PACIFIC NORTHWEST UTILITIES
CONFERENCE COMMITTEE

WEST GROUP FORECAST
OF POWER LOADS AND RESOURCES

JULY 1977 - JUNE 1988

FEBRUARY 15, 1977

WEST GROUP FORECAST
JULY 1977 THROUGH JUNE 1988

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Section

February 15, 1977

Mr. Howard C. Elmore, Chairman
Pacific Northwest Utilities Conference Committee
P. O. Box 1231
Wenatchee, WA 98801

Dear Mr. Elmore:

The PNUCC Subcommittee on Loads and Resources has completed the West Group Forecast dated February 15, 1977. The summary tabulation and bar graphs summarize and illustrate the estimated loads and resources of the West Group area for the years 1977-78 through 1987-88.

As was done last year, the detailed discussion has also been included in the summary report. No discussion of the report is included in this letter of transmittal except to highlight significant changes from previous West Group Forecasts.

The total load growth for the area is an average annual rate during the ten-year period of approximately 4.6% peak and 4.5% energy. Starting in 1977-78, peak and energy loads were also reduced in this year's report and reflect a reduction of 606 mw peak and 338 mw energy from last year's report, and by 1986-87 the loads are 1768 mw peak and 760 mw energy less than reported last year.

The probability of the West Group resources being able to meet the West Group energy load in each of the 11 years in the forecast period was changed to show the probability of not meeting the energy load. The probabilities were determined from the computer program developed last year, the Energy Reserve Planning Model, which is described in the detailed discussion.

Pacific Power & Light Company's (PP&L) 66 2/3 percent share of Jim Bridger plant continues to be available to serve West Group loads for a number of years. It is included as an import from the East Group along with PP&L's other Wyoming generation after deducting Wyoming load.

A range of projected loads was made from the econometric model developed for PNUCC by National Economic Research Associates. This model produces a spectrum of possible loads, providing one (but not the only) comparison for checking the reasonableness of the actual load forecast which is contained in the West Group Forecast. An appropriate description of what the model can and cannot do at this point is included in the detailed discussion.

The Hanford-NPR project has been included as a firm energy resource through June 1983, although negotiations have not been finalized to extend its operation past October 1977.

This year's (1977) report includes a Section VII entitled "Loads" which shows a breakdown of loads by major utilities. This section also includes two other sheets. The first sheet has information on loads which includes, by years, the interruptible loads in the area. The second sheet shows total West Group area peak and energy loads by months for the 11 years of the report.

Very truly yours,

Glenn Nogle

Glenn F. Nogle, Chairman
Subcommittee on Loads and
Resources of Pacific Northwest
Utilities Conference Committee

GFN:lv

Subcommittee on Loads and Resources:

F. C. Blood	Bonneville Power Administration
F. B. Dyer	Seattle City Light
D. J. Caha	Tacoma City Light
G. E. Bredemeier	Portland General Electric Company
A. D. Hanson	Coordinating Group of Northwest Power Pool
R. F. Deesen	Pacific Power & Light Company
D. H. Knight	Puget Sound Power & Light Company
H. M. Schoffen	Chelan County Public Utility District
T. C. Wendt	Grant County Public Utility District
N. A. Dodge	U. S. Army Corps of Engineers
J. I. Fuller	Eugene Water & Electric Board
G. A. Einarsson	Douglas County Public Utility District
H. R. Kosmata	Washington Public Power Supply System
E. F. Timme	Intercompany Pool
G. F. Nogle	The Washington Water Power Company

SECTION I

Summary Data

Discussion of Detailed Report

DEFINITIONS

For the purpose of assisting in interpreting the enclosed figures, the following terms are explained as used:

Critical Period: The multimonth period during which the least amount of firm energy load can be served from hydro firm resources. With the scheduled development of additional storage facilities, both U.S. and Canadian, the critical period has extended to a multiple-year sequence of historical water years. For each of the load years included in this report, the length of the critical period is 42-1/2 months (August 16 through February 29) based on 1928-32 water years.

The hydro peak capabilities are the January peaking capabilities based on 1936-37 streamflow conditions. The 1936-37 water year represents the most severe conditions that would occur in a single season with reservoirs full at the beginning of the storage drawdown period.

Adverse Water Years: Historical water years during which the critical period occurred.

Firm Resources: (Firm Power and Energy Capability) - Peak and energy resources of all systems, plants and reservoirs when operated as an integrated unit and when related to the characteristics of the Area firm load and as limited by the regulated streamflow of the critical period of the adverse water years.

Milestone: A significant event in the critical path from conception of a thermal project to the time it is placed in commercial operation. Each Milestone is assigned a standardized time interval from its occurrence to the most probable date that the project will provide the planned level of capacity and energy.

Probable Energy Date: The later of the scheduled date for commercial operation as submitted by the plant sponsor or the date determined by application of Milestones.

Secondary Resources: Resources in excess of firm resources.

Total Load: The peak and energy load that the West Group Area plans to provide resources to serve. The Area load consists of two components which are:

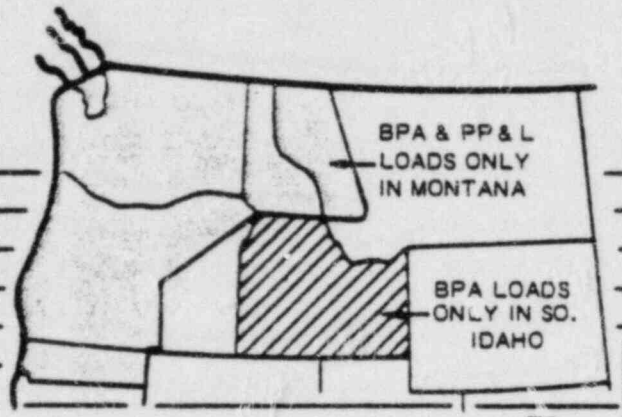
(1) Firm load or the load which a utility or agency is committed to supply.

(2) Interruptible load or the load which by agreement can be curtailed due to adverse water or shortage of machine capacity.

WEST GROUP FORECAST

PEAK LOADS AND RESOURCES

(ADVERSE HYDRO)



THOUSAND MEGAWATTS

40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

TOTAL PEAK LOAD

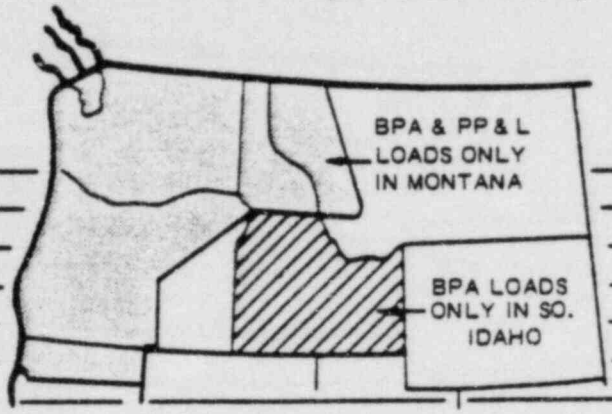
PEAK RESOURCES

1977-78 1978-79 1979-80 1980-81 1981-82 1982-83 1983-84 1984-85 1985-86 1986-87 1987-88

YEAR

WEST GROUP FORECAST

ENERGY LOADS AND RESOURCES
(ADVERSE HYDRO)



THOUSAND MEGAWATTS

40
39
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18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0

TOTAL ENERGY LOAD

ENERGY RESOURCES

1977-78
1978-79
1979-80
1980-81
1981-82
1982-83
1983-84
1984-85
1985-86
1986-87
1987-88

YEAR

L22888

WEST GROUP FORECAST - ESTIMATED LOADS AND RESOURCES
JULY 1977 - JUNE 1988

Figures are megawatts.		1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
1. Total Area Peak Load (January)		24,020	25,202	26,742	27,963	29,229	30,561	31,816	33,187	34,633	36,128	37,744
2. Total Peak Resources 1/		28,187	31,589	32,668	34,580	37,325	37,462	39,326	41,861	44,177	46,191	46,847
3. Reserve Requirements		(2,882)	(3,276)	(3,744)	(4,194)	(4,677)	(5,195)	(5,727)	(6,306)	(6,927)	(7,226)	(7,549)
4. Peak Resources		25,305	28,313	28,924	30,386	32,648	32,267	33,599	35,555	37,250	38,965	39,298
5. Peak Surplus (Over Total Load)		1,285	3,111	2,182	2,423	3,419	1,706	1,783	2,368	2,617	2,837	1,554
6. Total July-June Energy Load		15,545	16,326	17,335	18,178	18,948	19,770	20,565	21,401	22,281	23,183	24,128
7. Total Energy Resources 1/		15,032	15,489	15,693	16,703	18,126	18,929	19,306	20,700	22,277	23,337	23,414
8. Reserve Requirements		(313)	(322)	(330)	(351)	(386)	(368)	(388)	(407)	(421)	(444)	(478)
9. Energy Resources		14,719	15,167	15,363	16,352	17,740	18,561	18,918	20,293	21,856	22,893	22,936
10. Energy Surplus (Over Total Load)		(826)	(1,159)	(1,972)	(1,826)	(1,208)	(1,209)	(1,647)	(1,108)	(425)	(290)	(1,192)
11. Interruptible Load (Included in Lines 1 and 6)	-Peak	1,006	1,066	1,199	1,237	1,195	1,143	1,153	1,164	1,174	1,185	1,195
	-Energy	975	1,046	1,149	1,200	1,159	1,108	1,118	1,128	1,138	1,149	1,159
12. Fossil-Thermal & Miscellaneous Resources (Not Included Above) 2/	-Peak	-	-	-	-	-	-	-	-	-	-	-
	-Energy	554	611	617	611	611	611	611	611	603	603	603
Probability that Resources Will Be Insufficient to Meet Total Energy Load in at Least 1 Period of: 3/												
13. Year Shown	-%	31.2	18.6	35.2	31.8	15.8	18.0	21.0	18.4	11.0	15.0	24.6
14. Years, 1978-79 through Year Shown	-%	-	18.6	41.6	59.2	65.0	69.8	75.6	79.2	80.8	84.6	87.2
Probability that Resources Will Be Insufficient to Meet Firm Energy Load in At Least 1 Period of: 3/												
15. Year Shown	-%	17.4	9.6	11.8	10.2	4.8	6.4	7.6	6.0	3.0	4.6	9.4
16. Years, 1978-79 through Year Shown	-%	-	9.6	18.6	25.4	28.2	32.6	37.2	41.0	42.4	45.4	50.8

1/ Resources include hydro; small fossil-fuel plants; Hanford-NPR through June 1983; Centralia; Trojan; Colstrip #1 and #2 (50%), #3 and #4 (70%); WPPSS Nuclear #1, #2, #3, #4, #5; Boardman Coal; Skagit #1 and #2; Pebble Springs #1; and net contractual imports/exports with utilities outside the area. Hanford is not included as a peak resource. Estimated amounts for scheduled maintenance (energy only), hydro realization factor (peak only) and incremental losses have been deducted. All existing thermal units and future thermal units under 500 megawatts (peak and energy) are included in amounts as submitted by respective project owners. The energy availability of all future thermal units 500 megawatts or larger has been included as 60% of the first full year and 75% thereafter.

2/ The energy megawatts tabulated in line 12 reflect the amounts of energy available from existing fossil and gas turbine installations which may be considered available as reserve energy resources. These amounts are in addition to those included as firm energy resources in line 7.

3/ Based on same load and resource data as other tabulations herein, except that there is no consideration of energy reserve requirements or realization factor. Study initialized on the basis of actual system conditions and streamflow forecasts made as of February 1, 1977. Because the outlook for 1977-78 is strongly affected by the poor runoff forecasted for 1977, the probabilities for 1977-78 are omitted from the accumulated probability figures. The tabulation shows probability of not meeting load, while last year's West Group Forecast showed probability of meeting load.

New Generating Units Installed During the Report Period

Plant	Initial Operation	Date of Completion	Nameplate Rating
Lost Creek	Feb 1977	Mar 1977	49
Chief Joseph	May 1977	May 1979	1,045
Grand Coulee	Sep 1977	Sep 1978	2,100
Grand Coulee Pump-Generators	Oct 1979	Oct 1980	200
Lower Granite	Jan 1978	Mar 1978	405
Little Goose	Feb 1978	May 1978	405
Lower Monumental	Feb 1979	Apr 1979	405
Bonneville	May 1981	Jul 1982	532
Libby	Nov 1983	Nov 1983	420
Libby Reregulating	Dec 1983	Apr 1984	76
Rock Island	Feb 1978	Feb 1979	408
Noxon Rapids	Nov 1977	Nov 1977	114
Northeast Turbine	Oct 1978	Oct 1978	30
Colstrip #3 and #4 (70% for Area Resource)	Oct 1980	Aug 1981	980*
Skagit #1	Jul 1984	Jul 1984	1,330
Skagit #2	Aug 1986	Aug 1986	1,330
Beaver Combined Cycle	Nov 1977	Nov 1977	168
Boardman Coal (90% for Area Resource)	Jul 1980	Jul 1980	504*
Pebble Springs #1	Jul 1985	Jul 1985	1,295
Jim Bridger #4	Dec 1979	Dec 1979	509**
Washington Public Power Supply System #2	Jun 1980	Jun 1980	1,100
Washington Public Power Supply System #1	Sep 1981	Sep 1981	1,373
Washington Public Power Supply System #3	MAY Mar 1983	MAY Mar 1983	1,316
Washington Public Power Supply System #4	MAR May 1983	MAR May 1983	1,373
Washington Public Power Supply System #5	Nov 1984	Nov 1984	1,316
Total New Installations			18,783

December 31, 1976 Installed Capacity	- Hydro	22,556	
	- Hanford Steam	800	
	- Existing Thermal & Miscellaneous	1,246	
	- Centralia	1,330	
	- Jim Bridger #1, #2, #3	1,526**	
	- Colstrip #1, #2	358*	
	- Trojan	1,216	29,032
Total Installed Capacity - Megawatts			47,815

*Portion of plant shown as a West Group area resource.
**Generation from Jim Bridger is included in transfers from East.

WEST GROUP FORECAST

Discussion of Detailed Report

Objectives

The West Group Forecast is an area report prepared annually by the Loads and Resources Subcommittee of the Pacific Northwest Utilities Conference Committee. Its objective is to show the estimated peak and energy loads and the peak and energy capabilities of existing and planned resources to meet these requirements. The basic criteria employed in the preparation of the report are described in the following text.

Details of estimated loads and resources for the period July 1977 through June 1988 are tabulated in the report. Comparisons of total peak and energy loads with peak and energy resources indicate when deficiencies or surpluses may be expected in the area under adverse streamflow conditions. The probabilities of failing to meet area energy loads are determined for each year.

The critical-period hydro energy capabilities have been predicated on coordinated operation of all West Group resources, including the operation of Canadian Storage, as required by the Pacific Northwest Coordination Agreement. In preparing the analysis, an attempt was made to shape any surplus or deficiency as uniformly as possible during the critical period.

Tabulations "Summary of Resources" include the energy capability and January peak capability for each of the years of the report period. Summary tabulations by months for 40 years of water record showing the surpluses and deficiencies over the firm energy load carrying capability are also included. A more detailed analysis of individual plant January peak capabilities and critical-period energy capabilities is tabulated in Section V, "Peak and Energy Capability."

Operating Area Covered

The report area includes the entire state of Washington, the panhandle of Idaho, Oregon except for the southeastern part of the state, a portion of northern California, the Bonneville Power Administration and Pacific Power & Light Company service areas in Montana, and the BPA loads and USBR resources in southern Idaho. It does not include the service areas of Idaho Power Company, Utah Power & Light Company, The Montana Power Company, California-Pacific Utilities Company, B.C. Hydro and Power Authority or West Kootenay Power and Light Company, Limited. Firm contractual arrangements of utilities operating in the West Group area with utilities outside this area have been included in summary tabulations.

Planning Estimates

The West Group Area Loads used for planning purposes are the sum of the system peak loads and the system energy loads estimated by each of the utilities operating in the area. The resulting total average annual rate of load growth for the area for the 10-year period is approximately 4.6% peak and 4.5% energy. The estimates include an increase in total BPA industrial load, due to technological changes, of approximately 40 megawatts per year commencing in 1978-79.[1] The total West Group peak and energy loads by months are found in Section VII of the report. Section VII also includes a breakdown of loads by major utilities.

The utilities are keenly aware of the need for accurate load forecasts in the planning and scheduling of resources to meet the projected power requirements. The costs and difficulties of acquiring capital are at historic peaks, and the utility industry is very capital intensive. Therefore, scheduling of resources in advance of need would result in a very serious and adverse financial impact on utilities and their customers. Conversely, there would be severe adverse economic effects on the people and commerce of this area and a difficult allocation or rationing problem for state governments if there were insufficient resources to meet the power needs. Because of the vital importance of balancing the loads and resources, the load-resource analyses are reviewed at least annually. If experience shows that more than enough resources have been scheduled, the schedules can be corrected by delaying completion; but if too few resources have been scheduled, there may be no way to avoid the public injury from the resulting shortage.

The BPA system load excludes Grand Coulee and Roza pumping loads and USBR local use at Grand Coulee, and compensation for these loads is accomplished by reducing Grand Coulee and Roza resources by equivalent amounts.

The forecast reflects plans to provide resources to serve both the peak and energy components of the total Bonneville Power Administration industrial loads, approximately 25% of which may be interrupted for any reason. The BPA interruptible load has been noted in Section VII on the sheet "Information on Loads," and is shown on line 11 in Section I on the summary sheet "Estimated Loads and Resources." These loads operate under contracts which do not assure a firm power supply; therefore, it is to be expected that these loads might be curtailed if necessary during an adverse water year.

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[1] *Pending completion of BPA's "Role" environmental impact statement, BPA has not determined that it will serve either the present or new loads of its existing industrial customers after their existing contracts expire. This statement applies at all places in this report that include or make reference to BPA's industrial loads.*

Peak load estimates are based on 60-minute clock-hour averages. Within the hour, short-time loads will be in excess of the hourly average. However, peak load diversities between systems result in an area peak lower than the sum of system peaks. The short-time peak loads in excess of the hourly average and the diversity in system peak loads are of the same general magnitude and tend to cancel each other.

Energy loads on the summary sheets are shown as a July-June average.

Econometric Model Estimates

In 1975 the PNUCC contracted with the National Economic Research Associates (NERA) to develop an econometric load forecasting model for the Pacific Northwest Region. A great deal of judgment is involved in the development of econometric models both in the structure of a model and in the appropriateness of the relationships derived through statistical analysis. It was for this reason that the PNUCC retained a firm which is a national leader in this field and has had broad experience in the development and utilization of econometric models.

The construction of the PNUCC model was essentially completed by NERA during January 1976. Since that time, the model has been reviewed extensively by various members of the PNUCC, both through their own forecasting efforts and through participation in the Model Review Subcommittee. The experience gained through the review of this and other econometric models has provided a number of insights into the process of econometric modeling.

First and foremost, it should be noted that, while the econometric modeling technique appears to be highly complex and sophisticated, a model cannot replace human judgment as the essential element in prognostication, nor can it be relied upon invariably to produce more reliable projections than traditional methods. Instead, econometric models should be viewed as additional input to the forecasting process, having the ability to develop an array of projections derived from alternative assumptions. Such models may prove especially useful as a cross-check analysis in quantifying a range of reasonableness for projections based on equally likely alternative values of input variables.

The structure and formulation of various econometric models differ widely. Although there are advantages and disadvantages with each methodology, they all attempt to quantify relationships between electric energy demand and various causal factors. Prime considerations are the present depressed state of the economy and the abrupt change in energy prices from a long history of gradually decreasing prices to rapidly increasing prices.

Econometric models also vary in their degree of disaggregation. While most models distinguish between residential, commercial, and industrial classifications, some (such as the PNUCC model) also

consider the saturation levels of various appliances in the residential sector and different industry types in the industrial sector. However, even models that are similar in nature have yielded differing results.

While the relationships derived between electric energy demand and various causal factors are the result of statistical analysis and thus are subject to certain statistical tests, there is no guarantee that the relationships so derived are either theoretically correct or represent the correct magnitude of the relationships; that is, a relationship derived through a statistical estimation might conflict with economic theory due to the incorrect handling or omission of pertinent variables. In addition, variables may appear to be functionally related when in fact they are theoretically unrelated.

The projected values of inputs used in econometric models are very important since they govern the results of a particular econometric model. Thus, not only must the structure of the model be a correct representation of variable relationships, but also the input assumptions incorporated must turn out to be correct for the model to yield useful results. One complication inherent in the econometric approach is that the burden of forecasting has been shifted from electric energy demand by sector (dependent variables) to a series of various causal factors (independent variables) all of which may be as difficult to project as the dependent variables. For example, the future price levels of fossil fuels are not only a function of exploration, development, and production costs, but also of national and international politics.

In the PNUCC model, several economic and demographic variables are taken into account including energy prices, population, people per household, personal income and employment. In addition, the model uses both an electricity-only form and a fuel-split form for the commercial and industrial sectors. The electric-only form focuses only on the demand for electricity. The fuel-split form first estimates total energy demand, excluding transportation, and then splits the demand amongst gas, oil, and electricity. According to NERA, it is not clear at this time which form is capable of yielding more reliable forecasts.

The resultant output during the period July 1977 through June 1988 indicates annual average growth rates of 4.9 percent from the single-equation analysis and 4.1 percent from the fuel-split analysis. In an attempt to further determine the sensitivity of the model to major independent variables, the effects of various alternative scenarios were analyzed; specifically, the growth rates associated with population, income and energy prices were varied, resulting in a range of output values around the medium case. This analysis indicates an average annual growth rate of 3.6 to 6.4 percent associated with the single-equation model and a range of 3.0 to 5.2 percent associated with the fuel-split model.

The West Group Forecast, which produced a 4.5 percent average annual growth rate during this period, falls well within the range of reasonableness indicated by the model, thus providing additional assurance that the West Group Forecast is reasonable.

New Resources

New hydro projects included in the determination of the January peak and firm energy capabilities in the report are those considered to be assured. All federal projects included are authorized projects which are under construction or have been funded for construction or preconstruction planning. Nonfederal hydro projects include additional capability at High Ross. A license application is before the Federal Power Commission to raise the height of Ross Dam to a new elevation of 1725 feet over the present lake elevation of 1602.5 feet.

The energy resources include the generation in the United States resulting from the storage regulation of the three Canadian reservoirs (Duncan, Arrow, and Mica) in coordination with the Libby reservoir and other power facilities in the West Group area. No adjustments were made in downstream project power capabilities for the return of Canadian Entitlement to Canada inasmuch as the power has been purchased on a long-term basis by utilities in the Pacific Northwest. The Libby generation will be reduced in 1984 due to water being diverted from the Kootenay River to the Columbia River at Canal Flats in Canada.

The new projects scheduled as part of the area's hydro-thermal plan for meeting loads through 1987-88 are listed in Section II, and a chronological tabulation of the expected cumulative hydro nameplate ratings is given in Section IV. Section II also includes an enumeration of the various hydro projects which are under consideration in this area but were not included in the calculations.

New thermal plants included in this year's report are the ones agreed to by the Pacific Northwest Utilities Conference Committee as essential elements of the plan to meet the area's load requirements through the year 1987-88. The new thermal projects include some from which only part is scheduled as a West Group resource. One-half of the planned output of Colstrip Units #1 and #2 and 70% of Colstrip Units #3 and #4 are scheduled as a West Group resource. Ninety percent of Boardman coal plant will be used to serve West Group loads. Pacific Power & Light Company's (PP&L) 66 2/3 percent share of Jim Bridger plant continues to be available to serve West Group loads for a number of years. It is included as an import from the East Group along with PP&L's other Wyoming generation after deducting Wyoming load.

The energy capabilities of large new thermal resources (500 megawatts or larger) including allowance of scheduled maintenance outage reflect a maturity factor with the annual plant factor increasing from 60% for the first full year of operation to 75%

for all years thereafter. The scheduled dates of new thermal resources as shown in Section II are as submitted by the project sponsors; however, the peak and energy capabilities from such plants are based on the "Probable Energy Date" as later described in the text. The "Summary of Resources" tables in Section III show zeros in the intervening periods.

For new thermal plants under 500 megawatts, the energy capabilities used are those submitted by the plant construction agent. This year's report shows all thermal energy generation as a July-June average.

The impact of the second Bacon siphon and tunnel for the Bureau of Reclamation's Columbia Basin Project is not reflected in this year's report. Preliminary studies have been done on the pumping load and streamflow depletions, but the actual results are not firm enough to be included at this time. Any changes are expected to be gradual.

Joint Area Planning

On December 14, 1973, representatives of the Pacific Northwest's publicly- and cooperatively-owned systems, investor-owned utilities, direct-service industrial customers of BPA, BPA and the Corps of Engineers joined to pursue a plan to continue to meet the region's requirements on a cooperative basis. BPA's participation in the regional program, together with other alternatives, is now being considered in a "Role" environmental impact statement it is preparing. The final report is scheduled for completion in late fall 1977.

This plan called for the financing, construction, and operation of projects designed to meet the area's power requirements through 1986. There have been changes from the initial plan as to projects included and in plant schedules, as dictated by the continuing planning and site selection efforts. Despite the reduced load estimates appearing in this year's West Group Forecast, energy deficiencies occur in every year through 1987-88.

The scheduled dates for commercial operation of the new thermal facilities are the dates determined by the sponsoring utility for each plant. Experience throughout the United States has conclusively demonstrated in the last few years that many more large thermal plants are delayed beyond their scheduled completion dates than are completed on time. The reasons are many and may be caused by delays at any point along the paths of their respective development programs. Which plants may be delayed and for what reason or for how long cannot be anticipated in advance. Yet, on the average they will be delayed; and if the area were relying on firm resources based on every project being completed on its scheduled commercial operation date, the area's planned capacity and energy would not be realized.

It is important that the area's indicated resources realistically reflect the energy and capacity which can be expected on the average, recognizing that some of the scheduled completion dates will not be met. The capacity and energy resources in this report are therefore based on a Probable Energy Date which is the later of the Scheduled Operation Date or the Milestone Date.

Milestones

Milestone dates are determined from a standardized schedule reflecting anticipated average planning and construction times. The Milestones provide a means for utilizing a standardized schedule without upsetting the developmental program of each project planned by its sponsor. It is considered essential that each sponsor vigorously pursue his planned schedule in order that the area's planned levels of energy and capacity can be achieved despite the inevitable delays at some projects.

Milestones are key points along the developmental path of a project indicating the accomplishment of some significant action or the start of some significant activity. A standard schedule of Milestones has been developed by comparison with completed and ongoing projects. A time in months is assigned to each Milestone to indicate the number of months which must elapse after each Milestone is reached before the output of a plant is considered to have a high enough probability of realization for it to be included as part of the area's firm resource. The Milestone schedules were not composed by simply averaging the elapsed times of all plants from that point to commercial operation but by considering that average time as well as the impacts of the ever-changing procedures for site approvals, construction permits, licensing, etc., and the increasing construction and operating experience.

Because of these changing conditions, Milestones are reviewed each year and changes will be made when it is desirable and would affect the Probable Energy Date of any of the scheduled projects. It appears that one more year would be required under present regulations for a nuclear plant in Oregon, than would be required in Washington. In Oregon, one year notice of intent is required before the application for site certification is filed and the Oregon Facilities Siting Council is allowed two years for a decision. Three years would be required before a site is certified rather than the two provided by the Milestones as appropriate to other states. This potential change did not affect the Probable Energy Date of any project included as a resource during the period 1977-78 through 1987-88.

A project sponsor may select a schedule of greater duration than that indicated by the Milestones, and it is assumed that where this is done the schedule of activities leading to the indicated date for commercial operation is such that the scheduled date is the most probable date.

A tabulation is included which compares thermal plant schedules as submitted by project sponsors and the Probable Energy Date. Tabulations of the Milestones for both coal-fired and nuclear plants are also included at the end of this section.

Present Resources

Present resources include all generating resources presently available within the area. Small fossil-fuel plants and combustion turbines have been included as firm resources in the amounts submitted by each of the project owners. Where these plants are included as peaking resources and the firm energy included is the amount associated with such peaking operations, the remaining energy capability is considered available for energy reserves. However, these are petroleum-fueled plants utilizing high-cost fuels of questionable availability.

The Hanford-NPR project has been included as a firm energy resource through June 1983, although negotiations have not been finalized to extend its operation past October 1977. Because of a frequent refueling cycle, it is not considered dependable as a peak resource.

All existing thermal plants regardless of size have been included as firm resources in the amounts submitted by the plant operator.

Interchanges With Systems Outside the Area

The resources include firm arrangements for interchange with systems outside the reporting area. These arrangements are firm contracts with utilities to the East, assignment of Canadian Entitlement Exchange Power to California utilities and the state of California, deliveries of power to the Central Valley Project, and capacity sales and exchanges with California utilities. Commencing April 1, 1975, the Northwest utilities exercised maximum withdrawal of Columbia Storage Power Exchange power. Concurrently with withdrawal of Canadian Entitlement, there is an increase in capacity deliveries from the Northwest to California utilities.

Transfers to the Pacific Southwest are amounts delivered to the California-Oregon border. The incremental losses to the border associated with deliveries to Central Valley Project, Canadian Entitlement Assignment and peak/energy sales and exchanges are shown on the "Summary of Resources" sheets. These losses were deducted in determining the amount of peak and energy available to meet area requirements. Further breakdown on interchanges with systems outside the area are tabulated in Section VI to permit users to more readily assess the effect of these transactions on area requirements. All energy transfers have been included as a July-June average.

Reservoir Operation

A comprehensive analysis of surpluses and deficiencies using historical flows of record was made for all load years. Through this type of studies it is possible to analyze area resources and reservoir regulations that would occur for all water years including those with minimum runoff and those with extremely high streamflows. In making these analyses, procedures as developed under the Pacific Northwest Coordination Agreement were followed.

In computing the critical-period energy capability, all reservoirs in operation prior to the beginning of the operating year being studied were assumed to be full at the beginning of the storage control period and drafted to their normal bottom elevation to produce maximum firm energy. This maximum firm energy becomes the Firm Energy Load Carrying Capability (FELCC) of the system.

The 40-year studies assumed that all reservoirs were full at the beginning of the first year of the 40-year period. Reservoirs were drafted to energy content curves except when drafts below energy content curve were needed to carry FELCC. When draft below energy content curve was required, an attempt was made to draft all reservoirs a proportionate amount between energy content curve and critical rule curve. The energy content curves were adjusted in each month from January to April on the basis of subsequent runoff during that year to produce the maximum amount of secondary energy consistent with the requirements for refilling the reservoirs.

In addition, flood control requirements developed by the U. S. Corps of Engineers for each of the major reservoirs were considered as a mandatory draft whenever the energy content curve was above the flood control requirement.

Where reservoirs have restrictions on their operation for power production, those restrictions were observed in setting up the draft schedules in these analyses.

Restrictions on Usability of Resources

The Uniform Regional Planning Assumptions adopted by the PNUCC state that each system will take into account the ability of hydro generation to achieve claimed capability. Under this criterion BPA has submitted a 5% realization factor on the January peak capability of the federal system. This factor is an adjustment representing the reduction in capacity which will result in actual operation from inability to maintain all pools at their optimum levels from environmental restrictions, etc. These figures vary from 829 megawatts in January 1978, to 1075 megawatts in January 1988. Consequently, the Total Peak Resources shown on the summary sheet in Section I have been reduced by these amounts.

It has been assumed that there will be no restrictions on the utilization of all the available resources because of bottlenecking

transmission lines, transformers, etc., or because of reactive loading of generating facilities.

Scheduled Maintenance

In order to provide an indication of the maintenance normally undertaken in the Pool, we have included estimated amounts for scheduled maintenance in derivation of energy capabilities. These amounts are shown on tabulations "Summary of Resources". The amounts of maintenance for hydro and existing thermal resources are based on a procedure developed by the Coordinating Group of the Northwest Power Pool and utilizes a percentage of energy capabilities by months. The hydro maintenance used in the derivation of January peak capabilities is included as part of the reserves used in this report which were determined by the percentage method. The scheduled maintenance for large thermal units was assumed to be done during other than the winter heavy-load periods, which may not be possible in all future years.

Reserve Requirements

In the derivation of January peak capabilities, reserves have been deducted from the tabulation of peak resources. The area peak reserves used are the greater of forced-outage reserves as computed under the Pacific Northwest Coordination Agreement plus one-half year's load growth for utility-type loads or 12% reserve for the first year of the study, increasing 1% per year to 20% and remaining at 20% thereafter. The reserve requirements are shown in Section I on the summary sheet "Estimated Load and Resources."

The percentage method has been the controlling factor between these two methods since they were initiated in 1974 and is used in this report.

These reserves are used primarily for long-range planning and take into account forced-outage reserves, hydro maintenance, unanticipated load growth, project construction delays, and other contingency-type reserves. The percentage reserve method was a consensus of the representatives of PNUCC members to reflect peaking requirements taking into account that new resource construction may take up to ten to twelve years and that a project may be delayed much more easily than it can be accelerated.

The energy reserves shown in Section I on the summary sheet are one-half year's load growth for utility-type loads.

Energy Reserve Planning Model

The Energy Reserve Planning Model was developed to provide an improved method for analyzing the load-resource relationship in a hydro-based system increasingly dependent on thermal generating facilities. Our traditional techniques have combined an extremely

comprehensive treatment of hydro energy capabilities with a single-valued estimate of thermal energy generation, and they have only partially reflected the responses of operating policies to system conditions. So long as the proportion of thermal energy generation in the system was quite small, these established methods were adequate.

In the future, however, the reliability of energy supply will be affected not only by the vagaries of hydro runoff, but also by the uncertainties of thermal plant construction and availability once in service. These plants individually represent large portions of the total energy supply and their lead times, at best, are very long. A single plant's delay in construction or poor performance after completion might have a profound impact on system reliability, which cannot be measured in an analysis where the plant is represented as having a single probable installation date and a single average capacity factor.

Along with the uncertainties of hydro and thermal energy capabilities, the wide range of possible energy loads on the system in future years contributes to the doubts about the sufficiency of reliability evaluations based on single-point estimates.

The Model is a probabilistic simulation program, designed to treat rigorously the four general components of the energy load-resource picture -- hydro, thermal plant construction, thermal plant availability, and load -- combined with logic which operates the system model realistically in response to actual conditions of these components. It is based on a modelling technique called Monte Carlo Simulation, in which statistical results are derived from a mass of repeated trials. Within each trial, the model system is operated into the future continuously, and the state of each variable in each time interval is determined by a random draw from an appropriate probability distribution. Each trial, therefore, represents a possible real outcome, but many trials are necessary before a statistically valid conclusion can be drawn about the future. The probabilities shown in this report are based on a study comprising 500 trials. At the beginning of each trial, storage contents are defined on the basis of the latest available forecast at the time of the study.

The representation of energy load in the program presently has no probabilistic features; a list of load forecasts is input and used as fixed quantities. Work is continuing on logic which will treat the forecasted loads as a trend about which yearly deviations will be randomly generated. That is, the load forecasts will be assumed to constitute a true trend, subject to the effects of uneven economic conditions, varying weather and other unpredictable factors. There are no plans now, however, to make the trend itself probabilistic. Although there is no lack of alternative load trend forecasts available, no rational basis has been found for assigning probabilities to the various values.

As it stands, the Energy Reserve Planning Model is believed to be a significant advance in the state of the techniques available to analyze the energy load-resource situation. But it is not a finished product, nor will it ever be. Efforts to improve its structure and data will be continuous, and frequent program changes are expected.

*****

THERMAL PLANT SCHEDULES

PLANT	CAPABILITY MW	SCHEDULED COMMERCIAL OPERATION	PROBABLE ENERGY DATE
1/ Colstrip 3	700	Oct 1980	Feb 1981
4	700	Aug 1981	Dec 1981
2/ Jim Bridger 4	500	Dec 1979	Dec 1979
WNP 2	1100	Jun 1980	Jun 1980
1	1250	Sep 1981	Oct 1981
3	1240	May 1983	May 1984
4	1250	Mar 1983	Apr 1983
5	1240	Nov 1984	Nov 1985
3/ Boardman Coal	530	Jul 1980	Nov 1980
Pebble Springs 1	1260	Jul 1985	Jul 1985
2	1260	Jul 1988	Jul 1988
Skagit 1	1288	Jul 1984	Aug 1984
2	1288	Aug 1986	Aug 1986

1/ 70% of each unit is dedicated as a West Group Area resource.

2/ Generation from Jim Bridger is included in transfers from East.

3/ 90% of this unit is dedicated as a West Group Area resource.

MILESTONES

COAL-FIRED THERMAL PLANTS

MILESTONE 1	- 62 Months	-	Final Site Selection
MILESTONE 2	- 58 Months	-	Boiler and Turbine-Generator Ordered
MILESTONE 3	- 52 Months	-	Environmental and Siting Permits, Licenses, etc.
MILESTONE 4	- 50 Months	-	Start Site Preparation
MILESTONE 5	- 44 Months	-	Start Construction
MILESTONE 6	- 32 Months	-	Start Boiler Steel Erection
MILESTONE 7	- 26 Months	-	Drum Delivered
MILESTONE 8	- 16 Months	-	Turbine, Rotor & Boiler Deliveries Completed
MILESTONE 9	- 5 Months	-	Hydro Test
MILESTONE 10	- 4 Months	-	Boil Out
MILESTONE 11	- 3 Months	-	Turbine Roll

MILESTONES

NUCLEAR THERMAL PLANT

MILESTONE 1	114 months	Regional selection of unit
MILESTONE 2	102 months	Following actions completed: (a) NSSS contract awarded (b) A. E. selected (c) Site selected
MILESTONE 3	98 months	Project becomes firm system resource after following actions completed: (a) State site application and Environmental Report filed (b) Preliminary Safety Analysis Report filed
MILESTONE 4	90 months	Site certified by State
MILESTONE 5	86 months	Construction Permit or Limited Work Authorization issued by AEC
MILESTONE 6	80 months	Construction Permit if preceded by Limited Work Authorization
MILESTONE 7	66 months	Major building construction started
MILESTONE 8	60 months	Containment erection started
MILESTONE 9	34 months	Setting of NSSS components and T-G auxiliary equipment initiated
MILESTONE 10	27 months	Final Safety Analysis Report and Environmental Report
MILESTONE 11	6 months	Operating License issued by AEC

Additional Gen. Capacity

SECTION II

Additional Generating Capacity

Actually Installed - January 1976 through December 1976
Scheduled for Service - January 1977 through June 1988
Partial List of Plants Under Consideration

NEW GENERATING CAPACITY ACTUALLY INSTALLED
JANUARY 1976 THROUGH DECEMBER 1976

Plant	Unit No.	Location	Type	Nameplate Rating-Mw	Capability Expected-Mw	Date of Operation
Bonneville Power Administration						
Grand Coulee (USBR)	20	Grand Coulee, Wash.	Hydraulic	600.0	650.0	Apr 1976
	21					Dec 1976
Ice Harbor (USCE)	4	Pasco, Wash.	Hydraulic	110.96 each	127.6 each	Mar 1976
	5					Mar 1976
	6					Apr 1976
Libby (USCE)	3	Jennings, Montana	Hydraulic	105.0 each	120.75 each	Jan 1976
	4					Mar 1976
Pacific Power & Light Company						
Jim Bridger 1/ (66.6% of Unit)	3	Rock Springs, Wyo.	Steam	508.56	500.0	Sep 1976
Puget Sound Power & Light Company						
Colstrip (50% of Unit)	2	Colstrip, Montana	Steam	358.0	330.0	Aug 1976
Portland General Electric Company						
Trojan	1	Prescott, Oregon	Nuclear	1216.0	1130.0	May 1976
Eugene Water & Electric Board						
Weyco	1	Springfield, Oregon	Steam	51.2	51.3	Nov 1976

1/ Generation from Jim Bridger is included in transfers from East.

NEW GENERATING CAPACITY SCHEDULED FOR SERVICE
JANUARY 1977 THROUGH JUNE 1988

PLANT		UNIT NO.	LOCATION	TYPE	NAMEPLATE RATING-MW	CAPABILITY EXPECTED-MW	EXPECTED DATE OF COMMERCIAL OPERATION
Bonneville Power Administration							
Lost Creek	(USCE)	1	Trail, Oregon	Hydraulic	24.5 each	28.18 each	Feb 1977
		2					Mar 1977
Chief Joseph	(USCE)	17	Bridgeport, Washington	Hydraulic	95.0 each	102.92 each	May 1977
		18					Aug 1977
		19					Nov 1977
		20					Feb 1978
		21					May 1978
		22					Jul 1978
		23					Sep 1978
		24					Nov 1978
		25					Jan 1979
		26					Mar 1979
		27					May 1979
Grand Coulee	(USBR)						
3rd Powerhouse		22	Coulee Dam, Washington	Hydraulic	700.0 each	805.0 each	Sep 1977
		23					Mar 1978
		24					Sep 1978
Pump-Generator Additions		P/G- 9		Pumped Storage	50.0 each	57.5 each	Oct 1979
		P/G-10					Feb 1980
		P/G-11					Jun 1980
		P/G-12					Oct 1980
Lower Granite	(USCE)	4	Almota, Washington	Hydraulic	135.0 each	155.25 each	Jan 1978
		5					Feb 1978
		6					Mar 1978
Little Goose	(USCE)	4	Starbuck, Washington	Hydraulic	135.0 each	155.25 each	Feb 1978
		5					Mar 1978
		6					May 1978
Lower Monumental	(USCE)	4	Matthew, Washington	Hydraulic	135.0 each	155.25 each	Feb 1979
		5					Mar 1979
		6					Apr 1979

Note: A chronological tabulation of new hydro installations appears in the section on nameplate ratings.

NEW GENERATING CAPACITY SCHEDULED FOR SERVICE -contd.
JANUARY 1977 THROUGH JUNE 1988

PLANT		UNIT NO.	LOCATION	TYPE	NAMEPLATE RATING-MW	CAPABILITY EXPECTED-MW	EXPECTED DATE OF COMMERCIAL OPERATION
Bonneville Power Administration -contd.							
Bonneville 2nd Powerhouse	(USCE)	11	Bonneville, Washington	Hydraulic	66.5 each	77.8	May 1981
		12				77.8	Jul 1981
		13				77.8	Sep 1981
		14				77.8	Nov 1981
		15				77.8	Jan 1982
		16				77.8	Mar 1982
		17				41.6	May 1982
		18				41.6	Jul 1982
Libby	(USCE)	5,6,7,8	Jennings, Montana	Hydraulic	105.0 each	120.75 each	Nov 1983
Libby Reregulating	(USCE)	1	Libby, Montana	Hydraulic	15.4	17.7	Dec 1983
		2			30.5	35.0	Feb 1984
		3			30.5	35.0	Apr 1984
Chelan County PUD							
Rock Island		18	Rock Island, Washington	Hydraulic	51.0 each	51.0 each	Feb 1978
		17					Mar 1978
		16					Apr 1978
		15					Jun 1978
		14					Aug 1978
		13					Oct 1978
		12					Dec 1978
		11					Feb 1979
Seattle City Light							
High Ross		-	Rockport, Washington	Hydraulic	--	251.0 total	1980-81
The Washington Water Power Company							
Noxon Rapids		5	Noxon Rapids, Montana	Hydraulic	114.0	112.0	Nov 1977
Northeast Turbine		1	Spokane, Washington	Comb.-Turbine	29.8	34.5	Oct 1978

Note: A chronological tabulation of new hydro installations appears in the section on nameplate ratings.

NEW GENERATING CAPACITY SCHEDULED FOR SERVICE -contd.
JANUARY 1977 THROUGH JUNE 1988

PLANT	UNIT NO.	LOCATION	TYPE	NAMEPLATE RATING-MW	CAPABILITY EXPECTED-MW	EXPECTED DATE OF COMMERCIAL OPERATION
Puget Sound Power & Light Company						
Colstrip (70% of units)	3	Colstrip, Montana	Steam	700.0 each	700.0 each	Oct 1980
	4					Aug 1981
Skagit	1	Sedro Woolley, Washington	Nuclear	1330.0 each	1288.0 each	Jul 1984
	2					Aug 1986
Portland General Electric Company						
Beaver Combined Cycle (Addition)	1 thru 6	Clatskanie, Oregon	Steam Turbine	168.0 total	150.0 total	Nov 1977
Boardman Coal (90% of unit)	1	Boardman, Oregon	Steam	560.0	530.0	Jul 1980
Pebble Springs	1	Arlington, Oregon	Nuclear	1295.0 each	1260.0 each	Jul 1985
	2					Jul 1988
Pacific Power & Light Company						
Jim Bridger (66.67% of unit) 1/	4	Rock Springs, Wyoming	Steam	508.6	500.0	Dec 1979
Washington Public Power Supply System						
WNP #2	1	Richland, Washington	Nuclear	1100.0	1100.0	Jun 1980
WNP #1	1	Richland, Washington	Nuclear	1373.0	1250.0	Sep 1981
WNP #3	1	Satsop, Washington	Nuclear	1316.0	1240.0	MAY ~~Mar~~ 1983
WNP #4	1	Richland, Washington	Nuclear	1373.0	1250.0	MAR ~~May~~ 1983
WNP #5	1	Satsop, Washington	Nuclear	1316.0	1240.0	Nov 1984

1/ Generation from Jim Bridger is included in transfers from East.

PARTIAL LIST OF NEW GENERATING CAPACITY UNDER CONSIDERATION

PLANT		NO. OF UNITS	LOCATION	TYPE	NAMEPLATE RATING MW	CAPABILITY EXPECTED MW
Bonneville Power Administration						
Anderson Ranch	(USBR) Addition	1	S. Fork Boise River, Idaho	Hydraulic	13.5	17.25
Ben Franklin	(USCE)	16	Ringold, Washington	Hydraulic	53.0 each	61.0 each
Cougar	(USCE) Addition	1	Blue River, Oregon	Hydraulic	35.0	40.25
Dworshak	(USCE) Additions	3	Ahsahka, Idaho	Hydraulic	220.0 each	253.0 each
Garden Valley	(USBR)	4	Garden Valley, Idaho	Hydraulic	43.75 each	43.75 each
Garden Valley Reregulating	(USBR)	4	Garden Valley, Idaho	Hydraulic	9.0 each	9.0 each
Grand Coulee 3rd Powerhouse	(USBR)	6	Coulee Dam, Washington	Hydraulic	600.0 each	690.0 each
John Day	(USCE) Additions	4	Rufus, Oregon	Hydraulic	135.0 each	155.25 each
Lucky Peak	(USCE) Power Additions	2	Boise, Idaho	Hydraulic	17.5 each	20.15 each
		1			57.4	60.0
Lynn Crandall	(USBR)	4	Boise, Idaho	Hydraulic	60.0 each	60.0 each
McNary	(USCE) Additions	10	Umatilla, Oregon	Hydraulic	105.0 each	120.75 each
Palisades	(USBR) Additions	2	Palisades, Idaho	Hydraulic	67.5 each	77.62 each
Upper Scriver Creek	(USBR)	3	Garden Valley, Idaho	Hydraulic	12.5 each	12.5 each
Lower Scriver Creek	(USBR)	4	Garden Valley, Idaho	Hydraulic	30.0 each	30.0 each
Strube	(USCE)	1	Blue River, Oregon	Hydraulic	4.5	5.17
Twin Springs	(USCE)	2	Boise River, Idaho	Hydraulic	15.0 each	17.25 each
		2			30.0 each	34.5 each
Chelan County PUD						
Antilon		4	Manson, Washington	Pumped Storage	400.0 each	--
Douglas County PUD						
Brown's Canyon		4	Waterville Plateau-Lake Entiat, Washington	Pumped Storage	250.0 each	250.0 each
Grant County PUD						
Priest Rapids	Additions	6	Mattawa, Washington	Hydraulic	78.85 each	67.3 each
Wanapum	Additions	6	Beverly, Washington	Hydraulic	83.125 each	75.83 each
Northern Lights, Inc.						
Kootenai Falls		2	Troy, Montana	Hydraulic	70.0 each	80.5 each
Pacific Power & Light Company						
Klamath River Development		-	Klamath River	Hydraulic	230.0	--
Yale		-	Amboy, Washington	Pumped Storage	500.0	500.0
Pend Oreille County PUD						
Sullivan Creek		-	Metaline Falls, Washington	Hydraulic	13.6	--
Seattle City Light						
Copper Creek		-	Rockport, Washington	Hydraulic	--	145.0
Tacoma City Light						
Mayfield	Addition	1	Mayfield, Washington	Hydraulic	40.5	45.0
Mossyroc	Addition	1	Mossyrock, Washington	Hydraulic	150.0	192.0

SECTION III

Resources and Requirements - Summary Tabulations

January Peak and Critical Period Energy
Surplus or Deficiency - 40-Year Studies

SUMMARY OF RESOURCES

JANUARY PEAK CAPABILITY - Mw	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
1. Columbia Mainstem Hydro	22,477	25,736	26,506	26,603	26,869	27,077	27,627	27,712	27,613	27,834	27,780
2. Seasonal Hydro	2,728	2,729	2,733	2,975	2,969	2,972	2,975	2,975	2,975	2,974	2,973
3. Pondage & Minor Hydro	480	480	480	480	480	480	480	480	480	480	480
4. Small Existing Thermal	1,376	1,411	1,411	1,403	1,403	1,403	1,403	1,403	1,393	1,393	1,393
5. Miscellaneous (Industrial)	23	23	23	23	23	23	23	23	23	23	23
6. Centralia #1 and #2	1,313	1,313	1,313	1,313	1,313	1,313	1,313	1,313	1,313	1,313	1,313
7. Colstrip #1 and #2	330	330	330	330	330	330	330	330	330	330	330
8. Trojan	1,130	1,130	1,130	1,130	1,130	1,130	1,130	1,130	1,130	1,130	1,130
9. WNP #2	-	-	-	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
10. Boardman Coal	-	-	-	477	477	477	477	477	477	477	477
11. Colstrip #3	-	-	-	0	490	490	490	490	490	490	490
12. WNP #1	-	-	-	-	1,250	1,250	1,250	1,250	1,250	1,250	1,250
13. Colstrip #4	-	-	-	-	490	490	490	490	490	490	490
14. WNP #4	-	-	-	-	-	-	1,250	1,250	1,250	1,250	1,250
15. WNP #3	-	-	-	-	-	-	0	1,240	1,240	1,240	1,240
16. Skagit #1	-	-	-	-	-	-	-	1,288	1,288	1,288	1,288
17. Pebble Springs #1	-	-	-	-	-	-	-	-	1,260	1,260	1,260
18. WNP #5	-	-	-	-	-	-	-	0	1,240	1,240	1,240
19. Skagit #2	-	-	-	-	-	-	-	-	-	1,288	1,288
20. Exports to East	(123)	(284)	(226)	(244)	(245)	(247)	(248)	(249)	(251)	(253)	(104)
21. Imports from East	1,297	1,554	1,838	1,864	1,707	1,645	1,578	1,506	1,427	1,344	1,253
22. Exports to Pacific Southwest	(2,014)	(1,864)	(1,864)	(1,864)	(1,464)	(1,464)	(1,314)	(1,314)	(1,314)	(736)	(112)
23. Imports from Pacific Southwest	100	100	100	100	100	100	100	100	100	100	100
24. Incremental Losses 1/	(101)	(94)	(94)	(94)	(67)	(67)	(60)	(60)	(60)	(36)	(10)
25. Hydro Realization Factor 2/	(829)	(975)	(1,012)	(1,016)	(1,030)	(1,040)	(1,068)	(1,072)	(1,067)	(1,078)	(1,075)
26. Total Peak Resources	28,187	31,589	32,668	34,580	37,325	37,462	39,326	41,861	44,177	46,191	46,847

1/ Incremental losses from generator to border associated with deliveries under contracts with Pacific Southwest utilities.

2/ These figures represent a 5% hydro realization factor on the Federal System due to inability to simultaneously generate aggregate of individual plant peaking capabilities.

SUMMARY OF RESOURCES

CONTRACT YEAR ENERGY CAPABILITY - Mw	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
1. Columbia Mainstem Hydro	10,512	10,588	10,593	10,574	10,616	10,615	10,640	10,623	10,594	10,593	10,593
2. Seasonal Hydro	1,147	1,148	1,147	1,181	1,181	1,182	1,182	1,182	1,182	1,182	1,182
3. Pondage & Minor Hydro	319	319	319	319	319	319	319	319	319	319	319
4. Small Existing Thermal	130	131	131	130	130	130	130	130	128	128	128
5. Miscellaneous (Industrial)	9	9	9	9	9	9	9	9	9	9	9
6. Hanford Steam 1/	512	515	515	515	515	515	-	-	-	-	-
7. Centralia #1 and #2	919	919	919	919	919	919	919	919	919	919	919
8. Colstrip #1 and #2	274	280	255	293	293	274	280	280	280	280	280
9. Trojan	758	847	847	847	847	847	847	847	847	847	847
10. WNP #2	-	-	55	674	825	825	825	825	825	825	825
11. Boardman Coal	-	-	-	191	334	358	358	358	358	358	358
12. Colstrip #3	-	-	-	122	325	368	368	368	368	368	368
13. WNP #1	-	-	-	-	562	891	938	938	938	938	938
14. Colstrip #4	-	-	-	-	172	337	368	368	368	368	368
15. WNP #4	-	-	-	-	-	188	797	938	938	938	938
16. WNP #3	-	-	-	-	-	0	124	775	930	930	930
17. Skagit #1	-	-	-	-	-	-	-	709	950	966	966
18. Pebble Springs #1	-	-	-	-	-	-	-	-	756	945	945
19. WNP #5	-	-	-	-	-	-	-	0	496	868	930
20. Skagit #2	-	-	-	-	-	-	-	-	-	709	950
21. Exports to East	(210)	(160)	(141)	(162)	(159)	(155)	(157)	(159)	(161)	(163)	(165)
22. Imports from East	814	968	1,118	1,161	1,152	1,058	1,037	949	911	836	790
23. Exports to Pacific Southwest	(496)	(435)	(432)	(429)	(282)	(128)	(40)	(40)	(40)	(40)	(40)
24. Imports from Pacific Southwest	416	429	429	429	429	429	415	415	415	268	90
25. Incremental Losses 2/	(25)	(23)	(23)	(23)	(14)	(5)	(3)	(3)	(3)	(3)	(3)
26. Estimated Hydro Maintenance	(47)	(46)	(48)	(47)	(47)	(47)	(50)	(50)	(50)	(51)	(51)
27. Total Energy Resources	15,032	15,489	15,693	16,703	18,126	18,929	19,306	20,700	22,277	23,337	23,414
28. Thermal & Miscellaneous Resources (Not Included Above)	554	611	617	611	611	611	611	611	603	603	603

1/ Hanford-NPR operation is assumed available through June 1983.

2/ Incremental losses from generator to border associated with deliveries under contracts with Pacific Southwest utilities.

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 48 YEARS OF WATER RECORD
1977-78 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	3887	3469	0	0	0	0	0	0	0	0	0	0	0	0	466
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	2036	6276	8747	3545	1376
1932-33	0	395	1178	0	0	583	1474	7912	3858	1254	642	2919	5787	11856	2862
1933-34	3952	5219	2942	1716	3140	5121	8596	18397	9652	8028	7998	9265	7888	0	5889
1934-35	0	0	0	0	0	0	381	7485	4149	0	0	1097	4851	2717	1599
1935-36	1973	3358	0	0	0	0	0	4952	0	0	0	7544	7781	0	1698
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	1844	86
1937-38	0	0	0	0	0	0	0	5943	1281	2246	84	7437	7997	4369	2143
1938-39	0	0	0	0	0	0	0	2785	252	286	2802	5287	5618	0	1057
1939-40	0	448	0	0	0	0	0	2747	1841	4589	4113	3752	1651	0	1178
1940-41	0	0	0	0	0	0	0	0	560	981	1383	0	0	0	173
1941-42	0	0	0	0	0	0	2541	6484	2993	0	0	1791	587	2919	1353
1942-43	765	2449	126	0	0	0	528	8587	5344	2194	7698	10269	6987	6767	3429
1943-44	4102	4787	397	0	0	0	0	0	0	0	0	0	0	0	563
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	3134	252
1945-46	0	0	0	0	0	0	0	5949	1598	2821	2431	7259	10293	3732	2446
1946-47	0	1585	0	688	225	1893	6053	8557	6780	4186	3072	5174	9899	2118	3691
1947-48	0	278	0	157	5461	4169	3347	9846	6817	2445	998	6372	11325	11268	4755
1948-49	1457	3162	3249	1348	449	893	1842	5975	3884	2296	3674	7972	10856	2598	3285
1949-50	0	0	0	0	0	0	0	7991	5731	5885	6836	5486	6387	11117	3545
1950-51	6337	5875	2576	1826	3896	5241	6594	9495	10218	6133	6996	7185	10875	4961	6168
1951-52	1984	4483	426	1124	4178	2488	3267	8808	5159	1948	3562	9713	10878	325	3968
1952-53	662	2551	0	0	0	0	0	8779	5818	141	0	739	4865	8932	2544
1953-54	3757	3254	1390	365	241	1658	3245	8588	6598	3867	2616	2775	10192	8882	4278
1954-55	6269	7116	5947	3985	1135	3159	2358	7698	3575	0	0	0	3376	8648	3894
1955-56	5361	4855	319	280	2221	4878	5674	9720	6542	5368	7378	11116	11424	10839	6181
1956-57	728	2316	1708	712	1378	1145	3466	7314	4844	3517	3587	1998	11197	6822	3762
1957-58	0	0	0	0	0	0	0	6418	5988	2028	1583	3697	10689	2631	2516
1958-59	0	0	0	0	0	1098	4583	9537	7464	3988	4989	4397	8184	9499	4852
1959-60	1792	3373	1119	5766	5994	5955	4569	7624	5695	4127	7148	3878	4864	5454	4966
1960-61	1658	3124	0	332	29	2108	1337	7914	8347	5704	3809	836	9218	9594	4144
1961-62	0	0	0	0	0	0	0	7166	4155	0	1875	6713	3598	4493	1987
1962-63	0	2874	772	0	1369	3565	4804	7526	6995	1737	0	0	1695	3883	2749
1963-64	1875	2882	0	945	0	724	1178	8032	4835	365	1188	0	6584	10658	2987
1964-65	3278	4482	1306	1948	1941	1895	6380	10166	9689	4984	2791	8754	7988	6892	5289
1965-66	1730	4842	2879	1196	751	1838	1593	8068	3348	1564	4595	699	3394	1897	2658
1966-67	1211	2643	0	0	0	0	3310	8669	5784	2989	862	0	7158	10618	3513
1967-68	1343	3099	661	430	1284	1908	2044	8373	7227	4638	214	0	1167	5344	2958
AVERAGE	1316	2035	686	550	847	1239	1959	6897	4183	2249	2378	3758	5722	4655	2755

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 40 YEARS OF WATER RECORD
1978-79 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	4534	3291	0	0	0	0	0	0	0	0	0	0	0	0	520
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	2226	6596	9215	3645	1445
1932-33	0	1894	1184	0	0	413	1688	9867	4871	1317	581	2815	5532	12141	3872
1933-34	4677	5283	2997	1748	3178	5443	8911	12412	8785	7521	8747	18335	7464	0	6145
1934-35	0	0	0	0	0	0	387	8589	4256	0	0	1133	3761	2552	1665
1935-36	2883	3263	0	0	0	0	0	5942	0	0	0	8285	7771	0	1881
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	989	75
1937-38	0	0	0	0	0	0	0	7256	785	2444	138	7838	8256	4578	2288
1938-39	419	0	0	0	0	0	0	2646	169	277	1959	5642	5441	0	1871
1939-40	24	1828	0	0	0	0	0	3892	645	4671	4228	4167	1418	0	1218
1940-41	0	0	0	0	0	0	0	0	513	1175	1328	0	0	0	193
1941-42	0	0	0	0	0	0	2428	7441	2848	0	0	2476	169	3888	1419
1942-43	1362	2298	118	0	6	0	447	9674	5539	2253	7946	11488	6993	7897	3664
1943-44	4981	4645	123	0	0	0	0	0	0	0	0	0	0	0	619
1944-45	2	0	0	0	0	0	0	0	0	0	0	0	0	2896	238
1945-46	0	0	0	0	0	0	0	7387	1224	3847	2513	7759	11889	2619	2552
1946-47	484	1519	0	554	216	1912	6839	9875	6808	4171	2985	5367	9814	2171	3898
1947-48	238	842	0	168	5584	4274	3415	10318	6212	2358	745	6652	12189	11982	5868
1948-49	0	1963	3881	1041	421	915	1847	6925	3287	2315	3787	8583	11436	2489	3286
1949-50	0	0	0	0	0	0	0	9108	6454	6811	6152	5471	6272	12267	3797
1950-51	7185	4914	2923	1048	3110	5358	6763	11051	10285	6156	7126	7614	10899	5838	6494
1951-52	2628	4236	488	1131	4225	2535	3338	9182	5227	1747	3835	10783	11867	428	4266
1952-53	1271	2325	0	0	0	0	0	9788	5894	182	0	781	4648	9365	2692
1953-54	3413	3845	1399	364	246	1688	3299	9788	7161	3788	2353	2974	11846	9488	4577
1954-55	7179	7388	6277	4094	1141	3258	2436	4769	3625	0	0	0	3837	9812	4117
1955-56	6182	4711	317	167	2268	3964	6811	11198	6226	5253	7588	12517	12328	11314	6449
1956-57	1321	2869	1716	714	1371	1159	3528	8355	4965	3634	3783	2187	12883	4383	3873
1957-58	0	0	0	0	0	0	0	7545	6825	2051	1645	3967	11633	2732	2728
1958-59	0	0	0	0	0	1216	4876	11047	7124	4812	4752	4524	8568	10289	4287
1959-60	2471	3181	1122	5675	7892	6383	4786	8851	5818	4869	7419	3977	3755	5569	5165
1960-61	2322	2928	0	265	86	2140	1356	9896	9888	5983	3688	512	9981	18448	4477
1961-62	0	0	0	0	0	0	0	8294	4485	0	1928	7868	3332	5882	2186
1962-63	439	2932	883	0	1379	3634	4899	8589	7358	1883	0	0	1433	3991	2921
1963-64	1672	1753	0	947	0	662	1279	9122	4481	263	826	0	6462	11659	3131
1964-65	3958	4321	1481	1988	1971	1953	6389	11722	9588	5186	2665	9523	8382	7263	5577
1965-66	2329	4763	2918	1189	818	1884	1626	9856	3382	1766	4634	688	3859	1881	2788
1966-67	1856	2439	0	0	0	0	3386	9996	6913	2829	583	0	7474	11798	3793
1967-68	1976	2899	675	452	1288	2038	2879	9448	7786	4689	186	0	746	5485	3117
AVERAGE	1643	1976	687	536	860	1268	2088	7889	4163	2278	2396	4836	5916	4833	2914

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 40 YEARS OF WATER RECORD
1979-80 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	4683	3292	0	0	0	0	0	0	0	0	0	0	0	0	526
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	2899	6566	9288	4461	1511
1932-33	0	1864	1160	0	0	154	2825	9865	3353	1332	708	3854	5685	12946	3114
1933-34	4742	5219	3826	1756	3191	5426	9278	12451	8455	7168	8743	18432	7543	0	6142
1934-35	0	0	0	0	0	0	1113	8739	3972	0	0	1225	3814	3328	1789
1935-36	2725	3165	0	0	0	0	0	5326	0	0	0	8195	7657	671	1856
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	1775	146
1937-38	0	0	0	0	0	0	0	6381	1454	2283	97	7882	8323	5386	2322
1938-39	441	0	0	0	0	0	0	2124	0	1089	854	5388	5535	554	1876
1939-40	169	1881	0	0	0	0	0	2563	1256	4777	3817	3879	1586	0	1187
1940-41	0	0	0	0	0	0	0	0	1019	1189	389	0	0	0	185
1941-42	0	0	0	0	0	0	3384	7476	2871	0	0	1736	0	3824	1528
1942-43	1449	2331	82	0	0	0	881	9658	4978	2513	7734	11352	7856	7918	3746
1943-44	5127	4652	89	0	0	0	0	0	0	0	0	0	0	0	631
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	3474	286
1945-46	0	0	0	0	0	0	0	6160	1726	2888	2482	7744	11192	3428	2553
1946-47	427	1497	0	591	284	1984	6139	9858	6031	4235	3148	5338	9894	2998	3936
1947-48	263	816	0	223	5584	4276	3419	10310	5333	2518	1846	6759	12388	12791	5186
1948-49	0	1596	2994	1293	652	641	1046	6731	2954	2313	3458	8455	11524	3313	3235
1949-50	0	0	0	0	0	0	0	9186	5575	6098	6338	5747	6352	13078	3829
1950-51	7263	4913	2935	1848	3114	5348	6756	11833	9853	6152	7293	7595	11828	5833	6553
1951-52	2662	4234	479	1143	4271	2531	3335	9154	4571	2033	3834	10796	11169	1247	4322
1952-53	1306	2313	0	0	0	0	0	9638	5652	471	0	754	4718	10881	2757
1953-54	3377	3836	1418	362	536	1397	3381	9694	6482	3993	2669	2952	11143	10281	4628
1954-55	7276	7593	6325	4132	1139	3257	2437	8735	3269	0	0	0	3248	9737	4187
1955-56	6213	4717	288	261	2280	3616	6212	11211	5338	5631	7717	12685	12421	12895	6497
1956-57	1349	2848	1719	713	1415	1108	3523	8301	4579	3078	3775	2174	12188	5170	3916
1957-58	0	0	0	0	0	0	0	7853	5098	2213	1621	3943	11731	3562	2757
1958-59	0	0	0	0	0	1166	4988	11888	6421	4835	4982	4486	8648	11888	4387
1959-60	2477	3174	1128	5937	7278	6115	4694	8845	5810	4237	7583	3928	3798	6396	5213
1960-61	2371	2923	0	349	259	1889	1355	9891	8556	5823	3892	460	9995	11241	4534
1961-62	0	0	0	0	0	0	0	8861	4893	68	1397	7228	3452	5843	2152
1962-63	470	2928	803	0	1397	3619	4982	8638	7843	1765	0	0	1432	4743	2962
1963-64	1775	1742	0	963	0	673	1278	9113	3634	423	1136	0	6537	12488	3182
1964-65	4029	4327	1489	2808	1974	1956	6485	11776	8880	5166	2885	9482	8449	8874	5636
1965-66	2365	4776	2933	1196	745	1884	1626	9178	3867	1553	4588	663	3147	2627	2825
1966-67	1984	2432	0	0	0	0	3391	9998	6282	2979	914	0	7513	12606	3839
1967-68	2087	2896	674	446	1416	1894	2878	9415	7181	4841	254	0	778	6254	3168
AVERAGE	1678	1967	686	568	886	1221	2889	6898	3865	2333	2377	4029	5974	5488	2953

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 48 YEARS OF WATER RECORD
1980-81 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	4696	3485	0	0	0	0	0	0	0	0	0	0	0	0	542
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	3814	7162	9150	4373	1555
1932-33	0	1437	1231	0	0	241	1761	9123	4873	1152	1828	3372	5558	12865	3178
1933-34	4839	5437	3852	1763	3198	5826	8861	12529	9387	7485	9294	11868	7358	0	6218
1934-35	0	0	0	0	0	0	807	8663	4463	0	0	1367	3851	3456	1814
1935-36	2943	3463	0	0	0	0	0	5589	0	0	0	8452	7553	431	1988
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	225	18
1937-38	0	0	0	0	0	0	0	7383	979	2685	652	8413	8188	5326	2429
1938-39	539	0	0	0	0	0	0	2231	31	1166	889	6249	5448	335	1187
1939-40	273	1196	0	0	0	0	0	2549	1358	4754	2997	4753	1399	0	1233
1940-41	0	0	0	0	0	0	0	0	939	1271	224	0	0	0	198
1941-42	0	0	0	0	0	0	3118	7329	3834	0	17	3864	39	3732	1556
1942-43	1494	2584	128	0	0	0	689	9719	5764	2837	7818	11943	6923	7865	3774
1943-44	5196	4827	259	0	0	0	0	0	0	0	0	0	0	0	651
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	3325	273
1945-46	0	0	0	0	0	0	0	6572	1154	3281	3846	8342	11189	3316	2683
1946-47	524	1693	0	523	285	1886	6878	9931	6476	3838	3284	5878	9784	2912	3981
1947-48	368	1885	0	159	5581	4268	3429	10394	6149	2898	1882	7284	12224	12653	5152
1948-49	0	2158	3832	1283	327	916	1849	6421	3343	2442	3813	9844	11485	3227	3284
1949-50	0	0	0	0	0	0	0	9132	6313	6888	6592	5997	6387	13887	3892
1950-51	7361	5116	2966	1841	3888	5214	6834	11185	10642	5843	7528	8171	10897	5728	6619
1951-52	2761	4427	482	1078	4235	2518	3336	9182	4997	1797	4338	11384	11811	1159	4358
1952-53	1483	2587	0	0	0	0	0	9738	5466	445	0	1315	4598	10874	2778
1953-54	3551	3236	1427	366	246	1718	3321	9737	7221	3541	2723	3378	11143	10189	4687
1954-55	7379	7821	6388	4131	1127	3266	2457	8711	3644	0	0	0	3814	9082	4228
1955-56	6356	4923	333	0	2041	4185	6212	11282	6281	5896	7863	13235	12387	11974	6565
1956-57	1446	2248	1746	721	1363	1169	3549	4158	4969	3562	4299	2729	12843	5842	3966
1957-58	0	0	0	0	0	0	0	7124	5795	2173	2139	4480	11575	3485	2776
1958-59	0	0	0	0	0	1243	4968	11173	7344	3679	5863	5869	8531	10883	4384
1959-60	2589	3372	1148	5665	7888	5957	4787	8948	5844	4074	7997	4522	3623	6318	5252
1960-61	2471	3119	0	271	84	2143	1368	9147	9217	5624	4851	954	9988	11135	4582
1961-62	0	0	0	0	0	0	0	8859	4298	0	2393	7688	3246	5756	2177
1962-63	567	3124	813	0	1365	3646	4936	8306	7594	1699	0	0	1435	4885	3883
1963-64	1981	1948	0	567	0	781	1299	9158	4194	185	1268	0	6471	12462	3222
1964-65	4155	4533	1438	2886	1966	1958	6421	11869	9777	4643	2916	10833	8275	7982	5683
1965-66	2465	4976	2957	1054	848	1898	1638	8925	3343	1599	5116	1137	2991	2539	2867
1966-67	2081	2628	0	0	0	0	3426	10885	7185	2376	885	0	7685	12569	3884
1967-68	2129	3894	688	467	1305	2051	2096	9363	7828	4561	628	0	766	6296	3224
AVERAGE	1735	2187	702	535	849	1248	2857	6938	4231	2219	2572	4418	5893	5385	2991

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 48 YEARS OF WATER RECORD
1981-82 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	4117	2091	0	0	0	0	0	0	0	0	0	0	0	0	468
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	3	0	2887	7381	10884	4917	1683
1932-33	0	0	651	0	0	293	1937	9841	3983	1124	945	3375	6444	13577	3295
1933-34	4283	4911	3188	1783	3381	5877	9357	13184	9313	7574	9582	11258	8324	162	6457
1934-35	0	0	0	0	0	0	1555	9331	3881	0	0	1787	4411	3893	1984
1935-36	2222	2825	0	0	0	0	0	6238	0	0	0	9822	8237	648	1957
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	793	65
1937-38	0	0	0	0	0	0	0	6999	1339	2845	548	8623	9145	5966	2566
1938-39	0	0	0	0	0	0	0	1849	0	38	977	5866	6848	647	1808
1939-40	0	0	0	0	0	0	55	2744	1188	4993	3438	4778	1933	0	1248
1940-41	0	0	0	0	0	0	0	0	1259	1356	522	0	0	0	233
1941-42	0	0	0	0	0	0	2949	8823	3159	0	327	3568	671	4236	1739
1942-43	968	1825	0	0	0	0	555	10368	5849	1783	7969	12823	7857	8628	3876
1943-44	4634	4388	0	0	0	0	0	0	0	0	0	0	0	0	578
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	4487	362
1945-46	0	0	0	0	0	0	0	6856	1674	3172	3878	8569	12847	3817	2795
1946-47	0	745	0	0	0	1497	6381	10637	6979	4841	3482	5999	10658	3391	4848
1947-48	0	0	0	0	5721	4483	3599	11088	6281	2236	1149	7439	13143	13282	5328
1948-49	0	693	2638	791	457	957	1899	7398	2891	2571	3973	9264	12338	3773	3399
1949-50	0	0	0	0	0	0	71	9821	6285	5793	6548	6828	7241	13703	4866
1950-51	6887	4598	2987	1853	3194	5634	7116	11829	10639	6165	7855	8389	11812	6488	6864
1951-52	2122	3898	444	1148	4336	2641	3494	9924	4935	1818	4587	11494	11941	1588	4514
1952-53	722	1988	0	0	0	0	0	10156	6381	163	0	1234	5665	10619	2984
1953-54	2845	[illegible]	1395	382	255	1762	3461	10467	7339	3623	2817	3437	12897	10929	4848
1954-55	6826	7	6433	4245	1173	3399	2563	9533	3444	0	0	0	3881	10132	4337
1955-56	5527	44..	117	0	2893	4448	6858	12867	6098	5364	8221	13488	13262	12678	6798
1956-57	781	1631	1728	737	1487	1216	3787	9859	4798	3664	4423	2792	12939	5728	4119
1957-58	0	0	0	0	0	0	0	7698	6478	1898	2144	4683	12192	3878	2945
1958-59	0	0	0	0	0	1331	4458	11811	7306	3977	5213	5869	9478	11616	4571
1959-60	2884	2883	1894	5866	7247	6781	4994	9628	5835	3894	8125	4657	4386	6953	5478
1960-61	1820	2518	0	266	92	2234	1415	9886	9438	5859	4131	871	10466	11867	4757
1961-62	0	0	0	0	0	0	0	8112	4303	0	2446	7758	3879	6358	2298
1962-63	0	2278	759	0	1416	3796	5192	9187	7623	1591	0	0	2877	5398	3119
1963-64	1123	1212	0	982	0	833	1219	9985	4244	5	1187	0	7486	13149	3324
1964-65	3589	3988	1484	2814	2854	2831	6678	12548	9854	4994	3106	10225	9224	8752	5988
1965-66	1852	4458	2993	1143	815	1978	1718	9725	3360	1496	5202	1081	3788	2929	2963
1966-67	1296	2817	0	0	0	0	3552	10785	7128	2437	943	0	8522	13277	4818
1967-68	1482	2496	646	475	1323	2134	2196	10227	7839	4663	472	0	1239	6827	3322
AVERAGE	1376	1664	668	522	872	1333	2152	7422	4268	2221	2651	4581	6577	5872	3185

LOAD-WASH. WATER POWER CO.		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
WASH W P	77-78 PK		956	911	916	1036	1219	1324	1375	1290	1201	1072	955	950
WASH W P	77-78 AV	807.2	688	683	678	756	890	969	1007	942	900	783	697	693
WASH W P	78-79 PK		999	949	955	1083	1279	1392	1449	1356	1260	1122	995	989
WASH W P	78-79 AV	845.7	719	712	707	791	934	1021	1062	990	945	819	726	722
WASH W P	79-80 PK		1042	988	993	1127	1332	1448	1506	1411	1310	1166	1034	1028
WASH W P	79-80 AV	879.7	750	741	735	823	972	1063	1105	1030	963	851	754	750
WASH W P	80-81 PK		1083	1027	1032	1171	1386	1505	1564	1467	1362	1211	1073	1066
WASH W P	80-81 AV	914.4	780	770	763	855	1012	1106	1150	1071	1021	884	783	778
WASH W P	81-82 PK		1125	1066	1071	1216	1441	1561	1577	1481	1380	1222	1081	1078
WASH W P	81-82 AV	936.5	810	799	792	888	1052	1151	1162	1081	1035	892	789	787
WASH W P	82-83 PK		1140	1079	1082	1231	1458	1581	1640	1540	1434	1269	1122	1119
WASH W P	82-83 AV	960.8	821	809	801	898	1065	1165	1209	1124	1076	926	819	817
WASH W P	83-84 PK		1184	1120	1123	1278	1516	1645	1706	1601	1491	1318	1165	1162
WASH W P	83-84 AV	998.3	853	840	831	933	1107	1212	1257	1169	1118	962	850	848
WASH W P	84-85 PK		1230	1163	1166	1328	1577	1711	1768	1658	1544	1364	1205	1201
WASH W P	84-85 AV	1035.5	886	872	863	969	1151	1261	1303	1211	1158	996	879	877
WASH W P	85-86 PK		1273	1203	1206	1374	1633	1773	1832	1718	1599	1412	1246	1242
WASH W P	85-86 AV	1071.9	917	902	892	1003	1192	1307	1350	1254	1199	1031	909	907
WASH W P	86-87 PK		1317	1245	1247	1422	1692	1837	1898	1760	1656	1462	1289	1285
WASH W P	86-87 AV	1109.8	949	933	923	1038	1235	1354	1399	1299	1242	1067	941	938
WASH W P	87-88 PK		1364	1288	1290	1472	1752	1904	1967	1844	1715	1513	1333	1329
WASH W P	87-88 AV	1149.1	982	966	955	1075	1279	1403	1450	1346	1286	1104	973	970

OTHER PUBLIC AGENCIES 1/
Total Loads

Figures are mw.

		Jul-Jun Av	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1977-78	Pk		2650	2666	2738	2847	3014	3365	3507	3197	2962	2928	2911	2866
	Av	2231.5	2061	2106	2031	2030	2204	2561	2640	2426	2237	2172	2130	2180
1978-79	Pk		2836	2856	2931	3041	3215	3588	3719	3393	3147	3119	3104	3061
	Av	2377.6	2212	2264	2174	2166	2348	2729	2796	2569	2369	2306	2268	2330
1979-80	Pk		3023	3043	3127	3241	3419	3806	3944	3597	3333	3305	3296	3254
	Av	2529.5	2367	2423	2321	2305	2495	2894	2967	2727	2514	2450	2413	2478
1980-81	Pk		3202	3229	3322	3443	3630	4038	4165	3800	3521	3498	3480	3438
	Av	2679.8	2515	2577	2469	2450	2650	3073	3134	2881	2655	2586	2546	2622
1981-82	Pk		3377	3404	3507	3628	3825	4254	4399	4009	3717	3697	3680	3633
	Av	2826.3	2649	2716	2601	2580	2790	3233	3310	3043	2805	2730	2689	2770
1982-83	Pk		3588	3621	3733	3861	4066	4522	4666	4251	3942	3920	3904	3856
	Av	3010.7	2827	2898	2776	2754	2976	3445	3515	3234	2982	2905	2863	2954
1983-84	Pk		3778	3814	3935	4070	4288	4769	4918	4476	4150	4129	4111	4061
	Av	3168.7	2978	3054	2924	2901	3138	3630	3697	3399	3136	3054	3008	3106
1984-85	Pk		3977	4011	4143	4289	4517	5025	5190	4724	4378	4354	4336	4286
	Av	3338.8	3133	3212	3075	3050	3302	3823	3900	3587	3306	3220	3174	3284
1985-86	Pk		4188	4231	4373	4526	4770	5309	5464	4972	4602	4576	4556	4501
	Av	3510.7	3299	3387	3240	3211	3480	4030	4100	3770	3473	3380	3324	3434
1986-87	Pk		4401	4446	4597	4758	5016	5585	5759	5234	4840	4813	4787	4730
	Av	3686.5	3459	3552	3398	3373	3657	4239	4312	3963	3649	3547	3485	3604
1987-88	Pk		4624	4673	4831	5004	5281	5881	6068	5511	5091	5053	5022	4959
	Av	3870.4	3630	3729	3566	3540	3843	4458	4539	4170	3834	3720	3647	3769

1/ These loads are included in BPA Total Loads.

OTHER PUBLIC AGENCIES 1/
Total Loads

Figures are mw.

		Jul-Jun Av	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1977-78	Pk		2650	2666	2738	2847	3014	3365	3507	3197	2962	2928	2911	2866
	Av	2231.5	2061	2106	2031	2030	2204	2561	2640	2426	2237	2172	2130	2180
1978-79	Pk		2836	2856	2931	3041	3215	3588	3719	3393	3147	3119	3104	3061
	Av	2377.6	2212	2264	2174	2166	2348	2729	2796	2569	2369	2306	2268	2330
1979-80	Pk		3023	3043	3127	3241	3419	3806	3944	3597	3333	3305	3296	3254
	Av	2529.5	2367	2423	2321	2305	2495	2894	2967	2727	2514	2450	2413	2478
1980-81	Pk		3202	3229	3322	3443	3630	4038	4165	3800	3521	3498	3480	3438
	Av	2679.8	2515	2577	2469	2450	2650	3073	3134	2881	2655	2586	2546	2622
1981-82	Pk		3377	3404	3507	3628	3825	4254	4399	4009	3717	3697	3680	3633
	Av	2826.3	2649	2716	2601	2580	2790	3233	3310	3043	2805	2730	2689	2770
1982-83	Pk		3588	3621	3733	3861	4066	4522	4666	4251	3942	3920	3904	3856
	Av	3010.7	2827	2898	2776	2754	2976	3445	3515	3234	2982	2905	2863	2954
1983-84	Pk		3778	3814	3935	4070	4288	4769	4918	4476	4150	4129	4111	4061
	Av	3168.7	2978	3054	2924	2901	3138	3630	3697	3399	3136	3054	3008	3106
1984-85	Pk		3977	4011	4143	4289	4517	5025	5190	4724	4378	4354	4336	4286
	Av	3338.8	3133	3212	3075	3050	3302	3823	3900	3587	3306	3220	3174	3284
1985-86	Pk		4188	4231	4373	4526	4770	5309	5464	4972	4602	4576	4556	4501
	Av	3510.7	3299	3387	3240	3211	3480	4030	4100	3770	3473	3380	3324	3434
1986-87	Pk		4401	4446	4597	4758	5016	5585	5759	5234	4840	4813	4787	4730
	Av	3686.5	3459	3552	3398	3373	3657	4239	4312	3963	3649	3547	3485	3604
1987-88	Pk		4624	4673	4831	5004	5281	5881	6068	5511	5091	5053	5022	4959
	Av	3870.4	3630	3729	3566	3540	3843	4458	4539	4170	3834	3720	3647	3769

1/ These loads are included in BPA Total Loads.

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 40 YEARS OF WATER RECORD
1982-83 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	4711	2662	0	0	0	0	0	0	0	0	0	0	0	0	510
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	3677	7469	10377	4462	1706
1932-33	0	324	1171	0	0	682	1934	9449	3687	944	1871	3548	6629	13192	3387
1933-34	4922	4745	3148	1777	3317	5985	9575	12766	8789	7553	10651	11557	8604	0	6527
1934-35	0	0	0	0	0	20	1842	8686	3672	0	0	1698	4817	3589	1951
1935-36	2888	2596	0	0	0	0	0	5556	0	0	0	9467	8788	313	1977
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	643	53
1937-38	0	0	0	0	0	0	0	6928	1488	2524	1488	8764	9444	5517	2587
1938-39	429	0	0	0	0	0	0	1436	0	24	1563	6285	6489	293	1862
1939-40	125	388	0	0	0	0	154	2721	1828	4587	3872	4859	2388	0	1298
1940-41	0	0	0	0	0	0	0	0	728	1119	913	0	0	0	188
1941-42	0	0	0	0	0	0	3725	7729	2882	0	1115	3127	916	3881	1758
1942-43	1485	1569	57	0	0	0	773	10868	5342	1839	8955	12268	8115	8174	3913
1943-44	5311	4126	0	0	0	0	0	0	0	0	0	0	0	0	621
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	4188	344
1945-46	0	0	0	0	0	0	0	6784	1323	3876	4818	8785	12358	3357	2787
1946-47	392	838	0	394	0	1574	6316	10242	6425	4818	4444	6166	10993	2934	4888
1947-48	219	188	0	145	5793	4506	3587	10736	5668	2384	2226	7535	13456	12887	5356
1948-49	0	1138	2935	1131	413	968	1896	7837	2834	2368	4753	9489	12639	3324	3428
1949-50	0	0	0	0	0	0	421	9498	5949	5828	7584	6286	7463	13389	4884
1950-51	7585	4412	3829	1848	3201	5638	7112	11471	10319	6267	8974	8534	12161	5937	6922
1951-52	2717	3688	479	1136	4364	2645	3484	9565	4682	1798	5446	11788	12251	1124	4542
1952-53	1389	1669	0	0	0	0	0	9599	6299	333	0	1247	5988	10528	2924
1953-54	3554	2438	1431	362	256	1766	3455	10887	6889	3733	3872	3927	12399	10536	4898
1954-55	7553	7234	6543	4252	1188	3483	2548	9114	3226	0	428	0	3857	9914	4353
1955-56	6353	4217	278	68	2355	4384	6817	11708	5565	5528	9317	13628	13595	12279	6866
1956-57	1371	1399	1765	728	1418	1218	3788	8645	4528	3675	5366	2937	13247	5236	4134
1957-58	0	0	0	0	0	0	0	6988	6421	1895	3878	4859	12697	3519	2941
1958-59	0	0	0	0	0	1669	4455	11516	6761	3757	6423	5287	9855	11255	4575
1959-60	2562	2571	1128	5974	7448	6883	4986	9228	5391	3912	9186	4714	4684	6584	5494
1960-61	2411	2286	0	278	75	2235	1418	9484	9181	5988	5162	1288	11167	11475	4789
1961-62	0	0	0	0	0	0	0	7988	4168	0	3388	7834	4897	5983	2292
1962-63	427	2387	881	0	1418	3798	5144	9848	7226	1529	0	0	2349	5169	3113
1963-64	3916	1854	0	986	0	859	1192	9502	3818	51	2482	0	7633	12773	3368
1964-65	4222	3759	1441	2088	2865	2036	6883	12186	9587	4984	4139	18494	9548	8386	5958
1965-66	2447	4229	3833	1184	763	1972	1714	9582	2953	1379	6119	1167	3891	2476	2976
1966-67	1881	1784	0	0	0	0	3543	10416	6598	2634	2888	0	8793	12989	4838
1967-68	2874	2265	671	466	1324	2137	2198	9865	7588	4779	1458	0	1464	6382	3339
AVERAGE	1719	1592	658	548	884	1355	2199	7141	4813	2218	3343	4614	6822	5557	3126

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 48 YEARS OF WATER RECORD
1983-84 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	4356	2828	0	0	0	0	0	0	0	0	0	6	0	0	486
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
1930-31	0	0	0	0	[illegible]	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	3	0	3786	6789	10372	4115	1654
1932-33	0	0	825	0	0	382	1986	9757	3786	1928	1417	2856	6612	12882	3388
1933-34	4568	4982	3151	1786	3334	5820	9560	13163	8775	8147	10026	10899	8570	0	6519
1934-35	0	0	0	0	0	0	1808	8997	3857	0	0	985	4578	3227	1839
1935-36	2593	2854	0	0	0	0	0	6843	0	0	0	8417	8822	118	1956
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	958	78
1937-38	0	0	0	0	0	0	0	7577	989	2963	984	8138	9416	5191	2563
1938-39	69	0	0	0	0	0	0	2283	0	552	1983	5546	6525	0	1187
1939-40	0	0	0	0	0	0	0	3212	525	5893	4359	4883	2348	0	1292
1940-41	0	0	0	0	0	0	0	0	86	1448	1389	0	0	0	186
1941-42	0	0	0	0	0	0	3861	8141	2711	0	434	1988	717	3445	1683
1942-43	1897	1851	0	0	0	0	1838	10333	5519	2691	9815	11739	8181	7799	3968
1943-44	4959	4281	0	0	0	0	0	0	0	0	0	0	0	0	597
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	4813	338
1945-46	0	0	0	0	0	0	0	7897	1298	3584	3453	8884	12358	2991	2768
1946-47	36	986	0	308	0	1898	6478	18476	6556	4692	3939	5462	18976	2574	4895
1947-48	0	23	0	141	5818	4514	3591	11842	5766	2997	1684	6932	13526	12554	5351
1948-49	0	857	2569	1175	369	964	1897	7244	2828	2799	4686	8782	12652	2949	3388
1949-50	0	0	0	0	0	0	0	9747	6866	6577	7847	5489	7475	12994	4866
1950-51	7236	4568	3832	1844	3218	5634	7894	11888	10193	6828	8496	7913	12285	5554	6891
1951-52	2364	3833	479	1148	4483	2645	3489	9884	4837	2342	4873	11188	12235	757	4521
1952-53	953	1825	0	0	0	0	0	18361	5474	713	0	393	5751	10279	2866
1953-54	3198	2588	1435	361	283	1745	3458	18357	6935	4384	3389	3817	12484	18182	4876
1954-55	7193	7392	6561	4266	1186	3486	2553	9353	3349	0	79	0	3857	9612	4323
1955-56	6148	4367	66	84	2368	4297	6912	12846	5569	6223	8857	13874	13672	11985	6873
1956-57	1814	1554	1768	722	1411	1228	3783	8885	4783	4197	4797	2192	13325	4885	4187
1957-58	0	0	0	0	0	0	0	7623	5579	2441	2512	4891	12796	3197	2904
1958-59	0	0	0	0	0	1172	4598	11845	6724	4552	5898	4685	9768	18928	4554
1959-60	2226	2726	1128	5913	7678	6661	4935	9431	5493	4518	8599	4859	4545	6178	5475
1960-61	2855	2442	0	286	59	2238	1411	9766	9886	6558	4693	444	11165	18171	4762
1961-62	0	0	0	0	0	0	0	8581	3537	274	2766	7451	4147	5593	2255
1962-63	71	2463	812	0	1423	3883	5159	9214	7178	2187	0	0	2488	4343	3895
1963-64	1485	1188	0	974	0	653	1338	9728	4842	621	1725	0	7581	12375	3336
1964-65	3816	3917	1445	2015	2075	2048	6981	12408	9535	5672	3685	9884	9477	8862	5929
1965-66	2894	4386	3837	1140	812	1975	1717	9773	3136	2815	5544	481	3986	2134	2955
1966-67	1525	1948	0	0	0	0	3569	18728	6558	3238	1543	0	8644	12678	4048
1967-68	1692	2421	676	452	1328	2138	2198	10848	7522	5346	882	0	1334	5963	3388
AVERAGE	1517	1655	675	545	894	1338	2171	7419	3949	2637	3858	4119	6887	5298	3186

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 48 YEARS OF WATER RECORD
1984-85 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	3583	3947	651	0	0	0	0	0	0	0	0	0	0	0	488
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	4084	6548	10148	3803	1549
1932-33	0	0	334	0	0	0	1624	10193	4611	1586	1192	2578	6486	12328	3219
1933-34	3677	6833	3788	1806	3318	5448	9835	13695	9831	7995	9383	10583	7878	0	6522
1934-35	0	0	0	0	0	0	179	9388	4351	759	0	588	3903	2886	1799
1935-36	1791	3989	386	63	0	0	0	6221	0	0	0	8442	8589	0	1939
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	659	54
1937-38	0	0	0	0	0	0	0	7335	1561	3313	1411	8492	4718	4662	2554
1938-39	0	0	0	0	0	0	0	2128	323	98	3818	4844	6178	0	1868
1939-40	0	0	0	0	0	0	0	3888	738	4986	5189	3838	1986	0	1271
1940-41	0	0	0	0	0	0	0	0	125	1253	2248	0	0	0	288
1941-42	0	0	0	0	0	0	1568	8713	2529	0	123	2482	114	2957	1423
1942-43	171	3886	787	0	0	0	1198	10761	5682	3389	9111	11377	7221	7254	3957
1943-44	4228	5523	1149	0	0	0	0	0	0	0	0	0	0	0	636
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	3871	252
1945-46	0	0	0	0	0	0	0	6869	1953	3381	3281	7634	11647	2745	2684
1946-47	0	1436	579	466	0	1943	6532	10980	6939	4654	3551	5881	10516	2158	4112
1947-48	0	0	0	484	5786	4476	3597	11687	6895	2947	992	6588	12615	12823	5334
1948-49	0	923	3253	958	273	971	1181	7336	3625	3184	4157	8337	11943	2369	3358
1949-50	0	0	0	0	0	0	0	10892	6923	6526	6703	5319	6785	12482	4839
1950-51	6286	5793	3681	1180	3196	5598	7234	12344	11327	6911	8211	7668	11327	4831	6881
1951-52	1395	5878	1122	1136	4381	2638	3582	10867	5889	2466	5449	11369	11433	243	4492
1952-53	21	2953	7	0	0	0	0	10651	6223	1682	0	372	5232	9384	2872
1953-54	2261	3718	2856	383	266	1772	3467	10947	8856	4349	2928	2616	11643	9378	4833
1954-55	6389	8598	7197	4333	1182	3398	2565	9782	3666	0	464	0	2861	9397	4311
1955-56	5173	5577	908	138	2023	4476	7888	12685	6799	6181	8401	12771	12778	11334	6858
1956-57	219	2687	2337	772	1411	1225	3714	9853	4914	4342	4542	1958	12536	4217	4824
1957-58	0	0	0	0	0	0	0	7678	6423	2984	2285	3898	12113	3273	2958
1958-59	0	0	0	0	0	99	5321	12423	7937	4536	5225	3834	9326	10217	4513
1959-60	1291	3855	1755	5902	7449	6296	5828	9864	5829	4861	9838	4308	3698	5688	5428
1960-61	1351	3572	0	612	181	2236	1419	10374	10838	6414	3925	0	10415	10577	4736
1961-62	0	0	0	0	0	0	0	8294	4368	732	3227	7156	3346	5348	2251
1962-63	0	2088	1389	0	1362	3798	5211	9365	7749	2183	0	0	2183	3982	3897
1963-64	446	2341	614	992	0	696	1344	10173	4472	689	1348	0	7286	11882	3318
1964-65	2871	5848	1998	2876	2848	2038	6979	12884	9959	5592	3886	9941	8888	7568	5918
1965-66	1171	5521	3612	1149	844	1965	1724	10168	3487	1898	5986	834	3239	1613	2933
1966-67	591	3866	132	40	0	0	3797	11316	7734	3198	532	0	7863	11845	3997
1967-68	1868	3551	1340	445	1331	2143	2197	10418	7925	5488	598	0	845	5667	3322
AVERAGE	1897	2287	973	569	874	1288	2153	7668	4448	2784	3085	3978	6285	4873	3879

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 40 YEARS OF WATER RECORD
1985-86 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	3174	3498	788	0	0	0	0	0	0	0	0	0	0	0	444
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	4353	5867	9428	2889	1451
1932-33	0	0	299	0	0	0	568	18697	4833	2562	72	1819	5987	12858	3129
1933-34	3296	5556	3836	1702	3329	5829	18022	13958	18322	9138	8487	9525	6975	0	6515
1934-35	0	0	0	0	0	0	0	9538	4748	1553	0	0	2908	2419	1751
1935-36	1386	3523	365	0	0	0	0	6281	0	598	0	7318	8361	0	1873
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	585	48
1937-38	0	0	0	0	0	0	0	6791	1796	4288	297	7675	8849	4385	2458
1938-39	0	0	0	0	0	0	0	2419	689	1341	0	5374	5746	0	1081
1939-40	0	0	0	0	0	0	0	2641	622	5187	4628	4282	1577	0	1212
1940-41	0	0	0	0	0	0	0	0	0	478	2824	0	0	0	156
1941-42	0	0	0	0	0	0	992	8551	2589	0	818	2826	0	2773	1381
1942-43	0	1795	837	0	0	0	1349	11896	6355	3716	9896	11125	6398	6987	3919
1943-44	3653	4915	1162	0	0	0	0	0	0	0	0	0	0	0	563
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	2528	208
1945-46	0	0	0	0	0	0	0	6615	2282	4431	2218	7873	18773	2461	2686
1946-47	0	652	689	532	246	1942	6592	11173	7761	5586	2525	4296	9747	1724	4183
1947-48	0	0	0	0	5682	4498	3467	11988	7792	3941	0	5584	11763	11741	5283
1948-49	0	0	3395	733	220	938	931	7495	4911	4189	2857	8662	11812	2175	3381
1949-50	0	0	0	0	0	0	0	10273	7221	7231	5635	4337	6158	12283	3982
1950-51	5994	5226	3654	1887	3287	5642	7253	12678	12179	7713	7183	6591	18589	4549	6887
1951-52	1858	4535	1165	1818	4194	2806	3374	18483	6861	3318	4425	18488	18588	0	4431
1952-53	0	1859	0	0	0	0	0	11164	6513	2741	0	0	4847	8889	2831
1953-54	1784	3248	2186	785	314	1742	3315	11315	8962	5388	1876	1672	18772	9881	4758
1954-55	6886	8131	6988	4214	1223	3383	2436	18847	4351	0	0	0	1695	9382	4186
1955-56	4846	5828	959	20	2632	4746	7183	12898	7859	7876	7264	11828	11918	11856	6883
1956-57	0	1975	2484	675	1449	1188	3566	9245	5641	5411	3453	1827	11739	4882	3953
1957-58	0	0	0	0	0	0	0	7844	6895	3739	1364	2993	11341	3148	2914
1958-59	0	0	0	0	0	778	4415	12888	8582	5126	4828	2936	8626	18886	4468
1959-60	952	3371	1797	5721	6854	6964	4911	18253	6947	5847	7947	3277	2838	5334	5381
1960-61	986	3187	0	556	146	2211	1251	10708	10982	6981	3835	0	9478	10279	4678
1961-62	0	0	0	0	0	0	0	8427	4558	1628	2299	6625	2681	4929	2282
1962-63	0	1189	1429	0	1202	3775	5108	9651	8408	3138	0	0	1216	3663	3893
1963-64	0	1374	624	571	0	733	1178	18564	4915	1498	539	0	6354	11531	3281
1964-65	2582	4589	2845	1966	2889	2812	7884	13384	10571	6462	2795	9852	8888	7298	5849
1965-66	826	5848	3656	1836	898	1941	1557	10614	3863	3158	4891	0	2484	1364	2873
1966-67	212	2689	281	0	0	0	3638	11782	8496	3988	0	0	6946	11447	3954
1967-68	752	2818	1338	343	1362	2113	2032	10921	8832	6048	0	0	0	5068	3264
AVERAGE	938	1849	991	509	874	1331	2052	7853	4987	3328	2352	3556	5648	4647	3029

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 48 YEARS OF WATER RECORD
1986-87 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	3386	2808	0	0	0	0	0	0	0	0	0	0	0	0	396
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	4568	5931	9564	3878	1496
1932-33	0	0	0	0	0	0	751	18622	4786	2275	334	1860	6855	12324	3138
1933-34	3427	4878	3159	1767	3326	5741	9989	13928	18315	9166	8695	9658	7146	0	6485
1934-35	0	0	0	0	0	0	0	9388	4913	1488	0	0	3128	2723	1783
1935-36	1525	2834	0	0	0	0	0	5866	184	869	0	7358	8487	119	1865
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	646	53
1937-38	0	0	0	0	0	0	0	6094	2853	4037	552	7725	8191	4654	2436
1938-39	0	0	0	0	0	0	0	2285	971	1189	0	5549	5886	0	1884
1939-40	0	0	0	0	0	0	0	2513	882	5894	4638	4332	1788	0	1221
1940-41	0	0	0	0	0	0	0	0	0	391	2454	0	0	0	134
1941-42	0	0	0	0	0	0	1688	8396	2594	0	871	2628	0	2998	1445
1942-43	0	1518	128	0	0	0	1468	11856	6816	3661	9562	11166	6557	7248	3988
1943-44	3778	4225	244	0	0	0	0	0	0	0	0	0	0	0	585
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	2547	289
1945-46	0	0	0	0	0	0	0	6359	2735	4141	2471	7138	11815	2756	2658
1946-47	0	351	7	664	263	1971	6494	11196	7384	5615	2852	4446	9985	1992	4899
1947-48	0	0	0	0	5191	4511	3688	11865	7701	3956	384	5789	11948	12028	5381
1948-49	0	0	2455	908	118	846	1101	7657	4748	3932	2276	8723	11161	2445	3385
1949-50	0	0	0	0	0	0	0	10215	6953	7191	5761	4483	6308	12553	3996
1950-51	6126	4539	3046	1034	3195	5652	7194	12606	11893	8189	7355	6658	10669	4885	6821
1951-52	1187	3844	472	1118	4393	2653	3585	10515	5892	3298	4603	10551	10737	217	4437
1952-53	0	1468	0	0	0	0	0	11883	6612	2765	0	0	4191	9195	2849
1953-54	1951	2552	1434	351	263	1785	3472	11199	8712	5416	2215	1973	10929	9337	4773
1954-55	6217	7444	6378	4230	1190	3422	2569	10863	4322	0	0	0	1888	9554	4186
1955-56	4975	4341	338	191	2478	4769	6953	12875	7572	7192	7648	11914	12879	11329	6878
1956-57	0	1529	1784	738	1412	1232	3719	9383	5678	5147	3685	1091	11981	4252	3957
1957-58	0	0	0	0	0	0	0	7288	6992	3931	1425	3851	11581	3423	2931
1958-59	0	0	0	0	0	476	4248	12670	8628	4883	4488	3878	8836	10289	4459
1959-60	1868	2681	1127	5791	7547	6628	4998	10214	6741	5604	8875	3347	2961	5605	5377
1960-61	1115	2419	0	279	89	2249	1419	10631	10677	7221	3198	0	9637	10597	4686
1961-62	0	0	0	0	0	0	0	8388	4459	1585	2464	6681	2888	5241	2217
1962-63	0	788	788	0	1279	3813	5192	9772	8197	3162	0	3	1453	3933	3897
1963-64	0	458	0	883	0	538	1343	10537	4776	1547	638	0	6514	11798	3281
1964-65	2637	3817	1449	1988	2060	2851	6934	13293	10247	6659	3092	9167	8159	7569	5848
1965-66	957	4353	3046	1098	848	1988	1729	10684	3983	2787	5133	0	2564	1632	2877
1966-67	340	1919	0	0	0	0	3608	11579	8339	4889	0	0	7887	11759	3946
1967-68	988	2271	687	436	1321	2157	2199	10915	8578	6269	0	0	0	5583	3289
AVERAGE	998	1534	661	534	873	1112	2182	7768	4859	3311	2484	3683	5772	4852	3833

SURPLUS ENERGY IN EXCESS OF FIRM LOAD CARRYING CAPABILITY
FOR 40 YEARS OF WATER RECORD
1987-88 OPERATING YEAR

ENERGY IN AVERAGE MEGAWATTS

WATER CONDITION	JUL	AUG 1-15	AUG 16-31	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR 1-15	APR 16-30	MAY	JUN	ANNUAL AVERAGE
1928-29	3337	2847	0	0	0	0	0	0	0	0	0	0	0	0	368
1929-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931-32	0	0	0	0	0	0	0	0	0	0	3679	5986	9873	2811	1463
1932-33	0	0	0	0	0	0	166	18436	4974	2294	589	2831	6367	12858	3113
1933-34	3454	4113	3155	1777	3331	5572	9883	13732	18582	9826	8788	9765	7429	0	6459
1934-35	0	0	0	0	0	0	0	9237	4611	1869	0	0	3514	2538	1735
1935-36	1559	2878	0	0	0	0	0	6255	0	547	0	7597	8832	0	1858
1936-37	0	0	0	0	0	0	0	0	0	0	0	0	0	358	29
1937-38	0	0	0	0	0	0	0	6797	1748	3942	728	7983	8583	4388	2483
1938-39	0	0	0	0	0	0	0	1798	245	869	0	5572	6358	0	1814
1939-40	0	0	0	0	0	0	0	2237	441	5835	4472	4518	2187	0	1286
1940-41	0	0	0	0	0	0	0	0	0	186	2197	0	0	0	186
1941-42	0	0	0	0	0	0	1387	8221	2861	0	1822	2886	0	2784	1422
1942-43	77	1186	83	0	0	0	1228	18845	6412	3513	9657	11328	6856	6974	5888
1943-44	3888	3467	13	0	0	0	0	0	0	0	0	0	0	0	466
1944-45	0	0	0	0	0	0	0	0	0	0	0	0	0	2692	221
1945-46	0	0	0	0	0	0	0	7139	2326	4037	2652	7311	11253	2435	2693
1946-47	0	0	0	0	0	1946	6516	10976	7693	5586	2955	4561	10215	1728	4822
1947-48	0	0	0	0	4858	4583	3596	11667	7933	3811	395	5878	12261	11748	5276
1948-49	0	0	1986	753	58	958	1899	7468	4958	3819	2482	8881	11475	2173	3288
1949-50	0	0	0	0	0	0	0	10878	6812	6969	5876	4563	6813	12286	3978
1950-51	6156	3782	3836	1838	3192	5631	7282	12483	12843	7954	7471	6816	10998	4533	6788
1951-52	1216	3883	469	1135	4371	2646	3583	18271	6194	3145	4774	10738	11857	0	4421
1952-53	0	688	0	0	0	0	0	10895	6568	2568	0	0	4654	8925	2884
1953-54	1988	1794	1424	347	266	1788	3469	11823	8985	5338	2324	1998	11247	8861	4747
1954-55	6247	6689	6332	4252	1196	3421	2564	9842	4553	0	0	0	2118	9285	4161
1955-56	5885	3584	291	155	2622	4764	6967	12679	7868	6951	7764	12893	12481	11858	6853
1956-57	22	788	1773	728	1413	1232	3715	9113	5889	5853	3849	1261	12224	3972	3932
1957-58	0	0	0	0	0	0	0	7481	6628	3569	1601	3224	11824	3156	2989
1958-59	0	0	0	0	0	0	4354	12472	8819	4891	4545	3211	9112	9997	4435
1959-60	1187	1921	1114	5973	7483	6437	4989	18847	6865	5586	8256	3516	3267	5338	5375
1960-61	1143	1661	0	265	181	2247	1417	18452	10796	7121	3313	0	9992	10328	4655
1961-62	0	0	0	0	0	0	0	8144	4368	1289	2636	6857	3111	4933	2196
1962-63	0	184	653	0	1253	3809	5282	9536	8311	3894	0	0	1751	3678	3855
1963-64	0	137	0	923	0	673	1339	18379	5881	1374	678	0	6887	11535	3193
1964-65	2675	3855	1447	2085	2868	2058	6953	13896	10460	6552	3188	9387	8455	7388	5818
1965-66	986	3596	3035	1184	753	1977	1727	18445	4132	2748	5311	159	2874	1360	2853
1966-67	368	1161	0	0	0	0	3602	11385	8543	3822	0	0	7436	11542	3912
1967-68	1854	1526	673	454	1331	2155	2195	18684	8788	6159	0	0	310	5388	3262
AVERAGE	1885	1159	635	525	857	1295	2877	7681	4984	3196	2528	3694	6836	4656	3811

SECTION IV

Rating Information for Generating Facilities

Fuel Plants - Nameplate Ratings and Capabilities
Hydro Plants - Nameplate Ratings as of December 31, 1976
Hydro Plants - Chronological Projection of Nameplate Additions

Nameplate Rating
Fuel & Hydro Plants

NAMEPLATE RATINGS AND CAPABILITIES OF FUEL PLANTS
AS OF DECEMBER 31, 1976

Utility	Plant	Type	Nameplate Rating Mw	Peak Capability Mw	Energy Capability Avg. Mw
Eugene Water & Electric Board	--	Steam	28.9	33.8	5.0
	Weyco	Steam	51.2	51.3	27.4
Portland General Electric Company	Summit #1	Diesel	2.75	3.0	0.5
	Summit #2	Diesel	2.75	3.0	0.5
	Bethel	Comb. Turbine	113.4	127.6	3.9
	1/ Harborton	Comb. Turbine	226.8	257.6	7.8
	Beaver	Comb. Turbine	409.8	464.0	45.2
Pacific Power & Light Company	2/ Lincoln	Steam	35.5	15.0	0.0
	Libby Turbine	Comb. Turbine	23.8	28.0	0.0
Tacoma City Light	3/ Plant #1	Steam	9.0	9.1	0.0
	Plant #2	Steam	50.0	55.4	0.0
Seattle City Light	Lake Union	Steam	30.0	40.0	) 3.0
	4/ Georgetown	Steam	21.0	22.0	)
	Boundary	Comb. Turbine	0.75	0.75	0.64
Puget Sound Power & Light Company	Shuffleton	Steam	90.0	86.0	8.6
	Crystal Mountain	Diesel	2.8	2.8	0.3
	Whidbey Island	Comb. Turbine	26.5	28.5	2.8
	Whitehorn	Comb. Turbine	67.5	67.5	6.7
City of Bonners Ferry	--	Diesel	0.2	0.2	0.0
	#1	Diesel	1.1	1.1	1.0
	#2	Diesel	1.1	1.1	1.0
The Washington Water Power Company	Othello	Comb. Turbine	28.2	32.8	1.0
Total Small Fossil Fuel Plants			1223.0	1330.5	115.3
Washington Public Power Supply System	Hanford	Nuclear-Steam	800.0		
Pacific Power & Light Company	Centralia #1 & #2	Steam	1329.8	1313.0	919.1
	5/ Jim Bridger #1, #2, #3	Steam	1525.8	1500.0	1125.0
The Montana Power Company	6/ Colstrip #1	Steam	358.0	330.0	280.5
	Colstrip #2	Steam	358.0	330.0	264.0
Portland General Electric Company	Trojan	Nuclear-Steam	1216.0	1130.0	678.0

1/ Currently, no permit is issued for operation of this plant.
2/ Stand-by status only.
3/ Effective July 1, 1977, Tacoma Steam Plants No. 1 and No. 2 are no longer to be considered available as a capacity resource.
4/ Effective July 1, 1977, Seattle Steam Plant Georgetown will not be declared as a resource.
5/ PP[illegible] has 66-2/3% of all units. Generation from Jim Bridger is included in transfers from East.
6/ Puget Sound Power & Light has 50% of both units.

SMALL FUEL PLANTS

Peak and Energy Capabilities Used as Firm Resources and Additional Thermal Capability Available for Energy Reserve

Utility	Plant	Type	January Peak Capability - Mw				Annual Energy Capability - Avg. Mw				Additional Thermal Capability Available for Energy Reserve - Avg. Mw				
			1977-78	1978-79 And 1979-80	1980-81 Thru 1984-85	1985-86 Thru 1987-88	1977-78	1978-79 And 1979-80	1980-81 Thru 1984-85	1985-86 Thru 1987-88	1977-78	1978-79	1979-80	1980-81 Thru 1984-85	1985-86 Thru 1987-88
Eugene Water & Electric Board	--	Steam	33.8	33.8	26.5	16.1	5.0	5.0	3.9	2.4	25.4	25.4	25.4	19.9	12.1
	Weyco	Steam	33.5	33.5	33.5	33.5	27.4	27.4	27.4	27.4	-	-	-	-	-
Portland General Electric Company	Summit #1	Diesel	3.0	3.0	3.0	3.0	0.5	0.5	0.5	0.5	-	-	-	-	-
	Summit #2	Diesel	3.0	3.0	3.0	3.0	0.5	0.5	0.5	0.5	-	-	-	-	-
	Bethel	Comb. Turbine	127.6	127.6	127.6	127.6	3.9	3.9	3.9	3.9	78.2	78.2	78.2	78.2	78.2
	*Harborton	Comb. Turbine	257.6	257.6	257.6	257.6	7.8	7.8	7.8	7.8	157.7	157.7	157.7	157.7	157.7
	Beaver	Comb. Turbine	614.0	614.0	614.0	614.0	60.8	60.8	60.8	60.8	272.3	309.5	315.4	315.4	315.4
Pacific Power & Light Company	**Lincoln	Steam	15.0	15.0	15.0	15.0	-	-	-	-	-	-	-	-	-
	Libby Turbine	Comb. Turbine	28.0	28.0	28.0	28.0	-	-	-	-	-	-	-	-	-
Seattle City Light	Lake Union	Steam	40.0	40.0	40.0	40.0	2.0	2.0	2.0	2.0	-	-	-	-	-
	Boundary	Comb. Turbine	0.75	0.75	0.75	0.75	0.64	0.64	0.64	0.64	-	-	-	-	-
Puget Sound Power & Light Company	Shuffleton	Steam	86.0	86.0	86.0	86.0	8.6	8.6	8.6	8.6	-	-	-	-	-
	Crystal Mountain	Diesel	2.8	2.8	2.8	2.8	0.3	0.3	0.3	0.3	-	-	-	-	-
	Whidbey Island	Comb. Turbine	28.5	28.5	28.5	28.5	2.8	2.8	2.8	2.8	-	-	-	-	-
	Whitehorn	Comb. Turbine	67.5	67.5	67.5	67.5	6.7	6.7	6.7	6.7	-	-	-	-	-
City of Bonners Ferry	--	Diesel	0.2	0.2	0.2	0.2	-	-	-	-	-	-	-	-	-
	#1	Diesel	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	-	-	-	-	-
	#2	Diesel	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	-	-	-	-	-
The Washington Water Power Company	Othello	Comb. Turbine	32.8	32.8	32.8	32.8	1.0	1.0	1.0	1.0	20.0	20.0	20.0	20.0	20.0
	Northeast	Comb. Turbine	-	34.5	34.5	34.5	-	1.0	1.0	1.0	-	20.0	20.0	20.0	20.0
Total Capability			1376.2	1410.8	1403.4	1393.0	129.9	130.9	129.8	128.3	553.6	610.8	616.7	611.2	603.4

* Currently, no permit is issued for operation of this plant.
** Standby status only.

NAMEPLATE RATINGS OF PRESENT HYDRO INSTALLATIONS

Plant			Nameplate Megawatts
City of Bonners Ferry			
Moyie Springs			2.4 *
Bonneville Power Administration			
Hungry Horse		(USBR)	285.0
Albeni Falls		(USCE)	42.6
Libby		(USCE)	420.0
Grand Coulee		(USBR)	4,180.0 **
Chief Joseph		(USCE)	1,074.0
McNary		(USCE)	980.0
The Dalles		(USCE)	1,807.0
Bonneville		(USCE)	518.0
Detroit		(USCE)	100.0
Big Cliff		(USCE)	18.0
Hills Creek		(USCE)	30.0
Lookout Point		(USCE)	120.0
Dexter		(USCE)	15.0
Chandler		(USBR)	12.0
Roza		(USBR)	11.2
Dworshak		(USCE)	400.0
Lower Granite		(USCE)	405.0
Little Goose		(USCE)	405.0
Ice Harbor		(USCE)	602.9
Cougar		(USCE)	25.0
Green Peter		(USCE)	80.0
Foster		(USCE)	20.0
John Day		(USCE)	2,160.0
Lower Monumental		(USCE)	405.0
Palisades	(So. Idaho)	(USBR)	118.8
Black Canyon	(So. Idaho)	(USBR)	8.0
Boise Diversion	(So. Idaho)	(USBR)	1.5
Anderson Ranch	(So. Idaho)	(USBR)	27.0
Minidoka	(So. Idaho)	(USBR)	13.4
City of Centralia			
Yelm		(Nisqually River)	9.0
Chelan County PUD			
Chelan			48.0
Rock Island			212.1
Rocky Reach			1,211.6

Plant		Nameplate Megawatts
Cowlitz County PUD		
(See Swift No. 2 - Pacific Power & Light Company)		
Douglas County PUD		
Wells		774.3
Eugene Water & Electric Board		
Walterville	(McKenzie River)	8.0
Leaburg	(McKenzie River)	13.5
Carmen	(McKenzie River)	80.0
Trail Bridge	(McKenzie River)	10.0
Grant County PUD		
Priest Rapids	(10 Units)	788.5
Wanapum	(10 Units)	831.3
Pacific Power & Light Company		
Swift No. 1	(Lewis River)	204.0
Swift No. 2 - (Cowlitz PUD)	(Lewis River)	70.0
Merwin	(Lewis River)	136.0
Yale	(Lewis River)	108.0
John C. Boyle	(Klamath River)	80.0
Iron Gate	(Klamath River)	18.0
Copco No. 1	(Klamath River)	20.0
Copco No. 2	(Klamath River)	27.0
East Side	(Klamath River)	3.2
West Side	(Klamath River)	0.6
Toketee		42.5
Lemolo No. 2		33.0
Prospect No. 2		32.0
Lemolo No. 1		29.0
Clearwater No. 2		26.0
Slide Creek		18.0
Clearwater No. 1		15.0
Soda Springs		11.0
Fish Creek		11.0
Condit		9.6
Prospect No. 3		7.2
Naches		6.4
Powerdale		6.0
Big Fork		4.2

* Included in "Minor Hydro - Other" in resource tabulations.

** Includes service units, 2 pump-generator units, rewind of 18 main units.

NAMEPLATE RATINGS OF PRESENT HYDRO INSTALLATIONS

Plant		Nameplate Megawatts
Pacific Power & Light Company - contd.		
Prospect No. 1		3.8
Eagle Point		2.8
Fall Creek		2.2
Drop		1.4
Bend		1.1
Cline Falls		1.0
Prospect No. 4		1.0
Wallowa Falls		0.8
Albany		0.8
Stayton		0.6
Pend Oreille County PUD		
Calispel Creek		0.6 *
Box Canyon		60.0
Sullivan Lake	(Storage Only)	-
Portland General Electric Company		
T. W. Sullivan		15.4
Bull Run		21.0
Oak Grove	(Clackamas River)	51.0
North Fork	(Clackamas River)	38.4
Faraday	(Clackamas River)	34.5
River Mill	(Clackamas River)	19.0
Pelton	(Deschutes River)	108.0
Round Butte	(Deschutes River)	247.1
Puget Sound Power & Light Company		
Nooksack	(Nooksack River)	1.5
Electron	(Puyallup River)	25.5
Snoqualmie Falls	(Snoqualmie River)	41.7
White	(White River)	70.0
Lower Baker	(Baker River)	64.0
Upper Baker	(Baker River)	94.4
Seattle City Light		
Cedar Falls	(Cedar River)	22.9
Newhalem	(Newhalem River)	2.0
Ross	(Skagit River)	360.0
Diablo	(Skagit River)	120.0
Gorge	(Skagit River)	134.4
Boundary		551.0

Plant		Nameplate Megawatts
Tacoma City Light		
Cushman	(Skokomish River)	124.2
Alder	(Nisqually River)	50.0
LaGrande	(Nisqually River)	64.0
Mayfield	(Cowlitz River)	121.5
Mossyrock	(Cowlitz River)	300.0
The Washington Water Power Company		
Post Falls		11.2
Upper Falls		10.0
Monroe Street		7.2
Nine Mile		12.0
Long Lake		70.0
Little Falls		32.0
Meyers Falls		1.2
Cabinet Gorge		200.0
Noxon Rapids		282.9
Washington Public Power Supply System		
Packwood		26.0
City of Idaho Falls	(So. Idaho)	
Lower		3.0
Lower Valley Power & Light Inc.	(So. Idaho)	
Strawberry Creek		1.5
Flathead Irrigation Project (FIP)		
Big Creek		0.4 *
Total Installed as of December 31, 1976		22,555.8

* Included in "Minor Hydro - Other" in resource tabulations.

HYDRO PLANTS - CHRONOLOGICAL PROJECTION OF NAMEPLATE ADDITIONS

DATE	PLANT	UNIT NO.	PLANT ADDITION NAMEPLATE-MW	TOTAL AREA NAMEPLATE-MW
Dec/76				22,555.8
Feb/77	Lost Creek	1	24.5	22,580.3
Mar/77	Lost Creek	2	24.5	22,604.8
May/77	Chief Joseph	17	95.0	22,699.8
Aug/77	Chief Joseph	18	95.0	22,794.8
Sep/77	Grand Coulee	22	700.0	23,494.8
Nov/77	Noxon Rapids	5	114.0	23,608.8
Nov/77	Chief Joseph	19	95.0	23,703.8
Jan/78	Lower Granite	4	135.0	23,838.8
Feb/78	Lower Granite	5	135.0	23,973.8
Feb/78	Little Goose	4	135.0	24,108.8
Feb/78	Chief Joseph	20	95.0	24,203.8
Feb/78	Rock Island	18	51.0	24,254.8
Mar/78	Lower Granite	6	135.0	24,389.8
Mar/78	Little Goose	5	135.0	24,524.8
Mar/78	Grand Coulee	23	700.0	25,224.8
Mar/78	Rock Island	17	51.0	25,275.8
Apr/78	Rock Island	16	51.0	25,326.8
May/78	Little Goose	6	135.0	25,461.8
May/78	Chief Joseph	21	95.0	25,556.8
Jun/78	Rock Island	15	51.0	25,607.8
Jul/78	Chief Joseph	22	95.0	25,702.8
Aug/78	Rock Island	14	51.0	25,753.8
Sep/78	Chief Joseph	23	95.0	25,848.8
Sep/78	Grand Coulee	24	700.0	26,548.8
Oct/78	Rock Island	13	51.0	26,599.8
Nov/78	Chief Joseph	24	95.0	26,694.8

Note: Additional data relative to these units are contained in the section on Additional Generating Capacity.

HYDRO PLANTS - CHRONOLOGICAL PROJECTION OF NAMEPLATE ADDITIONS

DATE	PLANT	UNIT NO.	PLANT ADDITION NAMEPLATE-MW	TOTAL AREA NAMEPLATE-MW
Dec/78	Rock Island	12	51.0	26,745.8
Jan/79	Chief Joseph	25	95.0	26,840.8
Feb/79	Lower Monumental	4	135.0	26,975.8
Feb/79	Rock Island	11	51.0	27,026.8
Mar/79	Lower Monumental	5	135.0	27,161.8
Mar/79	Chief Joseph	26	95.0	27,256.8
Apr/79	Lower Monumental	6	135.0	27,391.8
May/79	Chief Joseph	27	95.0	27,486.8
Oct/79	Grand Coulee	P/G 9	50.0	27,536.8
Feb/80	Grand Coulee	P/G 10	50.0	27,586.8
Jun/80	Grand Coulee	P/G 11	50.0	27,636.8
Oct/80	Grand Coulee	P/G 12	50.0	27,686.8
May/81	Bonneville	11	66.5	27,753.3
Jul/81	Bonneville	12	66.5	27,819.8
Sep/81	Bonneville	13	66.5	27,886.3
Nov/81	Bonneville	14	66.5	27,952.8
Jan/82	Bonneville	15	66.5	28,019.3
Mar/82	Bonneville	16	66.5	28,085.8
May/82	Bonneville	17	66.5	28,152.3
Jul/82	Bonneville	18	66.5	28,218.8
Nov/83	Libby	5	105.0	28,323.8
Nov/83	Libby	6	105.0	28,428.8
Nov/83	Libby	7	105.0	28,533.8
Nov/83	Libby	8	105.0	28,638.8
Dec/83	Libby Reregulating	1	15.4	28,654.2
Feb/84	Libby Reregulating	2	30.5	28,684.7
Apr/84	Libby Reregulating	3	30.5	28,715.2

Note: Additional data relative to these units are contained in the section on Additional Generating Capacity.

SECTION V

January Peak, Critical Period Energy and 40-Year Average Energy Capabilities

Columbia Mainstem Hydro
Seasonal Hydro
Pondage and Minor Hydro

01/20/77

1977 WEST GROUP FORECAST

JANUARY PEAK CAPABILITY

JANUARY 1937 WATER YEAR

FIGURES ARE MEGAWATTS.

		1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
COLUMBIA MAINSTEM												
LIBBY	BPA	407	406	405	391	322	352	825	808	894	926	895
LIBBY REREGULATING	BPA	0	0	0	0	0	0	18	80	88	88	88
HUNGRY HORSE	BPA	297	283	291	297	213	228	277	304	117	313	298
NOXON RAPIDS	WWP	536	536	538	536	538	538	538	538	538	536	538
CABINET GORGE	WWP	230	230	230	230	230	230	230	230	230	238	230
ALBENI FALLS	BPA	25	25	24	25	25	24	25	25	26	26	25
BOX CANYON	PEND OR.PUD	71	72	71	72	72	71	72	72	73	72	72
BOUNDARY	SEATTLE	650	650	650	650	650	650	650	650	650	658	650
SPOKANE RIVER	WWP	152	152	152	152	152	152	152	152	152	152	152
GRAND COULEE	BPA	4987	6499	6549	6699	6699	6699	6699	6699	6699	6699	6699
CHIEF JOSEPH	BPA	1560	2266	2412	2412	2412	2412	2412	2412	2412	2412	2412
WELLS	DOUGLAS PUD	842	842	842	842	842	842	842	842	842	842	842
CHELAN	CHELAN PUD	51	51	51	51	51	51	51	51	51	51	51
ROCKY REACH	CHELAN PUD	1289	1267	1267	1267	1267	1267	1267	1267	1267	1267	1267
ROCK ISLAND	CHELAN PUD	153	511	544	544	544	544	544	544	544	544	544
WANAPUM	GRANT PUD	986	986	986	986	986	986	986	986	986	986	986
PRIEST RAPIDS	GRANT PUD	912	912	912	912	912	912	912	912	912	912	912
DWORSHAK	BPA	443	448	460	413	443	447	455	460	460	468	447
LOWER GRANITE	BPA	620	930	930	930	930	930	930	930	930	930	930
LITTLE GOOSE	BPA	456	930	930	930	930	930	930	930	930	930	930
LOWER MONUMENTAL	BPA	466	466	930	930	930	930	930	930	930	930	930
ICE HARBOR	BPA	693	693	693	693	693	693	693	693	693	693	693
MCNARY	BPA	1127	1127	1127	1127	1127	1127	1127	1127	1127	1127	1127
JOHN DAY	BPA	2484	2484	2484	2484	2484	2484	2484	2484	2484	2484	2484
ROUND BUTTE	PGE	312	312	312	312	312	312	312	312	312	312	312
PELTON	PGE	124	124	124	124	124	124	124	124	124	124	124
THE DALLES	BPA	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018
BONNEVILLE	BPA	574	574	574	574	963	1124	1124	1124	1124	1124	1124
TOTAL MAINSTEM HYDRO		22477	25736	26506	26603	26869	27077	27627	27712	27613	27834	27780
FEDERAL MAINSTEM		16372	19293	19981	19927	20193	20462	20951	21036	20936	21158	21104
FEDERAL HYDRO INDEPENDENTS		106	106	106	106	106	106	106	106	106	106	106
NET PUMPING LOADS		95	96	146	296	296	296	296	296	296	296	296
TOTAL FEDERAL HYDRO		16573	19495	20233	20329	20595	20864	21353	21438	21338	21560	21506
% REALIZATION FACTOR		-829	-975	-1012	-1016	-1030	-1043	-1068	-1072	-1067	-1078	-1075

1977 WEST GROUP FORECAST

JANUARY PEAK CAPACITY

JANUARY 1937 WATER YEAR

FIGURES ARE MEGAWATTS.

		1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
SEASONAL HYDRO												
CARMEN	EUGENE	41	41	41	41	41	41	41	41	41	41	41
TRAIL BRIDGE	EUGENE	5	5	5	5	5	5	5	5	5	5	5
DETROIT	BPA	99	99	99	99	99	99	99	99	99	99	99
BIG CLIFF	BPA	4	4	4	4	4	4	4	4	4	4	4
LOOKOUT POINT	BPA	71	71	71	71	71	71	71	71	71	71	71
DEXTER	BPA	6	6	6	6	6	6	6	6	6	6	6
COUGAR	BPA	6	6	6	6	6	6	6	6	6	6	6
HILLS CREEK	BPA	30	30	30	30	30	30	30	30	30		30
GREEN PETER	BPA	78	78	78	78	78	78	78	78	78		78
FOSTER	BPA	6	6	6	6	6	6	6	6	6	6	6
OAK GROVE	PGE	49	49	49	49	49	49	49	49	49	49	49
NORTH FORK	PGE	54	54	54	54	54	54	54	54	54	54	54
FARADAY	PGE	44	44	44	44	44	44	44	44	44	44	44
RIVER MILL	PGE	23	23	23	23	23	23	23	23	23	23	23
SWIFT #1	PP&L	188	188	189	188	189	189	189	188	189	189	189
SWIFT #2	PP&L	76	76	76	76	76	76	76	76	76	76	76
YALE	PP&L	118	118	118	118	118	118	118	118	118	118	118
MERWIN	PP&L	144	144	144	144	144	144	144	144	144	144	144
KLAMATH RIVER	PP&L	163	163	163	163	163	163	163	163	163	163	163
ALDER	TACOMA	41	41	41	41	36	38	40	40	40	40	39
LAGRANDE	TACOMA	65	65	65	65	65	65	65	65	65	65	65
CUSHMAN #1	TACOMA	29	29	29	29	27	28	29	29	29	28	28
CUSHMAN #2	TACOMA	88	88	88	88	88	88	88	88	88	88	88
MAYFIELD	TACOMA	131	131	131	131	131	131	131	131	131	131	131
MOSSYROCK	TACOMA	293	293	293	293	293	293	293	293	293	293	293
ROSS	SEATTLE	282	283	285	529	529	529	529	529	529	529	529
DIABLO	SEATTLE	159	159	159	159	159	159	159	159	159	159	159
GORGE	SEATTLE	175	175	175	175	175	175	175	175	175	175	175
WHITE	PSP&L	42	42	43	42	42	42	42	42	42	42	42
UPPER BAKER	PSP&L	83	83	83	83	83	83	83	83	83	83	83
LOWER BAKER	PSP&L	68	68	68	68	68	68	68	68	68	68	68
PALISADES-S. IDAHO	BPA	49	49	49	49	49	49	49	49	49	49	49
LOST CREEK	BPA	18	18	18	18	18	18	18	18	18	18	18
TOTAL SEASONAL HYDRO		2728	2729	2733	2975	2969	2972	2975	2974	2975	2974	2973

01/20/77

1977 WEST GROUP FORECAST

JANUARY PEAK CAPABILITY

JANUARY 1937 WATER YEAR

FIGURES ARE MEGAWATTS.

1977-78 THROUGH 1987-88

PONDAGE AND MINOR HYDRO

WATERVILLE	EUGENE	9
LEABURG	EUGENE	12
CHANDLER	BPA	9
ROZA(NET)	BPA	3
BULL RUN	PGE	22
T.W. SULLIVAN	PGE	14
UMPQUA	PP&L	175
ROGUE	PP&L	25
CONDIT,BIG F&MINOR	PP&L	33
YELM	CENTRALIA	10
CEDAR F&NEWHALEM	SEATTLE	32
SNOQUALMIE & MINOR	PSP&L	72
MEYER FALLS	WWP	1
PACKWOOD	WPPSS	30
MINOR HYDRO-OTHERS	1/	4
S.IDAHO-SMALL PLNT	BPA	26
S.IDAHO-PUBLIC AGY	BPA	3
TOTAL PONDAGE & MINOR HYDRO		480

1/ INCLUDES CALISPEL CREEK, MOYIE SPRINGS AND BIG CREEK (F.I.P. - FLATHEAD IRRIGATION PROJECTS).

01/20/77

1977 WEST GROUP FORECAST

CRITICAL PERIOD ENERGY CAPABILITY

FIGURES ARE MEGAWATTS.

		1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
MONTHS IN CRITICAL PERIOD		42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5
COLUMBIA MAINSTEM												
LIBBY	BPA	194	195	194	192	187	191	194	173	157	159	158
LIBBY REREGULATING	BPA	0	0	0	0	0	0	22	31	29	29	29
HUNGRY HORSE	BPA	96	97	98	98	97	97	98	99	99	99	98
NOXON RAPIDS	WWP	148	148	148	148	148	148	148	148	148	148	148
CABINET GORGE	WWP	106	106	106	106	106	106	106	106	105	105	105
ALBENI FALLS	BPA	25	25	25	25	25	25	25	25	25	25	25
BOX CANYON	PEND OR.PUD	46	46	46	46	46	46	46	46	46	46	46
BOUNDARY	SEATTLE	359	359	360	359	359	360	359	359	359	359	359
SPOKANE RIVER	WWP	90	90	90	90	90	90	90	90	89	89	89
GRAND COULEE	BPA	1952	1923	1900	1885	1901	1902	1903	1902	1897	1897	1901
CHIEF JOSEPH	BPA	1023	1062	1085	1086	1087	1087	1087	1086	1086	1086	1087
WELLS	DOUGLAS PUD	439	438	438	437	438	437	437	437	437	436	438
CHELAN	CHELAN PUD	38	38	38	38	38	38	38	38	38	38	38
ROCKY REACH	CHELAN PUD	606	591	591	590	590	589	589	589	589	589	590
ROCK ISLAND	CHELAN PUD	194	278	279	279	279	279	279	279	279	279	279
WANAPUM	GRANT PUD	556	558	558	557	557	557	557	557	557	557	557
PRIEST RAPIDS	GRANT PUD	531	531	531	536	530	536	530	530	538	538	530
DWORSHAK	BPA	163	161	164	155	163	164	164	165	165	165	164
LOWER GRANITE	BPA	220	219	213	219	218	217	217	217	216	216	215
LITTLE GOOSE	BPA	216	219	213	219	218	217	217	217	216	216	215
LOWER MONUMENTAL	BPA	216	218	217	217	217	216	216	215	215	214	213
ICE HARBOR	BPA	219	219	218	218	217	217	216	216	215	215	214
MCNARY	BPA	643	643	642	641	641	640	640	639	639	638	638
JOHN DAY	BPA	920	927	926	926	926	924	924	923	923	922	922
ROUND BUTTE	PGE	84	84	84	84	84	84	84	84	84	84	84
PELTON	PGE	40	40	40	40	40	40	40	40	40	40	40
THE DALLES	BPA	821	820	819	819	818	810	818	817	816	816	816
BONNEVILLE	BPA	553	553	554	560	596	590	596	595	595	594	595
TOTAL MAINSTEM HYDRO		13512	16566	10593	10574	10016	10615	10643	10623	10594	10593	10593

1977 WEST GROUP FORECAST

CRITICAL PERIOD ENERGY CAPABILITY

FIGURES ARE MEGAWATTS.

		1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
MONTHS IN CRITICAL PERIOD		42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5
SEASONAL HYDRO												
CARMEN	EUGENE	20	20	20	20	20	20	20	20	20	20	20
TRAIL BRIDGE	EUGENE	4	4	4	4	4	4	4	4	4	4	4
DETROIT	BPA	36	36	36	36	36	36	36	36	36	36	36
BIG CLIFF	BPA	10	10	10	9	9	10	10	10	10	10	10
LOOKOUT POINT	BPA	26	26	26	26	26	26	26	26	26	26	26
DEXTER	BPA	8	8	8	8	8	8	8	8	8	8	8
COUGAR	BPA	13	13	13	13	13	13	13	13	13	13	13
HILLS CREEK	BPA	15	15	15	15	15	15	15	15	15	15	15
GREEN PETER	BPA	22	22	22	22	22	22	22	22	22	22	22
FOSTER	BPA	12	12	12	12	12	12	12	12	12	12	12
OAK GROVE	PGE	24	24	24	24	24	24	24	24	24	24	24
NORTH FORK	PGE	19	19	19	19	19	19	19	19	19	19	19
FARADAY	PGE	17	17	17	17	17	17	17	17	17	17	17
RIVER MILL	PGE	10	10	10	10	10	10	10	10	10	10	10
SWIFT #1	PP&L	54	54	54	54	54	54	54	54	54	54	54
SWIFT #2	PP&L	20	21	20	20	20	20	20	20	20	20	20
YALE	PP&L	53	53	53	53	53	53	53	53	53	53	53
MERWIN	PP&L	52	52	52	52	52	52	52	52	52	52	52
KLAMATH RIVER	PP&L	50	50	50	50	50	50	50	50	50	50	50
ALDER	TACOMA	19	19	19	19	19	19	19	19	19	19	19
LAGRANDE	TACOMA	33	33	33	33	33	33	33	33	33	33	33
CUSHMAN #1	TACOMA	11	11	11	11	11	11	11	11	11	11	11
CUSHMAN #2	TACOMA	23	23	23	23	23	23	23	23	23	23	23
MAYFIELD	TACOMA	66	66	66	66	66	66	66	66	66	66	66
MOSSYROCK	TACOMA	98	98	98	98	98	98	98	98	98	98	98
ROSS	SEATTLE	66	66	66	101	101	101	101	101	101	101	101
DIABLO	SEATTLE	83	83	83	83	83	83	83	83	83	83	83
GORGE	SEATTLE	93	93	93	93	93	93	93	93	93	93	93
WHITE	PSP&L	28	28	28	26	28	28	28	28	28	28	28
UPPER BAKER	PSP&L	33	33	33	33	33	33	33	33	33	33	33
LOWER BAKER	PSP&L	38	38	38	38	38	38	38	38	38	38	38
PALISADES-S. IDAHO	BPA	69	69	69	69	69	69	69	69	69	69	69
LOST CREEK	BPA	22	22	22	22	22	22	22	22	22	22	22
TOTAL SEASONAL HYDRO		1147	1148	1147	1181	1181	1182	1182	1182	1182	1182	1182

01/20/77

1977 WEST GROUP FORECAST

CRITICAL PERIOD ENERGY CAPABILITY

FIGURES ARE MEGAWATTS.

		1977-78 THROUGH 1987-88
MONTHS IN CRITICAL PERIOD		42.5
PONDAGE AND MINOR HYDRO		
WATERVILLE	EUGENE	6
LEABURG	EUGENE	12
CHANDLER	BPA	7
ROZA(NET)	BPA	5
BULL RUN	PGE	10
T.W. SULLIVAN	PGE	13
UMPQUA	PP&L	97
ROGUE	PP&L	34
CONDIT,BIG F&MINOR	PP&L	26
YELM	CENTRALIA	9
CEDAR F&NEWHALEM	SEATTLE	8
SNOQUALMIE & MINOR	PSP&L	47
MEYER FALLS	WWP	1
PACKWOOD	WPPSS	7
MINOR HYDRO-OTHERS	1/	2
S.IDAHO-SMALL PLNT	BPA	30
S.IDAHO-PUBLIC AGY	BPA	3
TOTAL PONDAGE & MINOR HYDRO		319

1/ INCLUDES CALISPEL CREEK, MOYIE SPRINGS AND BIG CREEK (F.I.P. - FLATHEAD IRRIGATION PROJECTS).

01/19/77

1977 WEST GROUP FORECAST

40-YEAR AVERAGE ENERGY CAPABILITY

FIGURES ARE MEGAWATTS.

			LOAD YEAR STUDIED										
			1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
	COLUMBIA MAINSTEM												
112	LIBBY	BPA	217	217	217	217	216	217	224	206	191	191	191
113	LIBBY REREGULATING	BPA	0	0	0	0	0	0	25	37	34	33	33
114	HUNGRY HORSE	BPA	107	107	107	107	106	106	107	107	107	106	107
115	NOXON RAPIDS	WWP	202	203	203	203	203	203	203	203	203	203	203
116	CABINET GORGE	WWP	130	130	130	130	131	130	130	130	130	130	130
117	ALBENI FALLS	BPA	23	24	23	24	24	24	24	24	24	24	24
118	BOX CANYON	PEND OR.PUD	50	50	50	50	51	51	50	50	50	50	50
119	BOUNDARY	SEATTLE	454	456	454	456	456	456	455	456	456	455	455
120	SPOKANE RIVER	WWP	115	115	115	115	115	115	115	115	109	115	115
121	GRAND COULEE	BPA	2302	2261	2242	2240	2242	2240	2238	2238	2234	2235	2233
122	CHIEF JOSEPH	BPA	1381	1306	1348	1347	1348	1346	1344	1344	1343	1343	1341
123	WELLS	DOUGLAS PUD	523	521	522	521	522	521	520	520	520	520	519
124	CHELAN	CHELAN PUD	46	46	46	46	46	46	46	46	46	46	46
125	ROCKY REACH	CHELAN PUD	745	728	728	728	728	727	727	726	726	726	725
126	ROCK ISLAND	CHELAN PUD	210	333	338	337	338	338	337	337	337	337	336
127	WANAPUM	GRANT PUD	669	666	668	666	668	667	665	666	665	665	664
128	PRIEST RAPIDS	GRANT PUD	629	627	628	627	629	627	626	626	626	626	624
129	DWORSHAK	BPA	218	218	219	217	218	219	219	219	219	219	219
130	LOWER GRANITE	BPA	332	332	331	331	330	329	329	328	328	327	327
131	LITTLE GOOSE	BPA	330	333	332	332	331	330	330	329	329	328	328
132	LOWER MOUNMENTAL	BPA	292	336	335	335	334	334	333	333	332	332	331
133	ICE HARBOR	BPA	320	319	318	318	318	317	317	316	316	315	315
134	MCNARY	BPA	807	806	807	805	807	805	803	803	801	801	800
135	JOHN DAY	BPA	1256	1253	1252	1251	1251	1249	1248	1248	1247	1246	1245
136	ROUND BUTTE	PGE	99	99	99	99	99	99	99	99	99	99	99
137	PELTON	PGE	46	46	46	46	46	46	46	46	46	46	46
138	THE DALLES	BPA	1067	1065	1064	1064	1063	1062	1062	1061	1061	1060	1060
139	BONNEVILLE	BPA	558	558	559	570	728	748	747	746	745	745	744
140	TOTAL MAINSTEM HYDRO		12928	13157	13181	13182	13348	13352	13369	13359	13324	13325	13318

1977 WEST GROUP FORECAST

40-YEAR AVERAGE ENERGY CAPABILITY

FIGURES ARE MEGAWATTS.

			LOAD YEAR STUDIED										
			1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
	SEASONAL HYDRO												
146	CARMEN	EUGENE	27	27	27	27	27	27	27	27	27	27	27
147	TRAIL BRIDGE	EUGENE	6	6	6	6	6	6	6	6	6	6	6
148	DETROIT	BPA	47	47	47	47	47	47	47	47	47	48	47
149	BIG CLIFF	BPA	12	11	11	11	11	11	11	12	12	12	11
150	LOOKOUT POINT	BPA	38	38	38	38	38	38	38	38	38	38	38
151	DEXTER	BPA	10	10	10	10	10	10	10	10	10	10	10
152	COUGAR	BPA	17	17	17	17	17	17	17	17	17	17	17
153	HILLS CREEK	BPA	19	19	19	19	19	19	19	19	19	19	19
154	GREEN PETER	BPA	29	29	29	29	29	29	29	29	29	29	29
155	FOSTER	BPA	14	14	14	14	14	14	14	14	14	14	14
156	OAK GROVE	PGE	27	27	27	27	27	27	27	27	27	27	27
157	NORTH FORK	PGE	26	26	26	26	26	26	26	26	26	26	26
158	FARADAY	PGE	23	23	23	23	23	23	23	23	23	23	23
159	RIVER MILL	PGE	13	13	13	13	13	13	13	13	13	13	13
160	SWIFT #1	PP&L	74	74	74	74	74	74	74	74	74	74	74
161	SWIFT #2	PP&L	25	25	25	25	25	25	25	25	25	25	25
162	YALE	PP&L	65	65	65	65	65	65	65	65	65	65	65
163	MERWIN	PP&L	64	64	64	64	64	64	64	64	64	64	64
164	KLAMATH RIVER	PP&L	85	85	85	85	85	85	85	85	85	85	85
165	ALDER	TACOMA	25	25	25	25	25	25	25	25	25	25	25
166	LAGRANDE	TACOMA	39	39	39	39	39	39	39	39	39	39	39
167	CUSHMAN #1	TACOMA	13	13	13	13	13	13	13	13	13	13	13
168	CUSHMAN #2	TACOMA	25	25	25	25	25	25	25	25	25	25	25
169	MAYFIELD	TACOMA	72	72	72	72	72	72	72	72	72	72	72
170	MOSSYROCK	TACOMA	115	115	115	115	115	115	115	115	115	115	115
171	ROSS	SEATTLE	83	83	83	124	123	123	123	124	124	124	123
172	DIABLO	SEATTLE	92	92	92	92	92	92	92	92	92	92	92
173	GORGE	SEATTLE	107	107	106	107	106	107	107	107	107	107	107
174	WHITE	PSP&L	36	36	36	36	36	36	36	36	36	36	36
175	UPPER BAKER	PSP&L	40	40	40	40	40	40	40	40	40	40	40
176	LOWER BAKER	PSP&L	44	44	44	44	44	44	44	44	44	44	44
177	PALISADES-S. IDAHO	BPA	73	73	73	73	73	73	73	73	73	73	73
178	LOST CREEK	BPA	35	35	35	35	35	35	35	35	35	35	35
179	TOTAL SEASONAL HYDRO		1420	1419	1418	1460	1458	1459	1459	1461	1461	1462	1459

01/19/77

1977 WEST GROUP FORECAST

40-YEAR AVERAGE ENERGY CAPABILITY

FIGURES ARE MEGAWATTS.

LOAD YEAR STUDIED

1977-78 THROUGH 1987-88

PONDAGE AND MINOR HYDRO

112	WATERVILLE	EUGENE	8
113	LEABURG	EUGENE	13
114	CHANDLER	BPA	8
115	ROZA(NET)	BPA	7
116	BULL RUN	PGE	12
117	T.W. SULLIVAN	PGE	14
118	UMPQUA	PP&L	129
119	ROGUE	PP&L	43
120	CONDIT,BIG F&MINOR	PP&L	27
121	YELM	CENTRALIA	9
122	CEDAR F&NEWHALEM	SEATTLE	13
123	SNOQUALMIE & MINOR	PSP&L	54
124	MEYER FALLS	WWP	1
125	PACKWOOD	WPPSS	11
127	MINOR HYDRO-OTHERS	1/	3
128	S.IDAHO-SMALL PLNT	BPA	37
129	S.IDAHO-PUBLIC AGY	BPA	3
130	TOTAL PONDAGE & MINOR HYDRO		392

1/ INCLUDES CALISPEL CREEK, MOYIE SPRINGS AND BIG CREEK (F.I.P. - FLATHEAD IRRIGATION PROJECTS).

SECTION VI

Miscellaneous

Industrial and Miscellaneous Suppliers - Peak and Average
Pumping Requirements - Grand Coulee and Roza
USBR Local Use at Grand Coulee
Hanford-NPR - Peak and Energy
Imports and Exports (East) - Peak and Energy
Imports and Exports (Southwest) - Peak and Energy
B. C. Hydro and Power Authority - Loads
B. C. Hydro and Power Authority - Schedule of New Generating Units
West Kootenay Power and Light Company, Limited - Loads

INDUSTRIAL AND MISCELLANEOUS SUPPLIERS

Figures are mw.	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
PEAK												
Portland General Electric Company												
Lake Oswego Corp.	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	--	0.5	0.5	0.5
Pacific Power & Light Company												
U.S.B.R. - Green Springs	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3
The Washington Water Power Company												
City of Spokane, Upriver Hydro	--	--	--	2.0	4.0	4.0	4.0	4.0	4.0	1.0	--	--
Total PEAK	18.8	18.8	18.8	20.8	22.8	22.8	22.8	22.8	22.3	19.8	18.8	18.8
TOTAL PEAK USED IN REPORT	19	19	19	21	23	23	23	23	22	20	19	19
ENERGY												
Portland General Electric Company												
Lake Oswego Corp.	0.2	0.1	0.1	0.2	0.4	0.4	0.4	0.4	--	0.4	0.4	0.4
Pacific Power & Light Company												
U.S.B.R. - Green Springs	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
The Washington Water Power Company												
City of Spokane, Upriver Hydro	--	--	--	2.0	2.0	3.0	2.0	2.0	2.0	--	--	--
Total ENERGY	7.5	7.4	7.4	9.5	9.7	10.7	9.7	9.7	9.3	7.7	7.7	7.7
TOTAL ENERGY USED IN REPORT	8	7	7	10	10	11	10	10	9	8	8	8

PUMPING REQUIREMENTS AT GRAND COULEE AND ROZA

Electric Energy and Water Estimated for Primary Pumping at Grand Coulee 1/
Median or Adverse Hydro

	Peak and Energy are mw.	Jul	Aug 1-15	Aug 16-31	Sep	Oct	May	Jun
1977-78	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	90	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	2,800	9,090
1978-79	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	106	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	3,290	9,090
1979-80	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	118	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	3,680	9,090
1980-81	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	128	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	3,970	9,090
1981-82	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	135	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	4,180	9,090
1982-83	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	140	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	4,340	9,090
1983-84	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	144	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	4,460	9,090
1984-85	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	146	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	4,540	9,090
1985-86	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	149	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	4,620	9,090
1986-87	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	151	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	4,700	9,090
1987-88	Peak	373	272	180	135	90	258	272
	Energy	372	272	180	131	56	154	264
	Water - Avg. cfs	13,580	9,680	6,400	4,690	2,000	4,780	9,090

1/ These requirements have been deducted from both peak and energy capabilities for Grand Coulee plant.

Note: A. Columbia Basin Irrigation requirements are deducted from Hydro Resources and are not included in the load.
B. Primary pumping requirements at Grand Coulee are USBR estimates of October 21, 1976.

Peak and Energy Requirements Estimated for the USBR-Roza Project Roza Point of Delivery

	Peak Mw	Average Mw
Jul	5.2	4.7
Aug 1-15	5.2	4.7
Aug 16-31	5.2	4.7
Sep	4.7	3.7
Oct	3.3	1.5
Nov	0.1	0.1
Dec	0.1	0.1
Jan	0.1	0.1
Feb	0.1	0.1
Mar	1.1	0.2
Apr 1-15	2.8	1.0
Apr 16-30	3.9	2.7
May	5.0	3.7
Jun	5.2	4.2

Note: The Roza irrigation loads apply to all years, median and adverse, and have been deducted from the gross capability of the Roza plant and are not included in the loads.

USBR LOCAL USE AT GRAND COULEE DAM

Figures are mw.		Jul	Aug 1-15	Aug 16-31	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May	Jun
1977-78	Peak	2.4	2.4	2.4	2.4	2.4	3.6	5.0	5.0	3.6	3.6	2.4	2.4	2.4	2.4
	Energy	1.2	1.2	1.2	1.2	1.2	1.8	2.5	2.5	1.8	1.8	1.2	1.2	1.2	1.2
1978-79 through 1987-88	Peak	2.0	2.0	2.0	2.0	2.0	3.0	4.0	4.0	3.0	3.0	2.0	2.0	2.0	2.0
	Energy	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	1.5	1.5	1.0	1.0	1.0	1.0

Note: These requirements have been deducted from both peak and energy capabilities for Grand Coulee Plant and are not included in the load.

USBR estimates of October 20, 1976.

HANFORD-NPR
ESTIMATED MONTHLY CAPABILITIES

Megawatts

	Jul	Aug 1-15	Aug 16-31	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May	Jun
PEAK														
1977-78 thru 1987-88	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENERGY (The monthly distribution of energy is tentative and depends upon maintenance schedules which are not yet firm.)														
1977-78	0	667	667	667	667	691	691	691	691	691	691	691	0	0
1978-79 thru 1982-83	0	687	687	687	687	687	687	687	687	687	687	687	0	0
1983-84 thru 1987-88	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Hanford-NPR operation beyond October 1977 is contingent upon satisfactory conclusion of ongoing contract negotiations with ERDA. The plant is assumed undependable as a firm peak resource. The energy capabilities are based on 3.0 billion kwh operation for the period November through April 1977-78 and 4.5 billion kwh operation per year for the period August through April of years 1978-79 through 1982-83.

EXPORTS TO EAST

	Jul	Aug 1-15	Aug 16-31	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May	Jun
PEAK														
1977-78	711	696	696	327	120	121	122	123	122	121	120	120	145	538
1978-79	634	619	619	388	281	281	283	284	283	281	281	281	306	602
1979-80	577	563	563	293	222	223	225	226	225	223	222	222	248	324
1980-81	376	361	361	310	240	241	243	244	243	241	240	240	265	342
1981-82	377	362	362	311	241	242	244	245	244	242	241	241	266	343
1982-83	378	363	363	312	242	243	245	247	245	243	242	242	267	343
1983-84	379	364	364	313	243	244	247	248	246	244	243	243	268	345
1984-85	380	366	366	314	244	245	248	249	247	245	244	244	269	346
1985-86	382	366	366	315	245	246	249	251	248	246	245	245	270	347
1986-87	383	368	368	316	246	247	251	253	250	247	246	246	271	348
1987-88	384	369	369	168	97	99	102	104	102	99	97	97	123	200
ENERGY														
1977-78	544	604	604	253	131	69	71	73	71	69	68	68	242	325
1978-79	371	367	367	185	63	65	68	69	67	65	64	64	238	296
1979-80	348	343	343	141	56	56	59	61	59	56	55	55	229	232
1980-81	277	273	273	180	94	96	99	100	98	96	94	94	268	272
1981-82	274	269	269	177	90	92	95	97	95	92	90	90	264	268
1982-83	270	266	266	173	86	89	92	94	91	89	87	87	260	265
1983-84	272	268	268	175	88	90	94	96	93	91	88	88	262	267
1984-85	274	270	270	176	89	92	96	98	95	92	90	90	263	269
1985-86	276	272	272	178	91	94	98	100	97	94	92	92	265	271
1986-87	279	275	275	180	93	96	101	103	100	96	93	93	267	273
1987-88	281	277	277	182	95	98	103	106	102	99	95	95	269	276

IMPORTS FROM EAST

	Jul	Aug 1-15	Aug 16-31	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May	Jun
PEAK														
1977-78	912	1015	1015	755	872	1231	1251	1297	1254	1010	628	628	1067	1051
1978-79	946	1179	1179	1184	1467	1491	1508	1554	1513	1270	724	724	726	804
1979-80	965	1069	1069	1390	1421	1444	1792	1838	1797	1676	1187	1187	1190	1137
1980-81	1365	1699	1699	1373	1352	1472	1818	1864	1825	1371	1237	1237	1240	1069
1981-82	1313	1647	1647	1321	1299	1650	1662	1707	1668	1548	1286	1286	1286	1089
1982-83	1223	1327	1327	1265	1242	1591	1600	1645	1607	1156	1124	1124	1227	1330
1983-84	1526	1201	1201	1206	1180	1193	1533	1578	1541	1524	1161	1161	901	1266
1984-85	1240	1136	1136	1142	1114	1124	1461	1506	1470	1122	1062	1062	1098	1085
1985-86	1390	1397	1397	742	713	1383	1384	1427	1394	1381	1020	1020	873	647
1986-87	1314	1220	1220	668	966	969	1301	1344	1313	1299	942	942	726	932
1987-88	1233	1140	1140	1150	552	883	1212	1253	1224	1213	1191	1191	598	626
ENERGY														
1977-78	644	666	666	548	706	1080	1074	1071	1072	922	463	463	744	778
1978-79	733	810	810	857	1065	1279	1273	1270	1240	1130	645	645	535	776
1979-80	759	797	797	1036	1069	1282	1475	1473	1441	1365	881	881	858	974
1980-81	1047	1214	1214	965	1042	1231	1474	1471	1470	1150	948	948	896	1024
1981-82	999	1222	1222	1036	1030	1345	1337	1334	1334	1288	1026	1026	960	911
1982-83	899	1078	1078	929	923	1297	1289	1285	1286	970	859	859	914	961
1983-84	1139	955	955	881	875	996	1237	1233	1234	1259	893	893	766	977
1984-85	934	903	903	830	823	1003	1181	1177	1178	955	796	796	812	794
1985-86	1033	1021	1021	604	605	1132	1121	1116	1117	1147	742	742	784	510
1986-87	974	893	893	540	706	818	1056	1051	1052	1084	679	679	556	623
1987-88	910	806	795	836	511	731	968	963	964	998	844	844	466	495

EXPORTS TO SOUTHWEST

	Jul	Aug 1-15	Aug 16-31	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May	Jun
PEAK														
1977-78	3028	3028	3028	3028	2528	1928	1928	2014	2014	2014	1864	1864	2364	2964
1978-89	2964	2964	2964	2964	2464	1864	1864	1864	1864	1864	1864	1864	2364	2964
1979-80	2964	2964	2964	2964	2464	1864	1864	1864	1864	1864	1864	1864	2364	2964
1980-81	2964	2964	2964	2964	2464	1864	1864	1864	1864	1864	1864	1864	2364	2964
1981-82	2964	2964	2964	2964	2464	1864	1864	1464	1464	1464	1464	1464	1964	2564
1982-83	2564	2564	2564	2564	2064	1464	1464	1464	1464	1464	1314	1314	1814	2414
1983-84	2414	2414	2414	2414	1914	1314	1314	1314	1314	1314	1314	1314	1814	2414
1984-85	2414	2414	2414	2414	1914	1314	1314	1314	1314	1314	1314	1314	1814	2414
1985-86	2414	2414	2414	2414	1914	1314	1314	1314	1314	1314	1314	1314	1814	2414
1986-87	2414	1889	1889	1889	1389	789	789	736	736	736	736	736	1194	1794
1987-88	1794	644	644	644	144	144	144	112	112	112	112	112	612	612
ENERGY														
1977-78	514	520	552	562	553	535	411	518	491	487	450	450	440	450
1978-79	434	440	472	482	473	455	331	438	411	407	447	447	437	447
1979-80	431	437	469	479	470	452	328	435	408	404	444	444	434	444
1980-81	428	434	466	476	467	449	325	432	405	401	440	440	430	440
1981-82	424	430	462	472	463	445	321	153	132	132	131	131	131	131
1982-83	125	131	163	163	164	163	157	152	131	131	68	68	68	68
1983-84 through 1987-88	40	40	40	40	40	40	40	40	40	40	40	40	40	40

IMPORTS FROM SOUTHWEST

	Jul	Aug 1-15	Aug 16-31	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May	Jun
PEAK														
1977-78 through 1987-88	-	-	-	-	-	100	100	100	100	100	-	-	-	-
ENERCY														
1977-78	390	390	390	390	390	390	390	415	448	448	448	448	448	448
1978-79	415	415	415	415	415	415	415	415	448	448	448	448	448	448
1979-80	415	415	415	415	415	415	415	415	448	448	448	448	448	448
1980-81	415	415	415	415	415	415	415	415	448	448	448	448	448	448
1981-82	415	415	415	415	415	415	415	415	448	448	448	448	448	448
1982-83	415	415	415	415	415	415	415	415	448	448	448	448	448	448
1983-84	415	415	415	415	415	415	415	415	415	415	415	415	415	415
1984-85	415	415	415	415	415	415	415	415	415	415	415	415	415	415
1985-86	415	415	415	415	415	415	415	415	415	415	415	415	415	415
1986-87	415	265	265	265	265	265	265	250	250	250	250	250	238	238
1987-88	238	81	81	81	81	81	81	72	72	72	72	72	72	72

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
Load Estimates

Figures are mw.		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1977-78	Peak	3396	3461	3721	4167	4629	4835	4791	4643	4370	4177	3884	3840
	Energy	2683	2769	2876	3125	3365	3478	3546	3598	3395	3258	3069	3053
1978-79	Peak	3675	3748	4023	4656	5156	5380	5365	5184	4887	4685	4361	4312
	Energy	2903	2999	3110	3492	3764	3879	3970	4018	3797	3654	3445	3428
1979-80	Peak	4124	4209	4506	5057	5590	5885	5816	5613	5305	5183	4851	4792
	Energy	3258	3367	3483	3793	4081	4199	4304	4350	4122	4047	3832	3810
1980-81	Peak	4590	4681	4995	5608	6180	6515	6413	6190	5868	5675	5315	5246
	Energy	3626	3745	3861	4206	4511	4622	4746	4798	4559	4426	4199	4171
1981-82	Peak	5034	5134	5460	6138	6750	7150	6998	6751	6413	6072	5688	5606
	Energy	3977	4108	4221	4603	4928	5038	5179	5232	4983	4736	4493	4457
1982-83	Peak	5385	5494	5839	6572	7230	7685	7505	7229	6873	6498	6086	5994
	Energy	4254	4395	4514	4929	5278	5398	5554	5603	5340	5068	4808	4765
1983-84	Peak	5764	5880	6246	7039	7747	8265	8052	7746	7369	6955	6515	6410
	Energy	4554	4704	4828	5280	5656	5789	5958	6003	5726	5425	5147	5096
1984-85	Peak	6169	6294	6684	7541	8305	8890	8642	8303	7904	7463	6988	6871
	Energy	4874	5035	5167	5656	6063	6210	6395	6435	6141	5821	5520	5463
1985-86	Peak	6618	6754	7167	8099	8923	9570	9296	8919	8495	8036	7527	7393
	Energy	5228	5403	5540	6074	6514	6676	6879	6912	6601	6268	5946	5878
1986-87	Peak	7129	7277	7715	8726	9616	10330	10026	9610	9158	8588	8037	7927
	Energy	5632	5821	5964	6544	7019	7196	7419	7448	7116	6747	6398	6321
1987-88	Peak	7597	7707	8258	9248	10239	11010	10680	10239	9799	9204	8614	8496
	Energy	6012	6219	6368	6988	7488	7681	7921	7952	7599	7161	6789	6708

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
16-Year Generation Plan

YEAR	MONTH	PROJECT	UNIT	CAPACITY (MW)
1977	Mar	Mica	3	400
	Sep	Mica	4	400
1979	Sep	Site One	1	175
	Dec	Site One	2	175
1980	Apr	Seven Mile	1,2	350
	Jun	Site One	3	175
	Sep	Site One	4	175
	Oct	Seven Mile	3	175
1981	Oct	Vancouver Island Gas Turbines	-	100
1982	Sep	Revelstoke	1,2	900
	Oct	Vancouver Island Gas Turbines	-	100
	Dec	Revelstoke	3	450
1983	Jun	Revelstoke	4	450
1984	Jan	Hat Creek	1	500
	Oct	Kootenay Diversion	-	-
1985	Jan	Hat Creek	2	500
1986	Jan	Hat Creek	3	500
1987	Jan	Hat Creek	4	500

WEST KOOTENAY POWER AND LIGHT COMPANY, LIMITED
Estimated System Firm & Interruptible Loads

Figures are mw.

		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FIRM LOADS													
1977-78	Peak	447	449	450	495	560	586	611	573	535	500	478	458
	Energy	383	385	383	410	457	477	494	472	451	427	406	390
1978-79	Peak	470	473	474	521	591	619	647	605	564	525	502	481
	Energy	399	401	399	427	477	499	517	494	470	444	423	406
1979-80	Peak	495	498	499	550	624	655	685	639	595	553	529	507
	Energy	416	418	416	446	499	523	543	517	491	463	441	423
1980-81	Peak	522	525	527	581	660	694	725	675	626	581	556	533
	Energy	434	437	435	467	523	549	569	541	513	482	459	441
1981-82	Peak	550	554	555	613	697	734	767	713	661	611	585	561
	Energy	453	456	454	487	547	575	597	567	536	503	479	460
1982-83	Peak	580	584	586	648	738	777	814	755	698	644	617	592
	Energy	474	477	474	510	573	604	628	595	[illegible]	526	500	480
1983-84	Peak	613	617	619	685	781	824	864	800	738	680	651	625
	Energy	496	499	497	534	602	635	661	625	589	550	523	503
1984-85	Peak	648	653	655	725	829	875	918	849	782	719	688	661
	Energy	520	524	521	561	632	668	696	658	619	576	548	527
1985-86	Peak	686	691	693	769	880	930	977	902	829	760	728	700
	Energy	546	550	547	589	666	705	735	693	651	605	575	553
1986-87	Peak	727	733	735	817	935	990	1037	956	877	803	769	739
	Energy	575	578	575	620	702	744	775	729	683	634	602	579
1987-88	Peak	770	776	778	865	992	1051	1102	1014	929	849	813	782
	Energy	603	607	603	652	738	784	817	768	719	665	632	608
INTERRUPTIBLE LOADS													
All Years													
	Peak	55	55	55	55	55	55	55	55	55	55	55	55
	Energy	30	30	30	30	30	30	30	30	30	30	30	30

SECTION VII

Loads

INFORMATION ON LOADS

Total Load

In this resource-planning report, the West Group Area plans to provide resources to serve the total peak and energy load. The total load consists of utilities' firm loads and Bonneville Power Administration's industrial load which is composed of firm, modified firm and interruptible loads.

Interruptible Load

Bonneville Power Administration's interruptible loads are as follows:

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
Peak - Mw (January)	1006	1066	1199	1237	1195	1143	1153	1164	1174	1185	1195
Energy - Mw (July-June Avg.)	975	1046	1149	1200	1159	1108	1118	1128	1138	1149	1159

New Loads

For technological changes, one percent (1%) of the total BPA industrial load has been added to the estimated loads starting in 1978-79.

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
Peak - Mw (January)	-	36	80	120	160	200	240	280	320	360	400
Energy - Mw (July-June Avg.)	-	36	80	120	160	200	240	280	320	360	400

TOTAL WEST GROUP LOAD	JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
W. GROUP TOTAL LOAD 77-78 PK		17408	17673	18459	20445	21826	23561	24020	22687	21629	20511	19644	18751
W. GROUP TOTAL LOAD 77-78 AV	15545.2	13610	13850	13929	14876	16310	17586	18094	17235	16465	15588	14666	14393
W. GROUP TOTAL LOAD 78-79 PK		18325	18608	19451	21528	22999	24825	25202	23777	22699	21524	20624	19673
W. GROUP TOTAL LOAD 78-79 AV	16326.3	14348	14614	14647	15640	17161	18505	18962	18038	17200	16343	15572	15086
W. GROUP TOTAL LOAD 79-80 PK		19393	19686	20537	22705	24406	26324	26742	25158	24075	22846	21894	20926
W. GROUP TOTAL LOAD 79-80 AV	17335.2	15176	15473	15470	16502	18256	19668	20187	19151	18295	17399	16370	16075
W. GROUP TOTAL LOAD 80-81 PK		20450	20760	21657	23914	25528	27539	27963	26391	25152	23872	22872	21850
W. GROUP TOTAL LOAD 80-81 AV	18178.4	16023	16345	16349	17434	19096	20584	21103	20085	19105	18166	17080	16771
W. GROUP TOTAL LOAD 81-82 PK		21340	21668	22603	24952	26655	28763	29229	27579	26287	24950	23906	22837
W. GROUP TOTAL LOAD 81-82 AV	18947.8	16666	17012	17015	18156	19912	21471	22025	20959	19926	18946	17803	17483
W. GROUP TOTAL LOAD 82-83 PK		22310	22668	23645	26096	27888	30127	30561	28829	27477	26075	24975	23858
W. GROUP TOTAL LOAD 82-83 AV	19770.0	17367	17733	17745	18941	20791	22422	22994	21875	20795	19773	18568	18236
W. GROUP TOTAL LOAD 83-84 PK		23197	23571	24602	27161	29045	31404	31816	29864	28574	27111	25975	24808
W. GROUP TOTAL LOAD 83-84 AV	20565.4	18069	18463	18466	19725	21667	23370	23932	22269	21224	20551	19296	18953
W. GROUP TOTAL LOAD 84-85 PK		24127	24514	25601	28264	30243	32728	33187	31256	29785	28257	27077	25857
W. GROUP TOTAL LOAD 84-85 AV	21401.2	16769	19181	19178	20492	22526	24321	24932	23702	22508	21389	20080	19737
W. GROUP TOTAL LOAD 85-86 PK		25129	25546	26697	29456	31532	34152	34633	32601	31062	29464	28225	26944
W. GROUP TOTAL LOAD 85-86 AV	22280.9	19529	19963	19966	21320	23457	25343	25986	24702	23436	22268	20883	20518
W. GROUP TOTAL LOAD 86-87 PK		26170	26605	27805	30701	32888	35639	36128	33989	32373	30695	29391	28046
W. GROUP TOTAL LOAD 86-87 AV	23182.8	20305	20757	20746	22182	24427	26411	27073	25712	24391	23163	21707	21320
W. GROUP TOTAL LOAD 87-88 PK		27248	27702	28963	31989	34360	37196	37744	35350	33799	32025	30653	29246
W. GROUP TOTAL LOAD 87-88 AV	24128.3	21102	21574	21567	23076	25435	27523	28244	26709	25423	24127	22584	22176

TOTAL WEST GROUP LOAD	JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
W. GROUP TOTAL LOAD 77-78 PK		17408	17673	18459	20445	21826	23561	24020	22687	21629	20511	19644	18751
W. GROUP TOTAL LOAD 77-78 AV	15545.2	13610	13850	13929	14876	16310	17586	18094	17235	16465	15588	14666	14393
W. GROUP TOTAL LOAD 78-79 PK		18325	18608	19451	21528	22999	24825	25202	23777	22699	21524	20624	19673
W. GROUP TOTAL LOAD 78-79 AV	16326.3	14348	14614	14647	15640	17161	18505	18962	18038	17200	16343	15372	15086
W. GROUP TOTAL LOAD 79-80 PK		19393	19686	20537	22705	24406	26324	26742	25158	24075	22846	21894	20926
W. GROUP TOTAL LOAD 79-80 AV	17335.2	15176	15473	15470	16502	18256	19668	20187	19151	18295	17399	16370	16075
W. GROUP TOTAL LOAD 80-81 PK		20450	20760	21657	23914	25528	27539	27963	26391	25152	23872	22672	21850
W. GROUP TOTAL LOAD 80-81 AV	18178.4	16023	16345	16349	17434	19096	20584	21103	20085	19105	18166	17080	16771
W. GROUP TOTAL LOAD 81-82 PK		21340	21668	22603	24952	26655	28763	29229	27579	26287	24950	23906	22837
W. GROUP TOTAL LOAD 81-82 AV	18947.8	16866	17012	17015	18156	19912	21471	22025	20959	19926	18946	17803	17483
W. GROUP TOTAL LOAD 82-83 PK		22310	22668	23645	26096	27888	30127	30561	28829	27477	26075	24975	23858
W. GROUP TOTAL LOAD 82-83 AV	19770.0	17367	17733	17745	18941	20791	22422	22994	21875	20795	19773	18568	18236
W. GROUP TOTAL LOAD 83-84 PK		23197	23571	24602	27161	29045	31404	31816	29864	28574	27111	25975	24808
W. GROUP TOTAL LOAD 83-84 AV	20565.4	18069	18463	18466	19725	21667	23373	23932	22669	21624	20551	19296	18953
W. GROUP TOTAL LOAD 84-85 PK		24127	24514	25601	28264	30243	32728	33187	31256	29785	28257	27077	25857
W. GROUP TOTAL LOAD 84-85 AV	21401.2	18769	19181	19178	20492	22526	24321	24932	23702	22508	21389	20080	19737
W. GROUP TOTAL LOAD 85-86 PK		25129	25546	26697	29456	31532	34152	34633	32601	31062	29464	28225	26944
W. GROUP TOTAL LOAD 85-86 AV	22280.9	19529	19963	19966	21320	23457	25343	25986	24702	23436	22268	20883	20518
W. GROUP TOTAL LOAD 86-87 PK		26170	26605	27805	30701	32888	35639	36128	33989	32373	30695	29391	28046
W. GROUP TOTAL LOAD 86-87 AV	23182.8	20305	20757	20746	22182	24427	26411	27073	25712	24391	23163	21707	21320
W. GROUP TOTAL LOAD 87-88 PK		27248	27702	28963	31989	34360	37198	37744	35350	33799	32025	30653	29246
W. GROUP TOTAL LOAD 87-88 AV	24128.3	21102	21574	21567	23076	25435	27523	28244	26709	25423	24127	22584	22176

LOAD-BONNEVILLE PWR ADMIN.		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
BPA	77-78 PK		8011	8165	8358	8854	9126	9712	9976	9461	9075	8877	8749	8463
BPA	77-78 AV	7231.9	6741	6839	6780	6936	7287	7866	8038	7666	7366	7223	7033	7008
BPA	78-79 PK		8473	8633	8819	9354	9651	10268	10472	9910	9540	9334	9197	8897
BPA	78-79 AV	7600.8	7142	7253	7125	7292	7671	8283	8407	8006	7723	7574	7378	7356
BPA	79-80 PK		9012	9178	9377	9937	10409	11057	11259	10668	10235	10021	9873	9569
BPA	79-80 AV	8166.7	7601	7718	7582	7752	8303	8948	9078	8655	8317	8162	7953	7931
BPA	80-81 PK		9556	9731	9944	10527	10853	11527	11747	11122	10658	10441	10281	9955
BPA	80-81 AV	8553.9	8071	8198	8053	8236	8648	9330	9460	9011	8649	8486	8262	8243
BPA	81-82 PK		9897	10081	10287	10898	11240	11955	12178	11510	11026	10800	10633	10291
BPA	81-82 AV	8825.2	8313	8449	8299	8494	8924	9647	9779	9306	8926	8754	8515	8497
BPA	82-83 PK		10231	10423	10648	11288	11651	12408	12633	11934	11423	11187	11010	10652
BPA	82-83 AV	9116.0	8577	8716	8564	8768	9225	9983	10115	9619	9221	9040	8789	8775
BPA	83-84 PK		10526	10722	10970	11638	12023	12815	13047	12298	11766	11523	11345	10974
BPA	83-84 AV	9391.7	8828	8975	8815	9031	9513	10309	10437	9911	9496	9304	9046	9036
BPA	84-85 PK		10863	11062	11330	12027	12429	13266	13522	12731	12168	11920	11740	11352
BPA	84-85 AV	9684.3	9091	9244	9073	9296	9801	10643	10784	10232	9792	9593	9329	9334
BPA	85-86 PK		11226	11440	11739	12450	12869	13753	14041	13209	12610	12352	12159	11750
BPA	85-86 AV	9998.2	9378	9539	9369	9580	10112	10999	11164	10582	10115	9905	9620	9617
BPA	86-87 PK		11616	11839	12147	12912	13360	14287	14558	13676	13041	12766	12556	12129
BPA	86-87 AV	10312.0	9666	9837	9646	9890	10451	11388	11532	10917	10426	10202	9896	9893
BPA	87-88 PK		11966	12219	12544	13353	13833	14809	15096	14165	13493	13192	12964	12513
BPA	87-88 AV	10624.7	9941	10122	9924	10184	10776	11764	11919	11271	10750	10505	10174	10167

LOAD-CHELAN COUNTY PUD		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
CHELAN PUD	77-78 PK		272	276	276	294	304	327	336	315	300	286	283	278
CHELAN PUD	77-78 AV	234.6	217	221	222	231	244	258	264	250	237	227	222	222
CHELAN PUD	78-79 PK		280	285	285	304	314	339	348	327	311	294	291	286
CHELAN PUD	78-79 AV	240.4	222	226	227	237	251	265	271	257	243	232	227	227
CHELAN PUD	79-80 PK		289	293	293	314	325	351	360	338	321	301	298	292
CHELAN PUD	79-80 AV	246.6	227	232	233	243	258	273	280	264	249	237	231	232
CHELAN PUD	80-81 PK		295	300	300	322	333	361	371	347	329	308	304	298
CHELAN PUD	80-81 AV	252.2	232	237	237	249	264	280	287	271	255	242	236	236
CHELAN PUD	81-82 PK		327	332	332	355	367	387	407	382	363	346	342	335
CHELAN PUD	81-82 AV	278.3	256	262	263	275	290	308	315	298	281	268	262	262
CHELAN PUD	82-83 PK		339	345	344	369	382	413	424	397	377	355	351	344
CHELAN PUD	82-83 AV	285.3	262	268	269	282	298	317	325	306	289	274	267	267
CHELAN PUD	83-84 PK		347	354	353	379	393	426	438	409	388	364	360	353
CHELAN PUD	83-84 AV	291.8	267	273	274	288	306	325	334	314	295	280	273	273
CHELAN PUD	84-85 PK		356	363	362	390	405	440	452	422	400	374	369	362
CHELAN PUD	84-85 AV	298.8	273	279	280	295	314	334	343	322	302	286	279	279
CHELAN PUD	85-86 PK		366	373	372	402	417	454	467	435	412	384	378	370
CHELAN PUD	85-86 AV	306.4	278	285	287	302	322	343	353	331	310	294	286	286
CHELAN PUD	86-87 PK		374	382	381	413	429	466	482	448	423	395	389	381
CHELAN PUD	86-87 AV	314.8	286	293	294	310	332	354	364	341	319	301	292	292
CHELAN PUD	87-88 PK		385	393	392	425	443	484	499	464	437	406	400	391
CHELAN PUD	87-88 AV	323.1	292	300	301	318	341	363	375	351	328	308	299	299

Figures are mw.

CLARK COUNTY PUD 1/
Total Loads

		Jul-Jun Av	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1977-78	Pk		344	352	442	564	650	746	751	672	595	540	487	398
	Av	318.6	207	216	237	309	363	448	455	400	358	334	267	229
1978-79	Pk		368	376	473	605	698	801	806	715	636	576	520	425
	Av	340.6	220	232	253	330	388	479	489	427	382	356	286	245
1979-80	Pk		393	402	505	647	747	856	860	762	676	612	552	451
	Av	364.2	235	247	271	353	415	513	525	457	408	381	304	261
1980-81	Pk		418	426	536	688	796	911	914	809	716	649	585	478
	Av	388.0	251	265	288	379	444	549	559	486	433	404	322	276
1981-82	Pk		442	452	568	730	845	967	969	857	759	687	619	506
	Av	411.5	267	280	305	402	471	584	593	515	460	429	340	292
1982-83	Pk		468	477	601	773	896	1024	1026	908	803	728	655	535
	Av	435.9	282	296	323	426	500	619	629	546	488	454	359	309
1983-84	Pk		495	505	636	820	950	1085	1087	962	851	771	694	567
	Av	462.4	299	313	342	452	530	657	668	580	517	482	381	328
1984-85	Pk		524	535	675	869	1008	1151	1154	1020	902	817	735	600
	Av	490.2	316	332	362	479	562	697	709	615	549	511	403	347
1985-86	Pk		555	566	715	921	1069	1221	1223	1081	956	866	779	636
	Av	519.9	335	351	384	508	596	740	752	653	582	542	428	368
1986-87	Pk		587	598	757	976	1133	1294	1297	1146	1013	917	825	674
	Av	551.0	354	372	406	538	632	785	799	692	617	575	453	389
1987-88	Pk		622	633	802	1034	1201	1372	1375	1214	1074	971	874	714
	Av	584.0	375	393	430	570	670	833	847	734	655	609	480	412

1/ These loads are included in BPA Total Loads.

LOAD-DOUGLAS COUNTY PUD		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
DOUGLAS PUD	77-78 PK		72	73	73	76	85	94	102	97	90	82	79	75
DOUGLAS PUD	77-78 AV	62.2	57	59	57	54	63	70	76	74	62	59	58	58
DOUGLAS PUD	78-79 PK		74	77	76	78	88	97	107	101	93	84	82	76
DOUGLAS PUD	78-79 AV	64.2	59	61	59	56	65	72	79	76	64	61	60	59
DOUGLAS PUD	79-80 PK		76	79	78	81	91	101	109	103	95	86	83	78
DOUGLAS PUD	79-80 AV	65.7	60	62	60	57	67	75	81	78	65	62	61	60
DOUGLAS PUD	80-81 PK		78	81	79	83	94	104	115	108	99	90	87	82
DOUGLAS PUD	80-81 AV	67.2	62	64	62	58	58	77	85	82	68	65	63	63
DOUGLAS PUD	81-82 PK		81	84	83	87	99	110	121	114	105	95	92	86
DOUGLAS PUD	81-82 AV	71.1	64	66	64	60	72	81	90	86	71	68	66	65
DOUGLAS PUD	82-83 PK		85	88	87	91	104	116	128	121	110	100	96	90
DOUGLAS PUD	82-83 AV	74.2	67	69	67	62	75	85	94	90	74	71	69	68
DOUGLAS PUD	83-84 PK		89	93	91	96	110	122	136	128	116	105	101	94
DOUGLAS PUD	83-84 AV	77.8	70	72	70	65	79	89	99	95	78	74	72	71
DOUGLAS PUD	84-85 PK		94	98	96	101	116	130	144	135	123	111	107	99
DOUGLAS PUD	84-85 AV	81.7	73	76	73	68	82	94	105	100	81	78	75	75
DOUGLAS PUD	85-86 PK		99	103	101	106	122	137	153	143	130	117	113	104
DOUGLAS PUD	85-86 AV	86.7	77	80	77	71	87	99	111	116	85	81	79	78
DOUGLAS PUD	86-87 PK		104	108	106	112	129	145	162	152	138	123	119	110
DOUGLAS PUD	86-87 AV	90.3	80	84	80	74	91	104	119	112	90	85	83	82
DOUGLAS PUD	87-88 PK		108	113	111	117	136	153	170	159	145	129	125	115
DOUGLAS PUD	87-88 AV	94.6	84	87	84	78	95	109	125	117	94	89	87	86

LOAD-EUGENE W AND E BOARD		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
EUGENE	77-78 PK		251	256	311	379	422	467	472	441	416	379	338	291
EUGENE	77-78 AV	249.0	176	181	199	241	289	322	329	306	284	258	211	192
EUGENE	78-79 PK		258	262	320	390	435	481	485	454	428	391	348	300
EUGENE	78-79 AV	257.2	182	187	206	249	299	332	340	316	293	267	218	198
EUGENE	79-80 PK		266	271	329	401	448	495	500	467	441	402	359	309
EUGENE	79-80 AV	265.4	188	193	212	257	308	343	351	326	302	275	225	205
EUGENE	80-81 PK		274	279	339	413	461	510	515	481	454	414	369	318
EUGENE	80-81 AV	273.8	194	199	219	265	318	354	362	336	312	284	232	211
EUGENE	81-82 PK		282	287	349	426	475	525	530	495	469	426	380	327
EUGENE	81-82 AV	282.8	200	206	226	274	329	366	374	347	322	293	239	218
EUGENE	82-83 PK		290	296	360	438	489	541	546	510	482	439	392	337
EUGENE	82-83 AV	291.9	207	212	233	283	339	377	386	358	333	303	247	225
EUGENE	83-84 PK		299	305	370	451	503	557	562	525	496	452	404	347
EUGENE	83-84 AV	301.3	213	219	241	292	350	389	398	370	343	313	255	233
EUGENE	84-85 PK		308	314	382	465	519	574	579	541	511	466	416	358
EUGENE	84-85 AV	311.0	220	226	249	301	361	402	411	382	354	323	263	240
EUGENE	85-86 PK		317	323	393	479	534	591	597	557	526	480	428	368
EUGENE	85-86 AV	320.2	227	234	257	311	373	415	422	392	364	331	270	247
EUGENE	86-87 PK		325	332	403	491	548	606	612	572	540	492	439	378
EUGENE	86-87 AV	328.9	233	240	264	319	383	426	434	403	374	340	278	253
EUGENE	87-88 PK		333	340	413	504	562	621	627	586	553	505	450	387
EUGENE	87-88 AV	338.0	240	246	271	328	394	436	446	414	384	350	285	260

LOAD-GRANT COUNTY PUD		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
GRANT PUD	77-78 PK		252	248	203	176	182	200	211	201	192	196	225	245
GRANT PUD	77-78 AV	152.7	179	175	140	123	134	152	159	145	131	139	167	189
GRANT PUD	78-79 PK		275	274	231	198	200	218	229	218	209	216	247	268
GRANT PUD	78-79 AV	167.0	196	193	157	137	146	164	172	156	142	153	183	205
GRANT PUD	79-80 PK		295	296	244	208	209	227	239	228	218	226	261	284
GRANT PUD	79-80 AV	176.7	211	209	166	144	154	172	180	164	149	162	194	216
GRANT PUD	80-81 PK		319	324	267	227	224	243	255	244	234	245	281	305
GRANT PUD	80-81 AV	191.6	226	229	182	158	166	185	194	177	162	176	211	233
GRANT PUD	81-82 PK		327	333	275	232	231	251	263	252	241	255	292	318
GRANT PUD	81-82 AV	197.6	234	237	187	161	171	190	199	182	166	183	219	242
GRANT PUD	82-83 PK		344	353	291	245	244	264	276	265	254	270	309	336
GRANT PUD	82-83 AV	208.1	245	251	197	169	180	200	209	191	175	193	232	255
GRANT PUD	83-84 PK		361	373	308	259	257	276	291	279	268	286	326	355
GRANT PUD	83-84 AV	219.6	256	266	208	179	190	211	220	201	185	205	245	269
GRANT PUD	84-85 PK		378	394	324	272	269	291	304	292	280	300	342	373
GRANT PUD	84-85 AV	230.6	268	281	219	188	199	220	230	211	194	216	258	283
GRANT PUD	85-86 PK		391	407	333	278	275	297	311	298	286	308	353	384
GRANT PUD	85-86 AV	236.5	278	290	224	192	204	225	235	215	198	221	265	291
GRANT PUD	86-87 PK		404	420	343	285	281	304	318	305	292	317	363	396
GRANT PUD	86-87 AV	242.9	288	300	230	196	208	231	241	220	202	226	273	300
GRANT PUD	87-88 PK		424	440	359	298	294	318	333	319	306	332	381	415
GRANT PUD	87-88 AV	254.6	302	314	241	205	218	242	252	231	212	237	286	315

GRAYS HARBOR COUNTY PUD 1/
Total Loads

Figures are mw.

		Jul-Jun Av	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1977-78	Pk		186	165	200	253	255	271	276	279	283	249	229	199
	Av	162.3	124	116	122	152	180	201	209	197	189	169	153	135
1978-79	Pk		199	177	215	272	274	289	295	287	291	257	236	205
	Av	175.6	137	129	135	168	200	222	222	209	201	179	162	143
1979-80	Pk		212	188	228	289	291	310	316	308	313	276	253	220
	Av	184.4	143	135	141	176	208	232	234	221	212	189	171	151
1980-81	Pk		219	193	235	298	301	321	325	315	316	281	258	224
	Av	190.8	149	140	147	183	217	242	243	227	216	195	176	155
1981-82	Pk		225	199	242	307	306	334	337	323	324	288	265	230
	Av	198.1	155	146	153	190	223	254	252	235	223	202	183	161
1982-83	Pk		232	204	250	316	316	346	350	342	343	306	281	244
	Av	205.6	159	149	156	195	228	260	265	247	235	212	192	169
1983-84	Pk		242	212	261	330	329	359	363	343	348	306	284	247
	Av	213.3	167	157	165	205	241	274	274	251	241	215	197	173
1984-85	Pk		249	218	269	340	339	373	381	357	362	319	296	256
	Av	221.6	173	162	170	212	248	285	286	262	251	224	205	181
1985-86	Pk		259	227	279	353	352	387	393	371	376	331	307	267
	Av	229.9	179	168	176	220	258	296	297	272	260	232	213	188
1986-87	Pk		268	235	289	366	365	402	407	385	390	343	319	277
	Av	238.7	186	175	183	228	268	307	308	282	270	241	221	195
1987-88	Pk		279	244	301	380	379	417	423	400	405	356	331	288
	Av	247.6	193	181	190	237	278	319	320	292	280	250	229	202

1/ These loads are included in BPA Total Loads.

LOAD-PAC PWR & LIGHT CO.		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
PACIFIC	77-78 PK		2293	2401	2460	2838	2875	3338	3246	3120	2931	2783	2761	2594
PACIFIC	77-78 AV	1833.2	1596	1639	1586	1702	1906	2085	2167	2064	1964	1856	1728	1706
PACIFIC	78-79 PK		2413	2527	2589	2987	3026	3513	3416	3284	3085	2930	2906	2730
PACIFIC	78-79 AV	1931.0	1680	1726	1670	1793	2008	2197	2283	2174	2069	1955	1820	1797
PACIFIC	79-80 PK		2540	2660	2725	3144	3185	3699	3597	3457	3247	3084	3058	2874
PACIFIC	79-80 AV	2033.7	1769	1818	1759	1888	2115	2314	2405	2290	2179	2059	1917	1892
PACIFIC	80-81 PK		2673	2800	2869	3309	3353	3894	3786	3639	3418	3246	3219	3025
PACIFIC	80-81 AV	2143.0	1863	1915	1854	1990	2229	2439	2534	2413	2296	2170	2020	1993
PACIFIC	81-82 PK		2814	2947	3020	3484	3530	4100	4035	3881	3642	3457	3429	3221
PACIFIC	81-82 AV	2270.9	1962	2017	1953	2096	2349	2570	2701	2574	2446	2312	2150	2121
PACIFIC	82-83 PK		2998	3140	3220	3708	3766	4371	4250	4086	3834	3641	3609	3391
PACIFIC	82-83 AV	2405.6	2087	2146	2081	2234	2504	2739	2847	2713	2578	2437	2266	2235
PACIFIC	83-84 PK		3156	3306	3390	3904	3966	4603	4475	4303	4037	3833	3800	3570
PACIFIC	83-84 AV	2535.6	2199	2261	2194	2355	2640	2888	3001	2860	2717	2568	2389	2355
PACIFIC	84-85 PK		3323	3481	3569	4111	4176	4847	4713	4531	4251	4036	4002	3759
PACIFIC	84-85 AV	2672.8	2318	2383	2312	2482	2783	3045	3164	3015	2865	2707	2518	2482
PACIFIC	85-86 PK		3499	3666	3758	4328	4397	5105	4963	4772	4477	4250	4214	3958
PACIFIC	85-86 AV	2818.1	2443	2512	2438	2617	2935	3211	3336	3179	3020	2855	2655	2616
PACIFIC	86-87 PK		3684	3860	3958	4558	4631	5376	5226	5025	4715	4476	4437	4168
PACIFIC	86-87 AV	2971.6	2575	2646	2571	2760	3095	3386	3519	3353	3185	3010	2799	2758
PACIFIC	87-88 PK		3880	4065	4168	4800	4877	5662	5505	5273	4965	4713	4673	4389
PACIFIC	87-88 AV	3133.5	2714	2791	2711	2910	3264	3572	3711	3536	3359	3174	2952	2908

LOAD-PEND OREILLE PUD	JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
PEND OREILLE PUD 77-78 PK		18	18	25	25	26	28	29	27	26	24	22	19
PEND OREILLE PUD 77-78 AV	15.7	11	11	13	15	18	20	21	19	18	16	14	13
PEND OREILLE PUD 78-79 PK		19	19	26	27	28	30	31	29	27	25	24	20
PEND OREILLE PUD 78-79 AV	16.4	12	12	13	16	19	21	22	19	19	17	14	13
PEND OREILLE PUD 79-80 PK		20	20	28	28	29	32	32	30	29	27	25	21
PEND OREILLE PUD 79-80 AV	17.5	13	13	15	17	20	22	23	20	20	18	15	14
PEND OREILLE PUD 80-81 PK		21	21	29	30	31	33	34	32	30	28	26	22
PEND OREILLE PUD 80-81 AV	18.1	13	13	15	18	21	23	24	21	21	19	15	14
PEND OREILLE PUD 81-82 PK		22	22	31	32	33	35	36	33	32	30	28	23
PEND OREILLE PUD 81-82 AV	19.2	14	14	16	19	22	24	25	23	22	20	16	15
PEND OREILLE PUD 82-83 PK		23	24	33	33	35	37	38	35	34	31	29	24
PEND OREILLE PUD 82-83 AV	20.1	15	15	16	20	23	25	26	24	23	21	17	16
PEND OREILLE PUD 83-84 PK		25	25	34	35	36	39	40	37	35	33	31	26
PEND OREILLE PUD 83-84 AV	21.2	15	16	17	21	24	27	28	25	24	22	18	17
PEND OREILLE PUD 84-85 PK		26	26	36	37	38	41	42	39	37	35	32	27
PEND OREILLE PUD 84-85 AV	22.0	16	16	18	22	25	28	29	26	25	23	18	18
PEND OREILLE PUD 85-86 PK		27	28	38	39	41	44	44	41	39	37	34	28
PEND OREILLE PUD 85-86 AV	23.1	17	17	19	23	27	29	31	27	26	24	19	18
PEND OREILLE PUD 86-87 PK		29	29	40	41	43	46	47	44	41	39	36	30
PEND OREILLE PUD 86-87 AV	24.2	18	18	20	24	28	31	32	29	27	25	20	19
PEND OREILLE PUD 87-88 PK		30	31	43	43	45	49	49	46	44	41	38	32
PEND OREILLE PUD 87-88 AV	25.5	19	19	21	25	29	32	34	30	29	27	21	20

LOAD-PORTLAND G E CO.		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
PORTLAND G E	77-78 PK		1781	1758	1896	2253	2453	2485	2617	2486	2354	2163	2037	1899
PORTLAND G E	77-78 AV	1589.4	1344	1358	1400	1530	1758	1826	1872	1833	1719	1595	1437	1401
PORTLAND G E	78-79 PK		1864	1843	1988	2352	2563	2596	2739	2599	2462	2264	2137	1992
PORTLAND G E	78-79 AV	1662.2	1404	1421	1464	1600	1837	1909	1961	1918	1796	1668	1502	1466
PORTLAND G E	79-80 PK		1981	1959	2112	2484	2703	2735	2915	2680	2627	2420	2290	2152
PORTLAND G E	79-80 AV	1769.4	1493	1511	1557	1697	1946	2019	2100	1988	1927	1794	1617	1584
PORTLAND G E	80-81 PK		2113	2085	2248	2625	2850	2895	3048	2899	2750	2535	2405	2261
PORTLAND G E	80-81 AV	1872.5	1591	1610	1660	1804	2063	2139	2198	2155	2017	1879	1694	1660
PORTLAND G E	81-82 PK		2240	2213	2383	2765	3001	3049	3189	3037	2886	2664	2535	2387
PORTLAND G E	81-82 AV	1977.2	1688	1709	1761	1911	2181	2260	2305	2264	2120	1981	1790	1756
PORTLAND G E	82-83 PK		2366	2339	2512	2899	3142	3198	3351	3192	3040	2810	2680	2529
PORTLAND G E	82-83 AV	2087.2	1787	1809	1860	2016	2293	2374	2428	2387	2237	2096	1896	1863
PORTLAND G E	83-84 PK		2589	2480	2660	3049	3303	3365	3522	3241	3204	2967	2837	2681
PORTLAND G E	83-84 AV	2200.5	1897	1921	1973	2134	2420	2502	2558	2431	2362	2218	2011	1979
PORTLAND G E	84-85 PK		2662	2631	2816	3209	3473	3544	3702	3532	3379	3133	3004	2843
PORTLAND G E	84-85 AV	2336.6	2016	2041	2093	2260	2555	2639	2697	2659	2495	2349	2133	2102
PORTLAND G E	85-86 PK		2824	2793	2984	3380	3655	3734	3897	3719	3568	3311	3183	3018
PORTLAND G E	85-86 AV	2474.5	2143	2169	2222	2395	2699	2786	2846	2808	2637	2490	2264	2235
PORTLAND G E	86-87 PK		2998	2967	3165	3561	3849	3938	4104	3918	3768	3501	3372	3203
PORTLAND G E	86-87 AV	2622.2	2279	2307	2361	2539	2853	2942	3004	2969	2790	2640	2405	2377
PORTLAND G E	87-88 PK		3185	3154	3357	3755	4055	4154	4325	3988	3980	3706	3576	3404
PORTLAND G E	87-88 AV	2770.9	2425	2454	2509	2693	3018	3109	3173	3032	2953	2801	2555	2529

LOAD-PUGET SOUND PEL CO.		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
PUGET	77-78 PK		1502	1528	1715	1978	2371	2581	2622	2382	2308	2072	1835	1725
PUGET	77-78 AV	1485.5	1111	1147	1218	1404	1676	1820	1901	1794	1671	1502	1340	1242
PUGET	78-79 PK		1607	1634	1835	2116	2537	2762	2769	2516	2437	2188	1938	1821
PUGET	78-79 AV	1578.5	1189	1227	1303	1502	1794	1947	2008	1894	1765	1587	1415	1311
PUGET	79-80 PK		1697	1726	1938	2235	2679	2917	2923	2654	2573	2309	2045	1922
PUGET	79-80 AV	1666.3	1256	1296	1376	1587	1894	2056	2119	1999	1863	1674	1493	1383
PUGET	80-81 PK		1789	1819	2045	2359	2829	3079	3104	2819	2732	2453	2173	2041
PUGET	80-81 AV	1764.4	1324	1366	1452	1675	2000	2171	2250	2123	1978	1778	1586	1470
PUGET	81-82 PK		1902	1934	2172	2505	3003	3269	3290	2989	2896	2600	2303	2165
PUGET	81-82 AV	1872.0	1407	1453	1542	1778	2123	2305	2385	2250	2096	1885	1681	1559
PUGET	82-83 PK		2016	2050	2303	2655	3183	3465	3490	3171	3072	2759	2443	2297
PUGET	82-83 AV	1985.5	1492	1540	1635	1885	2250	2443	2531	2388	2224	2000	1784	1654
PUGET	83-84 PK		2139	2175	2443	2817	3377	3676	3694	3354	3250	2918	2584	2428
PUGET	83-84 AV	2103.2	1583	1634	1735	2000	2388	2592	2678	2526	2353	2115	1886	1748
PUGET	84-85 PK		2268	2299	2584	2979	3574	3890	3932	3573	3462	3108	2753	2588
PUGET	84-85 AV	2232.7	1673	1727	1835	2115	2527	2743	2851	2690	2506	2253	2010	1863
PUGET	85-86 PK		2409	2451	2753	3174	3805	4142	4177	3794	3677	3301	2924	2749
PUGET	85-86 AV	2374.4	1783	1840	1954	2253	2690	2920	3028	2857	2662	2393	2134	1979
PUGET	86-87 PK		2559	2603	2924	3371	4041	4399	4436	4030	3904	3506	3105	2919
PUGET	86-87 AV	2522.0	1894	1955	2076	2393	2857	3101	3216	3034	2827	2542	2267	2102
PUGET	87-88 PK		2717	2764	3105	3580	4292	4672	4696	4266	4134	3711	3287	3089
PUGET	87-88 AV	2673.9	2011	2076	2204	2542	3034	3294	3405	3213	2993	2691	2400	2224

LOAD-SEATTLE CITY LIGHT	JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
SEATTLE 77-78 PK		1084	1098	1196	1359	1469	1625	1617	1538	1444	1356	1246	1169
SEATTLE 77-78 AV	940.1	768	764	829	936	1010	1128	1135	1074	1004	950	861	822
SEATTLE 78-79 PK		1109	1123	1222	1390	1502	1662	1653	1572	1476	1386	1281	1195
SEATTLE 78-79 AV	961.1	784	781	847	957	1033	1154	1161	1098	1027	972	879	840
SEATTLE 79-80 PK		1133	1147	1250	1421	1535	1699	1703	1620	1521	1428	1319	1231
SEATTLE 79-80 AV	986.5	802	798	866	978	1056	1179	1196	1132	1058	1002	906	865
SEATTLE 80-81 PK		1167	1182	1287	1464	1582	1751	1747	1661	1560	1464	1353	1263
SEATTLE 80-81 AV	1016.3	826	823	893	1008	1088	1216	1227	1161	1086	1028	929	887
SEATTLE 81-82 PK		1202	1217	1325	1506	1627	1800	1821	1732	1626	1527	1411	1317
SEATTLE 81-82 AV	1048.9	848	845	917	1035	1117	1248	1278	1209	1130	1070	967	923
SEATTLE 82-83 PK		1251	1266	1379	1567	1693	1873	1882	1790	1681	1578	1458	1361
SEATTLE 82-83 AV	1087.2	881	879	954	1077	1162	1299	1320	1249	1168	1106	998	953
SEATTLE 83-84 PK		1291	1308	1424	1619	1748	1935	1918	1825	1713	1608	1487	1388
SEATTLE 83-84 AV	1114.7	909	908	985	1111	1200	1341	1345	1273	1190	1127	1017	971
SEATTLE 84-85 PK		1315	1332	1451	1649	1781	1971	1961	1865	1751	1644	1520	1418
SEATTLE 84-85 AV	1137.7	926	925	1003	1132	1222	1366	1375	1302	1217	1153	1039	992
SEATTLE 85-86 PK		1344	1362	1483	1686	1821	2015	1997	1900	1784	1674	1548	1445
SEATTLE 85-86 AV	1160.7	946	946	1025	1157	1249	1397	1401	1326	1240	1174	1058	1010
SEATTLE 86-87 PK		1368	1386	1509	1716	1854	2052	2053	1952	1833	1720	1590	1484
SEATTLE 86-87 AV	1188.1	964	963	1044	1178	1272	1423	1441	1363	1275	1208	1088	1038
SEATTLE 87-88 PK		1406	1424	1551	1764	1906	2110	2163	2058	1932	1813	1675	1563
SEATTLE 87-88 AV	1237.4	990	990	1073	1211	1308	1463	1519	1438	1344	1273	1146	1094

SNOHOMISH COUNTY PUD 1/
Total Loads

Figures are mw.

		Jul-Jun Av	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1977-78	Pk		499	519	630	791	848	942	1040	947	914	808	722	630
	Av	537.6	349	367	405	507	610	683	734	685	635	578	474	424
1978-79	Pk		541	563	683	858	919	1021	1078	982	947	838	749	654
	Av	569.3	379	398	439	549	662	739	762	711	659	600	493	440
1979-80	Pk		561	584	710	888	953	1059	1106	1007	972	859	768	670
	Av	586.4	392	412	455	569	686	766	781	728	676	616	505	451
1980-81	Pk		576	599	727	911	977	1086	1166	1061	1023	905	809	706
	Av	610.3	403	423	466	584	703	786	823	767	712	648	532	476
1981-82	Pk		605	630	766	961	1030	1143	1209	1100	1061	939	839	734
	Av	637.4	423	446	492	616	740	828	854	796	738	672	551	493
1982-83	Pk		629	654	795	996	1068	1186	1254	1141	1101	975	870	760
	Av	661.3	440	461	510	638	769	859	885	826	766	698	572	511
1983-84	Pk		652	678	824	1033	1109	1231	1301	1184	1142	1011	903	789
	Av	686.3	457	479	529	662	797	892	919	857	795	724	594	530
1984-85	Pk		677	704	855	1072	1150	1277	1350	1229	1185	1049	938	818
	Av	711.8	473	497	549	687	827	924	953	889	825	751	616	551
1985-86	Pk		702	731	886	1112	1192	1324	1441	1313	1266	1121	1001	875
	Av	750.3	491	516	570	713	858	959	1018	950	880	803	657	588
1986-87	Pk		750	780	948	1188	1274	1414	1494	1360	1312	1161	1037	906
	Av	788.4	525	550	607	761	917	1025	1056	984	912	832	682	610
1987-88	Pk		778	809	981	1232	1320	1465	1548	1409	1360	1204	1075	939
	Av	817.2	544	572	630	789	950	1062	1094	1020	946	861	706	632

1/ These loads are included in BPA Total Loads.

LOAD-TACOMA CITY LIGHT		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
TACOMA	77-78 PK		507	528	602	695	765	819	846	769	749	706	642	591
TACOMA	77-78 AV	522.3	391	407	452	529	582	616	645	594	586	538	483	445
TACOMA	78-79 PK		524	547	626	728	805	863	893	811	788	741	671	614
TACOMA	78-79 AV	548.3	405	422	471	555	614	650	682	628	618	566	506	463
TACOMA	79-80 PK		543	566	650	762	845	912	941	854	829	779	699	638
TACOMA	79-80 AV	575.2	420	438	490	582	646	687	720	662	651	596	528	482
TACOMA	80-81 PK		562	586	676	796	890	960	992	898	872	818	729	664
TACOMA	80-81 AV	603.2	435	454	511	609	681	725	760	698	686	626	552	502
TACOMA	81-82 PK		581	606	703	832	933	1011	1044	946	914	855	761	689
TACOMA	81-82 AV	632.1	451	471	532	638	715	765	802	736	720	656	577	522
TACOMA	82-83 PK		601	628	729	868	980	1062	1098	993	960	896	792	715
TACOMA	82-83 AV	662.1	466	488	553	667	753	805	845	774	758	690	601	543
TACOMA	83-84 PK		622	649	757	907	1026	1117	1153	1042	1006	938	825	743
TACOMA	83-84 AV	693.0	485	506	575	698	790	848	889	814	795	723	628	565
TACOMA	84-85 PK		643	671	786	946	1070	1172	1210	1092	1054	979	859	770
TACOMA	84-85 AV	724.6	502	524	598	729	829	892	934	854	835	756	655	587
TACOMA	85-86 PK		665	694	815	986	1126	1229	1269	1143	1102	1025	893	798
TACOMA	85-86 AV	757.1	520	543	621	761	869	937	981	895	874	793	681	610
TACOMA	86-87 PK		687	717	845	1027	1177	1286	1328	1196	1151	1069	928	828
TACOMA	86-87 AV	790.5	538	562	645	794	911	982	1029	939	915	828	710	633
TACOMA	87-88 PK		709	741	876	1069	1231	1346	1389	1250	1204	1115	965	857
TACOMA	87-88 AV	825.1	557	582	670	828	954	1029	1078	983	958	866	739	657

LOAD-WASH. WATER POWER CO.		JUL-JUN AV	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
WASH W P	77-78 PK		956	911	916	1036	1219	1324	1375	1290	1201	1072	955	950
WASH W P	77-78 AV	807.2	688	683	678	756	890	969	1007	942	900	783	697	693
WASH W P	78-79 PK		999	949	955	1083	1279	1392	1449	1356	1260	1122	995	989
WASH W P	78-79 AV	845.7	719	712	707	791	934	1021	1062	990	945	819	726	722
WASH W P	79-80 PK		1042	988	993	1127	1332	1448	1506	1411	1310	1166	1034	1028
WASH W P	79-80 AV	879.7	750	741	735	823	972	1063	1105	1030	983	851	754	750
WASH W P	80-81 PK		1083	1027	1032	1171	1386	1505	1564	1467	1362	1211	1073	1066
WASH W P	80-81 AV	914.4	780	770	763	855	1012	1106	1150	1071	1021	884	783	778
WASH W P	81-82 PK		1125	1066	1071	1216	1441	1561	1577	1481	1380	1222	1081	1078
WASH W P	81-82 AV	936.5	810	799	792	888	1052	1151	1162	1081	1035	892	789	787
WASH W P	82-83 PK		1140	1079	1082	1231	1458	1581	1640	1540	1434	1269	1122	1119
WASH W P	82-83 AV	960.8	821	809	801	898	1065	1165	1209	1124	1076	926	819	817
WASH W P	83-84 PK		1184	1120	1123	1278	1516	1645	1706	1601	1491	1318	1165	1162
WASH W P	83-84 AV	998.3	853	840	831	933	1107	1212	1257	1169	1118	962	850	848
WASH W P	84-85 PK		1230	1163	1166	1328	1577	1711	1768	1658	1544	1364	1205	1201
WASH W P	84-85 AV	1035.5	886	872	863	969	1151	1261	1303	1211	1158	996	879	877
WASH W P	85-86 PK		1273	1203	1206	1374	1633	1773	1832	1718	1599	1412	1246	1242
WASH W P	85-86 AV	1071.9	917	902	892	1003	1192	1307	1350	1254	1199	1031	909	907
WASH W P	86-87 PK		1317	1245	1247	1422	1692	1837	1898	1760	1656	1462	1289	1285
WASH W P	86-87 AV	1109.8	949	933	923	1038	1235	1354	1399	1299	1242	1067	941	938
WASH W P	87-88 PK		1364	1288	1290	1472	1752	1904	1967	1844	1715	1513	1333	1329
WASH W P	87-88 AV	1149.1	982	966	955	1075	1279	1403	1450	1346	1286	1104	973	970

OTHER PUBLIC AGENCIES 1/
Total Loads

Figures are mw.

		Jul-Jun Av	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1977-78	Pk		2650	2666	2738	2847	3014	3365	3507	3197	2962	2928	2911	2866
	Av	2231.5	2061	2106	2031	2030	2204	2561	2640	2426	2237	2172	2130	2180
1978-79	Pk		2836	2856	2931	3041	3215	3588	3719	3393	3147	3119	3104	3061
	Av	2377.6	2212	2264	2174	2166	2348	2729	2796	2569	2369	2306	2268	2330
1979-80	Pk		3023	3043	3127	3241	3419	3806	3944	3597	3333	3305	3296	3254
	Av	2529.5	2367	2423	2321	2305	2495	2894	2967	2727	2514	2450	2413	2478
1980-81	Pk		3202	3229	3322	3443	3630	4038	4165	3800	3521	3498	3480	3438
	Av	2679.8	2515	2577	2469	2450	2650	3073	3134	2881	2655	2586	2546	2622
1981-82	Pk		3377	3404	3507	3628	3825	4254	4399	4009	3717	3697	3680	3633
	Av	2826.3	2649	2716	2601	2580	2790	3233	3310	3043	2805	2730	2689	2770
1982-83	Pk		3588	3621	3733	3861	4066	4522	4666	4251	3942	3920	3904	3856
	Av	3010.7	2827	2898	2776	2754	2976	3445	3515	3234	2982	2905	2863	2954
1983-84	Pk		3778	3814	3935	4070	4288	4769	4918	4476	4150	4129	4111	4061
	Av	3168.7	2978	3054	2924	2901	3138	3630	3697	3399	3136	3054	3008	3106
1984-85	Pk		3977	4011	4143	4289	4517	5025	5190	4724	4378	4354	4336	4286
	Av	3338.8	3133	3212	3075	3050	3302	3823	3900	3587	3306	3220	3174	3284
1985-86	Pk		4188	4231	4373	4526	4770	5309	5464	4972	4602	4576	4556	4501
	Av	3510.7	3299	3387	3240	3211	3480	4030	4100	3770	3473	3380	3324	3434
1986-87	Pk		4401	4446	4597	4758	5016	5585	5759	5234	4840	4813	4787	4730
	Av	3686.5	3459	3552	3398	3373	3657	4239	4312	3963	3649	3547	3485	3604
1987-88	Pk		4624	4673	4831	5004	5281	5881	6068	5511	5091	5053	5022	4959
	Av	3870.4	3630	3729	3566	3540	3843	4458	4539	4170	3834	3720	3647	3769

1/ These loads are included in BPA Total Loads.

OTHER PUBLIC AGENCIES 1/
Total Loads

Figures are mw.

		Jul-Jun Av	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1977-78	Pk		2650	2666	2738	2847	3014	3365	3507	3197	2962	2928	2911	2866
	Av	2231.5	2061	2106	2031	2030	2204	2561	2640	2426	2237	2172	2130	2180
1978-79	Pk		2836	2856	2931	3041	3215	3588	3719	3393	3147	3119	3104	3061
	Av	2377.6	2212	2264	2174	2166	2348	2729	2796	2569	2369	2306	2268	2330
1979-80	Pk		3023	3043	3127	3241	3419	3806	3944	3597	3333	3305	3296	3254
	Av	2529.5	2367	2423	2321	2305	2495	2894	2967	2727	2514	2450	2413	2478
1980-81	Pk		3202	3229	3322	3443	3630	4038	4165	3800	3521	3498	3480	3438
	Av	2679.8	2515	2577	2469	2450	2650	3073	3134	2881	2655	2586	2546	2622
1981-82	Pk		3377	3404	3507	3628	3825	4254	4399	4009	3717	3697	3680	3633
	Av	2826.3	2649	2716	2601	2580	2790	3233	3310	3043	2805	2730	2689	2770
1982-83	Pk		3588	3621	3733	3861	4066	4522	4666	4251	3942	3920	3904	3856
	Av	3010.7	2827	2898	2776	2754	2976	3445	3515	3234	2982	2905	2863	2954
1983-84	Pk		3778	3814	3935	4070	4288	4769	4918	4476	4150	4129	4111	4061
	Av	3168.7	2978	3054	2924	2901	3138	3630	3697	3399	3136	3054	3008	3106
1984-85	Pk		3977	4011	4143	4289	4517	5025	5190	4724	4378	4354	4336	4286
	Av	3338.8	3133	3212	3075	3050	3302	3823	3900	3587	3306	3220	3174	3284
1985-86	Pk		4188	4231	4373	4526	4770	5309	5464	4972	4602	4576	4556	4501
	Av	3510.7	3299	3387	3240	3211	3480	4030	4100	3770	3473	3380	3324	3434
1986-87	Pk		4401	4446	4597	4758	5016	5585	5759	5234	4840	4813	4787	4730
	Av	3686.5	3459	3552	3398	3373	3657	4239	4312	3963	3649	3547	3485	3604
1987-88	Pk		4624	4673	4831	5004	5281	5881	6068	5511	5091	5053	5022	4959
	Av	3870.4	3630	3729	3566	3540	3843	4458	4539	4170	3834	3720	3647	3769

1/ These loads are included in BPA Total Loads.