	2493	5668	5019	5661	7109	6851	3845	3065			
1947	FEDERAL FIRM SURPLUS/DEFICIT	1842	-518	-5	1469	-11	1035	5816	2420	6004	3838	6374	8283	11204	4662	3871			
1948	FEDERAL FIRM SURPLUS/DEFICIT	1919	-774	-103	1469	-11	1035	5816	2420	6004	3838	6374	8283	11204	4662	3871			
1949	FEDERAL FIRM SURPLUS/DEFICIT	3747	4743	171	-165	-805	-364	-171	443	6344	5882	6060	6137	9980	5963	3264			
1950	FEDERAL FIRM SURPLUS/DEFICIT	-1372	-1686	-881	-165	-805	62	1874	4615	7407	8382	7015	8491	6670	5963	3264			
1951	FEDERAL FIRM SURPLUS/DEFICIT	3353	2746	24	409	-106	3607	6187	5697	7437	8382	7015	8491	6670	5963	3264			
1952	FEDERAL FIRM SURPLUS/DEFICIT	4458	2369	-155	953	-747	-1108	3534	2700	5519	7560	8139	8433	6398	3053	3505			
1953	FEDERAL FIRM SURPLUS/DEFICIT	1838	-638	-443	-70	-1121	-1035	1951	3311	3294	2153	2398	5132	9131	4396	3285			
1954	FEDERAL FIRM SURPLUS/DEFICIT	2405	306	-21	-6	-863	-329	3867	3784	4698	4986	5009	7558	9338	4444	3235			
1955	FEDERAL FIRM SURPLUS/DEFICIT	4837	4276	2290	507	-349	159	2496	261	2958	1819	1029	9139	9391	7486	2860			
1956	FEDERAL FIRM SURPLUS/DEFICIT	4081	808	-274	-145	-663	3203	6656	3265	7690	7666	8351	9058	10788	4758	4566			
1957	FEDERAL FIRM SURPLUS/DEFICIT	4514	900	37	-211	-1141	-86	1708	1524	5995	5927	3758	7751	10329	2054	2257			
1958	FEDERAL FIRM SURPLUS/DEFICIT	607	-900	-376	-89	-1199	22	480	3318	4343	3725	4750	7455	7502	1539	3516			
1959	FEDERAL FIRM SURPLUS/DEFICIT	515	-537	-207	1	-634	606	6368	3632	5894	6390	4120	5616	9910	5760	3768			
1960	FEDERAL FIRM SURPLUS/DEFICIT	4471	776	1454	3808	1609	2209	3411	3469	6468	8336	5280	4590	6858	4182	2865			
1961	FEDERAL FIRM SURPLUS/DEFICIT	3451	-887	-78	-104	-1244	-62	678	3476	5515	4136	6850	6696	10684	1595	2865			
1962	FEDERAL FIRM SURPLUS/DEFICIT	494	-136	-864	39	-809	-610	3469	3476	5515	4136	6850	6696	10684	1595	2865			
1963	FEDERAL FIRM SURPLUS/DEFICIT	1579	-346	-359	212	-657	1025	2608	3148	3221	2452	3373	4653	6561	3623	2297			
1964	FEDERAL FIRM SURPLUS/DEFICIT	1463	-11	230	-134	-1234	-424	1874	27	3313	3687	7643	4581	6561	3623	2297			
1965	FEDERAL FIRM SURPLUS/DEFICIT	4323	1269	107	326	-782	3284	6924	5356	7053	6299	7643	4581	6561	3623	2297			
1966	FEDERAL FIRM SURPLUS/DEFICIT	4495	2598	107	38	-788	110	2864	-200	2412	4071	2511	5002	7075	3677	2196			
1967	FEDERAL FIRM SURPLUS/DEFICIT	836	-885	-445	-13	-1226	156	4677	2802	3327	3688	1510	4354	10504	2894	2196			
1968	FEDERAL FIRM SURPLUS/DEFICIT	4671	1292	68	-111	-847	-90	2253	2556	4635	1070	1098	4354	10504	2894	2196			
1969	FEDERAL FIRM SURPLUS/DEFICIT	3245	785	356	689	-24	1368	6635	3162	6302	9066	8113	8053	7841	4107	2389			
1970	FEDERAL FIRM SURPLUS/DEFICIT	94	-691	-494	-37	-1115	-181	2080	1217	7168	6470	6342	7761	10507	5596	3960			
1971	FEDERAL FIRM SURPLUS/DEFICIT	6	-309	-6	-205	-1175	25	5307	6158	9752	8986	4603	7641	10843	7450	4724			
1972	FEDERAL FIRM SURPLUS/DEFICIT	4187	4032	72	58	-1092	553	-71	-684	441	94	196	3617	7450	4724	4724			
1973	FEDERAL FIRM SURPLUS/DEFICIT	4673	4981	-1158	72	-1092	553	-71	-684	441	94	196	3617	7450	4724	4724			
1974	FEDERAL FIRM SURPLUS/DEFICIT	-1023	-1226	-1158	72	-1092	553	-71	-684	441	94	196	3617	7450	4724	4724			
1975	FEDERAL FIRM SURPLUS/DEFICIT	4057	5039	76	-208	-1025	-123	1184	1887	6253	3271	3434	5909	9257	5508	3051			
1976	FEDERAL FIRM SURPLUS/DEFICIT	2406	2100	56	80	-1215	-4974	6279	4523	6512	8226	-2043	3525	3836	-10	654			
1977	FEDERAL FIRM SURPLUS/DEFICIT	5347	4297	2599	121	-1169	385	-14	-2602	-2007	-811	-5027	5616	7081	3429	1832			
1978	FEDERAL FIRM SURPLUS/DEFICIT	-1734	-1476	-1114	100	-1286	-409	-361	30	4649	6685	5027	5616	7081	3429	1832			

EXHIBIT 14

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

ENERGY IN AVERAGE MEGAWATTS		2001-2 OPERATING YEAR												1995 FINAL WHITEBOOK:				01/22/96			
														RUN DATE:				01/22/96			
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG					
1929	FEDERAL FIRM	1565	-1015	-284	818	-1669	75	-541	-2726	-1420	-480	-1881	5470	-223	5225	5470	-223	5225	5470	318	
1930	FEDERAL FIRM	-1529	-1177	-1523	705	-1223	-744	-878	-2139	-1563	-764	-153	3908	367	5418	3908	367	5418	3908	43	
1931	FEDERAL FIRM	-1507	-1701	-1573	242	-1341	-781	-544	-3072	-1809	-37	-2311	5263	-668	4995	5263	-668	4995	5263	172	
1932	FEDERAL FIRM	-1363	-1050	-1239	373	-985	-992	-2755	-2206	2695	5541	5714	5706	3794	8325	5706	3794	8325	5706	1428	
1933	FEDERAL FIRM	613	490	-161	402	-863	17	2408	-1487	5703	8617	4024	4654	7358	8810	4654	7358	8810	4654	2700	
1934	FEDERAL FIRM	3724	3480	216	580	-817	5851	828	1847	1299	419	2725	7359	518	7574	7359	518	7574	7359	4372	
1935	FEDERAL FIRM	-1358	-1411	-895	299	-928	-315	-702	-2656	1600	939	5923	5637	3200	6228	5637	3200	6228	5637	1458	
1936	FEDERAL FIRM	1549	-774	-276	448	-928	-702	-1697	-3104	-1816	-1034	-2631	4125	1447	7618	4125	1447	7618	4125	1227	
1937	FEDERAL FIRM	-169	-641	-374	371	-735	-1189	-1697	-3104	-1816	-1034	-2631	4125	1447	7618	4125	1447	7618	4125	0	
1938	FEDERAL FIRM	-1047	-2278	-643	413	-892	-1084	-1741	-1855	707	3279	6287	7206	2795	6897	7206	2795	6897	7206	2109	
1939	FEDERAL FIRM	137	-694	-53	344	-1097	-1189	-1741	-1855	707	3279	6287	7206	2795	6897	7206	2795	6897	7206	887	
1940	FEDERAL FIRM	-96	-583	-498	474	-812	-42	-1625	-1338	2505	2586	2237	6637	7101	6454	6637	7101	6454	6637	1104	
1941	FEDERAL FIRM	-1706	-1752	-532	545	-863	-915	-991	-2497	-205	776	462	3951	704	6454	3951	704	6454	3951	378	
1942	FEDERAL FIRM	-1929	-1179	-932	452	-637	940	1763	1032	1083	1459	3335	3288	2753	6454	3288	2753	6454	3288	1487	
1943	FEDERAL FIRM	886	345	-490	483	-637	329	2492	3085	5562	8303	8387	6085	4288	8520	6085	4288	8520	6085	3158	
1944	FEDERAL FIRM	1701	70	-247	211	-1518	351	-1926	-2475	-1818	-1000	-1613	4036	-60	5527	4036	-60	5527	4036	138	
1945	FEDERAL FIRM	-2129	-1696	-1063	426	-884	-1452	-2790	-1864	-1609	-794	-2390	4897	7889	7889	4897	7889	7889	4897	107	
1946	FEDERAL FIRM	-459	-612	-93	276	-1173	-547	1239	-2276	4934	4676	6342	7726	7087	7087	4676	6342	7726	7087	2548	
1947	FEDERAL FIRM	1884	-476	-86	184	-947	2051	3939	2273	5539	4754	5760	7182	4103	6911	7182	4103	6911	7182	3101	
1948	FEDERAL FIRM	1961	-732	-86	1828	50	1099	5742	2200	5875	3573	6473	8356	4920	11264	8356	4920	11264	8356	2596	
1949	FEDERAL FIRM	3789	4785	188	302	-1028	-300	1099	223	6215	5617	6546	7599	7110	10040	7599	7110	10040	7599	3300	
1950	FEDERAL FIRM	-1330	-1644	-864	194	-744	126	1800	4395	7278	6705	6159	6210	6221	10040	6210	6221	10040	6210	4451	
1951	FEDERAL FIRM	3395	2788	41	768	-45	3671	6113	5477	7308	8117	7114	8564	4084	6730	8564	4084	6730	8564	4451	
1952	FEDERAL FIRM	4500	2411	-138	1312	-686	1172	3460	2480	5390	7295	8238	8506	3311	6458	8506	3311	6458	8506	3541	
1953	FEDERAL FIRM	1880	-596	-426	289	-1060	-971	1877	3091	3165	1888	2497	5205	4654	9191	5205	4654	9191	5205	3231	
1954	FEDERAL FIRM	2447	348	-4	353	-802	-265	2422	3504	4569	4721	5108	7631	4702	9398	7631	4702	9398	7631	3271	
1955	FEDERAL FIRM	4879	4318	2307	866	-288	223	2422	3504	4569	4721	5108	7631	4702	9398	7631	4702	9398	7631	2895	
1956	FEDERAL FIRM	4123	850	-257	214	-602	3267	6582	3045	5866	5662	3857	7824	5016	10848	5662	3857	7824	5016	4601	
1957	FEDERAL FIRM	4556	850	54	148	-1080	-22	1634	3098	4214	3460	4849	7528	2312	10389	7528	2312	10389	7528	2991	
1958	FEDERAL FIRM	649	-858	-359	270	-1138	86	406	3098	4214	3460	4849	7528	2312	10389	7528	2312	10389	7528	2293	
1959	FEDERAL FIRM	557	-495	-190	360	-573	670	6294	3412	5765	6125	4219	5689	6018	9970	5689	6018	9970	5689	3551	
1960	FEDERAL FIRM	4513	818	1471	4167	1670	2273	3337	3256	6339	8071	5379	6663	4440	10744	6663	4440	10744	6663	3804	
1961	FEDERAL FIRM	3493	-845	-61	398	-1183	-546	3395	3256	5386	3871	2208	6769	1853	10744	6769	1853	10744	6769	2901	
1962	FEDERAL FIRM	536	-94	-847	255	-1183	126	604	843	2611	5350	6949	5661	3533	6523	5661	3533	6523	5661	2041	
1963	FEDERAL FIRM	1621	-304	-342	571	-596	1089	2534	2928	3092	3187	3472	4726	2333	6621	4726	2333	6621	4726	2333	
1964	FEDERAL FIRM	1505	31	247	225	-1173	-360	1800	-193	3184	3422	3109	4654	9935	6935	4654	9935	6935	4654	2470	
1965	FEDERAL FIRM	4365	1311	124	685	-721	3348	6850	5136	6924	6034	7742	6814	7289	9355	6814	7289	9355	6814	2470	
1966	FEDERAL FIRM	4537	2640	124	685	-721	3348	6850	5136	6924	6034	7742	6814	7289	9355	6814	7289	9355	6814	2470	
1967	FEDERAL FIRM	878	-843	-428	397	-1165	220	4603	2582	3198	3423	1609	5075	2232	10564	5075	2232	10564	5075	2232	
1968	FEDERAL FIRM	4713	1334	85	248	-786	-26	2179	2336	4506	805	1197	4427	6933	10564	4427	6933	10564	4427	2827	
1969	FEDERAL FIRM	3287	827	373	1048	-786	1432	6561	2942	6173	8801	8212	7914	4184	7914	8801	8212	7914	8801	2424	
1970	FEDERAL FIRM	136	-649	-296	322	-1054	-117	2006	997	2644	51	1371	5814	4365	7914	5814	4365	7914	5814	2424	
1971	FEDERAL FIRM	48	-267	-477	252	-1133	283	4654	6861	7039	6205	6441	9179	2026	9179	6205	6441	9179	6205	1827	
1972	FEDERAL FIRM	4229	4074	-77	252	-1133	283	4654	6861	7039	6205	6441	9179	2026	9179	6205	6441	9179	6205	3996	
1973	FEDERAL FIRM	4715	5023	89	154	-1114	89	5233	5938	9623	8721	4702	7714	7708	10903	7714	7708	10903	7714	4760	
1974	FEDERAL FIRM	-981	-1184	-1141	424	-724	223	7786	7454	8722	7886	295	7807	4820	6466	7807	4820	6466	7807	1168	
1975	FEDERAL FIRM	4099	5081	93	151	-964	-59	1110	1667	6124	3006	3533	5982	8250	9317	5982	8250	9317	5982	4905	
1976	FEDERAL FIRM	2448	2142	73	439	-154	5038	6205	4303	6383	7961	6161	7465	5766	8660	7465	5766	8660	7465	3087	
1977	FEDERAL FIRM	5389	4339	2616	480	-1108	449	-88	-2822	-2136	-1076	-2374	3598	248	8660	3598	248	8660	3598	4469	
1978	FEDERAL FIRM	-1692	-1434	-1097	459	-1225	-345	-435	-190	4520	6420	5126	5689	3687	7141	5689	3687	7141	5689	1868	

EXHIBIT 15

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

ENERGY IN AVERAGE MEGAWATTS		2002- 3 OPERATING YEAR												1995 FINAL WHITEBOOK: 01/22/96			
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	
1929	FEDERAL	1706	-874	-144	841	-1646	100	-516	-2771	-1416	-534	-1966	5380	5137	-311	318	
1930	FEDERAL	-1388	-1036	-1383	728	-1200	-719	-853	-2184	-1559	-818	-238	3818	5330	279	43	
1931	FEDERAL	-1366	-1560	-1433	265	-1318	-756	-519	-3117	-1805	-91	-2396	5173	4907	-756	-172	
1932	FEDERAL	-1222	-909	-1099	396	-962	-967	-2730	-2251	2699	5487	5629	5616	8237	3706	1428	
1933	FEDERAL	754	631	-21	425	-840	42	2433	1442	4125	3156	3939	4564	8722	7270	2700	
1934	FEDERAL	3865	3621	356	603	-800	5876	8824	4584	5707	8563	7069	7279	7486	-606	4372	
1935	FEDERAL	-1217	-1270	-755	322	-794	-290	853	1802	1303	365	2640	5547	6140	3112	1458	
1936	FEDERAL	1690	-633	-136	471	-905	-677	-1672	-2701	1604	885	5838	7602	5893	1359	1227	
1937	FEDERAL	-28	-500	-234	394	-712	-71	-3357	-3149	-1812	-1088	-2716	4035	7530	-457	0	
1938	FEDERAL	-906	-2137	-503	436	-869	-1164	-2288	662	4634	3225	6202	7116	6809	2707	2109	
1939	FEDERAL	278	-353	87	367	-789	-1059	-1716	-1900	1178	1687	2045	6108	6587	239	887	
1940	FEDERAL	45	-442	358	497	-704	-17	-1600	-1383	2509	2532	2152	4547	7013	684	1104	
1941	FEDERAL	-1565	-1611	-392	568	-840	-890	-966	-2542	-201	722	377	3841	6366	616	378	
1942	FEDERAL	-1788	-1038	-792	475	-614	965	1788	987	1087	1405	3250	3198	7169	2665	1487	
1943	FEDERAL	1027	486	-350	506	-1371	354	2517	3040	5566	8249	8302	5995	8432	4180	3158	
1944	FEDERAL	1842	211	-107	234	-1495	376	-1901	-2520	-1814	-1054	-1698	3946	5439	-148	138	
1945	FEDERAL	-1988	-1555	-923	449	-861	-1427	-2765	-1909	-1605	-848	-2475	4807	7801	1157	108	
1946	FEDERAL	-318	-471	47	299	-1150	-522	1264	2231	4938	4622	6257	7636	6999	7801	108	
1947	FEDERAL	2025	-335	152	207	-924	2076	3964	2228	5543	4700	5675	7092	6823	3793	2548	
1948	FEDERAL	3930	4926	328	325	-1005	-275	-220	178	5879	3519	6388	8266	11176	4832	3907	
1949	FEDERAL	-1189	-1503	-724	217	-721	151	1825	4350	7282	6651	6074	6120	9952	6133	2596	
1950	FEDERAL	3536	2929	181	791	-22	3696	6138	5432	7312	8063	7029	8474	6642	3996	4452	
1951	FEDERAL	4641	2552	-286	1335	-663	1197	3485	2435	5394	7241	8153	8416	6370	3223	3541	
1952	FEDERAL	2021	-455	-286	312	-707	-946	1902	3046	3169	1834	2412	5115	9103	4566	3231	
1953	FEDERAL	2588	489	136	376	-779	-240	3818	3519	4573	4667	5023	7541	9310	4614	3271	
1954	FEDERAL	5020	4459	2447	889	-265	248	2447	-4	2833	1500	1043	3122	9363	7656	2896	
1955	FEDERAL	4264	991	-117	237	-579	3292	6607	3000	7565	7347	8365	9041	10760	4928	4601	
1956	FEDERAL	4697	991	-117	237	-579	3292	6607	3000	7565	7347	8365	9041	10760	4928	4601	
1957	FEDERAL	790	-717	-219	293	-1115	111	431	1259	5870	5608	3772	7734	10301	2224	2991	
1958	FEDERAL	698	-354	-50	383	-550	695	6319	3053	4218	3406	4764	7438	10301	2224	2991	
1959	FEDERAL	4654	959	1611	4190	1693	2298	3362	933	5769	6071	4134	5599	9882	5930	3552	
1960	FEDERAL	3634	-704	79	421	-725	-521	3420	933	6343	8017	5294	4573	6830	4352	3804	
1961	FEDERAL	677	47	-707	278	-1160	-521	3420	3211	5390	3817	2123	6679	10656	1765	2901	
1962	FEDERAL	1762	-163	-202	594	-573	-521	3420	3211	5390	3817	2123	6679	10656	1765	2901	
1963	FEDERAL	1646	172	387	248	-1150	1114	2559	2883	3096	3817	2123	6679	10656	1765	2901	
1964	FEDERAL	4506	1452	264	708	-698	3373	6875	2883	3096	3817	2123	6679	10656	1765	2901	
1965	FEDERAL	4678	2781	264	420	-704	335	6875	5091	6928	5980	7657	6724	8181	3847	4258	
1966	FEDERAL	1019	-702	-288	369	-1142	199	2815	-465	2287	3752	2525	4985	7047	3064	2232	
1967	FEDERAL	4854	1475	225	271	-763	245	4628	2537	3202	3369	1524	4446	10476	6845	2827	
1968	FEDERAL	3428	968	513	1071	-60	-1	2204	2291	4510	751	1112	4337	7826	4096	4127	
1969	FEDERAL	277	-508	-156	345	1457	1457	6586	2897	6177	8747	8127	8036	7813	4277	4127	
1970	FEDERAL	189	-126	-337	275	-1031	-92	2031	952	2648	-105	1286	5724	9091	1938	1827	
1971	FEDERAL	4370	4215	151	177	-1110	308	4679	6816	7043	6151	6356	7744	10479	5766	3996	
1972	FEDERAL	4856	5164	229	440	-1091	114	5258	5893	9627	8667	4617	7624	10815	7620	4760	
1973	FEDERAL	-840	-1043	-1001	447	-1008	642	-120	-949	316	-225	210	7624	10815	7620	4760	
1974	FEDERAL	4240	5222	229	447	-701	2238	7811	7409	8726	7832	7489	7617	10739	8762	4906	
1975	FEDERAL	2589	2283	213	174	-941	-34	1135	1622	6128	2952	3448	5892	9229	5678	3087	
1976	FEDERAL	5530	4480	2756	503	-131	5063	6230	4258	6387	7907	6076	7375	8572	5768	4469	
1977	FEDERAL	-1551	-1293	-957	482	-1202	-320	-410	-235	4524	-2132	-2459	3508	3808	160	689	
1978	FEDERAL										6366	5041	5599	7053	3599	1868	

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

75

EXHIBIT 17

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

ENERGY IN AVERAGE MEGAWATTS		2004-5 OPERATING YEAR												1995 FINAL WHITEBOOK:					01/22/96 12 MO AVG	
														RUN DATE:						
		AUG	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	APR	APR	MAY	JUN	JUL	JUL	JUL		
		1-15	16-31									1-15	16-30							
1929	FEDERAL	1642	-938	-210	774	-1709	40	-577	-2765	-1482	-477	-1884	5507	5265	-198	-198	-198	-198	318	
1930	FEDERAL	-1452	-1100	-1449	661	-1263	-779	-914	-2178	-1825	-761	-156	3945	5458	392	392	392	392	43	
1931	FEDERAL	-1430	-1624	-1499	198	-1381	-816	-580	-3111	-1871	-34	-2314	5300	5035	-643	-643	-643	-643	-173	
1932	FEDERAL	-1286	-973	-1165	329	-1025	-1027	-2791	-2243	-2633	5544	5711	5743	8365	3819	3819	3819	3819	1428	
1933	FEDERAL	690	567	-87	358	-903	-18	2372	1448	4059	3213	4021	4691	8850	7383	7383	7383	7383	2700	
1934	FEDERAL	3801	3557	290	536	737	5816	8763	4590	5641	8620	7151	7406	7614	-493	-493	-493	-493	1458	
1935	FEDERAL	-1281	-1334	-821	255	-857	-350	792	1808	1237	422	2722	5674	6268	3225	3225	3225	3225	4372	
1936	FEDERAL	1626	-697	-202	404	-968	-737	-1733	-2695	1538	942	5920	7729	6021	1472	1472	1472	1472	1227	
1937	FEDERAL	-92	-564	-300	327	-775	-131	-3418	-3143	-1878	-1031	-2634	4162	7658	-344	-344	-344	-344	0	
1938	FEDERAL	-970	-2201	-569	369	-932	-1224	2227	668	4568	1744	2127	6235	6715	352	352	352	352	2109	
1939	FEDERAL	214	-417	21	300	-1137	-1119	-1777	-1894	1112	2589	2234	4674	7141	797	797	797	797	887	
1940	FEDERAL	-19	-506	-424	430	-852	-77	-1661	-2536	1021	1462	3332	3325	7297	2778	2778	2778	2778	1486	
1941	FEDERAL	-1629	-1675	-458	501	-903	905	1727	993	5500	8306	8384	6122	8560	4293	4293	4293	4293	3158	
1942	FEDERAL	-1852	-1102	-858	408	-677	294	2456	3046	1880	-997	-1616	4073	5567	-35	-35	-35	-35	138	
1943	FEDERAL	963	422	-416	439	-1434	316	-1962	-2514	-1880	-791	-2393	4934	7929	1270	1270	1270	1270	107	
1944	FEDERAL	1778	147	-173	167	-1558	-1487	-2826	-1903	-1671	4679	6339	7763	7127	3906	3906	3906	3906	2548	
1945	FEDERAL	-2052	-1619	-989	382	-924	-582	1203	2234	5472	3576	6470	8393	11304	4945	4945	4945	4945	3907	
1946	FEDERAL	-382	-535	-19	232	-1213	-1064	5706	2161	5813	5620	6543	7636	7150	743	743	743	743	2596	
1947	FEDERAL	1961	-399	86	140	-987	2016	3903	2234	5472	4679	6339	7763	7127	3906	3906	3906	3906	3100	
1948	FEDERAL	2038	-335	-12	1784	-1068	-335	5706	2161	5813	5620	6543	7636	7150	743	743	743	743	3300	
1949	FEDERAL	-3866	-4862	262	258	-784	91	1764	4356	7216	6708	6156	6247	10080	6246	6246	6246	6246	4451	
1950	FEDERAL	-1253	-1567	-790	724	-85	3636	6077	5438	7246	8120	7111	8601	6770	4109	4109	4109	4109	3350	
1951	FEDERAL	3472	2865	115	1268	-726	1137	3424	2441	5328	7298	8235	8543	6498	3336	3336	3336	3336	3540	
1952	FEDERAL	4577	2488	-64	245	-1100	-1006	1841	3052	3103	1891	2494	5242	9231	4619	4619	4619	4619	2320	
1953	FEDERAL	1957	-519	-352	1268	-842	-300	3757	3525	4507	4724	5105	7668	9438	4727	4727	4727	4727	3271	
1954	FEDERAL	2524	425	70	309	-842	-300	3757	3525	4507	4724	5105	7668	9438	4727	4727	4727	4727	2895	
1955	FEDERAL	4956	4395	2381	822	-328	188	2386	2	2767	1557	1125	3249	9491	7759	7759	7759	7759	4601	
1956	FEDERAL	4200	927	-183	170	-642	3232	6546	3006	5804	5665	8447	9168	10888	5041	5041	5041	5041	2991	
1957	FEDERAL	4633	927	128	104	-1120	-57	1598	1265	5804	5665	8447	9168	10888	5041	5041	5041	5041	2292	
1958	FEDERAL	726	-781	-285	226	-1178	51	370	3059	4152	3463	4846	7565	7602	1822	1822	1822	1822	3551	
1959	FEDERAL	634	-418	-116	316	-613	635	6258	3373	5703	6128	4216	5726	10010	6043	6043	6043	6043	3804	
1960	FEDERAL	4590	895	1545	4123	1630	2238	3301	939	6277	8074	2205	6806	10784	1878	1878	1878	1878	2900	
1961	FEDERAL	3570	-768	13	354	-1223	-581	3359	804	5324	5353	6946	5698	6563	3558	3558	3558	3558	2041	
1962	FEDERAL	613	-17	-773	211	-1223	91	568	804	5324	5353	6946	5698	6563	3558	3558	3558	3558	2332	
1963	FEDERAL	1698	-227	-268	527	-636	1054	2498	2889	3030	2190	3469	4763	6661	3906	3906	3906	3906	2470	
1964	FEDERAL	1582	108	321	181	-1213	-395	1764	-232	3122	3425	3106	4691	9975	7314	7314	7314	7314	4257	
1965	FEDERAL	4442	1388	198	641	-761	3313	6814	5097	6862	6037	7739	6851	7175	3960	3960	3960	3960	2251	
1966	FEDERAL	4614	2717	198	553	-767	139	2754	-459	2221	3809	2607	5112	7175	3177	3177	3177	3177	2827	
1967	FEDERAL	955	-766	-354	302	-1205	185	4567	2543	3136	3426	1606	4573	10604	6958	6958	6958	6958	2424	
1968	FEDERAL	4790	1411	159	204	-826	-61	2143	2297	4444	808	1194	4464	7954	4390	4390	4390	4390	4126	
1969	FEDERAL	3364	904	447	1004	-3	1397	6525	2903	6111	8804	8209	8163	7941	4390	4390	4390	4390	1827	
1970	FEDERAL	213	-572	-222	278	-1094	-152	1970	958	2582	-48	1368	5851	9219	2051	2051	2051	2051	3995	
1971	FEDERAL	125	-190	-403	208	-1173	248	4618	6822	6977	6208	6438	7871	10607	5879	5879	5879	5879	4760	
1972	FEDERAL	4306	4151	85	110	-1154	54	5197	5899	9561	8724	4699	7751	10943	7733	7733	7733	7733	1168	
1973	FEDERAL	4792	5100	163	373	-1071	582	7750	7415	8660	-168	292	7844	10867	8375	8375	8375	8375	4905	
1974	FEDERAL	-904	-1107	-1067	380	-764	2178	7750	1628	6062	7889	7571	6019	9357	5791	5791	5791	5791	3087	
1975	FEDERAL	4176	5158	167	107	-1004	-94	1074	1628	6062	3009	3530	7502	8700	5881	5881	5881	5881	4468	
1976	FEDERAL	2525	2219	147	395	-194	5003	6169	4264	6321	7964	6158	7363	3936	273	273	273	273	689	
1977	FEDERAL	5466	4416	2690	415	-1148	414	-124	-2861	-2198	-1073	-2377	7502	8700	5881	5881	5881	5881	4468	
1978	FEDERAL	-1615	-1357	-1023	415	-1265	-380	-471	-229	-4458	6423	5123	5726	7181	3712	3712	3712	3712	1867	

EXHIBIT 18

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

ENERGY IN AVERAGE MEGAWATTS		2005-6 OPERATING YEAR												1995 FINAL WHITEBOOK:					01/22/96 12 MO AVG
		AUG 1-15												RUN DATE:					
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL				
1929	FEDERAL FIRM SURPLUS/DEFICIT	1669	-911	-182	798	-1726	5	-614	-2797	-1417	-512	-1876	5506	5257	-194	318			
1930	FEDERAL FIRM SURPLUS/DEFICIT	-1425	-1073	-1421	685	-1280	-814	-951	-2210	-1560	-796	-148	3944	5450	396	43			
1931	FEDERAL FIRM SURPLUS/DEFICIT	-1403	-1597	-1471	222	-1398	-851	-617	-3143	-1806	-69	-2306	5299	5027	-639	-172			
1932	FEDERAL FIRM SURPLUS/DEFICIT	-1259	-946	-1137	353	-1042	-1062	-2828	-2277	2698	5509	5719	5742	8357	3823	1428			
1933	FEDERAL FIRM SURPLUS/DEFICIT	717	594	-59	382	-920	-53	2335	1416	4124	3178	4029	4690	8842	7387	2700			
1934	FEDERAL FIRM SURPLUS/DEFICIT	3828	3584	318	560	720	5781	8726	4558	5706	8585	7159	7405	7606	-489	4372			
1935	FEDERAL FIRM SURPLUS/DEFICIT	-1254	-1307	-793	279	-874	-385	755	1776	1302	387	2730	5673	6260	3229	1458			
1936	FEDERAL FIRM SURPLUS/DEFICIT	1653	-670	-174	428	-985	-772	-1770	-2727	1603	907	5928	7728	6013	1476	1227			
1937	FEDERAL FIRM SURPLUS/DEFICIT	-65	-537	-272	351	-792	-166	-3455	-3175	-1813	-1066	-2626	4161	7650	-340	0			
1938	FEDERAL FIRM SURPLUS/DEFICIT	-943	-2174	-541	393	-949	-1259	2190	636	4633	3247	6292	7242	6929	2824	2109			
1939	FEDERAL FIRM SURPLUS/DEFICIT	241	-390	49	324	-1154	-1154	-1814	-1926	1177	1709	2135	6234	6707	356	887			
1940	FEDERAL FIRM SURPLUS/DEFICIT	8	-479	-396	454	-869	-112	-1698	-1409	2508	2554	2242	4673	7133	801	1104			
1941	FEDERAL FIRM SURPLUS/DEFICIT	-1602	-1648	-430	525	-920	-985	-1064	-2568	-202	744	467	3987	6486	733	379			
1942	FEDERAL FIRM SURPLUS/DEFICIT	-1825	-1075	-830	432	-694	-870	1690	961	1086	1427	3340	3324	7289	2782	1487			
1943	FEDERAL FIRM SURPLUS/DEFICIT	990	449	-388	463	-1451	259	2419	3014	5565	8271	8392	6121	8552	4297	3158			
1944	FEDERAL FIRM SURPLUS/DEFICIT	1805	174	-145	191	-1575	281	-1999	-2546	-1815	-1032	-1608	4072	5559	-31	138			
1945	FEDERAL FIRM SURPLUS/DEFICIT	-2025	-1592	-961	406	-941	-1522	-2863	-1935	-1606	-826	-2385	4933	7921	1274	108			
1946	FEDERAL FIRM SURPLUS/DEFICIT	-355	-508	9	256	-1230	-617	1166	2205	4937	4644	6347	7762	7119	3910	2548			
1947	FEDERAL FIRM SURPLUS/DEFICIT	1988	-372	114	164	-1004	1981	3866	2202	5542	4722	5745	7218	6943	4132	3101			
1948	FEDERAL FIRM SURPLUS/DEFICIT	2065	-628	16	1808	-7	1029	5669	2129	5878	3541	6478	8392	11296	4949	3907			
1949	FEDERAL FIRM SURPLUS/DEFICIT	3893	4889	290	282	-1085	-370	-318	152	6218	5585	6551	7635	7142	747	2596			
1950	FEDERAL FIRM SURPLUS/DEFICIT	-1226	-1540	-762	174	-801	56	1727	4324	7281	6673	6164	6246	10072	6250	3300			
1951	FEDERAL FIRM SURPLUS/DEFICIT	3499	2892	143	748	-102	3601	6040	5406	7311	8085	7119	8600	6762	4113	4452			
1952	FEDERAL FIRM SURPLUS/DEFICIT	4604	2515	-36	1292	-743	1102	3387	2409	5393	7263	8243	8542	6490	3340	3541			
1953	FEDERAL FIRM SURPLUS/DEFICIT	1984	-492	-324	269	-1117	-1041	1804	3020	3168	1856	2502	5241	9223	4683	3231			
1954	FEDERAL FIRM SURPLUS/DEFICIT	2551	452	98	333	-859	-335	3720	3493	4572	4689	5113	7667	9430	4731	3271			
1955	FEDERAL FIRM SURPLUS/DEFICIT	4983	4422	2409	846	-345	153	2349	-30	2832	1522	1133	3248	9483	7773	2896			
1956	FEDERAL FIRM SURPLUS/DEFICIT	4227	954	-155	194	-659	3197	6509	2974	7564	7369	8455	9167	10880	5045	4601			
1957	FEDERAL FIRM SURPLUS/DEFICIT	4660	954	156	128	-1137	-92	1561	1233	5869	5630	3862	7860	10421	2341	2991			
1958	FEDERAL FIRM SURPLUS/DEFICIT	753	-754	-257	250	-1195	16	333	3027	4217	3428	4854	7564	7594	1826	2293			
1959	FEDERAL FIRM SURPLUS/DEFICIT	661	-391	-88	340	-630	600	6221	3341	5768	6093	4224	5725	10002	6047	3552			
1960	FEDERAL FIRM SURPLUS/DEFICIT	4617	922	1573	4147	1613	2203	3264	907	6342	8039	5384	4699	6950	4469	3804			
1961	FEDERAL FIRM SURPLUS/DEFICIT	3597	-741	41	378	-805	-616	3322	3185	5389	3839	2213	6805	10776	1882	2901			
1962	FEDERAL FIRM SURPLUS/DEFICIT	640	10	-745	235	-1240	56	531	772	2614	5318	6954	5697	6555	3562	2041			
1963	FEDERAL FIRM SURPLUS/DEFICIT	1725	-200	-240	551	-653	1019	2461	2857	3095	2155	3477	4762	6653	3910	2233			
1964	FEDERAL FIRM SURPLUS/DEFICIT	1609	135	349	205	-1230	-430	1727	-264	3187	3390	3114	4690	9967	7318	2470			
1965	FEDERAL FIRM SURPLUS/DEFICIT	4469	1415	226	665	-778	3278	6777	5065	6927	6002	7747	6850	8301	3964	4258			
1966	FEDERAL FIRM SURPLUS/DEFICIT	4641	2744	226	377	-784	104	2717	-491	2286	3774	2615	5111	7167	3181	2232			
1967	FEDERAL FIRM SURPLUS/DEFICIT	982	-739	-326	326	-1222	150	4530	2511	3201	3391	1614	4572	10596	6962	2827			
1968	FEDERAL FIRM SURPLUS/DEFICIT	4817	1438	187	228	-843	-96	2106	2265	4509	773	1202	4463	7946	4213	2424			
1969	FEDERAL FIRM SURPLUS/DEFICIT	3391	931	475	1028	-20	1362	6488	2871	6176	8769	8217	8162	7933	4394	4127			
1970	FEDERAL FIRM SURPLUS/DEFICIT	240	-545	-194	302	-1111	-187	1933	926	2647	-83	1376	5850	9211	2055	1827			
1971	FEDERAL FIRM SURPLUS/DEFICIT	152	-163	-375	232	-1190	213	4581	6790	7042	6173	6446	7870	10599	5883	3996			
1972	FEDERAL FIRM SURPLUS/DEFICIT	4333	4178	113	134	-1171	19	5160	5867	9626	8689	4707	7750	10935	7737	4760			
1973	FEDERAL FIRM SURPLUS/DEFICIT	4819	5127	191	397	-1088	547	7713	7383	8725	7854	7579	7843	10859	8879	4906			
1974	FEDERAL FIRM SURPLUS/DEFICIT	-877	-1080	-1039	404	-781	2143	1037	1596	6127	2974	3538	6018	9349	5795	3087			
1975	FEDERAL FIRM SURPLUS/DEFICIT	4203	5185	195	131	-1021	-129	1037	1596	6127	2974	3538	6018	9349	5795	3087			
1976	FEDERAL FIRM SURPLUS/DEFICIT	2552	2446	175	419	-211	4968	6132	4232	6386	7929	6166	7501	8692	5885	4469			
1977	FEDERAL FIRM SURPLUS/DEFICIT	5493	4443	2718	460	-1165	379	-161	-2893	-2133	-1108	-2369	3634	3928	277	1868			
1978	FEDERAL FIRM SURPLUS/DEFICIT	-1588	-1330	-995	439	-1282	-415	-508	-261	4523	6388	5131	5725	7173	3716				

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION VIII

REGIONAL SYSTEM EXHIBITS

THIS PAGE INTENTIONALLY LEFT BLANK

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

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												1995 FINAL WHITEBOOK:		01/22/96																							
O P E R A T I N G Y E A R												R U N D A T E:																									
												2002- 3		2003- 4		2004- 5		2005- 6																			
												AVG		AVG		AVG		AVG																			
1996-97												1997-98		1998-99		1999- 0		2000- 1		2001- 2		2002- 3		2003- 4		2004- 5		2005- 6									
AVG												AVG		AVG		AVG		AVG		AVG		AVG		AVG		AVG		AVG									
FIRM LOADS																																					
1/ SYSTEM FIRM LOADS												21356		21446		21564		21672		21777		21892		22025		22168		22326		22511							
2 EXPORTS												1283		1290		1393		1523		1499		1499		1576		1703		1574		1506							
3/ FED DIVERSITY												0		0		0		0		0		0		0		0		0		0							
4 FIRM LOADS												22638		22736		22957		23195		23276		23392		23601		23871		23900		24018							
NON-FIRM LOADS																																					
5 REGIONAL NON-FIRM LOADS												0		0		0		0		0		0		0		0		0		0		0					
6 TOTAL LOADS												22638		22736		22957		23195		23276		23392		23601		23871		23900		24018							
HYDRO RESOURCES																																					
7 REGULATED HYDRO												11129		11154		11120		11124		11128		11124		11123		11123		11123		11123		11123					
8 INDEPENDENT HYDRO												1089		1097		1097		1097		1096		1092		1091		1092		1091		1091		1091					
9 SUS. PKNG. ADJUSTMENT												0		0		0		0		0		0		0		0		0		0		0		0			
10 TOTAL HYDRO												12218		12251		12217		12220		12224		12215		12215		12215		12214		12214		12214					
OTHER RESOURCES																																					
11 SMALL THERMAL & MISC												69		70		69		69		68		64		64		65		65		65		64		64			
12 COMBUSTION TURBINES												569		570		570		570		570		570		570		570		570		570		570		570		570	
13 RENEWABLES												44		45		45		45		45		46		46		46		46		46		46		46		46	
14 COGENERATION												286		286		286		286		286		286		286		286		286		286		286		286		286	
15 IMPORTS												1834		1744		1642		1719		1720		1569		1596		1556		1446		1446		1440		1440			
16 CENTRALIA												1251		1273		1273		1273		1273		1231		1183		1253		1233		1233		1233		1233			
17 JIM BRIDGER												609		616		616		610		610		596		629		600		629		629		629		594		594	
18 COLSTRIP 1 & 2												342		341		340		340		338		331		331		331		331		331		331		331			
19 BOARDMAN												386		386		386		386		386		386		386		386		386		386		386		386		386	
20 VALMY												195		195		194		195		195		195		195		195		195		195		195		195		195	
21 COLSTRIP 3												503		503		502		502		501		496		495		496		495		495		495		495		495	
22 WNP 2												821		842		842		845		878		878		878		878		878		878		878		878		878	
23 COLSTRIP 4												623		623		623		623		623		623		623		623		623		623		623		623		623	
24 FED RESOURCE ACQUIS												0		0		0		0		0		0		0		0		0		0		0		0		0	
25 NON-UTILITY GENERATION												1055		1056		1048		1048		1048		1015		990		989		987		987		978		978		978	
26 TOTAL RESOURCES												20807		20800		20655		20732		20766		20502		20487		20488		20363		20334		20334		20334		20334	

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

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

M E D I U M L O A D S												1995 FINAL WHITEBOOK:		01/22/96							
OPERATING YEAR												RUN DATE:		01/22/96							
												2002- 2	2003- 3	2004- 4	2005- 5	2005- 6					
												AVG	AVG	AVG	AVG	AVG					
												-----	-----	-----	-----	-----					
												1996-97	1997-98	1998-99	1999- 0	2000- 1	2001- 2	2002- 3	2003- 4	2004- 5	2005- 6
												AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG
												-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MEGAWATTS												0	0	0	0	0	0	0	0	0	0
RESERVES & MAINTENANCE												15/	16/	17/	18/						
27 HYD, SM THRM & MISC RES												0	0	0	0	0	0	0	0	0	0
28 LARGE THERMAL RESERVES												0	0	0	0	0	0	0	0	0	0
29 BPA SPINNING RESERVES												0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE												-12	-12	-12	-12	-12	-12	-12	-12	-12	-12
												-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
31 NET RESOURCES												20795	20787	20642	20720	20754	20489	20474	20476	20350	20321
												-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
SURPLUS/DEFICITS																					
32 FIRM SURPLUS/DEFICIT												-1843	-1948	-2315	-2475	-2522	-2902	-3126	-3396	-3550	-3696
33 TOTAL SURPLUS/DEFICIT												-1843	-1948	-2315	-2475	-2522	-2902	-3126	-3396	-3550	-3696
												-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
34 EXTREME WEATHER ADJ.												0	0	0	0	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.												-1843	-1948	-2315	-2475	-2522	-2902	-3126	-3396	-3550	-3696
36 TOTAL S/D W/EXT WTHR. ADJ.												-1843	-1948	-2315	-2475	-2522	-2902	-3126	-3396	-3550	-3696

THIS PAGE INTENTIONALLY LEFT BLANK

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

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

1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS	AUG 1-15	AUG 16-31	1996-97 OPERATING YEAR												1995 FINAL WHITEBOOK:				
			SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG	RUN DATE: 01/22/96			
FIRM LOADS																			
1 SYSTEM FIRM LOADS	1/	19974	19974	19499	20195	22207	23736	24397	23299	21949	20681	20681	20067	20037	20227	21356			
2 EXPORTS	3/	1714	1714	1687	1162	1047	1021	1022	974	998	1029	1053	1204	1738	1783	1283			
3 FED DIVERSITY	4/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4 FIRM LOADS		21688	21688	21186	21357	23254	24757	25419	24273	22947	21710	21734	21271	21775	22010	22638			
NON-FIRM LOADS																			
5 REGIONAL NON-FIRM LOADS	2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6 TOTAL LOADS		21688	21688	21186	21357	23254	24757	25419	24273	22947	21710	21734	21271	21775	22010	22638			
HYDRO RESOURCES																			
7 REGULATED HYDRO	5/	10029	10216	9771	9632	10860	12117	9136	8725	8430	9176	11551	16613	17769	10005	11129			
8 INDEPENDENT HYDRO	6/	1048	1068	1008	995	922	975	799	813	960	1227	1283	1548	1576	1161	1089			
9 SUS. PKNG. ADJUSTMENT	7/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
10 TOTAL HYDRO		11077	11284	10779	10627	11782	13092	9935	9538	9390	10403	12834	18161	19345	11166	12218			
OTHER RESOURCES																			
11 SMALL THERMAL & MISC	8/	78	79	71	71	77	72	76	76	73	79	84	57	12	82	69			
12 COMBUSTION TURBINES	9/	580	580	580	580	728	723	723	738	580	580	580	291	150	580	569			
13 RENEWABLES	10/	48	48	48	48	48	48	48	48	48	48	48	5	48	48	44			
14 COGENERATION	11/	305	305	294	294	294	287	294	294	294	305	305	235	240	298	286			
15 IMPORTS	12/	1645	1645	1670	1773	2255	2388	2396	2334	1643	1470	1368	1152	1607	1731	1834			
16 CENTRALIA		1300	1300	1300	1300	1300	1300	1300	1300	1127	649	1127	1300	1300	1300	1251			
17 JIM BRIDGER		642	642	509	616	642	642	642	642	554	482	514	642	642	642	609			
18 COLSTRIP 1 & 2		371	374	358	359	357	349	355	355	361	187	321	242	357	379	342			
19 BOARDMAN		403	403	403	403	403	403	403	403	403	403	349	221	403	403	386			
20 VALMY		202	202	202	202	202	202	202	202	150	128	202	202	202	211	195			
21 COLSTRIP 3		537	540	528	527	521	526	526	526	530	539	327	314	527	543	503			
22 WNP 2		983	983	983	983	983	983	983	983	983	983	0	0	491	1010	821			
23 COLSTRIP 4		657	657	657	657	657	657	657	657	657	657	394	381	657	657	623			
24 FED RESOURCE ACQUIS	13/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
25 NON-UTILITY GENERATION	14/	1190	1191	1098	1006	983	973	961	989	1016	1142	1144	871	1181	1249	1055			
26 TOTAL RESOURCES		20018	20233	19479	19447	21238	22640	19501	19085	17809	18055	19597	24075	27162	20299	20807			

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

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

M E D I U M L O A D S

1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96															
1996-97 OPERATING YEAR															
	AUG 1-15 16-31	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15 16-30	APR 16-30	MAY	JUN	JUL	12 MO AVG
RESERVES & MAINTENANCE															
27 HYD, SM THRM & MISC RES	15/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 LARGE THERMAL RESERVES	16/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 BPA SPINNING RESERVES	17/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE	18/ -31	-26	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES	19987	20207	19470	19438	21234	22640	19501	19085	17804	18048	19589	24055	27147	20249	20795
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT	-1701	-1480	-1715	-1919	-2020	-2117	-5918	-5188	-5143	-3662	-2144	2784	5372	-1761	-1843
33 TOTAL SURPLUS/DEFICIT	-1701	-1480	-1715	-1919	-2020	-2117	-5918	-5188	-5143	-3662	-2144	2784	5372	-1761	-1843
34 EXTREME WEATHER ADJ.	19/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	-1701	-1480	-1715	-1919	-2020	-2117	-5918	-5188	-5143	-3662	-2144	2784	5372	-1761	-1843
36 TOTAL S/D W/EXT WTHR. ADJ.	-1701	-1480	-1715	-1919	-2020	-2117	-5918	-5188	-5143	-3662	-2144	2784	5372	-1761	-1843

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

1995 FINAL WHITEBOOK: 01/22/96														
RUN DATE: 01/22/96														
M E D I U M L O A D S														
2000- 1 OPERATING YEAR														
1937 WATER YEAR														
ENERGY IN AVERAGE MEGAWATTS														
FIRM LOADS														
1 SYSTEM FIRM LOADS														
2 EXPORTS														
3 FED DIVERSITY														
4 FIRM LOADS														
NON-FIRM LOADS														
5 REGIONAL NON-FIRM LOADS														
6 TOTAL LOADS														
HYDRO RESOURCES														
7 REGULATED HYDRO														
8 INDEPENDENT HYDRO														
9 SUS. PKNG. ADJUSTMENT														
10 TOTAL HYDRO														
OTHER RESOURCES														
11 SMALL THERMAL & MISC														
12 COMBUSTION TURBINES														
13 RENEWABLES														
14 COGENERATION														
15 IMPORTS														
16 CENTRALIA														
17 JIM BRIDGER														
18 COLSTRIP 1 & 2														
19 BOARDMAN														
20 VALMY														
21 COLSTRIP 3														
22 WNP 2														
23 COLSTRIP 4														
24 FED RESOURCE ACQUIS														
25 NON-UTILITY GENERATION														
26 TOTAL RESOURCES														
12 MO														
AUG.														

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

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

M E D I U M L O A D S

1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96															
2000- 1 OPERATING YEAR															
1937 WATER YEAR ENERGY IN AVERAGE MEGAWATTS															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
RESERVES & MAINTENANCE															
27 HYD, SM THERM & MISC RES	15/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 LARGE THERMAL RESERVES	16/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 BPA SPINNING RESERVES	17/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE	18/ -31	-26	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES	20144	20232	19242	19690	21088	22536	18106	17785	18306	18552	16421	23955	30241	20419	20754
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT	-2091	-2003	-2475	-2353	-2841	-2923	-7991	-7194	-5336	-3832	-5986	2071	7893	-2163	-2522
33 TOTAL SURPLUS/DEFICIT	-2091	-2003	-2475	-2353	-2841	-2923	-7991	-7194	-5336	-3832	-5986	2071	7893	-2163	-2522
34 EXTREME WEATHER ADJ.	19/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	-2091	-2003	-2475	-2353	-2841	-2923	-7991	-7194	-5336	-3832	-5986	2071	7893	-2163	-2522
36 TOTAL S/D W/EXT WTHR. ADJ.	-2091	-2003	-2475	-2353	-2841	-2923	-7991	-7194	-5336	-3832	-5986	2071	7893	-2163	-2522

TABLE 1: PACIFIC, NORTHWEST REGIONAL AREA

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

1995 FINAL WHITEBOOK: 01/22/96															
RUN DATE: 01/22/96															
M E D I U M L O A D S															
2005- 6 OPERATING YEAR															
1937 WATER YEAR															
ENERGY IN AVERAGE MEGAWATTS															
FIRM LOADS															
1 SYSTEM FIRM LOADS															
2 EXPORTS															
3 FED DIVERSITY															
4 FIRM LOADS															
NON-FIRM LOADS															
5 REGIONAL NON-FIRM LOADS															
6 TOTAL LOADS															
HYDRO RESOURCES															
7 REGULATED HYDRO															
8 INDEPENDENT HYDRO															
9 SUS. PKNG. ADJUSTMENT															
10 TOTAL HYDRO															
OTHER RESOURCES															
11 SMALL THERMAL & MISC															
12 COMBUSTION TURBINES															
13 RENEWABLES															
14 COGENERATION															
15 IMPORTS															
16 CENTRALIA															
17 JIM BRIDGER															
18 COLSTRIP I & 2															
19 BOARDMAN															
20 VALMY															
21 COLSTRIP 3															
22 WNP 2															
23 COLSTRIP 4															
24 FED RESOURCE ACQUIS															
25 NON-UTILITY GENERATION															
26 TOTAL RESOURCES															

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

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

1995 FINAL WHITEBOOK: 01/22/96															
RUN DATE: 01/22/96															
M E D I U M L O A D S															
2005- 6 OPERATING YEAR															
1937 WATER YEAR															
ENERGY IN AVERAGE MEGAWATTS															
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG
RESERVES & MAINTENANCE															
27 HYD, SM THRM & MISC RES	15/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 LARGE THERMAL RESERVES	16/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 BPA SPINNING RESERVES	17/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 HYDRO MAINTENANCE	18/ -31	-25	-9	-9	-4	0	0	0	-5	-7	-8	-20	-15	-50	-12
31 NET RESOURCES	19889	19978	19213	19354	20719	22185	17610	17084	17315	17769	16324	23364	29907	20125	20321
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT	-3012	-2924	-3146	-3369	-3957	-4033	-9205	-8614	-7044	-5313	-6744	863	6984	-3838	-3696
33 TOTAL SURPLUS/DEFICIT	-3012	-2924	-3146	-3369	-3957	-4033	-9205	-8614	-7044	-5313	-6744	863	6984	-3838	-3696
34 EXTREME WEATHER ADJ.	19/ 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 FIRM S/D W/EXT WEATHER ADJ.	-3012	-2924	-3146	-3369	-3957	-4033	-9205	-8614	-7044	-5313	-6744	863	6984	-3838	-3696
36 TOTAL S/D W/EXT WTHR. ADJ.	-3012	-2924	-3146	-3369	-3957	-4033	-9205	-8614	-7044	-5313	-6744	863	6984	-3838	-3696

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 23
REGIONAL MONTHLY 50-HOUR CAPACITY
SURPLUSES AND DEFICITS UNDER MEDIUM LOADS
USING 1937 WATER CONDITIONS

EXHIBIT 23

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

REGIONAL FIRM 50-HOUR CAPACITY SURPLUS/DEFICIT

INCLUDING EXTREME WEATHER ADJUSTMENTS DURING NOVEMBER THROUGH FEBRUARY

20 YEAR MONTHLY SUMMARY

ASSUMING NO NIGHTTIME RETURN CONSTRAINTS,
EXISTING REGIONAL CONTRACTS, AND NO NEW RESOURCE ACQUISITIONS

M E D I U M L O A D S

1937 WATER YEAR													1995 FINAL			WHITEBOOK: RUN DATE: 01/22/96	
AUG 1-15		AUG 16-31		SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL		
PEAK IN MEGAWATTS																	
1996-97	1857	1907	2186	1273	-402	-1665	-5779	-5464	-844	-233	1181	3852	5121	1830			
1997-98	2127	2080	2309	946	-405	-1930	-5977	-5721	-625	-650	345	3383	4859	1536			
1998-99	1629	1660	1565	497	-2173	-1564	-6364	-6246	-1126	-1392	-27	2627	4205	2641			
1999-00	1742	1011	1280	227	-2144	-2561	-7005	-6631	-1781	-1202	-3046	2260	4047	712			
2000-01	1609	874	943	185	-2372	-2790	-7214	-6911	-1702	-1375	-3071	2379	3842	676			
2001-02	1785	1050	1043	304	-2705	-2912	-7636	-7302	-3068	-1915	-3538	1937	3949	675			
2002-03	1539	803	1068	58	-2459	-3184	-7876	-8096	-3355	-2856	-4139	1539	3152	-125			
2003-04	700	-28	69	-802	-3352	-4060	-9061	-8690	-3753	-2774	-4354	1231	3108	-288			
2004-05	610	-125	-74	-1500	-4448	-4619	-9238	-8902	-4476	-2374	-4166	1367	3105	-243			
2005-06	536	-200	152	-1348	-4334	-4773	-9362	-8953	-4130	-3055	-4441	798	2838	462			

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

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

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

M E D I U M L O A D S													1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96			
1996-97 OPERATING YEAR																

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

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

1995 FINAL WHITEBOOK: 01/22/96																
RUN DATE: 01/22/96																
M E D I U M L O A D S																
1996-97 OPERATING YEAR																
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL		
RESERVES & MAINTENANCE																
27 HYD, SM THERM & MISC RES	15/-1692	-1680	-1710	-1656	-1712	-1726	-1728	-1733	-1691	-1685	-1662	-1577	-1663	-1689		
28 LARGE THERMAL RESERVES	16/-1013	-1013	-958	-976	-1014	-992	-995	-998	-933	-791	-761	-829	-854	-1010		
29 BPA SPINNING RESERVES	17/-295	-296	-297	-307	-351	-378	-302	-300	-297	-297	-326	-397	-402	-295		
30 HYDRO MAINTENANCE	18/-4604	-4042	-3787	-3208	-2935	-2037	-1561	-2288	-2631	-2751	-2483	-2360	-2202	-3721		
31 NET RESOURCES	29632	29681	29693	30147	33652	35180	31994	31566	29581	28610	30079	31337	33162	29574		
SURPLUS/DEFICITS																
32 FIRM SURPLUS/DEFICIT	1857	1907	2186	1273	3276	2311	-1692	-1449	-844	-233	1181	3852	5121	1830		
33 TOTAL SURPLUS/DEFICIT	1737	1787	2084	1199	3143	2224	-1845	-1549	-994	-354	1060	3763	4977	1710		
34 EXTREME WEATHER ADJ.	0	0	0	0	-3678	-3976	-4087	-4015	0	0	0	0	0	0		
35 FIRM S/D W/EXT WEATHER ADJ.	1857	1907	2186	1273	-402	-1665	-5779	-5464	-844	-233	1181	3852	5121	1830		
36 TOTAL S/D W/EXT WTHR. ADJ.	1737	1787	2084	1199	-535	-1752	-5932	-5564	-994	-354	1060	3763	4977	1710		

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

1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96																
2000- 1 OPERATING YEAR																
1937 WATER YEAR PEAK IN MEGAWATTS																
FIRM LOADS																
1	SYSTEM FIRM LOADS	1/	26080	26080	25903	28417	30605	32823	33588	33033	30691	28987	28987	27386	26636	26152
2	EXPORTS	3/	3659	3659	3597	2940	2158	2169	2174	2149	2119	2138	2190	2399	3684	3753
3	FED DIVERSITY	4/	-978	-978	-998	-1091	-1045	-788	-802	-805	-1038	-963	-958	-1035	-1011	-956
4	FIRM LOADS		28761	28761	28502	30265	31717	34203	34960	34377	31772	30162	30219	28750	29310	28949
NON-FIRM LOADS																
5	REGIONAL NON-FIRM LOADS	2/	111	111	101	72	133	83	154	141	153	120	120	90	145	122
6	TOTAL LOADS		28872	28871	28603	30338	31850	34287	35114	34518	31926	30283	30339	28840	29455	29071
HYDRO RESOURCES																
5/	REGULATED HYDRO		29535	29356	29914	28947	29774	29487	29658	29666	29268	28812	28602	28222	29394	29338
6/	INDEPENDENT HYDRO		1846	1831	1808	1798	1781	1751	1701	1814	1895	1928	1943	2013	2028	1923
7/	SUS. PKNG. ADJUSTMENT		-3422	-4555	-4985	-4050	-3628	-2003	-6557	-6310	-5979	-5228	-6442	-1200	-1500	-5110
10	TOTAL HYDRO		27959	26632	26737	26695	27927	29235	24802	25170	25184	25512	24103	29035	29922	26151
OTHER RESOURCES																
8/	SMALL THERMAL & MISC		89	89	80	82	191	187	188	184	82	83	79	44	45	103
9/	COMBUSTION TURBINES		719	719	719	719	1417	1417	1417	1417	719	719	719	69	185	719
10/	RENEWABLES		53	53	53	53	53	53	53	53	53	53	53	6	53	53
11/	COGENERATION		340	340	329	329	329	309	329	329	329	340	340	340	340	320
12/	IMPORTS		1774	1774	1330	1877	2352	2634	2919	2929	2464	1642	1369	1770	1950	1836
15	CENTRALIA		1340	1340	1340	1340	1340	1340	1340	1340	1340	670	1340	1340	1340	1340
16	JIM BRIDGER		693	693	692	693	692	693	693	693	692	520	519	519	693	693
17	COLSTRIP 1 & 2		406	406	388	392	398	392	394	387	392	197	385	196	397	433
18	BOARDMAN		507	507	507	507	507	507	507	507	507	507	507	507	507	507
19	VALMY		242	242	242	242	242	242	242	242	242	242	242	242	242	242
20	COLSTRIP 3		568	568	556	559	563	559	560	556	559	560	554	558	562	587
21	WNP 2		1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	0	0	0	1170
22	COLSTRIP 4		720	720	720	720	720	720	720	720	720	720	720	720	720	720
23	FED RESOURCE ACQUIS	13/	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	NON-UTILITY GENERATION	14/	1414	1414	1321	1231	1187	1164	1162	1188	1223	1367	1364	920	1318	1474
25	TOTAL RESOURCES		37994	36667	36184	36609	39088	40622	36496	36885	35676	34302	32294	36266	38274	36348

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

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

1937 WATER YEAR PEAK IN MEGAWATTS	M E D I U M L O A D S												1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96		
	2000-1 OPERATING YEAR														
	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	
RESERVES & MAINTENANCE															
27 HYD SM THRM & MISC RES	15/-1709	-1699	-1720	-1667	-1745	-1727	-1734	-1741	-1687	-1674	-1664	-1590	-1677	-1705	
28 LARGE THERMAL RESERVES	16/-996	-996	-935	-960	-945	-974	-976	-981	-990	-793	-745	-788	-838	-1000	
29 BPA SPINNING RESERVES	17/-315	-296	-297	-322	-342	-398	-302	-300	-297	-297	-254	-399	-405	-296	
30 HYDRO MAINTENANCE	18/-4604	-4041	-3787	-3208	-2935	-2037	-1561	-2288	-2631	-2751	-2483	-2360	-2202	-3721	
31 NET RESOURCES	30370	29635	29445	30451	33122	35486	31923	31575	30071	28787	27148	31129	33152	29625	
SURPLUS/DEFICITS															
32 FIRM SURPLUS/DEFICIT	1609	874	943	185	1405	1283	-3038	-2801	-1702	-1375	-3071	2379	3842	676	
33 TOTAL SURPLUS/DEFICIT	1498	763	842	113	1272	1199	-3191	-2942	-1855	-1495	-3191	2289	3697	554	
34 EXTREME WEATHER ADJ. 19/	0	0	0	0	-3777	-4073	-4176	-4110	0	0	0	0	0	0	
35 FIRM S/D W/EXT WEATHER ADJ.	1609	874	943	185	-2372	-2790	-7214	-6911	-1702	-1375	-3071	2379	3842	676	
36 TOTAL S/D W/EXT WTHR. ADJ.	1498	763	842	113	-2505	-2874	-7367	-7052	-1855	-1495	-3191	2289	3697	554	

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

1937 WATER YEAR PEAK IN MEGAWATTS															1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96														
M E D I U M L O A D S																													
2004- 5 OPERATING YEAR																													
FIRM LOADS															NON-FIRM LOADS														
1/ SYSTEM FIRM LOADS															5/ REGIONAL NON-FIRM LOADS														
2/ EXPORTS															6/ TOTAL LOADS														
3/ FED DIVERSITY															HYDRO RESOURCES														
4/ FIRM LOADS															7/ REGULATED HYDRO														
NON-FIRM LOADS															8/ INDEPENDENT HYDRO														
5/ REGIONAL NON-FIRM LOADS															9/ SUS. PKNG. ADJUSTMENT														
6/ TOTAL LOADS															10/ TOTAL HYDRO														
HYDRO RESOURCES															OTHER RESOURCES														
7/ REGULATED HYDRO															11/ SMALL THERMAL & MISC														
8/ INDEPENDENT HYDRO															12/ COMBUSTION TURBINES														
9/ SUS. PKNG. ADJUSTMENT															13/ RENEWABLES														
10/ TOTAL HYDRO															14/ COGENERATION														
OTHER RESOURCES															15/ IMPORTS														
11/ SMALL THERMAL & MISC															16/ CENTRALIA														
12/ COMBUSTION TURBINES															17/ JIM BRIDGER														
13/ RENEWABLES															18/ COLSTRIP 1 & 2														
14/ COGENERATION															19/ BOARDMAN														
15/ IMPORTS															20/ VALMY														
16/ CENTRALIA															21/ COLSTRIP 3														
17/ JIM BRIDGER															22/ WNP 2														
18/ COLSTRIP 1 & 2															23/ COLSTRIP 4														
19/ BOARDMAN															24/ FED RESOURCE ACQUIS														
20/ VALMY															25/ NON-UTILITY GENERATION														
21/ COLSTRIP 3															26/ TOTAL RESOURCES														
22/ WNP 2																													
23/ COLSTRIP 4																													
24/ FED RESOURCE ACQUIS																													
25/ NON-UTILITY GENERATION																													
26/ TOTAL RESOURCES																													

SHEET 2 OF 2

TABLE 1: PACIFIC NORTHWEST REGIONAL AREA

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

1937 WATER YEAR PEAK IN MEGAWATTS		M E D I U M L O A D S												1995 FINAL WHITEBOOK: 01/22/96 RUN DATE: 01/22/96				
		2004- 5 OPERATING YEAR												APR 1-15	APR 16-30	MAY	JUN	JUL
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR								
RESERVES & MAINTENANCE																		
27 HYD, SM THERM & MISC RES	15/	-1706	-1696	-1720	-1667	-1745	-1728	-1735	-1742	-1687	-1674	-1664	-1591	-1678	-1700			
28 LARGE THERMAL RESERVES	16/	-981	-981	-909	-912	-896	-965	-967	-972	-846	-882	-761	-803	-829	-977			
29 BPA SPINNING RESERVES	17/	-315	-296	-297	-322	-342	-398	-302	-300	-297	-297	-254	-399	-405	-296			
30 HYDRO MAINTENANCE	18/	-4605	-4042	-3787	-3208	-2935	-2037	-1561	-2289	-2632	-2751	-2483	-2360	-2202	-3721			
31 NET RESOURCES		30266	29531	29325	29770	32434	35049	31218	30879	28530	29000	27209	31220	33089	29387			
SURPLUS/DEFICITS																		
32 FIRM SURPLUS/DEFICIT		610	-125	-74	-1500	-576	-451	-4956	-4685	-4476	-2374	-4166	1367	3105	-243			
33 TOTAL SURPLUS/DEFICIT		479	-256	-177	-1571	-710	-535	-5107	-4785	-4625	-2483	-4276	1273	2971	-365			
34 EXTREME WEATHER ADJ.	19/	0	0	0	0	-3872	-4168	-4282	-4217	0	0	0	0	0	0			
35 FIRM S/D W/EXT WEATHER ADJ.		610	-125	-74	-1500	-4448	-4619	-9238	-8902	-4476	-2374	-4166	1367	3105	-243			
36 TOTAL S/D W/EXT WTHR. ADJ.		479	-256	-177	-1571	-4582	-4703	-9389	-9002	-4625	-2483	-4276	1273	2971	-365			

REGIONAL FOOTNOTES

For Exhibits 9 through 16

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

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

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

5. Regulated hydro includes those hydro dams where the firm energy generation of the dam is affected by the release of stored water from upstream reservoirs. Regulated hydro generation is determined by completing a hydro regulation study of the Pacific Northwest hydro system.
6. Independent hydro includes those hydro dams where no reservoirs exist upstream to release stored water and the firm energy is based on fixed historical flows. Hydro independents are not changed as a part of the hydro regulation study.
7. Sustained peaking adjustment is a percentage reduction applied to the Federal hydro system to meet a capacity load of 50 hours per week. This adjustment also includes reductions for Federal hydro maintenance, spinning reserves, forced outage reserves, and summer flow augmentation on the Lower Snake River and John Day hydro projects.
8. Small thermal and miscellaneous resources include: IPC: Energy Management Systems; MPC: regional Bird and Corlette; PGE: Summit 1 & 2; PSP&L: Crystal Mountain and Shuffleton; SCL: Boundary; and TPU: Steam Plant 2.
9. Combustion turbines include: Clark: River Road (Cogentrix); IPC: Wood River; PGE: Bethel and Beaver; PSP&L: Whidbey Island, Whitehorn, Fredrickson, and Fredonia; and WWP: Northeast units.
10. Renewables include: Consumer: Coffin Butte; Emerald County PUD: Short Mountain; and WWP: Kettle Falls.
11. Cogeneration includes: EWEB: WEYCO Energy Center; Snohomish: County PUD Scott Paper; and PGE: Coyote Springs. Longview Fibre output is sold outside the region to WAPA.
12. Regional imports include: Anaheim to BPA, exchange energy; Azusa to BPA, seasonal exchange; Burbank to BPA, exchange energy and supplemental energy; Glendale to BPA, exchange energy and supplemental energy; Imperial to BPA, seasonal exchange; Pasadena to BPA, two exchange energy contracts and a seasonal exchange; Riverside to BPA; two exchange energy contracts and a diversity exchange; SMUD to BPA, deferred energy return; SDG&E to BPA, exchange energy and deferred energy return; Sierra to BPA, for Harney and Wells; SCE to BPA, exchange energy, supplemental energy, option energy, and environmental storage; Basin Electric to BPA, power sale; BC Hydro to BPA, for PGE ICP; PP&L (Wyoming) to BPA, Southern Idaho transfer; Trans Alta to BPA, power sale; PowerEx to EWEB, power sale; SCE to PP&L, power sale; Glendale to PGE, seasonal power exchange; SCE to PGE, seasonal power exchange; BC Hydro to PSP&L, power sale; PG&E to PSP&L, seasonal power exchange; BC Hydro to SCL, Ross; PG&E to SCL, seasonal power exchange; and NCPA to SCL, seasonal power exchange.

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

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

EXHIBITS 27 - 36
REGIONAL ENERGY SURPLUSES AND DEFICITS FOR
50 HISTORICAL WATER CONDITIONS

EXHIBIT 27

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

ENERGY IN AVERAGE MEGAWATTS		1996-97 OPERATING YEAR												1995 FINAL WHITEBOOK:				01/22/96 12 MO AVG	
														RUN DATE:					
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL				
1929	REGIONAL	FIRM	SURPLUS/DEFICIT	540	-2654	-1815	225	-1984	-1739	-3274	-3876	-1508	-3718	-3205	5527	3292	-2791	-1038	
1930	REGIONAL	FIRM	SURPLUS/DEFICIT	-4898	-3407	-3767	-629	-2172	-3684	-3780	-1993	-2850	-3560	-4	2793	1592	-2423	-1904	
1931	REGIONAL	FIRM	SURPLUS/DEFICIT	-2641	-2596	-3715	-557	-2155	-3090	-4384	-3596	-4070	-2473	-3297	4056	580	-1751	-2016	
1932	REGIONAL	FIRM	SURPLUS/DEFICIT	-2570	-2520	-3333	-903	-2056	-3020	-5584	-4641	1862	5507	6558	5749	10031	4195	482	
1933	REGIONAL	FIRM	SURPLUS/DEFICIT	-964	-1064	-1720	-1888	-1948	-2017	-5029	-2742	3775	1881	3939	4382	11064	8060	2448	
1934	REGIONAL	FIRM	SURPLUS/DEFICIT	-3903	-2768	-1727	-292	-1984	-2076	-10529	-7574	6815	10084	8663	8027	5962	-1775	4908	
1935	REGIONAL	FIRM	SURPLUS/DEFICIT	-2277	-2596	-3028	-1947	-1984	-2076	-1716	-1642	-949	-2135	2029	5551	7776	3846	671	
1936	REGIONAL	FIRM	SURPLUS/DEFICIT	323	-1492	-1715	-1910	-2032	-3203	-3910	-4610	-1047	-1128	6647	8395	6843	560	-38	
1937	REGIONAL	FIRM	SURPLUS/DEFICIT	-1701	-1480	-1715	-1919	-2020	-2117	-5918	-5188	-5143	-3662	-2144	2784	5372	-1761	-1843	
1938	REGIONAL	FIRM	SURPLUS/DEFICIT	-3463	-2380	-1945	-1917	-1987	-2219	-2520	-1337	-2154	-2372	7177	8277	8777	3061	1660	
1939	REGIONAL	FIRM	SURPLUS/DEFICIT	-981	-1489	-1724	-1887	-2024	-2128	-3647	-3222	-898	-929	1623	6484	5639	239	-338	
1940	REGIONAL	FIRM	SURPLUS/DEFICIT	-1161	-1471	-1812	-1896	-2027	-2109	-2431	-3115	545	1821	1932	3588	5860	-755	-299	
1941	REGIONAL	FIRM	SURPLUS/DEFICIT	-2488	-3596	-2207	-1895	-2032	-2774	-2267	-3142	-2150	-2613	-1926	2291	3943	-1929	-1458	
1942	REGIONAL	FIRM	SURPLUS/DEFICIT	-4579	-3979	-2822	-1876	-1964	-435	-1919	128	-1454	-488	3224	2425	7113	4689	401	
1943	REGIONAL	FIRM	SURPLUS/DEFICIT	-1118	-1314	-1726	-1916	-2037	-2042	-5069	4031	3624	10115	10491	6766	9023	383	3098	
1944	REGIONAL	FIRM	SURPLUS/DEFICIT	1051	-1516	-1727	-1920	-2002	-2044	-3128	-2635	-2534	-3922	-4177	2659	963	-2079	-1561	
1945	REGIONAL	FIRM	SURPLUS/DEFICIT	-3733	-3536	-2829	-1886	-2039	-3306	-5683	-3567	-4782	-3388	-3345	5463	9023	383	-1352	
1946	REGIONAL	FIRM	SURPLUS/DEFICIT	-2769	-1479	-2093	-1922	-2021	-2112	-231	3942	4456	4362	8368	9109	8850	4643	3144	
1947	REGIONAL	FIRM	SURPLUS/DEFICIT	-777	-1498	-1728	-1910	-1787	-2836	-5938	5684	5450	6116	6820	9340	7807	2766	3277	
1948	REGIONAL	FIRM	SURPLUS/DEFICIT	-414	-1519	-1727	-1920	-2002	-2044	-3128	5124	5913	2311	7259	9518	13193	5265	4212	
1949	REGIONAL	FIRM	SURPLUS/DEFICIT	4783	-4680	-1727	-1920	-2002	-2044	-3128	282	6865	5915	7713	9023	8664	-136	2327	
1950	REGIONAL	FIRM	SURPLUS/DEFICIT	-1712	-2073	-1735	-1215	-1503	-2043	-2065	282	6865	5915	7713	9023	8664	-136	2327	
1951	REGIONAL	FIRM	SURPLUS/DEFICIT	4043	1735	-2182	-1897	-2037	-2059	-3870	9304	8515	9646	8822	10034	8481	5176	5712	
1952	REGIONAL	FIRM	SURPLUS/DEFICIT	3365	-1492	-1735	-1913	-2034	-2934	-2675	5145	3104	7625	10050	9988	8099	2475	3687	
1953	REGIONAL	FIRM	SURPLUS/DEFICIT	259	-511	-1756	-1084	-189	-265	-5760	3844	1396	5182	5651	8275	10611	6333	3620	
1954	REGIONAL	FIRM	SURPLUS/DEFICIT	2131	-1176	-1723	-1913	-2034	-2934	-2675	5145	3104	7625	10050	9988	8099	2475	3687	
1955	REGIONAL	FIRM	SURPLUS/DEFICIT	5274	-5104	-1436	-293	-1203	-1263	-5475	7274	5095	5182	5651	8275	10611	6333	3620	
1956	REGIONAL	FIRM	SURPLUS/DEFICIT	4698	-715	-1725	-626	-1639	-1616	-1616	313	736	282	-66	2409	11251	9380	5704	
1957	REGIONAL	FIRM	SURPLUS/DEFICIT	4683	160	-1730	-629	-1639	-1616	-1616	313	736	282	-66	2409	11251	9380	5704	
1958	REGIONAL	FIRM	SURPLUS/DEFICIT	-1175	-1484	-1716	-1909	-2042	-2085	-2810	3857	5844	6228	3898	8555	11763	946	3169	
1959	REGIONAL	FIRM	SURPLUS/DEFICIT	-1347	-1479	-1717	-1909	-2042	-2085	-2810	3857	5844	6228	3898	8555	11763	946	3169	
1960	REGIONAL	FIRM	SURPLUS/DEFICIT	4514	-539	-629	-5496	-4242	-1674	-4506	1743	6086	9494	6381	4655	8279	4763	4333	
1961	REGIONAL	FIRM	SURPLUS/DEFICIT	1665	-1508	-1730	-1887	-1469	-2072	-4293	6649	6311	4234	1742	6768	11651	564	2679	
1962	REGIONAL	FIRM	SURPLUS/DEFICIT	-942	-1494	-1945	-1915	-2003	-2078	-911	660	813	5626	8787	7455	3417	1430	1991	
1963	REGIONAL	FIRM	SURPLUS/DEFICIT	-255	-1505	-1729	-1418	-402	-899	2691	5191	1415	1607	3333	4006	8112	3537	1991	
1964	REGIONAL	FIRM	SURPLUS/DEFICIT	-338	-1487	-1731	-1886	-1945	-2055	-9336	1165	1218	3455	3683	4006	12074	8293	2186	
1965	REGIONAL	FIRM	SURPLUS/DEFICIT	4918	101	-1739	-21	-377	-4066	9136	9323	7060	6512	9517	7506	10416	3932	4985	
1966	REGIONAL	FIRM	SURPLUS/DEFICIT	3275	1730	-1750	-1060	-1316	-1544	-3647	-292	683	4297	2553	4846	7113	4274	1711	
1967	REGIONAL	FIRM	SURPLUS/DEFICIT	-491	-1497	-1729	-1891	-2014	-2014	-5711	5660	4005	2508	459	4462	12632	6673	2665	
1968	REGIONAL	FIRM	SURPLUS/DEFICIT	4915	280	-1724	-923	-994	-1762	-4339	4058	4266	-534	263	3839	9142	4382	2257	
1969	REGIONAL	FIRM	SURPLUS/DEFICIT	2204	158	-1256	698	-1323	-408	8931	6270	6250	10011	10199	9706	8411	4555	4715	
1970	REGIONAL	FIRM	SURPLUS/DEFICIT	-1319	-1493	-1745	-1572	-2056	-2054	1542	2421	1813	-1791	758	8188	11138	1317	1256	
1971	REGIONAL	FIRM	SURPLUS/DEFICIT	-1615	-1468	-1765	-2111	-2352	-1934	7764	9538	8537	6910	7689	8981	13502	7022	4412	
1972	REGIONAL	FIRM	SURPLUS/DEFICIT	4920	3507	-1837	-1489	-1333	-730	7228	9374	11248	11290	6738	10526	13857	10693	5893	
1973	REGIONAL	FIRM	SURPLUS/DEFICIT	5602	6023	-2837	-471	-1400	-120	-373	455	-1981	-2222	-830	2499	3245	-1490	254	
1974	REGIONAL	FIRM	SURPLUS/DEFICIT	-1618	-2428	-2968	-1987	-2555	1791	11006	10021	10480	9959	10153	10162	14501	11451	5828	
1975	REGIONAL	FIRM	SURPLUS/DEFICIT	4961	5434	-1800	-1849	-2127	-1447	4369	2342	5642	1794	3766	6363	11732	7653	5238	
1976	REGIONAL	FIRM	SURPLUS/DEFICIT	2242	935	-1840	-398	-1895	6810	9053	7904	6640	9346	7585	8408	10452	6144	5427	
1977	REGIONAL	FIRM	SURPLUS/DEFICIT	5902	5145	-2038	-690	-2015	-1946	-1118	-2325	-2248	-4089	-4868	1619	127	-3268	1192	
1978	REGIONAL	FIRM	SURPLUS/DEFICIT	-3081	-2732	-4004	-2068	-2618	-2065	-2162	1056	3914	6674	6230	6096	8449	4163		

EXHIBIT 28

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

ENERGY IN AVERAGE MEGAWATTS		1997-98 OPERATING YEAR												1995 FINAL WHITEBOOK: 01/22/96				RUN DATE: 01/22/96			
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG	AUG	AUG	AUG		
1929	REGIONAL	540	2658	-1842	-786	-3254	-2157	-3209	-3091	-1896	-3704	-2999	5448	3155	-2699	-1228	FIRM	SURPLUS/DEFICIT			
1930	REGIONAL	-2365	-2469	-4823	-1595	-2860	-3526	-4325	-1795	-2222	-3603	-365	2714	3113	-3485	-1934	FIRM	SURPLUS/DEFICIT			
1931	REGIONAL	-2576	-2582	-4396	-1359	-2917	-2922	-5167	-3919	-2516	-2745	-3663	4150	1657	-2250	-2118	FIRM	SURPLUS/DEFICIT			
1932	REGIONAL	-2106	-2774	-3945	-1359	-2588	-3130	-5797	-4826	1967	5522	6230	5741	9883	4051	267	FIRM	SURPLUS/DEFICIT			
1933	REGIONAL	-863	-1170	-1854	-2085	-2190	-2240	-4607	3247	3182	1892	3636	4306	10868	8309	2325	FIRM	SURPLUS/DEFICIT			
1934	REGIONAL	3857	2891	-1861	-319	1318	7209	10345	8046	7276	9913	8351	7996	6988	2387	4760	FIRM	SURPLUS/DEFICIT			
1935	REGIONAL	-2089	-2093	-4073	-2145	-2251	-2329	-2585	1904	-1486	-2222	1329	5393	7128	3618	484	FIRM	SURPLUS/DEFICIT			
1936	REGIONAL	-1759	-1684	-1853	-2142	-2262	-3527	-3388	-4858	-1410	-1079	-2733	2693	5275	-1799	-178	FIRM	SURPLUS/DEFICIT			
1937	REGIONAL	-3328	-1813	-2312	-2130	-2251	-2875	-5466	-1802	-2347	-2337	6852	8021	8568	2851	1497	FIRM	SURPLUS/DEFICIT			
1938	REGIONAL	-1220	-1683	-1853	-2103	-2335	-2934	-3234	-2058	1246	1325	942	3519	5584	106	-472	FIRM	SURPLUS/DEFICIT			
1939	REGIONAL	-1737	-2930	-2842	-2093	-2261	-3757	-2029	-3699	-2514	-2540	-2283	2208	4085	-1780	-1619	FIRM	SURPLUS/DEFICIT			
1940	REGIONAL	-3453	-3280	-3148	-2064	-2216	-1086	-1558	178	-835	-467	2509	2045	7364	3902	279	FIRM	SURPLUS/DEFICIT			
1941	REGIONAL	-504	-1245	-1859	-2120	-2262	-2282	-4319	3543	4545	9925	10157	6670	10563	3567	-1613	FIRM	SURPLUS/DEFICIT			
1942	REGIONAL	1056	-1145	-1860	-2107	-2266	-2256	-3877	-2434	-2840	-3949	-4532	2586	2543	198	-1556	FIRM	SURPLUS/DEFICIT			
1943	REGIONAL	-3293	-3641	-2904	-2116	-2283	-4317	-6086	-3789	-4419	-3886	-4252	5436	8893	198	-1556	FIRM	SURPLUS/DEFICIT			
1944	REGIONAL	-2285	-1671	-2488	-2136	-2247	-2329	-5940	6555	5128	5930	6561	7214	7604	2935	3034	FIRM	SURPLUS/DEFICIT			
1945	REGIONAL	-759	-1690	-1864	-2110	-2187	-2173	-5940	6555	5128	5930	6561	7214	7604	2935	3034	FIRM	SURPLUS/DEFICIT			
1946	REGIONAL	-335	-4992	-1860	-1845	-2201	-2270	-269	364	5985	5922	7382	8994	8475	-62	2238	FIRM	SURPLUS/DEFICIT			
1947	REGIONAL	4800	1681	-2548	-2109	-2234	-2273	4305	6888	6888	8066	7407	6813	12172	8599	3509	FIRM	SURPLUS/DEFICIT			
1948	REGIONAL	-1770	2705	-1862	-479	1029	5017	5889	8953	8557	9908	8581	10228	8415	5057	5523	FIRM	SURPLUS/DEFICIT			
1949	REGIONAL	4348	887	-1889	524	-2119	683	5884	5022	3823	7647	9720	9908	7960	2452	3618	FIRM	SURPLUS/DEFICIT			
1950	REGIONAL	4078	615	-1859	-2124	-2221	-3460	3583	2637	1764	502	1536	5314	11372	2452	3618	FIRM	SURPLUS/DEFICIT			
1951	REGIONAL	5273	5059	-1856	-2049	-2207	-1646	5504	7646	5526	5272	5625	2330	11112	9080	2680	FIRM	SURPLUS/DEFICIT			
1952	REGIONAL	4655	-667	-1859	-1365	-2263	-2325	2785	7463	6308	6724	4693	5708	10862	5511	3649	FIRM	SURPLUS/DEFICIT			
1953	REGIONAL	-1017	-1676	-1850	-2106	-2161	-2325	2785	7463	6308	6724	4693	5708	10862	5511	3649	FIRM	SURPLUS/DEFICIT			
1954	REGIONAL	-915	-1675	-1855	-2103	-2161	-2325	2785	7463	6308	6724	4693	5708	10862	5511	3649	FIRM	SURPLUS/DEFICIT			
1955	REGIONAL	4611	-539	-1855	-2103	-2161	-2325	2785	7463	6308	6724	4693	5708	10862	5511	3649	FIRM	SURPLUS/DEFICIT			
1956	REGIONAL	1870	-1699	-1866	-2077	-2194	-2326	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1957	REGIONAL	-901	-1523	-1866	-2125	-2258	-2326	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1958	REGIONAL	-90	-1574	-1867	-2086	-2222	-2291	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1959	REGIONAL	4913	103	-1875	-679	-2175	-2328	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1960	REGIONAL	3293	1737	-1885	-2055	-2207	-2328	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1961	REGIONAL	-334	-1574	-1867	-2086	-2222	-2291	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1962	REGIONAL	4913	103	-1875	-679	-2175	-2328	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1963	REGIONAL	3293	1737	-1885	-2055	-2207	-2328	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1964	REGIONAL	-493	-1688	-1864	-2117	-2258	-2328	4953	3244	5772	9506	6054	4576	8140	4611	4215	FIRM	SURPLUS/DEFICIT			
1965	REGIONAL	4871	329	-1856	-1813	-2204	-2066	4763	5885	3805	2873	425	4382	12003	3554	1581	FIRM	SURPLUS/DEFICIT			
1966	REGIONAL	-1310	-1685	-1880	-2189	-2339	-2287	4763	5885	3805	2873	425	4382	12003	3554	1581	FIRM	SURPLUS/DEFICIT			
1967	REGIONAL	-1589	-1639	-1932	-2321	-2589	-2172	7827	9243	7536	6966	7355	9055	13339	7582	4260	FIRM	SURPLUS/DEFICIT			
1968	REGIONAL	4884	3803	-1971	-2214	-2589	-2172	7827	9243	7536	6966	7355	9055	13339	7582	4260	FIRM	SURPLUS/DEFICIT			
1969	REGIONAL	5725	6000	-1620	-1316	-2450	-328	2056	-639	-2033	-2222	-1362	2414	14362	11973	5704	FIRM	SURPLUS/DEFICIT			
1970	REGIONAL	-1677	-1641	-3471	-2195	-2775	-1132	10576	10546	9549	9750	9761	6250	10312	6393	5300	FIRM	SURPLUS/DEFICIT			
1971	REGIONAL	4921	5475	-1932	-2026	-2433	-2087	4473	2633	8727	7258	3412	7227	10312	6393	5300	FIRM	SURPLUS/DEFICIT			
1972	REGIONAL	2246	1401	-1972	-1383	-277	6808	8836	8727	7258	3412	7227	10312	6393	5300	5300	FIRM	SURPLUS/DEFICIT			
1973	REGIONAL	5901	5141	-2402	-1731	-2323	-2177	-1194	-2690	-2374	-4209	-5345	1386	1304	-3104	-813	FIRM	SURPLUS/DEFICIT			
1974	REGIONAL	-4407	-2868	-3919	-2231	-2838	-2311	-1390	130	4207	6560	5838	5993	8301	4036	1045	FIRM	SURPLUS/DEFICIT			

EXHIBIT 29

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

ENERGY IN AVERAGE MEGAWATTS		1998-99 OPERATING YEAR												1995 FINAL WHITEBOOK:				01/22/96	
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO	AVG		
1929	REGIONAL	FIRM SURPLUS/DEFICIT	405	-2796	-3030	-972	-4105	-3001	-3642	-3892	-4052	-3887	-4006	5151	5156	-1999	-1627		
1930	REGIONAL	FIRM SURPLUS/DEFICIT	-4510	-3384	-5021	-1802	-4002	-2893	-5561	-2841	-3323	-3784	-952	2335	5484	-3474	-2284		
1931	REGIONAL	FIRM SURPLUS/DEFICIT	-3208	-3284	-4632	-1669	-4731	-2625	-5183	-3161	-4617	-2937	-4120	3717	2988	-2146	-2403		
1932	REGIONAL	FIRM SURPLUS/DEFICIT	-2418	-2658	-4791	-2285	-3575	-4379	-6001	-4815	-2319	-5343	5773	5348	9534	2986	-220		
1933	REGIONAL	FIRM SURPLUS/DEFICIT	33	-516	-1944	-2261	-2391	-2444	-6001	-4815	-2319	-5343	5773	5348	9534	2986	-220		
1934	REGIONAL	FIRM SURPLUS/DEFICIT	3683	3117	-1934	-1299	-200	-6813	10113	8047	6871	1520	3186	3912	10492	8014	2064		
1935	REGIONAL	FIRM SURPLUS/DEFICIT	-3728	-3417	-4100	-2308	-2393	-2504	2414	1662	6871	9898	7897	7591	6913	-2113	4458		
1936	REGIONAL	FIRM SURPLUS/DEFICIT	341	-1938	-2746	-2305	-3076	-4148	-2502	-4976	-2027	1687	5856	7871	7498	-224	117		
1937	REGIONAL	FIRM SURPLUS/DEFICIT	-2015	-1925	-2793	-2304	-3159	-2495	-7785	-5321	-5260	-3811	-2964	5006	6959	3188	446		
1938	REGIONAL	FIRM SURPLUS/DEFICIT	-2017	-3005	-3210	-2303	-2629	-3081	3631	-838	-2311	75	546	2269	5530	-1102	-2315		
1939	REGIONAL	FIRM SURPLUS/DEFICIT	-1632	-1935	-3094	-2265	-2781	-2498	-2613	-3360	-972	1142	485	5906	6071	-1257	-817		
1940	REGIONAL	FIRM SURPLUS/DEFICIT	-1143	-1918	-3790	-2278	-2859	-3535	-3077	-5153	-3055	2620	2037	1818	5764	-1644	-1967		
1941	REGIONAL	FIRM SURPLUS/DEFICIT	-3222	-3658	-3053	-2263	-2802	-2811	4152	2248	-4169	9915	9770	6510	5386	3670	-183		
1942	REGIONAL	FIRM SURPLUS/DEFICIT	-3668	-3422	-2802	-2263	-2802	-2811	4152	2248	-4169	9915	9770	6510	5386	3670	-183		
1943	REGIONAL	FIRM SURPLUS/DEFICIT	-14	-1512	-2802	-2263	-2802	-2811	4152	2248	-4169	9915	9770	6510	5386	3670	-183		
1944	REGIONAL	FIRM SURPLUS/DEFICIT	1325	-1160	-1957	-2286	-3460	-2425	-5082	-3935	-4952	-4151	-4961	10202	4780	-1641	-1937		
1945	REGIONAL	FIRM SURPLUS/DEFICIT	-3603	-3565	-3834	-2304	-2996	-2498	-2499	2753	3705	3903	7135	8492	8358	4345	-1973		
1946	REGIONAL	FIRM SURPLUS/DEFICIT	-3006	-1925	-2703	-2304	-2996	-2498	-2499	2753	3705	3903	7135	8492	8358	4345	-1973		
1947	REGIONAL	FIRM SURPLUS/DEFICIT	-836	-1943	-1935	-2291	-2384	-661	5741	8824	5357	6190	9045	12704	7168	2831	2702		
1948	REGIONAL	FIRM SURPLUS/DEFICIT	-193	-1965	-2309	-2217	-2388	-2466	-2466	5832	5899	2545	6507	9045	12704	7168	2831		
1949	REGIONAL	FIRM SURPLUS/DEFICIT	4528	-4953	-1938	-2217	-2388	-2466	-2466	5832	5899	2545	6507	9045	12704	7168	2831		
1950	REGIONAL	FIRM SURPLUS/DEFICIT	-2027	-2388	-3646	-2294	-2400	-2466	-2466	5832	5899	2545	6507	9045	12704	7168	2831		
1951	REGIONAL	FIRM SURPLUS/DEFICIT	3611	-2699	-1939	-1155	-327	-4317	8893	8839	9041	9815	8150	9853	8130	4967	5196		
1952	REGIONAL	FIRM SURPLUS/DEFICIT	4631	-651	-1962	-672	-2347	-720	5690	5906	3041	7346	9265	9510	7610	2520	3348		
1953	REGIONAL	FIRM SURPLUS/DEFICIT	751	-1936	-2396	-2301	-3323	-2404	5690	5906	3041	7346	9265	9510	7610	2520	3348		
1954	REGIONAL	FIRM SURPLUS/DEFICIT	2715	-698	-1929	-2229	-2390	-2058	3905	7340	4999	5031	5152	7750	10211	5990	3193		
1955	REGIONAL	FIRM SURPLUS/DEFICIT	5138	-4879	-1935	-1185	-1364	-2058	3905	7340	4999	5031	5152	7750	10211	5990	3193		
1956	REGIONAL	FIRM SURPLUS/DEFICIT	4485	-504	-1935	-1185	-1364	-2058	3905	7340	4999	5031	5152	7750	10211	5990	3193		
1957	REGIONAL	FIRM SURPLUS/DEFICIT	4911	-1929	-1938	-2282	-2375	-2049	3181	4774	8287	8827	9722	10339	13275	5567	5199		
1958	REGIONAL	FIRM SURPLUS/DEFICIT	1425	-1927	-2583	-2282	-2375	-2049	3181	4774	8287	8827	9722	10339	13275	5567	5199		
1959	REGIONAL	FIRM SURPLUS/DEFICIT	1210	-1927	-2583	-2282	-2375	-2049	3181	4774	8287	8827	9722	10339	13275	5567	5199		
1960	REGIONAL	FIRM SURPLUS/DEFICIT	4558	-445	-1927	-2259	-2352	-2506	8123	6995	6171	6851	4428	5296	10513	6551	3302		
1961	REGIONAL	FIRM SURPLUS/DEFICIT	1826	-1955	-2020	-4069	-1662	-1215	4813	3799	5518	9324	5597	4183	7790	4316	3894		
1962	REGIONAL	FIRM SURPLUS/DEFICIT	-1040	-1658	-3191	-2259	-2376	-2504	3614	687	5372	3453	486	6274	11171	974	2237		
1963	REGIONAL	FIRM SURPLUS/DEFICIT	190	-1887	-2283	-2259	-2376	-2504	3614	687	5372	3453	486	6274	11171	974	2237		
1964	REGIONAL	FIRM SURPLUS/DEFICIT	-279	-1718	-1939	-2284	-2370	-2501	4096	6294	660	973	2093	5333	6890	3113	951		
1965	REGIONAL	FIRM SURPLUS/DEFICIT	4777	230	-1950	-1662	-2353	-2505	3246	1996	-354	2520	2444	5315	7607	2958	1519		
1966	REGIONAL	FIRM SURPLUS/DEFICIT	3161	1606	-1959	-2231	-2398	-2505	8783	8857	7633	6460	8954	4143	11405	8306	1761		
1967	REGIONAL	FIRM SURPLUS/DEFICIT	-524	-1943	-2576	-2291	-2611	-2453	5127	5503	-170	3791	1679	4031	7260	3144	1266		
1968	REGIONAL	FIRM SURPLUS/DEFICIT	4696	243	-1928	-2222	-2680	-2418	3999	6135	3210	1178	-555	521	8589	3594	2303		
1969	REGIONAL	FIRM SURPLUS/DEFICIT	2125	21	-2041	-796	-1360	-2418	3999	6135	3210	1178	-555	521	8589	3594	2303		
1970	REGIONAL	FIRM SURPLUS/DEFICIT	-1276	-1941	-1959	-2369	-2554	-2504	5519	1270	155	9786	9428	9250	8121	4698	4214		
1971	REGIONAL	FIRM SURPLUS/DEFICIT	-1930	-1912	-3247	-2489	-2554	-2504	5519	1270	155	9786	9428	9250	8121	4698	4214		
1972	REGIONAL	FIRM SURPLUS/DEFICIT	4716	4510	-2045	-2392	-2620	-2362	7519	9141	7818	6582	6862	8638	12979	7181	801		
1973	REGIONAL	FIRM SURPLUS/DEFICIT	5742	5305	-2052	-2268	-2503	-1368	8937	8937	11465	10881	-5951	9984	13492	10517	3902		
1974	REGIONAL	FIRM SURPLUS/DEFICIT	-1930	-4322	-2025	-2362	-2503	-1368	8937	8937	11465	10881	-5951	9984	13492	10517	3902		
1975	REGIONAL	FIRM SURPLUS/DEFICIT	4759	5625	-2006	-2229	-2585	-2644	10245	10340	10212	9734	9390	9487	14015	11771	5392		
1976	REGIONAL	FIRM SURPLUS/DEFICIT	2120	1548	-2047	-2058	-1207	-2585	3640	3231	4074	1744	3208	5852	11201	7763	2830		
1977	REGIONAL	FIRM SURPLUS/DEFICIT	5966	5004	1253	-2132	-2467	-2371	-875	-4582	-4720	-4396	-5810	1037	2424	-1909	4958		
1978	REGIONAL	FIRM SURPLUS/DEFICIT	-4413	-4681	-4800	-2509	-3831	-2496	-1461	-442	3869	6351	5054	5584	7956	3759	565		

EXHIBIT 30

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

ENERGY IN AVERAGE MEGAWATTS		1999-0 OPERATING YEAR												1995 FINAL WHITEBOOK:					01/22/96	
														RUN DATE:					01/22/96	
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG	AUG	AUG	12 MO	AVG
1929	REGIONAL	421	-3045	-2822	-868	-3794	-2604	-3136	-5981	-4514	-3847	-5214	4692	5550	-2042	-1780				
1930	REGIONAL	4065	-3572	-4878	-1528	-3621	-3881	-3871	-4398	-4631	-3744	-2480	1962	4677	-2042	-1780				
1931	REGIONAL	3895	-4193	-4813	-2202	-3739	-4116	-3302	-4398	-4631	-3744	-2480	1962	4677	-2042	-1780				
1932	REGIONAL	3771	-3331	-4468	-1952	-2830	-3929	-6222	-5216	1174	5406	5642	4921	9463	-2922	-2776				
1933	REGIONAL	1251	-1091	-2007	-2302	-2384	-2413	1827	306	3087	2001	3376	3809	10392	9512	-279				
1934	REGIONAL	3399	3169	-2017	-1271	451	6343	10015	5960	6553	9979	7695	7439	7552	2061	1779				
1935	REGIONAL	-2798	-3740	-4162	-2351	-2412	-2468	-7	1279	-624	-2397	720	4628	6703	2972	4257				
1936	REGIONAL	300	-2016	-2504	-2338	-3096	-3952	-4506	6160	-920	-1634	5738	7496	6496	112	-46				
1937	REGIONAL	-2093	-2000	-2196	-2336	-2736	-2802	-7882	-7183	-5459	-3821	-5985	1898	7976	2033	-681				
1938	REGIONAL	-2102	-3984	-3226	-2346	-2407	-3256	1262	-1072	3827	2221	6261	7174	8255	2553	-2475				
1939	REGIONAL	-2006	-2012	-2012	-2327	-2661	-3881	-4330	-4475	-1026	23	472	5442	6354	1261	-993				
1940	REGIONAL	-2099	-1994	-2841	-2322	-2912	-3881	-4330	-3442	-1369	1397	510	2748	6354	-1356	-870				
1941	REGIONAL	-3331	-4198	-3529	-2326	-2612	-3924	-3939	-5971	-3281	-1819	-2178	1450	5679	-1228	-2336				
1942	REGIONAL	-4133	-3491	-4001	-2300	-2417	-2109	850	669	-1567	-589	1928	1192	7778	-2201	-349				
1943	REGIONAL	-1027	-1824	-2576	-2326	-2967	-2440	1841	2685	-5113	-4024	9623	6018	10138	5383	-2005				
1944	REGIONAL	908	-1407	-2015	-2326	-2967	-2440	1841	2685	-5113	-4024	9623	6018	10138	5383	-2005				
1945	REGIONAL	-4175	-4342	-4207	-2336	-2717	-4957	-6494	-4168	-4971	-3573	-5937	1819	4653	-2008	-2005				
1946	REGIONAL	-2101	-2002	-2054	-2347	-2674	-2623	74	1750	4421	4256	6597	8186	8249	4399	-2229				
1947	REGIONAL	1044	-2023	-2021	-2327	-2380	-482	4357	2562	5787	5518	6370	6758	7567	4135	-2229				
1948	REGIONAL	569	-2042	-2024	-2259	-1576	-1335	6536	1985	6036	2626	6551	8818	12942	5766	-2229				
1949	REGIONAL	3612	5175	-2020	-2259	-2393	-2457	-1848	5054	6326	5776	6718	8097	8080	-207	-2229				
1950	REGIONAL	-2103	-2534	-3232	-2321	-2393	-2418	1176	7401	8326	7789	6794	9295	7842	3164	-2229				
1951	REGIONAL	3322	2760	-2020	-1143	-120	-4161	7456	3444	5704	7782	8144	9188	10558	4922	4931				
1952	REGIONAL	4350	1777	-2043	-1554	-2352	-890	3931	2644	9262	10002	9270	9188	7564	3164	4931				
1953	REGIONAL	775	-2014	-2224	-2340	-3048	-4141	4217	1113	1958	190	1023	1567	10478	5481	1312				
1954	REGIONAL	4940	4591	940	-1215	-2385	-2371	2192	3432	4495	5112	5343	4844	10977	5481	1312				
1955	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1956	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1957	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1958	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1959	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1960	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1961	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1962	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1963	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1964	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1965	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1966	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1967	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1968	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1969	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1970	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1971	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1972	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1973	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1974	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1975	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1976	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1977	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				
1978	REGIONAL	4729	-447	-2015	-2070	-1137	-2380	1377	997	8959	8899	9675	10019	13508	6353	4914				

EXHIBIT 31

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

ENERGY IN AVERAGE MEGAWATTS			2000-1 OPERATING YEAR												1995 FINAL WHITEBOOK:				01/22/96		
			AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG				
1929	REGIONAL	FIRM	SURPLUS/DEFICIT	586	-3137	-3072	-983	-3868	-2671	-3217	-5965	-4391	-3858	-5216	4864	5467	-2215	-1822			
1930	REGIONAL	FIRM	SURPLUS/DEFICIT	-4156	-3664	-5127	-1433	-3695	-3948	-3951	-4382	-4508	-3756	-2482	2134	4594	-1418	-2414			
1931	REGIONAL	FIRM	SURPLUS/DEFICIT	-3986	-4285	-5062	-2316	-3812	-4182	-3383	-6145	-4769	-3215	-5710	3560	9380	3560	-2827			
1932	REGIONAL	FIRM	SURPLUS/DEFICIT	-3862	-3423	-4717	-2066	-2904	-3996	-6303	-5200	1298	5395	5639	5094	9380	3560	-331			
1933	REGIONAL	FIRM	SURPLUS/DEFICIT	-1342	-1183	-2156	-2316	-2407	-2423	-1665	169	3124	1973	3372	3981	10307	9338	1724			
1934	REGIONAL	FIRM	SURPLUS/DEFICIT	3304	3077	-2022	-1434	184	6274	9934	5977	6676	9967	7692	7611	9217	-2178	4209			
1935	REGIONAL	FIRM	SURPLUS/DEFICIT	-2945	-3866	-4423	-2360	-2426	-2476	-248	1247	-510	-1649	719	4800	6620	2798	-103			
1936	REGIONAL	FIRM	SURPLUS/DEFICIT	209	-2018	-2777	-2354	-3188	-4047	-4601	-6146	-805	-1649	5736	7628	6413	-60	-733			
1937	REGIONAL	FIRM	SURPLUS/DEFICIT	-2091	-2003	-2475	-2353	-2841	-2923	-3411	-7194	-5336	-3832	-5986	2071	7893	-2163	-2522			
1938	REGIONAL	FIRM	SURPLUS/DEFICIT	-2099	-4117	-3528	-2354	-2420	-3411	1346	-914	3925	2209	6259	7310	7927	2379	949			
1939	REGIONAL	FIRM	SURPLUS/DEFICIT	-2097	-2013	-2079	-2345	-2939	-3967	-4426	-4471	-904	11	428	5579	6290	-1437	-1044			
1940	REGIONAL	FIRM	SURPLUS/DEFICIT	-2097	-1996	-3150	-2335	-2995	-2468	-4713	-3435	1492	1386	507	2920	6272	-1527	-920			
1941	REGIONAL	FIRM	SURPLUS/DEFICIT	-3521	-4290	-3778	-2341	-2884	-3993	-4036	-5960	-3164	-1831	-2228	1622	5600	-1399	-2189			
1942	REGIONAL	FIRM	SURPLUS/DEFICIT	-4220	-3578	-4236	-2311	-2430	-2181	666	-703	-1453	-600	1925	1343	7675	-403	-2389			
1943	REGIONAL	FIRM	SURPLUS/DEFICIT	-1118	-1916	-2826	-2344	-3044	-2437	1726	2627	5224	10013	9619	6182	10055	5209	-2147			
1944	REGIONAL	FIRM	SURPLUS/DEFICIT	817	-1499	-2018	-2344	-3375	-2437	-4473	-5332	-5445	-4037	-4830	1991	8342	-157	-2286			
1945	REGIONAL	FIRM	SURPLUS/DEFICIT	-4290	-4450	-4460	-2351	-2849	-5104	-6575	-4151	-4847	-3585	-5938	3843	8166	4225	1675			
1946	REGIONAL	FIRM	SURPLUS/DEFICIT	-2097	-2002	-2372	-2357	-2752	-2691	-157	1767	4544	4245	6594	8358	8166	4225	1675			
1947	REGIONAL	FIRM	SURPLUS/DEFICIT	953	-2024	-2022	-2350	-2409	-329	4266	2480	5798	5386	6549	8990	12859	5592	2484			
1948	REGIONAL	FIRM	SURPLUS/DEFICIT	478	-2045	-2297	-78	-1663	-1403	6442	1980	6157	2614	6549	8990	12859	5592	2484			
1949	REGIONAL	FIRM	SURPLUS/DEFICIT	3521	5082	-2023	-2273	-2412	-2471	-2120	-1228	6411	5730	6715	8209	7997	-380	1687			
1950	REGIONAL	FIRM	SURPLUS/DEFICIT	-2102	-2651	-3504	-2337	-2410	-2429	1051	4998	8399	7708	8782	6233	11805	8211	2907			
1951	REGIONAL	FIRM	SURPLUS/DEFICIT	3231	2668	-2024	-1290	-358	4051	7375	7417	9385	9990	8141	9467	7759	4748	4879			
1952	REGIONAL	FIRM	SURPLUS/DEFICIT	4258	1685	-2017	-761	-2373	-1009	3837	2639	5775	7679	9267	9352	7457	2990	3109			
1953	REGIONAL	FIRM	SURPLUS/DEFICIT	684	-2017	-2513	-2354	-3155	-4209	1258	3455	2088	-136	647	4737	10894	5306	1258			
1954	REGIONAL	FIRM	SURPLUS/DEFICIT	1668	-1066	-2013	-2287	-2409	-2385	4062	4202	4463	4998	5306	7651	10474	5306	1258			
1955	REGIONAL	FIRM	SURPLUS/DEFICIT	4848	4498	690	-1330	-1434	-2390	2086	-1100	2068	162	-1025	1740	10593	9634	2797			
1956	REGIONAL	FIRM	SURPLUS/DEFICIT	4112	-539	-2017	-2259	-1339	-2526	8025	3442	9076	8878	9673	10191	13425	6179	6859			
1957	REGIONAL	FIRM	SURPLUS/DEFICIT	4637	-23	-2023	-2258	-2400	-2318	1295	1010	6183	5931	9673	8473	12027	1331	2353			
1958	REGIONAL	FIRM	SURPLUS/DEFICIT	-1248	-2008	-2672	-2359	-2999	-2479	-872	3204	3796	6448	6918	5311	10952	7114	3004			
1959	REGIONAL	FIRM	SURPLUS/DEFICIT	-1433	-2007	-2105	-2312	-2372	-1766	7091	3796	6448	6918	5311	10952	7114	3004	3559			
1960	REGIONAL	FIRM	SURPLUS/DEFICIT	4182	-479	-2105	3917	1613	645	3200	312	7350	9692	5808	3986	7637	4658	3559			
1961	REGIONAL	FIRM	SURPLUS/DEFICIT	3034	-2034	-2025	-2319	-2398	-2533	2715	3122	5449	3379	354	6515	11420	919	1936			
1962	REGIONAL	FIRM	SURPLUS/DEFICIT	-1291	-1997	-3134	-2345	-2828	-2474	-904	-608	1027	5591	7707	5121	6796	3123	732			
1963	REGIONAL	FIRM	SURPLUS/DEFICIT	205	-2029	-2372	-2284	-2392	-1169	2416	3593	2500	1326	2515	3347	7510	3610	1314			
1964	REGIONAL	FIRM	SURPLUS/DEFICIT	-216	-2015	-2026	-2335	-2431	-2478	589	-1954	1813	2581	2324	3940	11837	8980	1440			
1965	REGIONAL	FIRM	SURPLUS/DEFICIT	4427	179	-2033	-1803	-2374	-2438	8307	6204	8372	6655	8859	7078	9693	4035	4165			
1966	REGIONAL	FIRM	SURPLUS/DEFICIT	4648	2290	-2046	-2285	-2423	-2439	2611	-1909	1382	3517	1517	4086	7577	3097	1137			
1967	REGIONAL	FIRM	SURPLUS/DEFICIT	-601	-2024	-2684	-2331	-2811	-2432	4854	2581	2318	2592	428	3779	11960	8112	1962			
1968	REGIONAL	FIRM	SURPLUS/DEFICIT	4285	-52	-2016	-2276	-2404	-2425	2048	2819	4925	-1083	-813	3211	8959	4349	1530			
1969	REGIONAL	FIRM	SURPLUS/DEFICIT	2693	-318	-2093	-929	-1417	-481	7615	3279	6965	10033	9382	9263	9384	4640	3927			
1970	REGIONAL	FIRM	SURPLUS/DEFICIT	-1559	-2018	-2186	-2425	-2577	-2473	1298	121	1565	-2557	-644	5303	10490	1319	587			
1971	REGIONAL	FIRM	SURPLUS/DEFICIT	-2007	-1994	-2774	-2538	-2832	-2365	4856	8430	7886	6310	6881	8416	12909	7848	3703			
1972	REGIONAL	FIRM	SURPLUS/DEFICIT	4343	4039	-2129	-2446	-2644	-2644	7515	7515	11190	10969	5799	9948	13406	10180	5131			
1973	REGIONAL	FIRM	SURPLUS/DEFICIT	5132	3430	-2132	-2323	-2531	-1655	-799	-1759	-1693	-2946	-2081	1751	6405	-2132	-341			
1974	REGIONAL	FIRM	SURPLUS/DEFICIT	-2160	5459	-4607	-2425	-2967	358	8973	9455	10015	9980	8705	9294	13839	12035	5042			
1975	REGIONAL	FIRM	SURPLUS/DEFICIT	4375	5567	-2092	-2291	-2577	-2618	613	1646	6625	1698	2719	5675	11093	7280	2545			
1976	REGIONAL	FIRM	SURPLUS/DEFICIT	1788	1473	-2135	-2180	-1226	5861	7514	5443	7687	9238	6848	10278	7398	4699	4699			
1977	REGIONAL	FIRM	SURPLUS/DEFICIT	5838	4668	-1934	-2185	-2493	-2368	-1748	-5717	-5471	-4340	-5709	1357	2295	-1993	-1408			
1978	REGIONAL	FIRM	SURPLUS/DEFICIT	-3621	-3979	-4532	-2443	-3007	-2507	-2576	-2176	5471	6368	5072	5403	7839	3583	437			

EXHIBIT 32

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

ENERGY IN AVERAGE MEGAWATTS		1995 FINAL WHITEBOOK: 01/22/96											
		RUN DATE: 01/22/96											
		12 MO AVG											
		2001-2 OPERATING YEAR											
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY
		1995 FINAL WHITEBOOK: 01/22/96											
		RUN DATE: 01/22/96											
		12 MO AVG											
1929	REGIONAL	411	3311	-3262	-1218	-4268	-2848	-3594	-6527	-5603	-4737	-5537	4593
1930	REGIONAL	4331	3838	-5317	-1879	-4095	-4124	-4329	-4944	-5719	-4636	-2803	1863
1931	REGIONAL	4162	4460	-5253	-2552	-4211	-4358	-3762	-6707	-5980	-4095	-6028	3289
1932	REGIONAL	4038	3598	-4907	-2302	-3304	-4173	-6682	-5761	89	4516	5316	4823
1933	REGIONAL	1517	1359	-2346	-2551	-2808	-2599	-1285	-394	1914	1093	3049	3710
1934	REGIONAL	3130	2901	-2213	-1668	-217	-6096	9553	5414	5464	9087	7370	7340
1935	REGIONAL	3121	4041	-4613	-2596	-2827	-2654	-628	5414	1720	-3297	399	4529
1936	REGIONAL	33	2193	-2966	-2590	-3588	-4224	-4981	-6706	6545	4711	-6306	7357
1937	REGIONAL	2266	4290	-2665	-2589	-3241	-3100	-8369	-7754	1720	-3297	5416	7719
1938	REGIONAL	2274	2178	-2269	-2590	-2821	-3588	966	-7754	6545	4711	-6306	7357
1939	REGIONAL	2273	2189	-2269	-2590	-2821	-3588	966	-7754	6545	4711	-6306	7357
1940	REGIONAL	2273	2189	-2269	-2590	-2821	-3588	966	-7754	6545	4711	-6306	7357
1941	REGIONAL	3695	4462	-3340	-2570	-3396	-2645	-5093	-3995	283	508	188	5308
1942	REGIONAL	4392	3750	-4426	-2577	-3284	-4171	-4415	-3995	283	508	188	5308
1943	REGIONAL	1294	-2092	-4426	-2577	-3284	-4171	-4415	-3995	283	508	188	5308
1944	REGIONAL	641	1675	-2208	-2577	-3284	-4171	-4415	-3995	283	508	188	5308
1945	REGIONAL	4463	4622	-4649	-2580	-3249	-4171	-4415	-3995	283	508	188	5308
1946	REGIONAL	777	2200	-2213	-2586	-2809	-4387	-537	1205	3335	3367	6273	8169
1947	REGIONAL	302	2221	-2488	-313	-2062	-1578	3886	1917	4587	4506	6043	7311
1948	REGIONAL	3346	4906	-2214	-2507	-2813	-2649	-2501	-1790	5201	4859	7939	8719
1949	REGIONAL	2278	2826	-3694	-2573	-2813	-2649	-2501	-1790	5201	4859	7939	8719
1950	REGIONAL	3055	2491	-2214	-2507	-2813	-2649	-2501	-1790	5201	4859	7939	8719
1951	REGIONAL	4082	1509	-2238	-2597	-2772	-184	3457	2075	4564	6799	8945	9196
1952	REGIONAL	508	2192	-2703	-2590	-3556	-4387	879	2894	879	1015	327	7586
1953	REGIONAL	1492	-1242	-2203	-2521	-2809	-2560	3682	3639	3253	4118	4984	10721
1954	REGIONAL	3936	714	-2207	-2492	-1738	-2566	1706	1663	857	719	1346	10301
1955	REGIONAL	4673	4323	-499	-1563	-1833	-2566	1706	1663	857	719	1346	10301
1956	REGIONAL	3936	714	-2207	-2492	-1738	-2566	1706	1663	857	719	1346	10301
1957	REGIONAL	1423	-2182	-2862	-2595	-3400	-2656	1706	1663	857	719	1346	10301
1958	REGIONAL	1609	-2182	-2862	-2595	-3400	-2656	1706	1663	857	719	1346	10301
1959	REGIONAL	4006	-655	-401	-3681	-2798	-2710	2335	2560	6138	8811	5486	3715
1960	REGIONAL	2858	-2210	-2215	-2554	-2798	-2710	2335	2560	6138	8811	5486	3715
1961	REGIONAL	1467	-2172	-3324	-2580	-3229	-2652	1283	3029	1289	446	7384	6244
1962	REGIONAL	29	-2205	-2562	-2518	-2792	-1344	2036	3029	1289	446	7384	6244
1963	REGIONAL	392	-2190	-2216	-2570	-2832	-2653	209	2514	604	1703	2193	3077
1964	REGIONAL	4251	2114	-2224	-2536	-2773	-2616	7927	5640	7160	5774	8536	3669
1965	REGIONAL	4472	-2236	-2236	-2520	-2823	-2616	7927	5640	7160	5774	8536	3669
1966	REGIONAL	4109	-228	-2875	-2566	-3212	-2609	4474	2018	1108	1713	1194	3815
1967	REGIONAL	777	-2199	-2875	-2566	-3212	-2609	4474	2018	1108	1713	1194	3815
1968	REGIONAL	4109	-228	-2875	-2566	-3212	-2609	4474	2018	1108	1713	1194	3815
1969	REGIONAL	2517	-494	-2284	-2510	-1816	-657	7235	2715	3715	1964	9059	2940
1970	REGIONAL	2183	-2169	-2376	-2660	-2978	-2650	4476	7867	6676	1964	9059	2940
1971	REGIONAL	4168	3863	-2319	-2680	-3043	-2542	5924	6952	9978	10089	5476	9677
1972	REGIONAL	4956	5254	-2322	-2556	-2931	-1830	1179	2321	2903	3825	2401	9677
1973	REGIONAL	2335	3634	-4797	-2661	-3366	-183	8594	8892	8804	9099	8382	9023
1974	REGIONAL	4200	5391	-2282	-2526	-2977	-2793	233	1083	5415	818	2397	5404
1975	REGIONAL	1612	1296	-2325	-2414	-1625	5685	7133	1083	5415	818	2397	5404
1976	REGIONAL	5663	4493	1004	-2419	-2893	-2546	-2128	-6279	-6681	-5218	-6029	1087
1977	REGIONAL	3794	-4151	-4722	-2679	-3408	-2684	-2957	-2737	2532	5489	4749	5132
1978	REGIONAL												

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

Bonneville Power Administration

EXHIBIT 34

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

ENERGY IN AVERAGE MEGAWATTS	1929 REGIONAL FIRM SURPLUS/DEFICIT	2003-4 OPERATING YEAR				1995 FINAL WHITEBOOK: 01/22/96												RUN DATE: 01/22/96				JUL 12 MO AVG			
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG	SEP								
		1-15	16-31	1-15	16-31	1-15	16-31	1-15	16-31	1-15	16-31	1-15	16-31	1-15	16-31	1-15	16-31								
1929 REGIONAL FIRM SURPLUS/DEFICIT	1929 REGIONAL FIRM SURPLUS/DEFICIT	-135	3856	-3803	-1756	-4611	-3440	-4168	-7108	-5930	-5021	-5827	4101	4755	-2969	-2696									
1930 REGIONAL FIRM SURPLUS/DEFICIT	1930 REGIONAL FIRM SURPLUS/DEFICIT	-4817	-4384	-5858	-2416	-4437	-4716	-4903	-5524	-6046	-4919	-3094	1372	3883	-2170	-3288									
1931 REGIONAL FIRM SURPLUS/DEFICIT	1931 REGIONAL FIRM SURPLUS/DEFICIT	-4708	-5006	-5793	-3090	-4554	-4950	-4334	-7287	-6307	-4378	-6319	2798	3158	-3840	-3700									
1932 REGIONAL FIRM SURPLUS/DEFICIT	1932 REGIONAL FIRM SURPLUS/DEFICIT	-4833	-4144	-5448	-2840	-3647	-4765	-7254	-6343	-240	4232	5026	3218	8668	-2804	-1206									
1933 REGIONAL FIRM SURPLUS/DEFICIT	1933 REGIONAL FIRM SURPLUS/DEFICIT	-2063	-1904	-2887	-3089	-3150	-3191	-715	-974	1585	808	2759	4318	9595	8581	850									
1934 REGIONAL FIRM SURPLUS/DEFICIT	1934 REGIONAL FIRM SURPLUS/DEFICIT	-2584	-2355	-2753	-2206	-560	-5503	8984	4835	5135	8802	7079	6849	6757	-2931	3335									
1935 REGIONAL FIRM SURPLUS/DEFICIT	1935 REGIONAL FIRM SURPLUS/DEFICIT	-3666	-4586	-5154	-3133	-3170	-3246	-1198	104	-2048	-2581	109	4037	5909	2042	-976									
1936 REGIONAL FIRM SURPLUS/DEFICIT	1936 REGIONAL FIRM SURPLUS/DEFICIT	-513	-2739	-3507	-3128	-3931	-4816	-5552	-7290	-2343	-2811	5125	6866	5701	-809	-3396									
1937 REGIONAL FIRM SURPLUS/DEFICIT	1937 REGIONAL FIRM SURPLUS/DEFICIT	-2812	-2724	-4259	-3127	-3584	-3692	-8942	-8338	-6873	-4994	-6596	1309	7181	-2915	-1606									
1938 REGIONAL FIRM SURPLUS/DEFICIT	1938 REGIONAL FIRM SURPLUS/DEFICIT	-2820	-4835	-4259	-3128	-3164	-4736	-396	-2058	-2388	1047	5648	6548	7215	1623	-3976									
1939 REGIONAL FIRM SURPLUS/DEFICIT	1939 REGIONAL FIRM SURPLUS/DEFICIT	-2819	-2734	-2810	-3118	-3683	-4180	5376	-5615	-2441	-1152	-182	4817	5578	-2191	-1793									
1940 REGIONAL FIRM SURPLUS/DEFICIT	1940 REGIONAL FIRM SURPLUS/DEFICIT	-2818	-2716	-3881	-3108	-3739	-4763	-5664	-4579	-45	223	-103	2159	5560	-2275	-3062									
1941 REGIONAL FIRM SURPLUS/DEFICIT	1941 REGIONAL FIRM SURPLUS/DEFICIT	-4241	-5007	-4509	-3114	-3627	-4763	-4986	-7104	-4701	-2993	-2839	861	4889	-2147	-1276									
1942 REGIONAL FIRM SURPLUS/DEFICIT	1942 REGIONAL FIRM SURPLUS/DEFICIT	-4938	-4295	-4966	-3084	-3174	-2948	-284	-1846	-2991	-1763	1315	580	6963	1271	-3160									
1943 REGIONAL FIRM SURPLUS/DEFICIT	1943 REGIONAL FIRM SURPLUS/DEFICIT	-1840	-2637	-3557	-3115	-3787	-3218	776	1483	-6384	-4747	-6548	1230	3859	-2873	-3020									
1944 REGIONAL FIRM SURPLUS/DEFICIT	1944 REGIONAL FIRM SURPLUS/DEFICIT	95	-2221	-2749	-3118	-4118	-3205	-5423	-6475	-6982	-5199	-5440	5420	9344	-2147	-1515									
1945 REGIONAL FIRM SURPLUS/DEFICIT	1945 REGIONAL FIRM SURPLUS/DEFICIT	-5008	-5168	-5190	-3125	-3592	-5871	-7527	-6475	-6982	-5199	-5440	5420	9344	-2147	-1515									
1946 REGIONAL FIRM SURPLUS/DEFICIT	1946 REGIONAL FIRM SURPLUS/DEFICIT	-2819	-2723	-3103	-3131	-3495	-3461	-1107	633	-6384	-4747	-6548	1230	3859	-2147	-1515									
1947 REGIONAL FIRM SURPLUS/DEFICIT	1947 REGIONAL FIRM SURPLUS/DEFICIT	231	-2745	-2753	-3123	-3152	-438	3316	1337	4259	4221	5982	7596	7454	-2873	-3020									
1948 REGIONAL FIRM SURPLUS/DEFICIT	1948 REGIONAL FIRM SURPLUS/DEFICIT	-244	-2766	-3028	-851	-2404	-2170	5493	837	4616	1449	5936	8228	12148	3204	1610									
1949 REGIONAL FIRM SURPLUS/DEFICIT	1949 REGIONAL FIRM SURPLUS/DEFICIT	2804	4361	-2754	-3045	-3156	-3241	-3070	-2371	4873	4574	6105	7447	7286	-1133	813									
1950 REGIONAL FIRM SURPLUS/DEFICIT	1950 REGIONAL FIRM SURPLUS/DEFICIT	2824	-3372	-4235	-3111	-3153	-3197	101	3855	6860	6543	6169	5470	11094	7455	2033									
1951 REGIONAL FIRM SURPLUS/DEFICIT	1951 REGIONAL FIRM SURPLUS/DEFICIT	2510	1946	-2755	-2062	-1100	3283	6425	7845	7845	8825	7528	8705	7047	3992	4005									
1952 REGIONAL FIRM SURPLUS/DEFICIT	1952 REGIONAL FIRM SURPLUS/DEFICIT	3537	963	-2778	-1534	-3114	-1776	2887	1496	4235	6514	8654	8590	6746	2234	2235									
1953 REGIONAL FIRM SURPLUS/DEFICIT	1953 REGIONAL FIRM SURPLUS/DEFICIT	-37	-2738	-3244	-3059	-3899	-4979	308	2310	550	-1298	36	3874	10183	2234	2235									
1954 REGIONAL FIRM SURPLUS/DEFICIT	1954 REGIONAL FIRM SURPLUS/DEFICIT	946	-1787	-2744	-3029	-3152	-3152	3112	3058	2924	3833	4693	6889	9763	4550	384									
1955 REGIONAL FIRM SURPLUS/DEFICIT	1955 REGIONAL FIRM SURPLUS/DEFICIT	4128	3778	-41	-2101	-2176	-3157	1136	-2422	528	-1002	-1637	977	9882	8877	1193									
1956 REGIONAL FIRM SURPLUS/DEFICIT	1956 REGIONAL FIRM SURPLUS/DEFICIT	3990	-1260	-2748	-3030	-2080	1759	7076	-2599	7535	7713	9060	9429	12711	5423	1923									
1957 REGIONAL FIRM SURPLUS/DEFICIT	1957 REGIONAL FIRM SURPLUS/DEFICIT	3916	-744	-2754	-3029	-3143	-3085	345	-133	4644	4768	2683	7711	11316	5727	1480									
1958 REGIONAL FIRM SURPLUS/DEFICIT	1958 REGIONAL FIRM SURPLUS/DEFICIT	-1989	-2728	-3402	-3132	-3743	-3248	-1822	2050	2210	1539	3472	7217	7744	-89	329									
1959 REGIONAL FIRM SURPLUS/DEFICIT	1959 REGIONAL FIRM SURPLUS/DEFICIT	-2154	-2728	-2836	-3084	-3114	-2533	6142	2853	4908	5753	3699	4548	10241	6358	2131									
1960 REGIONAL FIRM SURPLUS/DEFICIT	1960 REGIONAL FIRM SURPLUS/DEFICIT	3461	-1200	-942	-3143	-3869	-124	2250	-831	5809	8527	5195	3224	6085	3902	2685									
1961 REGIONAL FIRM SURPLUS/DEFICIT	1961 REGIONAL FIRM SURPLUS/DEFICIT	2312	-2756	-2756	-3091	-3571	-3302	-1854	1752	960	162	258	4359	6085	2367	1062									
1962 REGIONAL FIRM SURPLUS/DEFICIT	1962 REGIONAL FIRM SURPLUS/DEFICIT	-2013	-2718	-3865	-3118	-3571	-3244	1466	-2450	960	162	258	4359	6085	2367	1062									
1963 REGIONAL FIRM SURPLUS/DEFICIT	1963 REGIONAL FIRM SURPLUS/DEFICIT	-517	-2750	-3102	-3056	-3134	-1936	1466	-2450	960	162	258	4359	6085	2367	1062									
1964 REGIONAL FIRM SURPLUS/DEFICIT	1964 REGIONAL FIRM SURPLUS/DEFICIT	-937	-2736	-2757	-3108	-3175	-3245	-361	-3097	275	1419	1713	3178	11126	8224	566									
1965 REGIONAL FIRM SURPLUS/DEFICIT	1965 REGIONAL FIRM SURPLUS/DEFICIT	3705	-543	-2765	-2574	-3166	-1671	7358	5061	6831	5490	8246	6315	8982	3248	3291									
1966 REGIONAL FIRM SURPLUS/DEFICIT	1966 REGIONAL FIRM SURPLUS/DEFICIT	3926	1568	-2777	-3057	-3166	-3208	1661	-3052	-157	2353	904	3323	6865	2370	262									
1967 REGIONAL FIRM SURPLUS/DEFICIT	1967 REGIONAL FIRM SURPLUS/DEFICIT	-1323	-2745	-3415	-3104	-3554	-3200	3904	1437	779	1428	-184	3016	11248	7356	1088									
1968 REGIONAL FIRM SURPLUS/DEFICIT	1968 REGIONAL FIRM SURPLUS/DEFICIT	3563	-773	-2746	-3047	-3147	-3193	1098	1675	339	2248	-1425	2449	8672	3593	656									
1969 REGIONAL FIRM SURPLUS/DEFICIT	1969 REGIONAL FIRM SURPLUS/DEFICIT	1971	-1040	-2825	-1701	-2158	-1249	6665	2136	5424	8868	8769	8501	8672	3593	656									
1970 REGIONAL FIRM SURPLUS/DEFICIT	1970 REGIONAL FIRM SURPLUS/DEFICIT	-2281	-2739	-2017	-3197	-3320	-3242	348	-1023	27	-3719	-1254	4541	9778	563	-286									
1971 REGIONAL FIRM SURPLUS/DEFICIT	1971 REGIONAL FIRM SURPLUS/DEFICIT	-2728	-2715	-3505	-3312	-3575	-3134	3906	7286	6347	5145	6268	7654	12197	7092	2829									
1972 REGIONAL FIRM SURPLUS/DEFICIT	1972 REGIONAL FIRM SURPLUS/DEFICIT	3623	3318	-2859	-3218	-3386	-3097	5354	6372	9650	9804	5186	9186	12695	9424	4257									
1973 REGIONAL FIRM SURPLUS/DEFICIT	1973 REGIONAL FIRM SURPLUS/DEFICIT	4411	4708	-2863	-3094	-3274	-2421	-1749	-2901	-3231	-4108	-2692	989	5693	-2885	-1215									
1974 REGIONAL FIRM SURPLUS/DEFICIT	1974 REGIONAL FIRM SURPLUS/DEFICIT	-2881	-4180	-5337	-3199	-3709	-409	8022	8312	8475	8815	8092	8531	13128	11279	4168									
1975 REGIONAL FIRM SURPLUS/DEFICIT	1975 REGIONAL FIRM SURPLUS/DEFICIT	3654	4845	-2823	-3064	-3319	-3385	-337	502	5087	534	2107	4913	10382	6524	1671									
1976 REGIONAL FIRM SURPLUS/DEFICIT	1976 REGIONAL FIRM SURPLUS/DEFICIT	1066	751	-2866	-2951	-1967	5093	6564	4300	6146	8073	6235	7317	9566	6641	3826									
1977 REGIONAL FIRM SURPLUS/DEFICIT	1977 REGIONAL FIRM SURPLUS/DEFICIT	5117	3947	-463	-2956	-3236	-3138	-2698	-6860	-7008	-5502	-6319	596	1584	-2740	-2281									
1978 REGIONAL FIRM SURPLUS/DEFICIT	1978 REGIONAL FIRM SURPLUS/DEFICIT	-4339	-4697	-5263	-3217	-3751	-3276	-3526	-3318	2203	5204	4459	4641	7127	2826	-437									

EXHIBIT 35

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

ENERGY IN AVERAGE MEGAWATTS		OPERATING YEAR												1995 FINAL WHITEBOOK:											
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	AUG AVG									
1929	REGIONAL	FIRM	SURPLUS/DEFICIT	-330	-4051	-3981	-2110	-5120	-3651	-4291	-7217	-6487	-4862	-5649	4304	4780	-2975	-2849							
1930	REGIONAL	FIRM	SURPLUS/DEFICIT	-5073	-4580	-6036	-2771	-4946	-4928	-5026	-5633	-6803	-4760	-2916	1574	3908	-2176	-3442							
1931	REGIONAL	FIRM	SURPLUS/DEFICIT	-4905	-5203	-5971	-3444	-5063	-5163	-4457	-7396	-6864	-4391	-6141	3000	3183	-3864	-3855							
1932	REGIONAL	FIRM	SURPLUS/DEFICIT	-4779	-4340	-5626	-3194	-4156	-4976	-7377	-6452	-797	-4291	-5204	4534	8694	2798	-1359							
1933	REGIONAL	FIRM	SURPLUS/DEFICIT	-2260	-2107	-3065	-3433	-3659	-3403	-592	-1083	-1028	-967	-2937	3420	9621	8575	696							
1934	REGIONAL	FIRM	SURPLUS/DEFICIT	-2391	-2157	-2931	-2560	-1069	-5294	-8862	-4726	-4579	-967	-7257	7051	6782	-2937	3182							
1935	REGIONAL	FIRM	SURPLUS/DEFICIT	-3863	-4783	-5332	-3488	-3679	-3456	-1321	-7398	-2900	-3422	-287	4240	5934	2036	-1130							
1936	REGIONAL	FIRM	SURPLUS/DEFICIT	-710	-2936	-3685	-3481	-4440	-5026	-5674	-8447	-7430	-2651	-5303	7068	5726	-815	-1760							
1937	REGIONAL	FIRM	SURPLUS/DEFICIT	-3017	-5026	-4437	-3482	-3673	-3902	-9065	-2166	-1831	-4835	-6418	1511	7206	-2921	-3550							
1938	REGIONAL	FIRM	SURPLUS/DEFICIT	-3016	-2931	-2988	-3473	-4192	-4947	-5499	-5723	-2998	-993	-5827	6750	7241	1617	-78							
1939	REGIONAL	FIRM	SURPLUS/DEFICIT	-3015	-2913	-4059	-3462	-4248	-3448	-5787	-4688	-602	-383	-75	5019	5603	-2197	-2072							
1940	REGIONAL	FIRM	SURPLUS/DEFICIT	-4433	-5198	-4687	-3468	-4136	-4973	-5109	-7212	-5258	-2834	-2661	1063	5586	-2281	-1947							
1941	REGIONAL	FIRM	SURPLUS/DEFICIT	-5126	-4486	-5144	-3438	-3683	-3162	-654	-1375	-3547	-1603	-1493	782	6988	1265	-3215							
1942	REGIONAL	FIRM	SURPLUS/DEFICIT	-2037	-2834	-3735	-3369	-4296	-3429	-654	-6584	-7539	-5048	-5622	9369	4447	-1430	-1361							
1943	REGIONAL	FIRM	SURPLUS/DEFICIT	-102	-2419	-2927	-3472	-4627	-3417	-5546	-5404	-6941	-4587	-6370	3284	7656	-2879	-3174							
1944	REGIONAL	FIRM	SURPLUS/DEFICIT	-5197	-5359	-5368	-3479	-4101	-6084	-7649	-514	-2450	-4241	-6160	7798	7480	3463	-647							
1945	REGIONAL	FIRM	SURPLUS/DEFICIT	-3016	-2920	-3281	-3485	-4004	-3671	-1230	-514	-3702	-3240	-6283	6365	7480	3463	-3131							
1946	REGIONAL	FIRM	SURPLUS/DEFICIT	34	-2942	-2931	-3477	-3661	-652	-3193	-1228	-2450	-3241	-6114	8930	12173	4830	1455							
1947	REGIONAL	FIRM	SURPLUS/DEFICIT	-441	-2965	-3206	-1205	-2913	-2383	-5370	-728	-4060	-1609	-6283	6365	7480	3463	2337							
1948	REGIONAL	FIRM	SURPLUS/DEFICIT	-2605	-4162	-2932	-3399	-3665	-3451	-3193	-2479	-4316	-4734	-6283	6365	7480	3463	1455							
1949	REGIONAL	FIRM	SURPLUS/DEFICIT	-3021	-3568	-4413	-3465	-3662	-3409	-3193	-3746	-6303	-6702	-6283	6365	7480	3463	2337							
1950	REGIONAL	FIRM	SURPLUS/DEFICIT	-2312	-1746	-2933	-2416	-1609	-3071	-6303	-6166	-7288	-8984	-7707	7072	3986	1138	1879							
1951	REGIONAL	FIRM	SURPLUS/DEFICIT	3339	-765	-2957	-1889	-3623	-1990	-2765	-1387	-3678	-6674	-8833	8792	6771	2229	3851							
1952	REGIONAL	FIRM	SURPLUS/DEFICIT	-235	-2934	-3422	-3482	-4408	-1990	-2765	-2202	-7	-1139	-214	4772	10208	4544	2081							
1953	REGIONAL	FIRM	SURPLUS/DEFICIT	748	-1985	-2922	-3413	-3661	-3365	-2989	-2367	-2950	-3992	-4872	7091	9788	5585	1769							
1954	REGIONAL	FIRM	SURPLUS/DEFICIT	3933	-3581	-2926	-2455	-2685	-3371	-1013	-2351	-29	-843	-1459	1179	9907	5585	1769							
1955	REGIONAL	FIRM	SURPLUS/DEFICIT	3192	-1458	-2926	-3384	-2589	-1545	-6953	-6978	-7872	-9238	-9632	9632	12739	5417	1039							
1956	REGIONAL	FIRM	SURPLUS/DEFICIT	3718	-943	-2932	-3384	-3652	-3299	-222	-242	-4087	-4927	-2861	7913	11341	572	1326							
1957	REGIONAL	FIRM	SURPLUS/DEFICIT	-2166	-2925	-3581	-3487	-4252	-3458	-1945	-1951	-1653	-1698	-3651	7419	7769	-95	1976							
1958	REGIONAL	FIRM	SURPLUS/DEFICIT	-2352	-2925	-3014	-3438	-3623	-2747	-6019	-2544	-4351	-5912	-3877	7419	7769	-95	1976							
1959	REGIONAL	FIRM	SURPLUS/DEFICIT	2263	-1999	-1120	-2789	-360	-336	-1977	-1869	-1068	-4374	-5374	3426	6950	3896	2531							
1960	REGIONAL	FIRM	SURPLUS/DEFICIT	2115	-2954	-2934	-3445	-3650	-3512	-1642	-1869	-1068	-4374	-5374	3426	6950	3896	2531							
1961	REGIONAL	FIRM	SURPLUS/DEFICIT	2210	-2915	-4043	-3472	-4080	-3454	-1977	-1869	-1068	-4374	-5374	3426	6950	3896	2531							
1962	REGIONAL	FIRM	SURPLUS/DEFICIT	-714	-2948	-3280	-3410	-3643	-2150	-1343	-2341	-282	-403	-2081	2787	6823	2848	286							
1963	REGIONAL	FIRM	SURPLUS/DEFICIT	-1135	-2932	-2935	-3462	-3684	-3455	-484	-3206	-403	-2081	-1891	3380	11151	8218	412							
1964	REGIONAL	FIRM	SURPLUS/DEFICIT	3507	-741	-2943	-2928	-3625	-1457	-7235	-4952	-6274	-5649	-8424	9007	9007	3272	3137							
1965	REGIONAL	FIRM	SURPLUS/DEFICIT	3728	-1369	-2953	-3411	-3675	-3420	-1538	-3160	-714	-2512	-1082	3525	6890	2335	108							
1966	REGIONAL	FIRM	SURPLUS/DEFICIT	1520	-2942	-3593	-3458	-4043	-3412	-3781	-1328	-222	-1588	-6	3525	11274	7350	934							
1967	REGIONAL	FIRM	SURPLUS/DEFICIT	-1520	-2942	-3593	-3458	-4043	-3412	-3781	-1328	-222	-1588	-6	3525	11274	7350	934							
1968	REGIONAL	FIRM	SURPLUS/DEFICIT	3365	-970	-2924	-3402	-3656	-3405	-976	-1567	-2829	-2088	-1247	2651	8272	3588	504							
1969	REGIONAL	FIRM	SURPLUS/DEFICIT	1774	-1238	-3095	-2055	-2667	-1462	-6543	-2027	-4867	-9037	-8947	8703	8697	3877	2899							
1970	REGIONAL	FIRM	SURPLUS/DEFICIT	-2478	-2936	-3095	-3551	-3829	-3452	-225	-1132	-530	-530	-1076	6447	7856	7086	-440							
1971	REGIONAL	FIRM	SURPLUS/DEFICIT	-2926	-2912	-3683	-3667	-4084	-3344	-3783	-7178	-5790	-9963	-5364	9388	12223	9418	4103							
1972	REGIONAL	FIRM	SURPLUS/DEFICIT	3428	-3119	-3041	-3572	-3895	-3312	-5231	-6264	-3949	-3949	-2514	1192	12720	2891	-1369							
1973	REGIONAL	FIRM	SURPLUS/DEFICIT	4215	-4509	-3037	-3448	-3783	-2635	-1872	-3010	-7918	-8974	-8270	8734	13153	-2891	-1369							
1974	REGIONAL	FIRM	SURPLUS/DEFICIT	-3078	-4376	-5515	-3553	-4218	-623	-7899	-8204	-3949	-3949	-2514	1192	12720	2891	-1369							
1975	REGIONAL	FIRM	SURPLUS/DEFICIT	3459	-4646	-3001	-3418	-3828	-3599	-4459	-394	-4530	-4530	-2285	5115	10407	6518	1517							
1976	REGIONAL	FIRM	SURPLUS/DEFICIT	868	3751	-285	-3306	-3745	-3348	-6441	-4191	-5589	-8232	-6414	7519	9591	6736	3671							
1977	REGIONAL	FIRM	SURPLUS/DEFICIT	4920	3751	-285	-3306	-3745	-3348	-6441	-4191	-5589	-8232	-6414	7519	9591	6736	3671							
1978	REGIONAL	FIRM	SURPLUS/DEFICIT	-4528	-4888	-5441	-3571	-4260	-3486	-3649	-3427	-1646	-5363	-4637	4843	7152	-2821	-2435							

EXHIBIT 36

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

ENERGY IN AVERAGE MEGAWATTS		2005-6 OPERATING YEAR												1995 FINAL WHITEBOOK:				01/22/96	
		AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	JUL	12 MO AVG			
1929 REGIONAL	FIRM SURPLUS/DEFICIT	-333	-4055	-3744	-1999	-4984	-3782	-4431	-7384	-6102	-5340	-5975	3655	4558	-3893	-2997			
1930 REGIONAL	FIRM SURPLUS/DEFICIT	-5076	-4584	-5798	-2659	-4810	-5059	-5166	-5800	-6218	-5238	-3241	925	3686	-3093	-3589			
1931 REGIONAL	FIRM SURPLUS/DEFICIT	-4909	-5206	-5734	-3333	-4927	-5294	-4597	-7563	-6478	-4698	-6466	2352	2961	-4763	-4001			
1932 REGIONAL	FIRM SURPLUS/DEFICIT	-4783	-4344	-5389	-3083	-4020	-5107	-7518	-6620	-411	3912	-4878	3885	8471	1881	-1507			
1933 REGIONAL	FIRM SURPLUS/DEFICIT	-2264	-2107	-2828	-3331	-3523	-3534	452	-1251	1415	489	2611	2772	9398	7658	549			
1934 REGIONAL	FIRM SURPLUS/DEFICIT	2387	-2152	-2694	-2449	-933	-5163	8721	-4558	4965	8483	6932	6403	6560	-3854	3035			
1935 REGIONAL	FIRM SURPLUS/DEFICIT	-3867	-4787	-5095	-3376	-3543	-3586	-1461	-5815	-2219	-3900	-38	3591	5712	1118	-1277			
1936 REGIONAL	FIRM SURPLUS/DEFICIT	-714	-2940	-3448	-3371	-4304	-5157	-5815	-7566	-2514	-3130	-4978	6420	5504	-1733	-1907			
1937 REGIONAL	FIRM SURPLUS/DEFICIT	-3012	-2924	-3146	-3369	-3957	-4033	-9205	-8614	-7044	-5313	-6744	863	6984	-3838	-3696			
1938 REGIONAL	FIRM SURPLUS/DEFICIT	-3021	-5030	-4200	-3371	-3537	-4521	-133	-2334	-2217	-728	5501	6102	7018	700	-225			
1939 REGIONAL	FIRM SURPLUS/DEFICIT	-3020	-2936	-2751	-3361	-4055	-5077	-5640	-5891	-2613	-1471	-329	4371	5381	-3114	-2219			
1940 REGIONAL	FIRM SURPLUS/DEFICIT	-3019	-2916	-3822	-3351	-4112	-3578	-5927	-4855	-217	-96	-250	1712	5363	-3198	-2094			
1941 REGIONAL	FIRM SURPLUS/DEFICIT	-4437	-5202	-4450	-3357	-4000	-5104	-5249	-7380	-4872	-3313	-2986	415	4692	-3070	-3362			
1942 REGIONAL	FIRM SURPLUS/DEFICIT	-5130	-4490	-4907	-3326	-3546	-3293	-548	-1207	-3517	-5518	8859	4974	9146	3530	-1214			
1943 REGIONAL	FIRM SURPLUS/DEFICIT	-2041	-2839	-3497	-3358	-4160	-3560	513	1207	-3517	-5518	8859	4974	9146	3530	-1214			
1944 REGIONAL	FIRM SURPLUS/DEFICIT	-106	-2424	-2690	-3360	-4491	-3548	-5886	-6752	-7153	-5066	-6696	2635	7433	-1836	-3461			
1945 REGIONAL	FIRM SURPLUS/DEFICIT	-5201	-5363	-5131	-3368	-3965	-6215	-7790	-5571	-6556	-5066	-6696	2635	7433	-1836	-3461			
1946 REGIONAL	FIRM SURPLUS/DEFICIT	-3020	-2923	-3044	-3373	-3868	-3802	-1370	347	-2836	-2763	5835	7150	7257	2545	500			
1947 REGIONAL	FIRM SURPLUS/DEFICIT	30	-2947	-2694	-3366	-3525	-783	-3053	1061	4088	3902	5605	5716	6575	2281	1308			
1948 REGIONAL	FIRM SURPLUS/DEFICIT	-445	-2969	-2969	-1093	-2777	-2514	-5229	560	4446	1130	5788	7781	11951	3912	2190			
1949 REGIONAL	FIRM SURPLUS/DEFICIT	2601	-4157	-2695	-3287	-3528	-3582	-3334	-2647	4702	4255	5958	7001	10897	-2056	512			
1950 REGIONAL	FIRM SURPLUS/DEFICIT	-3025	-3573	-4176	-3353	-3526	-3540	-163	-3578	6689	6223	6021	5024	10897	6532	1732			
1951 REGIONAL	FIRM SURPLUS/DEFICIT	2309	1742	-2695	-2304	-1473	-2940	6162	5998	7675	8506	7381	8258	6850	3068	3704			
1952 REGIONAL	FIRM SURPLUS/DEFICIT	3335	760	-2719	-1777	-3487	-2121	2624	1219	4065	6195	8507	8144	6549	1311	1934			
1953 REGIONAL	FIRM SURPLUS/DEFICIT	-238	-2939	-3184	-3371	-4272	-5320	45	2034	380	-1618	-111	3528	9566	3627	83			
1954 REGIONAL	FIRM SURPLUS/DEFICIT	745	-1990	-2685	-3302	-3525	-3496	2849	-2782	2754	3514	4546	6443	9566	4668	1622			
1955 REGIONAL	FIRM SURPLUS/DEFICIT	3929	3577	18	-2344	-2549	-3502	873	-2518	357	1322	-1784	531	9685	4668	1622			
1956 REGIONAL	FIRM SURPLUS/DEFICIT	3188	-1462	-2688	-3273	-3453	-1415	6812	2022	7365	7393	8913	8983	12517	4500	892			
1957 REGIONAL	FIRM SURPLUS/DEFICIT	3714	-947	-2695	-3272	-3516	-3430	82	-409	4473	4448	2535	7265	11119	-346	1179			
1958 REGIONAL	FIRM SURPLUS/DEFICIT	-2170	-2929	-3343	-3375	-4115	-3589	-2086	1784	2040	1220	5048	6770	7547	-1012	29			
1959 REGIONAL	FIRM SURPLUS/DEFICIT	-2355	-2929	-2777	-3327	-3487	-2878	5878	2377	4737	5433	3551	4102	10043	5435	1829			
1960 REGIONAL	FIRM SURPLUS/DEFICIT	3259	-1403	-883	-2901	-496	-466	1986	-1108	5639	8207	5048	2777	6728	2979	2384			
1961 REGIONAL	FIRM SURPLUS/DEFICIT	2111	-2959	-2696	-3334	-3514	-3643	1502	1702	3741	1896	-405	5307	10512	-759	761			
1962 REGIONAL	FIRM SURPLUS/DEFICIT	-2214	-2919	-3805	-3361	-3944	-3585	-2117	-2028	-682	4108	6946	3912	10512	1444	-443			
1963 REGIONAL	FIRM SURPLUS/DEFICIT	-718	-2953	-3043	-3298	-3507	-2281	1203	2173	790	-158	1755	2139	6601	1931	139			
1964 REGIONAL	FIRM SURPLUS/DEFICIT	-1138	-2937	-2697	-3351	-3547	-3586	-625	-3373	105	1100	1565	2732	10929	7301	265			
1965 REGIONAL	FIRM SURPLUS/DEFICIT	3503	-746	-2706	-2817	-3489	-1326	7094	4785	6661	5170	8098	5869	8785	2355	2989			
1966 REGIONAL	FIRM SURPLUS/DEFICIT	3724	1364	-2718	-3300	-3539	-3550	1398	-3328	-328	2033	756	2877	6668	1417	-39			
1967 REGIONAL	FIRM SURPLUS/DEFICIT	1524	-2947	-3356	-3347	-3927	-3543	3641	1161	609	1109	-1373	2570	11051	6433	787			
1968 REGIONAL	FIRM SURPLUS/DEFICIT	3362	-975	-2687	-3290	-3520	-3536	835	1399	3216	-2567	-1573	2003	8050	2670	355			
1969 REGIONAL	FIRM SURPLUS/DEFICIT	1770	-1243	-2766	-1944	-2531	-1593	6402	1859	5254	8548	8621	8055	8475	2960	355			
1970 REGIONAL	FIRM SURPLUS/DEFICIT	-2482	-2941	-2858	-3440	-3693	-3475	85	-1299	-144	-4039	1401	8055	8475	-360	2751			
1971 REGIONAL	FIRM SURPLUS/DEFICIT	-2930	-2916	-3446	-3555	-3948	-3475	3643	7010	6177	4826	5038	8739	12498	6168	2528			
1972 REGIONAL	FIRM SURPLUS/DEFICIT	3424	3114	-2800	-3461	-3759	-3442	5091	6096	9479	9485	5038	8739	12498	6168	2528			
1973 REGIONAL	FIRM SURPLUS/DEFICIT	4211	4504	-2804	-3337	-3647	-2766	-2012	-3177	-3402	-4428	-2839	543	5496	-3809	-1516			
1974 REGIONAL	FIRM SURPLUS/DEFICIT	-3082	-4380	-5278	-3342	-4082	-754	-3442	-3177	8305	8495	7944	8085	12931	10355	3867			
1975 REGIONAL	FIRM SURPLUS/DEFICIT	3455	4641	-2764	-3307	-3692	-3730	-600	226	3305	214	1959	4466	10185	5718	1369			
1976 REGIONAL	FIRM SURPLUS/DEFICIT	864	547	-2807	-3194	-2340	-4750	-6301	4023	5976	7754	6088	6871	9369	5718	3524			
1977 REGIONAL	FIRM SURPLUS/DEFICIT	4917	3747	523	-3199	-3609	-3478	-2961	7136	7180	5821	-6467	150	1387	-3664	-2582			
1978 REGIONAL	FIRM SURPLUS/DEFICIT	-4532	-4892	-5204	-3460	-4124	-3617	-3790	-3595	2033	4885	4311	4195	6930	1903	-737			

THIS PAGE INTENTIONALLY LEFT BLANK

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

THIS PAGE INTENTIONALLY LEFT BLANK

1995 Pacific Northwest Loads and Resources Study Administrator's Record Of Decision

I. Introduction

The 1995 Pacific Northwest Loads and Resources Study (White Book) establishes the Bonneville Power Administration (BPA) planning basis for supplying electric power to BPA customers. The White Book includes Federal system loads and resources and regional loads and resources with detailed technical appendices. This White Book updates the 1994 Pacific Northwest Loads and Resources Study, published in December 1994. As in past years, BPA staff developed a draft of the 1995 White Book. BPA then took public comment upon the draft. The draft was issued November 29, 1995, and a public workshop was held December 11, 1995. In addition, written comments were submitted during a 22-day comment period. BPA received 16 comments from its customers and others. Many comments questioned some proposed changes in methodology.

The 1995 White Book has generated substantial interest on the part of BPA's utility customers who want to reduce their power purchased from BPA over the remaining five years of their 1981 power sales contracts. Several issues were raised in this year's comments regarding BPA's method of calculating its loads and resources. As discussed in the Response to Customer Comment section, page 122, BPA's methodology takes into account some major changes in the hydro resources operation on the Columbia and Snake Rivers due to the 1995 National Marine Fisheries Service (NMFS) Biological Opinion. However, BPA's methodology for this White Book remains substantially the same as for previous loads and resources studies.

Due to the extensive nature of the comments, BPA has decided to prepare this Record of Decision for the purpose of summarizing customer concerns and BPA positions on specific issues, evaluating these positions, and providing a decision on the data and planning assumptions used to prepare the final 1995 White Book. This Record of Decision addresses the comments BPA received from its utility customers and others as part of BPA's determination of its loads and resource planning which meet in part its statutory obligations under sections 2, 5, and 6 of the Northwest Power Act. BPA deems this Record of Decision to be the final action for purposes of judicial review under Northwest Power Act section 9(e)(5).

II. Statutory Background

With the passage of the Northwest Power Act in December 1980, Congress directed BPA to assure the Pacific Northwest an adequate, efficient, economical, 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 firm power customers and to plan and acquire firm resources sufficient to meet these firm power loads. 16 U.S.C. 839e(9).

A. Northwest Power Act Section 5 Obligation to Serve Utility and Federal Agency Loads

Whenever requested, BPA is directed by section 5(b)(1) of the Northwest Power Act to offer to sell to its utility customers and Federal agency customers electric power sufficient to meet the firm peak and energy loads of such customers. BPA is to provide firm power to meet firm regional loads of a customer in excess of the firm resources which the customer dedicates to serve its own firm loads under subsection 5(b)(1)(A) and (B). 16 U.S.C. 839e(b)(1). BPA is also to provide electric power for those loads which were served by a customer's dedicated resources if those resources are no longer available to serve loads due to obsolescence, retirement or loss of resource, or loss of contract rights. Customers were required to dedicate those firm resources which they used or planned to use in the year prior to enactment of the Act. However, customers could choose whether to dedicate other, later acquired, resources. Because the Northwest Power Act requires that the Administrator meet the firm peak and energy loads of its utility customers in excess of the firm resources dedicated to serve such loads by the customer, BPA must have certainty in order to be able to efficiently and reliably plan the use of its own resources to meet its obligations.

B. Northwest Power Act Section 6 Obligation to Plan and Acquire Resources

The Northwest Power Act creates a direct obligation on BPA to acquire resources on a planning basis to meet its contract obligations. Under section 6(a)(2) of the Act, the Administrator is directed to acquire sufficient resources to meet, in addition to its other obligations, BPA's contractual obligations. Such obligations include BPA's obligations to provide firm electric power to its utility customers for their regional firm loads, as well as BPA's contract obligations to provide firm power to its direct service industrial (DSI) customers. 16 U.S.C. 839c(b); 839c(d). BPA's contracts with its utility and DSI customers contain provisions implementing these statutory directives.

III. Relationship of the White Book to 1981 Utility Power Sales Contracts and Current DSI Contracts

A. Uses of the White Book

The White Book is a source of information on projections of regional and Federal system load and resource capabilities. It incorporates information on forecasted loads derived from regional economic planning models (supported by current signed power sales contracts and exchange agreements) and resource capability obtained from public agency utility customers and investor-owned utility (IOU) customers through the annual data submittals to the Pacific Northwest Utilities Conference Committee, the Pacific Northwest Coordination Agreement (PNCA) Operating Committee, and analysis of the Federal hydroelectric power system. Verifiable changes to individual utility service obligations as evidenced by the annual submissions to BPA of a utility's Firm Resource Exhibits (FREs) under the power sales contract with BPA are also included. The White Book also serves as the referenced load-resource document under certain BPA contracts with extraregional purchasers.

The White Book does not serve as a Federal system operational planning guide. Operation of the Federal Columbia River Power System (FCRPS) is based on a set of criteria different from that used for this multi-year resource planning study or other resource

decisions. Operational planning criteria is dependent upon real-time and 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 contrast, the information in the White Book is based upon a different and less variable set of assumptions regarding loads, hydro capabilities, and contractual obligations.

B. Power Sales Contracts

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

The 1981 utility requirements power sales contracts establish the terms and conditions for BPA's sales of electric power to meet its Pacific Northwest utility customers' firm power loads in excess of their dedicated resources. The recently executed new requirements power contracts between BPA and its DSI customers establish BPA's firm power load obligations to those customers. The utility power sales contracts have a remaining term of 5 years, expiring on June 30, 2001. The new DSI contracts are also 5 years in duration, expiring September 30, 2001. BPA's White Book shows an estimate of firm loads and obligations for a 10-year planning period and is based on certain assumptions regarding the amount of load obligation BPA will have after expiration of the above agreements.

Certain provisions of the utility power sales contract address BPA's planning. Section 10(a) and (d) require BPA to exchange long-term planning and load information with its customers. Customers are to provide BPA with any planned changes in their loads. Section 8 of the contract requires the customers to inform BPA of any new large loads planned to be served by the customer. Section 5(a) of the power sales contract restates BPA's statutory obligation to plan and acquire sufficient resources in order to meet firm power load obligations to its customers. BPA's obligation to provide electric power to serve its customers' loads is not contingent upon any specific action taken by its customers to provide resources.

If BPA is unable to obtain or acquire sufficient firm power or resources on a planning basis to meet its obligations under its contracts with utility customers, BPA would have to determine whether there is a planning "insufficiency". In the event of an insufficiency, BPA must allocate the amount of Federal power available to each of its customers in accordance with section 7 of the contracts and pursuant to a formula. These provisions implement Northwest Power Act subsections 5(b)(5) and (6), and subsections 5(e) and (g) regarding the declaration of an insufficiency in firm resources on the Federal system to meet BPA's firm load obligations under its contracts. 16 U.S.C. 839c(b)(5); 839c(b)(6); 839c(e); 839c(g). Finally, section 12 of the utility contract contains provisions regarding the need for BPA and the customer to know what firm resources the customer will dedicate to its firm load over a planning period; the additions or removal of resources; and the terms for

notice. These provisions enable both BPA and the customer to know their respective service obligations and have certainty for their load and resource planning obligations.

The White Book is the resource planning and load forecast document used by BPA to determine those firm loads it must serve over the planning period and the Federal system resources available to meet those loads. Under section 12 of the 1981 utility power sales contracts, the customer must submit a Firm Resource Exhibit (FRE) which BPA reviews and either changes or accepts. The FRE declares the utility's dedicated resources it will use to serve its regional firm load over a 7-year period. The customer must update the seventh year of the FRE each year, which provides BPA with 7 years' notice for changes in the amounts of firm energy resources the customer will use to serve its firm energy load. The customer may make changes in the intervening six years only to the extent such changes are consistent with the notices required. Different notice periods are applicable to specific conditions or for specific types of resources.

Presently, customers are most focused on section 12(b)(7) and this White Book. Under subsection 12(b)(7) of the contract, the notice period is based on BPA's loads and resources study. BPA is to receive 7 years' notice for the addition of a firm resource to be dedicated by the customer to its load if BPA has a surplus of firm resources over the firm power loads BPA is to serve. BPA is to receive 6 months' notice if BPA has a deficit of firm resources over firm loads. BPA's calculation of surplus or deficit is based on its loads and resource study. BPA's calculations of amounts of firm resources and load are based on an average annual amount for energy (annual megawatt-hours) and megawatts for capacity. This provision also states that in making its calculation of surplus or deficit, BPA can only consider its firm commitments for the purchase of power.

Apart from its general use in planning, the White Book is the basis for BPA to make determinations of the notice required under section 12(b)(7) and (8) of the power sales contract, when a customer requests a change in its FRE. Under the terms of section 12, customers may not add or remove firm resources without giving BPA notice within the required period. The notice period provides planning certainty to BPA as to how much power a customer will continue to purchase from BPA for meeting its firm loads. In the event BPA is showing an annual resource deficit, customers may dedicate additional firm resources under their FREs and thus reduce the firm loads served from BPA. Such reductions are only up to the amount of the deficit in resources shown, and are made on a first-come, first-served, basis.

IV. Response To Customer Comment

Issue 1: Whether BPA Provided Customers Sufficient Documentation To Allow Reasonable Evaluation Of The Draft Analytical Results Of The White Book.

Summary of Comments:

The information BPA included in its November 29, 1995, mailing was inadequate to allow meaningful comments by customers on the draft results of the White Book analysis. (Clark Public Utilities; Clatskanie PUD; Benton PUD; Tacoma Public Utilities; Springfield Utility Board; Benton REA; Clearwater Power Company; Public Power Council)

Response:

BPA provided its most current draft of its White Book assumptions and calculations for the customers to review and comment upon. As with the past White Books, not all the data or assumptions may have been comprehensive, particularly those assumptions which might be changed or modified for use in the study. Given the high level of interest on the part of some customers, BPA sought input from customers as early as possible prior to completing the analysis in the White Book. The information provided by BPA in its November 29, 1995, mailing to its utility customers provided preliminary calculations and the assumptions used, including information on specific changes to the White Book analysis.

BPA recognizes that the information was not comprehensive, in that associated technical appendices were not completed at that time and that such information would be finalized at the time the White Book is published. The mailing provided the information which would usually be contained in an executive summary and sought to highlight those changes and assumptions of interest to customers. The summary gave customers an opportunity to consider the assumptions and calculations which impact Federal loads and resources planning and any proposed changes. The mailing was not intended to be a final draft of the White Book.

Issue 2: Whether BPA Should Include Or Exclude As Federal Resource Capability Terminated Resources, Or Resources That Were Planned To Be Acquired But For Which BPA Will Not Now Exercise Acquisition Rights.**Summary of Comments:**

Resources that BPA had planned to acquire, or had exercised acquisition rights for project output, but which are now not being acquired, or are being terminated, should be excluded from the White Book analysis. (Seattle; Tacoma; Grant; Douglas; Pend Oreille; Eugene Water & Electric Board; Franklin; PPC).

Response:

BPA agrees with the comment made. We have not included in our evaluation of Federal resource capability any of the planned output of any resources BPA had intended to acquire, but is now electing to not acquire.

In last year's analysis, BPA did include the gas-fired resources of Tenaska and SDS Lumber. Since that analysis, BPA determined that it will not acquire the output of resources under the Tenaska and SDS Lumber agreements; therefore, those projects have been removed from the 1995 White Book.

In addition to the above modification on Federal resources, we have made the following changes to customer resources based on changes in FREs agreed to between BPA and its customers after the publication of the 1994 White Book. BPA granted an FRE waiver to Clatskanie for its James River plant at Wauna as a 5(b)(1)(B) dedicated Firm resource, reducing Clatskanie's firm power load served by BPA. Emerald PUD requested a 5-average megawatt FRE addition for firm resources and BPA granted a waiver of the required notice. However, BPA could not determine a Firm resource as the source for the firm power and did not include it in this study.

Issue 3: Whether BPA Addressed The Return Of Canadian Entitlement As A Loss Of Resources.

Summary of Comments:

The draft White Book does not address the return of the Canadian Entitlement. Under treaty obligations with Canada, Bonneville is obligated to return energy beginning in April 1998. The return of the Federal portion should show up as a loss of resources ("transfers out") in the White Book. There should also be a load increase due to loads placed on BPA by its customers who are affected by Canadian return obligations. (Franklin; Canby; Clatskanie)

Response:

The Federal system delivers the Federal, public agency, and IOU shares of the Canadian Entitlement Return to Canada beginning in April 1998. This obligation is shown in the Federal System Exports as deliveries to Canada. See Table 2, page 9. As to the additional portions of firm load which may be served by BPA, BPA has not had any notice under section 12(b)(8) of the contract from those customers which are losing their Columbia Storage Power Exchange (CSPE) rights and thereby requesting BPA to replace those Firm resources.

Decision:

The White Book will show the expiration of the CSPE resources, but BPA will not assume an increase in load served by BPA under the utility contract.

Issue 4: Whether BPA Understated The Direct Service Industry Loads By 250 To 500 Average Megawatts.

Summary of Comments:

BPA has understated DSI loads by 250 to 500 average megawatts. (Clark) Public comments made by the Administrator state that BPA will serve 2,100 average megawatts of DSI load. The information in the November mailing indicates BPA will serve between 1,448 and 1,889 average megawatts of aluminum industry load. (Clatskanie; Canby)

Response:

The amount of DSI load that BPA will serve over the planning horizon is correctly stated in the final White Book. The numbers stated by the Administrator and in the preliminary study were early estimates of the size of DSI load. They also did not take into account the shape of the load placement from the DSI over the next five years. The final quantities of DSI loads are shown in Exhibits 1 through 4 and 6 through 8, lines 4 and 5, pages 44 through 63 in the 1995 White Book. They represent the aggregate of signed contract amounts associated with aluminum and non-aluminum DSI customers that had executed 5-year power sales contracts through December 31, 1995.

The levels of DSI service increase over the 5-year period. The values shown in the White Book are by operating year (OY)—which is different than fiscal year (FY) amounts as

reported by the Administrator. The fiscal year amounts for the DSIs are contracted for 1,588 average megawatts in FY 1996-97, increasing to 2,042 average megawatts in FY 2001.

Federal DSI Power Sales Contracts Signed Through December 31, 1995

Shown in Fiscal Year Format ^{1/}
Energy in Average Megawatts

Fiscal Year	1997	1998	1999	2000	2001
Federal DSI Loads	1,588	1,865	1,914	1,962	2,042

^{1/} Fiscal year is the 12-month period October 1 through September 30. For example, fiscal year 1997 is October 1, 1996 through September 30, 1997.

The corresponding DSI power sales contracts in OY 1996-97 total 1,560 average megawatts, increasing to 2,079 average megawatts in OY 2000-01.

Federal DSI Power Sales Contracts Signed Through December 31, 1995

Shown in Operating Year Format ^{2/}
Energy in Average Megawatts

Operating Year	1997	1998	1999	2000	2001
Federal DSI Loads	1,560	1,774	1,940	2,004	2,079

^{2/} Operating year is the 12-month period August 1 through July 31. For example, operating year 1997 is August 1, 1996 through July 31, 1997.

The Administrator's reference to DSI sales of 2,100 average megawatts includes BPA's sales to third parties who in turn sell to the DSIs, and additional DSI sales that were not signed by December 31, 1995. The White Book Federal DSI load forecast does not include those third party sales; they are included in Federal Contracts Out, Exhibits 1 through 4 and 6 through 8, line 10, pages 44 through 63 in the 1995 White Book.

Issue 5: Whether It Is Reasonable For BPA To Provide Aggregate DSI Load Information, But Not Amounts Associated With Individual Companies.

Summary of Comments:

Declaring DSI aggregate load information as "commercially sensitive" is untenable. (Benton PUD) BPA may be understating the DSI load numbers by excluding SP (surplus power) sales; however, it is impossible to confirm this because BPA has alleged individual DSI load information constitutes "commercially sensitive information." (PPC)

Response:

BPA has determined that individual DSI contract load information constitutes confidential commercial information. This determination was reached in the 1996 Wholesale Power Rate Case regarding information found to be exempt from public disclosure under the Freedom of Information Act (FOIA). Pursuant to Exemption 4 of the FOIA and Department of Energy (DOE) regulations, BPA may withhold "trade secrets and commercial or financial information obtained from a person and privileged or confidential." If released, competitors to the DSI customers could use the contract load numbers to their advantage in planning the timing of their production increases and release of such information could injure future individual DSI customer negotiations with suppliers of production inputs.

Decision:

This information has been found to constitute confidential commercial information exempt from public disclosure under the FOIA and DOE regulations. Because BPA is withholding this information for purposes of FOIA and DOE regulations in the 1996 Wholesale Power Rate Case, it will not disclose it for purposes of the White Book analysis.

Issue 6: Whether Resources That BPA Has Not Made A "Commitment" To Purchase Should Be Included In The Amounts Of Federal Resources Available To Serve Firm Load.**Summary of Comments:**

Specifically, the use of "option" energy purchases from various California contracts, which have been included among White Book firm energy resources, do not constitute "commitments" under the power sales contract and should be excluded. (Tacoma; Clatskanie; Grant; Douglas; Pend Oreille; Eugene; PNGC)

Some comments state that unless BPA has an obligation to purchase the energy, supplemental and option energy should not be counted as a firm resource. (Tacoma; Clark; Franklin; Clatskanie; Benton; PNGC; PPC; Grant; Douglas; Pend Oreille; Eugene) They claim that the firm right to purchase is not the same as the obligation to purchase. Some comments indicated that BPA should not include these options because they were not economic and would tend to increase BPA's rates. (Seattle; PNGC)

Response:

Section 12(b)7 of the power sales contract requires the exclusion of any purchase that BPA has not made a commitment to purchase.

Section 12(b)(7) of the contract reads, in pertinent part, as follows:

Bonneville's expected firm load-resource balance will be determined from the then latest publication of Bonneville's firm loads and planned firm resources issued by Bonneville; provided, however, that purchases by Bonneville which are shown in such publication but which Bonneville has not at the time of such determination

made a commitment to purchase shall be removed from Bonneville's resources before such determination is made.

The term "commitment" means a pledge or agreement to do something in the future. BPA has made a commitment to purchase the resources of the supplemental or "option" energy by making a binding agreement with its Pacific Southwest customers that they have the obligation to deliver firm power to BPA when BPA requests it. The terms for delivery are certain, as are the terms for price, quality of power, and amount of power. These are all binding terms and create a commitment on BPA to purchase firm power when needed. Furthermore, the customer's obligations to provide such energy can not be excused except on conditions of force majeure. These contract resources are fully like firm generation on any utility system which may be economically dispatched until it is needed.

Regarding the customers' comment that BPA should not include these firm contracts in its resources due to the price of the resources, there is no standard in section 12 regarding "commitments" which uses price as a condition in considering a resource as a firm resource for planning.

Decision:

BPA's right to purchase supplemental energy and other energy under executed contracts with its Pacific Southwest customers will be included. SCE (Southern California Edison) and BGP (the cities of Burbank, Glendale, and Pasadena) contracts are executed and fully enforceable. The SCE contract has both supplemental energy and option energy. The BGP contracts provide for BPA's purchase of supplemental energy. BPA has the right to purchase supplemental and option energy up to amounts pre-agreed in the contracts and at prices already determined under these contracts. Such rights are commonly relied upon by other utilities for service to loads and are distinguishable from an "option" to negotiate and enter into an agreement to acquire new resources. In addition, BPA has the obligation to exercise this right if it determines that it cannot otherwise meet its firm load obligations to Pacific Northwest customers. It is reasonable to consider this amount of energy as a firm commitment of BPA to supply it to Northwest customers and to use it in planning to meet their firm loads.

Such treatment of this right is consistent with section 12(b)(7), which requires that purchases BPA plans to use as firm resources must be committed to prior to publication of the White Book. Both the SCE and BGP contracts are firm rights to purchase power and are commitments made prior to publication of the 1995 White Book. BPA's right to exercise its right to purchase energy from SCE and BGP is a commitment for planning purposes because there is no ability of the power supplier to refuse to deliver the energy.

Issue 7: Whether BPA Should Convert The Power Sale Contract and Capacity/Energy Exchange Agreement With BGP And SCE From The Power Sale Mode To The Capacity/Energy Exchange Mode.

Summary of Comments:

Section 12(b)(7) requires that BPA only include purchases committed to prior to the publication of the White Book. BPA has not committed to converting those contracts to the exchange mode, therefore the energy can not be included as a firm resource. (Clark)

Converting those contracts to a capacity for energy exchange is a change from the 1994 White Book. This approach is not economically feasible since power is available in the marketplace at lower cost. (PNGC)

Response:

All of BPA's contracts with its Pacific Southwest purchasers are agreements binding in accordance with their terms upon both BPA and the customers under section 5 (a) of the Bonneville Project Act. Each of those contracts for the sale of Federal energy contains provisions for the termination of deliveries of Federal energy (recall) to the purchaser upon 60 days' notice. Such termination may be exercised by the Administrator at any time during the term of those contracts when the Administrator determines there is a need for the energy to meet its firm power requirements, including its obligations to supply firm power to meet BPA's regional utility load obligations. Such provisions are operative notwithstanding any other provision in those contracts. Such provisions are required and consistent with directives of P.L. 88-552 and section 9(c) of the Northwest Power Act.

The Administrator's ability to exercise his right to terminate delivery to the extraregional customers upon 60 days' notice is consistent with statute, and makes that energy available for use in the Pacific Northwest to meet firm load obligations at any time during an operating year and certainly makes such firm energy available for meeting firm load on a planning basis. This assumption is not only consistent with the statutes, but is consistent with the purposes of such statutes. Additionally, BPA's prior White Books have considered such contracts as firm resources "committed" by statute to serve Northwest loads when needed in the Administrator's judgment. Nothing in the utility power sales contract is inconsistent with this assumption.

The contracts with SCE and BGP also contain an alternative to the termination of deliveries (recall). That alternative is conversion of the sale transaction to a seasonal energy exchange. A seasonal energy exchange may provide greater benefit to BPA and its customers than planned termination of delivery. Seasonal energy exchange provides more firm energy when needed on BPA's system to meet firm load obligations. Energy exchanges are a common utility means of meeting firm load, and P.L. 88-552 recognizes seasonal exchanges with the Pacific Southwest as a beneficial means of meeting loads in both regions. Today, exchanges permit BPA to use thermal resources of another system to create a greater ability to shape amounts of its monthly surplus energy into months when it has a deficit.

The use of exchanges for firm planning is wholly appropriate. These contracts are executed contracts under which the parties have firm rights and obligations. The contracts may move from a power sale into a capacity/energy exchange pursuant to the terms of those contracts. Under the contracts, BPA has the firm right to convert them from power sales to capacity/energy exchanges prior to each operating year if BPA needs the energy to meet its firm obligations. Likewise, both SCE and BGP have rights to request conversion to meet their needs.

BPA's decision to convert is made based on both planned loads needs and annual operational needs of the Federal system. When deciding whether to convert a contract for a specific operating year, BPA considers its ability to meet loads and the expected market price of energy for the upcoming operating year. The decision is based upon BPA's energy

requirements and what makes economic sense at the time the decision is made. For the last several years, BPA has shown the contracts in the power sale mode; however, in studies prior to 1990, these contracts were shown as power sales that converted to capacity/energy exchanges within the study period. Regardless of whether BPA elects to use the alternative of conversion or exercises its right to recall, the contracts are firm resources for use in meeting BPA firm loads on a planning basis. BPA has also shown these contracts in capacity/energy exchange mode in annual operating submittals to the Northwest Power Pool Operating Program.

Decision:

Under the BGP and SCE contracts, BPA may exercise its right to terminate deliveries or to convert them from the power sales mode to a capacity/energy exchange mode. For planning purposes, BPA has chosen to use the alternative of conversion for its planning purposes in order to provide operational flexibility for the Federal system.

Issue 8: Whether It Is Reasonable For BPA To Change The Resources Methodology To A 12-Month Annual Average Approach Based Upon An 8-Month Critical Water Period And Remove The May And June Columbia River Flow Augmentation Energy As Part Of The Federal Capability.

Summary of Comments:

For OY 1996-97, the 12-month average resources compared with 12-month firm loads would be reasonable. (Seattle)

BPA should not adopt the proposed 12-month average approach that includes excess hydro capability for May and June. (Tacoma; Grant; Pend Oreille; Douglas; EWEB) Current hydro system management circumstances require a monthly rather than annual basis. (Benton; Clatskanie; McMinnville; Flathead Electric; Franklin; PPC)

Removing the May and June Flow Augmentation results in an overstatement of Federal capability in excess of 400 average megawatts. Due to the inability to shape the surplus, it should continue to be made to reflect zero on an annual basis. (Tacoma; Grant; Douglas; Pend Oreille; Eugene; Clark; Franklin; Clatskanie; Benton; Canby; McMinnville; Flathead)

Rather than eliminate the flow-augmentation, it should be increased to reflect the fact that extra energy output associated with the fish-flush is dump energy. It is not legitimate for BPA to claim it would use Canadian storage to convert dump energy into firm energy in other months of an Operating Year because BPA has allowed its Canadian storage contract to expire. (Benton REA, Springfield, Clearwater)

Response:

The White Book establishes the firm capability of all Federal resources and contracts. However, changes mandated by the 1995 NMFS Biological Opinion required BPA to make a new assessment of the firm energy resource capability of the Federal hydro system. These changes, in turn, require BPA to change the way the hydro system is operated for producing power for the Federal system in two ways. First, the Biological Opinion mandated quantities of spill to be achieved between the months of April through July. Second, as a

result of this change in Federal hydro generation operations, regional power planning bodies moved from the traditional 42-month critical period to an 8-month critical period.

The firm capability of the Federal system includes the generating capability of all resources and contracts for all months in any operating year--including any surpluses in the months of May and June. This approach is consistent with the Northwest Power Pool's Coordination Contract Committee decision for the 1996 Pacific Northwest Coordination Agreement Operating Program. That decision treats the firm hydro system capability in the months outside the 8-month critical period as firm resources based on their assured capability to meet firm loads. The White Book is an estimate of firm resources on an annual planning basis for BPA's multi-year study of loads and resources and not an operational study. In calculating an annual average of firm energy, it would be unreasonable not to use an annual shape for assured capability of resources and thereby understate firm generating capability on the system in excess of loads from those months with highest streamflows. BPA's use of a 12-month average is consistent with PNCA planning and allows for the equal treatment of all surpluses and deficits in any operating year. This provided the rationale for removing May and June Flow Augmentation from the 12-month annual average.

Inclusion of energy capability for May and June is consistent with the treatment by the PNCA of the assured capability for generation in those months. It also more accurately reflects annual Federal system generation capability.

The comments made that BPA no longer has storage agreements with Canada are in error. BPA has several agreements in place with Canada that provide BPA with off-system storage and flexibility. BPA has a general storage agreement with B.C. Hydro at the Williston hydro project. In addition, BPA has non-Treaty storage at Mica Dam through June 30, 2003.

BPA is also exploring ways to further increase its off-system "storage" operations with the Pacific Southwest. This off-system storage would meld Pacific Northwest energy surplus in the spring and summer to serve the Pacific Southwest peak energy demand. In return, the Pacific Southwest would provide energy to the Pacific Northwest to serve winter time peak energy demand.

Decision:

The methodology used to calculate the annual firm hydro capability of the Federal system will reflect the 12-month annual average of energy, including the full firm energy capability for the months of May and June.

Issue 9: Whether The Parties To The Contract Should Agree Upon A New Method For Determining Surplus/Deficit Post Operating Year 1996-97.

Summary of Comments:

For operating year 1996-97, the 12-month average is reasonable (using PNCA monthly firm resource estimates), but after operating year 1996-97 a new method for determining surplus/deficit should be agreed upon by BPA and all of BPA's affected customers. (Seattle)

Current hydrosystem management circumstances require a monthly rather than annual basis. (Benton; Clatskanie; McMinnville; Flathead Electric; Franklin; and PPC)

Response:

We will continue to use the assumptions that result in an annual planning estimate for firm energy and firm capacity on the Federal system for both loads and resources. This is a reasonable assumption and is consistent with past practices and methods. No specific method, such as using monthly deficits or surpluses for annual planning, is required by the contract. In fact the use of monthly deficits, which could permit a utility to reduce its load on BPA for 12 months when BPA has a single month in which a deficit may occur, shows the unreasonableness of that approach. The consequence would be that BPA could have huge surpluses in resources in those months unless the customer was only permitted to take its load off in the month of the deficit. This is a new approach to multi-year planning which was not provided for in the current contract. BPA is under no obligation to negotiate a change in its White Book methodology with its customers but is willing to have them review future White Books and provide comment.

BPA recognizes that regional markets are changing and customers may be desirous of negotiating new contractual arrangements for firm power service with BPA. We agree that a regional dialogue on a new method for determining resource surpluses/deficits would be appropriate for a new contract and would be valuable. BPA may engage in a regional dialogue over the changes that have occurred to power planning and system operations in the Northwest as part of such a negotiation. Certainly the 1995 NFMS Biological Opinion monthly streamflow requirements, and the reduced ability on the Federal system to shift and shape water among certain months of the year, indicates consideration to developing a different basis for annual estimations of generation may be desirable. If new contracts are executed between BPA and its utility customers, then the parties may provide for a different basis upon which the annual loads and resources may be analyzed. For example, one approach may be a monthly, or a probabilistic basis, as a way to fully review and analyze generation capability, and reliability.

Decision:

BPA will use a 12-month average of generation capability and loads consistent with its prior planning assumptions used for this study and consistent with the PNCA operating committee determination of assured capability for system generation for this year, and apply that assumption for an annual energy and peak numbers in this study as a basic assumption.

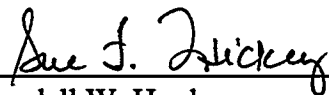
V. Conclusion

BPA has prepared this 1995 White Book using a methodology for calculating loads consistent with its past White Books. It has made a modification to the methodology for calculating Federal and regional resources from the 1994 White Book by using the 12 months for average energy, rather than the 10 months used by the PNCA operating committee for 1994 planning. However, as shown in Appendix X, the use of the 12-month average energy based on the assured generating capability of hydro resources for the 4 months of March through June is consistent with this year's PNCA operating committee planning decisions. The White Book continues to use the same assumption as the PNCA planning on assured capability. This White Book also reinstates the use of Pacific Southwest contracts as committed resources available to serve firm power load obligations of BPA in the Pacific Northwest. The White Book's reflection of these contracts as a firm resource, including the supplemental energy available to BPA, is (1) required by BPA statutes regarding extraregional sales; (2) consistent with our power sales contract provisions; and (3) consistent with calculations contained in many of the prior White Books issued by BPA.

As in the past, BPA's 1995 White Book was prepared after consideration of several of our customers' issues and concerns addressed above. Given the possibility for more change in the market and in operations of both the Federal system and our utility customer systems, we expect there will be further issues to resolve. This White Book is a loads and resource study which provides BPA's best estimate of its ability to meet its existing firm power load obligations given its resources and alternatives available to it. This White Book is one part of BPA's compliance with the Congressional purpose and directives of Northwest Power Act sections 2(a), 4(h), 5(b) and 6(a) to provide an adequate, efficient, economic, and reliable power supply to our customers.

FEB 06 1996

Issued in Portland, Oregon on _____.



Randall W. Hardy
Administrator and
Chief Executive Officer

SECTION X

GLOSSARY AND ACRONYMS

THIS PAGE INTENTIONALLY LEFT BLANK

GLOSSARY

- Average Megawatts** - A unit of electrical consumption or production over a year. It is equivalent to the energy produced by the continuous use of 1 megawatt of capacity served over a period of 1 year. (Equivalent to 8.76 gigawatt hours, 8,760 megawatt hours, or 8,760,000 kilowatt hours.)
- Biomass** - Any organic matter that is available on a renewable basis, including forest residues, agricultural crops and waste, wood and wood wastes, animal wastes, livestock operation residue, aquatic plants, and municipal wastes.
- Bonneville Power Administration (BPA)** - BPA is a power marketing agency, responsible for acquiring and delivering sufficient power to meet its contractual obligations to serve the electrical needs of its customers. BPA does not own generating resources.
- Capacity** - The maximum power that an electrical system or machine such as a hydro powered or thermal powered generating plant can produce under specified conditions.
- Capacity Factor** - The ratio of the average load on a machine or piece of equipment over a given period to the maximum power rating of the machine or equipment.
- Cogeneration** - The simultaneous production of electricity and useful heat energy from a fuel source. Often this is accomplished by the recovery of waste energy caused by various industrial and commercial operations. This is typically used for industrial processes or space heating applications.
- Conservation** - Any reduction in electrical power consumption as a result of increases in the efficiency of energy use, production, or distribution.
- Critical Period** - That portion of the historical streamflow record during which the recorded streamflows, combined with all available reservoir storage, produced the least amount of energy.
- Dedicated Resources** - Generating resources owned by a utility and used to serve its firm loads. These resources are declared for a rolling 7-year period in Exhibit I of the utilities' power sales contracts with BPA.
- Direct Service Industries (DSI)** - A group of industrial customers that purchase electric power directly from BPA. Most DSIs are aluminum and other primary metal smelting plants.
- Diversity** - An adjustment applied to peak loads to reflect the fact that all peaking electrical demands do not occur simultaneously across the region.
- Energy Load** - The demand for power averaged over a specified period of time.
- Federal Columbia River Power System (FCRPS)** - The FCRPS consists of 30 Federal hydroelectric projects constructed and operated by the U.S. Army Corps of Engineers (COE), U.S. Bureau of Reclamation (USBR), plus BPA's transmission facilities.
- Federal System** - The Federal system is a combination of BPA's customer loads and contractual obligations, and resources from which BPA acquires the power it sells. The resources include plants operated by the U.S. Army Corps of Engineers (COE), U.S. Bureau of Reclamation (USBR), and hydroelectric projects owned by the city of Idaho Falls and WPPSS. BPA markets the thermal generation from WNP-2, operated by WPPSS.

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

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

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

Fiscal Year - In this study, fiscal year (FY) is the 12 month period October 1 to September 30. For example FY 1994-95 is October 1, 1994 to September 30, 1995.

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

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

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

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

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

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

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

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

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

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

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

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

Operating Year - For this study, operating year (OY) is the 12-month period August 1 through July 31. For example, OY 1996-97 is August 1, 1996 through July 31, 1997.

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

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

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

Resource Acquisitions - Conservation or generating resources acquired in order to meet projected firm energy deficits.

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

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

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

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

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

ACRONYMS

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

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

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.