Docket No. 94-2035-03
PacifiCorp Exhibit No. 1 (RW-1)
Witness: Rodger Weaver

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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE APPLICATION OF PACIFICORP FOR AN ORDER APPROVING AVOIDED COST RATES	))))	Docket NO. 94-2035-03 PREFILED DIRECT TESTIMONY OF RODGER WEAVER

EXHIBIT NO. PacifiCorp-1
Case 94 2035 03
Date 4 29 94
Witness RWeaver
Reporter

April 29, 1994

Q. Please state your name, business address and present position with PacifiCorp (the Company).

A. My name is Rodger Weaver, my business address is 424 Public Service Building, Portland, Oregon 97204, and my present position is Power Systems Regulation Manager.

Q. Please briefly describe your education and business experience.

A. I received an undergraduate degree in Economics and a Ph.D in Economics from the University of Utah. I worked for the Public Service Commission of Utah from 1984-1987 and from 1987 to 1992 for the Utah Division of Public Utilities. In both positions my title was Senior Economist. I began working for PacifiCorp in 1992.

Q. Please describe your current duties.

A. I am responsible for the management and coordination of the Company's efforts related to net power cost, avoided cost, and related power resource issues before various regulatory commissions. In addition, I am responsible for managing the Company's involvement in a broad range of issues regarding the Bonneville Power Administration, the Northwest Power Planning Council, and other electric utility related agencies and trade organizations.

Q. What is the purpose of your testimony?

A. My testimony describes the Company's proposed methodology for calculating system avoided costs and presents the Company's proposed standard avoided cost rates. My testimony also proposes that the Commission adopt these rates for purchases from qualifying facilities (QFs) of 1,000 kw or less in size. In support of the avoided

cost discussion, I will also briefly describe the Company's integrated resource planning process which is the basis for the Company's proposed avoided cost. In compliance with the requirements of the Public Utilities Regulatory Policy Act of 1978 (PURPA), the Company's system avoided costs are calculated on the basis of what it would cost the Company to purchase power from others, or produce it using the Company's own generation resources.

Q. Attached to your testimony are PacifiCorp Exhibits 1.1 (RW-1) through 1.8 (RW-8). Were those exhibits prepared by you or under your direction?

A. Yes.

Integrated Resource Planning

Q. Please describe the Company's integrated resource planning process.

A. The Company recently completed its third integrated resource planning process which is published as Positioning for Competition and Uncertainty, PacifiCorp Resource and Market Planning Program (RAMPP-3). The final RAMPP-3 Report was published on April 12, 1994. Copies of the RAMPP-3 Report have been provided to the Commission.

The RAMPP-3 document details PacifiCorp's most current planning information. It describes the assumptions, strategies and principles that will guide future supply and demand decisions. It does not, however, make those decisions; rather, it sets out guidelines

for evaluating resource alternatives in the future. The RAMPP-3 document represents a planning process that: 1) Examines a range of forecasts for electricity demand; 2) Considers feasible alternatives for balancing resource supply with electricity demand; 3) Assesses supply and demand alternatives in a consistent manner; 4) Assesses possible external cost impacts as part of its evaluation of resource alternatives; 5) Describes a credible long-range plan for balancing supply and demand and related uncertainties, and a short-range set of actions consistent with that long-range plan; and 6) Has been prepared with substantial public involvement including extensive participation by the interested Utah community.

Avoided Cost Methodology

Q. Why is the Company requesting approval of its proposed avoided cost methodology and standard avoided cost rates at this time?

A. The Company believes it is important to have an approved methodology in place so both the Company and potential developers can effectively review potential QFs. However, the Company currently does not have a Utah Commission approved method of calculating system avoided cost rates. In its April 23, 1992 order, in Docket No. 91-2035-01, the Commission adopted the Company's filed avoided cost rates for purchases from QFs of 1,000 kw or less in size without adopting the Company's proposed methodology. With the completion of the Company's RAMPP-3 process and the resulting

changes in the Company's avoided cost, the Company has decided to request approval of its proposed avoided cost rates and the methodology that was used to develop them.

Q. What is the basis of the Company's avoided cost calculation?

A. The avoided cost calculation is based on a load and resource plan developed in conjunction with the Company's RAMPP-3 report. The RAMPP-3 process analyzed five load growth scenarios that reflect the range of system load growth PacifiCorp might experience. For calculation of avoided costs, the medium load growth scenario was used. A resource expansion plan was then developed to match the medium load forecast using the techniques, criteria and resource portfolio described in the RAMPP-3 report as updated for known changes. The major post-RAMPP-3 load and resource changes are:

- A 50 megawatt (MW) wholesale energy and capacity sale to the City of Redding for the period June 1, 1994, through May 31, 2004.

- A 20 year power purchase agreement, with a 10 year extension option, that allows the Company to purchase the output of U.S. Generating Company's 474 MW high efficiency Hermiston cogeneration project. The 20 year period begins with the commercial operation date, which is expected to be July 1, 1996.

- The Irrigation Load Control Program, which consists of radio operated switches connected to customer irrigation pumps that allow the Company to curtail irrigation load in southern Idaho, Wyoming and Utah. Testing of the program was completed in the fall of 1993. The testing indicated the program can provide approximately 90 MW of summer capacity.

- The avoided cost analysis used critical water conditions to develop the proposed load and resource balance, while RAMPP-3 analyses used average water conditions. Planning would typically be based on critical water conditions while operations would be based on average water conditions. However, because of the analytical requirements discussed in the RAMPP-3 Report Chapter 5, pages 90 and 91, RAMPP-3 used average water conditions.

- A 1994 agreement for the purchase of summer capacity from the Washington Water Power Company (WWP) for the period June 16, 1994, through September 15, 2003. The three-month capacity purchase agreement allows the Company to purchase 100 MW of summer capacity and energy during 1994 and 1995, and 150 MW from 1996 through the end of the agreement.

- A 1994 seasonal exchange agreement with WWP that allows the Company to exchange 50 MW of winter capacity for 50 MW of summer capacity for the period June 16, 1994 through March 31, 2009.

- A 1994 agreement to sell the Company's Northern Idaho service territory to WWP. The sale is expected to close in July 1994.

The resultant load and resource plan is used to identify periods of resource sufficiency (i.e., no additional deferrable resources are needed to meet forecasted capacity and energy needs) and to identify the potentially avoidable resources when new resources are required.

Q. Please explain PacifiCorp Exhibit 1.1 (RW-1).

A. Exhibit 1.1 (RW-1) is a three page exhibit which shows the load and resource plan used to develop the Company's proposed avoided costs. The first page is the balance of energy requirements and resources. The second and third pages show the winter and summer capacity load and resource balances, respectively. The exhibit shows that under the medium load growth scenario PacifiCorp would not require any new deferrable resources to satisfy energy and winter capacity resource requirements through the year 1999. However, new deferrable capacity resources, in the form of short term summer capacity purchases, are needed in the years 1995, 1998, and 1999 to

satisfy summer peak capacity requirements.

Q. Please discuss how a summer capacity purchase was used to develop the proposed avoided costs.

A. As discussed in Chapter 1 of the RAMPP-3 Report, the analysis excluded market resources as options because there would be no assurance that a selected resource would be available when needed. The RAMPP-3 analysis was based on a portfolio of Company owned resources that could be counted on when needed. However, in the future when actual resource acquisition decisions are required the Company will Compare market options to Company-owned options and select the least cost option. The RAMPP-3 Report recognized this planning assumption in action plan item 5) d) which states:

> Pursue opportunities to purchase power that provide peaking benefits which are more cost effective than building or acquiring peaking resources.

Consistent with this action item, and based on the Company's experience and understanding of the resource markets, the short-run capacity component of avoided cost prices is based on generic three-month summer capacity purchases. These short-term firm purchases match the Company's intention to purchase power to meet any system capacity shortfalls until the load and resource balance analysis indicates a need for additional energy resources and capacity resource requirements in both winter and summer. The price is assumed to be equal to the Company's recently signed

summer capacity purchase agreement with WWP. A summer capacity purchase has an advantage over other alternative resources because it allows the Company to specifically meet its summer capacity requirements at a lower cost. In the year 2000, the summer capacity purchase is eliminated and a combined cycle combustion turbine (CCCT) is added to meet energy and year-around capacity requirements. Additional resources will be required in the year 2000 and beyond and the Company believes that the cost of a CCCT is representative of the cost of those additional resources.

Q. Is the Company adding other resources prior to the year 2000?

A. Yes. Exhibit 1.1 (RW-1) shows several new resources in addition to the avoidable combustion turbines. These resources are either committed resources or planned resources which, for a variety of reasons, are not considered by the Company to be deferrable. Post-RAMPP-3 committed resources are described on pages 5 and 6 of my testimony. RAMPP-3 committed resources are:

- Demand-side resources which represent the Company's commitment to the development of cost effective conservation programs;

- Upgrades to existing thermal, hydro, transmission, and distribution systems which are part of the Company's long range maintenance and plant life extension programs;

- A Company owned 50 MW cogeneration facility will be built at James River Corporation's pulp and paper mill complex in Camas, Washington. The project is expected to be placed in service on January 1, 1996.

- A Company owned 150 MW simple cycle combustion turbine facility (SCCT) will be built in Arizona in accordance with existing contracts. These units are expected to be placed in service on July 1, 1997.

- Two wind generation facilities totaling 56 MW to be located in the states of Washington and Wyoming. The wind resources are planned as productive resources and will also serve as pilot projects that will allow the Company to gain experience with the new technologies. Both projects are expected to be placed in service on January 1, 1996.

Q. As background for the following discussion, please provide a general description of the proxy and differential revenue requirement methods of calculating avoided cost rates.

A. The proxy method assumes that the fixed and variable costs of a single resource are the utility's long run avoided costs. The differential revenue requirement method assumes an amount of zero cost QF capacity with given characteristics and calculates the utility's system cost with and without the assumed QF capacity over a

specified period of years. The difference in total system costs between the with-QF and without-QF cases is the avoided cost for the assumed block of QF generation.

Q. Please describe the Company's proposed method of calculating avoided cost rates for the purchase of power from QFs.

A. The Company proposes a combined differential revenue requirement and proxy method to calculate avoided cost prices. This method recognizes the distinction between the Company's long term and short term resource needs and breaks avoided costs into two distinct periods based on the Company's load and resource plan.

- During the period from 1994 through 1999 a period of winter capacity and total energy sufficiency, the avoided costs are based on the marginal energy production cost of operating existing resources (differential revenue requirement) plus the cost of purchasing summer capacity (proxy);

- During the period period 2000 and beyond, a period in which new resources (proxy) are required to provide both summer and winter capacity and energy to meet the Company's loads, avoided costs are based on the fixed and variable costs of a CCCT.

Q. Please describe the Company's calculation of short run avoided costs.

A. During the period from 1994 through 1999, a period of resource sufficiency, the Company's avoided energy costs are based on the displacement of purchased power and existing thermal resources. To calculate short-term avoided energy costs, two production cost model (PD/Mac) studies are performed. The model input data includes the monthly load and resource data which is the basis for the annual summary of loads and resources shown in Exhibit 1.1 (RW-1). The only difference between the two studies is an assumed zero running cost 50 MWa increase in monthly system resources. The 50 MWa resource serves as a surrogate for QF generation. The resulting differences in system production costs between the two studies represents PacifiCorp's avoided energy costs. The avoided energy costs could be thought of as the highest variable cost incurred to serve total system load from existing and non-deferrable resources. The highest variable energy costs resulting from the two production cost model runs are provided as Exhibit 1.2 (RW-2).

Avoided capacity costs in this period, which reflect summer capacity requirements, are based on three-month capacity purchases at prices identical to the Company's recently signed long-term summer capacity purchase agreement with WWP. The WWP capacity purchase prices were used because they represent the Company's most recent experience in the market for purchases of this type. Since the purchases are for three months only, the annual avoided capacity costs for the years 1995, 1998 and 1999, as shown

in Column 1 of Exhibit 1.6 (RW-6) are one-fourth of the purchase price.

Q. Please describe the Company's calculation of long run avoided costs.

A. Beginning in the year 2000, avoided costs are based on the fixed and variable costs of a planned resource which could be avoided or deferred, in this case a CCCT. Since a CCCT is built as a baseload unit which provides both capacity and energy, the fixed cost of the CCCT is split into capacity and energy components. The fixed cost of a SCCT, which due to its higher operating cost would be acquired as a capacity resource, defines the portion of the fixed cost of the CCCT that is assigned to capacity. The difference in cost between the fixed cost of a CCCT and the fixed cost of a SCCT are assigned to the energy component and are added to the variable production (fuel) cost of the CCCT to determine the total avoided energy cost.

Q. Why is the proposed differential revenue requirement / proxy method the Company's preferred method of calculating avoided cost prices?

A. The major reason is that the method produces avoided cost rates which reflect the costs the Company can avoid, based on its resource requirements and least cost resource options, with purchases from QFs. The method recognizes that in the short run, during a period of energy and winter capacity sufficiency, purchases from QFs would only allow the Company to avoid the incremental cost of energy production from existing resources and the cost of a summer capacity purchase. Therefore, as I discussed earlier, the energy component of

the Company's short term avoided costs reflects the incremental cost of energy production from existing Company resources and the capacity component of the Company's short term avoided cost reflects a three month summer capacity purchase.

In the long run, when the Company requires additional energy and capacity resources in both the summer and winter, the method recognizes that the Company can avoid the fixed costs of a base load unit. Since a CCCT is the Company's least cost resource base load resource option, the Company's long run avoided costs are, as I discussed earlier, based on the fixed and variable costs of a CCCT. This is consistent with the Company's RAMPP-3 action plan item 3) which states:

> Meet baseload requirements with installation of 500-900 MW of cogeneration and/or combined cycle combustion turbines (CCCT) by 2001.

The Company believes the cost of the CCCT is also representative of the cost of future resources. The CCCT was chosen as the proxy instead of cogeneration because a CCCT does not require a thermal host that may or may not be available when future resources are required. Further, both the CCCT and most cogeneration options use the same type of technology; therefore, the costs are very similar.

Q. Does the proposed method have other attributes which are desirable for an avoided cost methodology?