Exhibit ____ (DRS-testimony)
Docket Nos. UE-920433, UE-920499 and UE-921262
Witness: Diane R. Sorrells

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Petition of PUGET SOUND POWER & LIGHT COMPANY for an Order Regarding the Accounting Treatment of Residential Exchange Benefits	DOCKET NO. UE-920433
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND POWER & LIGHT COMPANY, Respondent.	DOCKET NO. UE-920499
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND POWER & LIGHT COMPANY, Respondent.	DOCKET NO. UE-921262

TESTIMONY OF

DIANE R. SORRELLS

For Commission Staff

INTRODUCTION

Q. Please state your name and business address.

A. My name is Diane R. Sorrells. My business address is Chandler Plaza Building, 1300 S. Evergreen Park Drive S.W., P.O. Box 47250, Olympia, Washington 98504-7250.

Q. By whom are you employed and in what capacity?

A. I am employed by the Washington Utilities and Transportation Commission (Commission) as a Utilities Rate Research Specialist.

Q. Have you prepared an exhibit detailing your professional background?

A. Yes. Exhibit No. _____ (DRS-1) outlines my professional background.

Q. What is the scope of your testimony?

A. I analyze Puget Sound Power and Light Company's (Puget or the company) cost of service, rate spread and rate design proposals in consolidated Docket Nos. UE-920499 ("rate design case") and UE-921262 ("rate case") and present staff's proposal regarding these areas.

IMPORTANT CONSIDERATIONS

Q. What factors did you consider while analyzing rate design issues?

A. My analysis is based on many considerations, including those which have been important to the Commission in previous rate cases and other hearings.

Q. Please list these major considerations.

A. I considered:

1. Past Commission orders on the need for forward-looking, embedded cost of service studies and other features.
2. The need to develop a cost of service methodology which is acceptable to the Commission and which recognizes the Commission's integrated resource planning initiatives.
3. The importance of price signaling to customers to reflect the need for energy conservation, the seasonality of energy costs and the impact of growth management issues.
4. The balance of economic and equity issues, including parity relationships, gradualism and the needs of customers on lower incomes.

A. <u>Economic and Policy Considerations (2-4 above)</u>

Q. Briefly describe how these economic and policy considerations interrelate.

A. If the Commission is able to accept one cost of service methodology, then in future general rate cases the issues for rate design can focus on the data used in that method. An appropriate cost of service method should represent as

accurately as possible the economic impacts of electric use by different classes of customer. In so doing, customers will receive appropriate price signals on the cost of using electricity. Such a methodology is then tempered by rate design policy considerations on equity, on the need to change rates gradually, and the particular needs of certain groups of customers.

Q. Did you consider the classification of base and resource costs as required by the Commission in Docket Nos. UE-901183-T and UE-901184-P (the "Decoupling Proceeding")?

A. Yes. Puget Power submitted the necessary documentation on this issue in response to staff data requests 21, 22 and 23. The responses to staff data requests 22 and 23 (also known as the supplemental response to 22) are Deposition Exh. 1 to Ms. Lynch's deposition taken on February 18, 1993. This deposition is be filed at the same time as my testimony.

Q. Is this issue presented in your testimony?

A. No. This issue will be addressed in the context of the Puget Power general rate case proceeding which is also in progress at this time.

B. Past Commission Orders (Item 1 above)

Q. Please briefly describe which past Commission orders you considered.

A. I considered the following:

Docket Nos.:

U-78-05 - Puget, WWP and PP&L rate design case

U-80-10 - Puget general rate case

U-81-41 - Puget general rate case

U-82-10 & U-82-11 - Washington Water Power general rate case

U-82-38 - Puget general rate case

U-83-54 - Puget general rate case

U-85-53 - Puget general rate case

U-89-2688-T & U-892955-T - Puget 1989 general rate case

Below I explain a number of the requirements stated by the Commission in one or more of the above orders. This rate design filing was directed by the Commission in Docket Nos. UE-901183-T and UE-901184-P (the "Decoupling Proceeding") as a necessary element of Puget's efforts to pursue regulatory reform.

Q. Did the Commission direct Puget in any other way, relevant to rate design, in the order in the Decoupling Proceeding?

A. Yes. In the order, staff and other parties were encouraged to work with the company to ensure that the concerns of all parties were addressed in this filing and that the filed cost of service studies contain sufficient information to permit the Commission to make policy determinations on this issue.

Q. Did staff and other parties work with the company on rate design issues?

A. Yes. The company formed the Rate Design Collaborative Group consisting of Commission staff, other interested persons, and members from Puget's Customer Rate Design Task Force.

Q. Was the Rate Design Collaborative Group able to reach agreement on cost of service and rate design issues?

A. There was general agreement on a number of broad concepts for cost of service and specific proposals for rate design. However, there remain key issues which will require policy decisions by the Commission. The collaborative effort focused on narrowing items of contention.

Q. Were there other Commission orders important to your analysis?

A. Yes. Cost of service studies were mandated by the Commission's electric rate design order in Cause No. U-78-05 for Puget, WWP and PP&L. The policies developed in that docket were reiterated and expanded upon in the December 30, 1982, Second Supplemental Order in Cause Nos. U-82-10 (electric) and U-82-11 (gas) in the 1982 Washington Water Power electric and gas general rate case.

Q. Briefly, what policies were stated in the 1982 order involving Washington Water Power?

A. There were three policies stated:

1. Embedded cost studies for allocation to production plant and other categories followed by a "forward-looking" classification approach should be used to reflect the purposes for which plant expenditures are being made.

(Page 36 of the U-82-10 and 11 order.)

2. The peak credit method for classifying energy and demand costs for production plant in order to account for the power supply requirements of the company, which are predominantly energy rather than capacity should be used. Also, the Commission stated that multiple peaks should be used rather than a single peak because a single peak study is less representative than a multiple peak study. (Page 37 of the U-82-10 and 11 order.)

3. Classification of transmission system costs should be applied using the same principles as for production plant because energy requirements, together with capacity, create the necessity for investment. (Page 37 of the U-82-10 and 11 order.)

Q. Have you incorporated these policies in your analysis?

A. Yes.

COST OF SERVICE PROPOSAL

A. Purpose

Q. Please describe the purpose of a cost of service study.

A. Its purpose is to reasonably reflect how costs are incurred on an electric utility system and to appropriately allocate those costs to the customers.

Q. What steps are taken to determine those costs?

A. The first step is to separate the electric utility system costs by function. The costs of an electric utility system are costs of production of electricity, costs of transmission and distribution of electricity, costs to provide customer specific services, and general costs which do not fall under any of the above functions.

Q. What is the step after this functionalization?

A. The next step is to classify portions of each function by the requirement it meets. Each function is needed to meet one or more of the following requirements: the demand for electricity in kW, the demand for electricity in kWh, and the specific customer service needs of groups of customers.

Q. What is the final step?

A. Lastly, the fractions or proportions developed from the above two steps are applied to the approved revenue requirement. The appropriate proportions of revenue requirement are then assigned to the customers~~, causing that cost~~.

B. Overall Staff Position on Cost of Service

Q. What is staff's position on the Puget proposed cost of service study?

A. Staff agrees with the majority of Puget's filing. Exception is taken to some portions of classification of production,

transmission and distribution costs. In particular, staff's major concern is Puget's classification of non-generation related transmission. The other items of concern have little financial impact on the results of the cost of service study, although in future rate cases these ~~principles~~ data (for example, data on the use of oil and gas on peak) should be considered.

1. The Classification of Transmission Costs

Q. What is your concern over the classification of non-generation related transmission costs?

A. Puget has classified this transmission as 100% demand-related. The amount of plant involved is $253,479,793 (rate case level) as shown in Exh. 565, Schedule C, page 11 at line 11.

Q. How would you propose this transmission be classified?

A. It should be based on the peak credit method with a coincident peak. This method reflects the fact that transmission facilities are sized and operated to meet both demand and energy requirements of the ~~utilities~~ utility system.

Q. Puget's witness, Ms. Lynch, testified in Docket No. UE-920499 that non-generation related transmission is built based on Puget's power planning department's estimates of demand (Tr. Vol. II, page 72 at line 3). Why do you propose that an allocation methodology incorporating both demand and energy components be used?

A. The peak credit methodology should be used for several reasons. The first reason could be called the benefit of "economies of scale." That is, transmission plant and operating costs do not increase or decrease in direct proportion to capacity. As Ms. Lynch agreed at page 118 of Tr. Vol II in Docket No. UE-920499, the average cost per kilowatt of transmission capacity will be lower for a 230 kilovolts transmission line than for a 115 kilovolts transmission line. This shows that the cost of installing a larger line is lower on a per unit basis than the cost installing a smaller capacity line. Allocating transmission costs solely on demand, as in the company's proposal, assumes that transmission costs are solely a function of capacity. Finally, some customers may not contribute to the calculated peak demand, but still ~~cause~~ incur transmission costs. ~~to be incurred~~ should. A transmission system is designed to deliver energy during the entire year, not just during the peak load hours. Those customers whose load characteristics are such that they may not affect peak capacity requirements should still be allocated some costs of the transmission system. Yet, under a pure peak demand classification, these customers may not be allocated any of the costs of transmission. Therefore, it is appropriate that the costs of non-generation related transmission be assigned to them through a peak credit classification which results in allocations based on energy as

well as demand.

Q. What is your recommendation?

A. I recommend that non-generation related transmission costs be classified in the same manner as generation related transmission costs. That is, the results of the cost of service study should reflect the peak credit method as it is used for generation related transmission costs.

Q. What is the impact of this recommendation on the costs allocated to customer classes?

A. This recommendation means that the costs allocated to the residential class should be reduced by $3,817,923 (based on Puget's proposed revenue requirements in Docket No. UE-921262). The costs allocated to the commercial and industrial classes would increase by about $550,000 and $200,000 respectively. These impacts are shown in Exhs. ____ (DRS-2) and ____ (DRS-3). Exh. ____ (DRS-2) shows the cost of service results using the peak credit method for non-generation related transmission costs. Exh. ____ (DRS-3) summarizes the difference between the cost of service results of staff and those of Puget. Exh. ____ (DRS-3) compares line 6 on page 2 of Exhibit 565 with line 6 on the last page of Exh. ____ (DRS-2).

2. Support of the Peak Credit Method

Q. Do you agree with Puget's use of the peak credit method of classification of production costs?

A. I support the company's use of the peak credit method and the use of 200 hours for the system peak. The peak credit method reflects the use of production plant for energy as well as demand needs. The 200 hours is more representative of the actual use of Puget's peaking facilities than a smaller number of hours. Puget has usually used 12 hours for system peak in past studies. However, 200 hours is preferable because Puget plans to operate its peaking facilities for 200 hours a year, as stated by Ms. Lynch at lines 17-25 on page 99 of Tr. Vol. II.

Q. Do you propose any changes to Puget's use of the peak credit method?

A. I have one minor change I would make to the data used in the peak credit method. Puget assumed that only oil would have been used on peak (page 2 of Exhibit 5). However, only natural gas was used during the test year period to fire these peaking units, which are combustion turbines (page 65, line 4 through page 66, line 6) of Tr. Vol. II. According to the company's response to record requisition No. 1 in Docket No. UE-920499, which is my Exhibit ____ (DRS-4), if natural gas were used to meet the peak, the demand/energy allocation factor would be 12% demand and 88% energy instead of the 17/83 demand/energy split shown

in Puget's filing.

Q. What is your recommendation?

A. I recommend that the study be left as is because the peak credit method as implemented by the company is basically correct. However, in future rate cases the use of gas, with a partial use of oil to account for one or more unusually cold weather peaking days in a test year, should be used in assumptions about the data for peak credit.

3. Basic Customer Charge v. Minimum Distribution System Charge

Q. What is the purpose of the basic customer charge?

A. The Rate Design Collaborative Group stated that the basic customer charge accounts for the cost of the service meter, meter reading and billing services. These services are basic for any customer regardless of their electrical load.

Q. What is the minimum distribution system charge approach?

A. The minimum distribution charge approach includes the costs listed above plus transformers and distribution lines.

Q. Does Puget propose to use the basic customer charge approach to classify distribution system costs?

A. Yes.

Q. Do these approaches result in different basic charges?

A. Yes. For example, for the residential class, the basic customer charge approach results in $4.75 basic charge, and

the minimum distribution system approach would result in a charge in the range of $15, as stated by Ms. Lynch at lines 14-25 on page 73 and lines 1-2 on page 74 of Tr. Vol. II in Docket No. UE-920499.

Q. Which method does staff recommend?

A. Staff also recommends the use of the basic customer charge approach.

Q. Why?

A. On a cost basis, the basic customer charge approach recognizes that a company's decision to install distribution plant is based on the energy revenues the company expects from customers on those distribution. The company does not plan distribution lines without expecting customers to use energy. The basic customer charge approach also improves the price signal sent to customers.

Q. How does the basic customer charge improve the price signal sent to customers?

A. Since more of the costs are reflected in the kWh and kW used by a customer than in the meter, a customer receives an incentive to avoid unnecessarily increasing its use of electricity because the price will reflect that additional use. If the minimum distribution system approach is used, the customer has less incentive to avoid increasing its use because it pays a higher fixed charge every month and a lower energy and demand charge.

Q. What has been the Commission's position in previous electric and gas rate cases?

A. The Commission has rejected the minimum distribution system approach many times. For example, in the Third Supplemental Order in consolidated Docket Nos. U-89-2688-T and U-89-2955-T ("Puget Power 1989 general rate case"), on page 71, the Commission states that, "The minimum system method is likely to lead to the double allocation of costs to residential customers and over-allocation of costs to low-use customers." The Commission goes on to state that "The parties should not use the minimum system approach in future studies."

RATE SPREAD PROPOSAL

Q. What did Puget propose for rate spread?

A. Puget proposed to move the spread of rates one third of the distance toward 100% parity for all classes.

Q. What does 100% parity mean?

A. 100% parity, in this case, is when the price charged for electric utility services is equal to, or on a par with, the cost of those electric utility services. At 100% parity, each customer class is paying for its cost of service instead of having another class subsidize its service costs or having it subsidize another class's costs.

Q. Does staff agree with Puget's proposal?

A. Staff agrees that rates should move toward cost gradually as Puget proposed. However, staff does not agree with Puget's analysis of cost of service.

Q. With what does staff disagree?

A. As stated above, staff disagrees with the company's classification of non-generation related transmission costs. Therefore, staff disagrees with the parity ratios shown on page 3 of Exhibit T-567 because Puget's parity ratios are based on the company's proposal for non-generation related transmission costs.

Q. What would the parity ratios be with staff's proposal for the classification of non-generation related transmission costs?

A. Staff's proposed parity ratios are shown on the final page of Exh. ____ (DRS-2) on row 13. The parity ratios under staff's proposal compared with Puget's would be the following:

	Staff	Puget
Residential Class	98%	97%
Secondary Class		
less than 50 kW	108%	109%
between 50 & 350 kW	115%	115%
more than 350 kW	112%	113%
Primary Class	91%	91%
High Voltage Class	84%	86%
Lighting Class	133%	134%
Firm Resale Class	74%	75%

Please note that these comparisons are based on the company's proposed revenue requirement in Docket No. UE-921262. Therefore they may change when the cost of service model is run based on staff's recommended revenue requirement, which will be developed later.

Q. What is the result of staff's proposed changes to the parity ratios?

A. The result of staff's proposal is that all classes, except the high voltage and firm resale classes, are closer to parity than proposed by Puget. Therefore, the customer classes do not have as far to move towards parity as Puget suggests. Therefore, the required change in rates for most of the customer classes would be smaller under staff's proposal than under Puget's proposal.

RATE DESIGN PROPOSAL

A. Residential Class

1. Schedule 7

Q. Is the proposed Schedule 7 for the residential class, as shown in Exh. 570 of the Puget general rate case, reasonable?

A. Overall it is reasonable in that it is moving towards reflecting marginal cost in the tail block and the basic

customer charge is used. However, Schedule 7 does not reflect costs as well as it could.

Q. What do you mean?

A. Most residential customers would use more than 400 kWh a month. Therefore, if the tail block started at about 400 kwh and over, then more customers would be aware of the marginal cost of electricity and therefore have a reasonably accurate price signal from which to judge whether to invest in conservation or to reduce their electric consumption in other ways.

Q. Are you recommending that the tail block be set at 400kwh?

A. No, not in this proceeding. As pointed out by Mr. Hoff on pages 7 and 8 of Exhibit T-567, the rate shock would be too great for the residential class. The move towards a tail block set at a lower number of kwh's should be introduced gradually over the next one or two rate cases or similar proceedings. A gradual introduction of this tail block will allow residential customers time to adjust.

2. <u>Interruptible Water Heat Rate</u>

Q. Has Puget Power proposed an interruptible water heat rate for residential customers?

A. No, Puget has not filed this interruptible rate in its general rate case although in its original rate design filing in

Docket No. UE-920499 Puget had proposed such a rate (Exh. 12, Sch. 6).

Q. Why did Puget revise its proposal?

A. Upon changing some assumptions on the cost and benefits of such a rate, it was clear that the monetary benefits were not enough to warrant such a rate at this time.

Q. What was the benefit of such a rate?

A. The benefit to the company and ratepayers was $8.36 a year per customer, as shown on page 2 of Exh. _____ (DRS-5). This workpaper provided by Puget to me shows where assumptions were changed from the original proposal contained in Exh. 15 (shown as page 1 in Exh. ____ (DRS-5).

Q. Do you believe that Puget's corrected assumptions are valid?

A. Yes, I do. They reasonably reflect the actual time of use of water heaters. Time of use is critical for a successful interruption schedule. If the appliance is not being used during the time of interruption, then the company does not benefit from having the interruption.

Q. Is there a reason why this rate should be proposed?

A. Starting the rate now would give Puget some experience in the field of load management.

Q. Should this rate therefore be proposed?

A. No, not at this time. As stated above, the net benefit to ratepayers is minimal currently. Therefore Puget should continue to monitor the costs of peaking fuel so that when the

benefit is of a reasonably significant amount, Puget can be prepared to begin such a rate schedule.

3. Hook-up Fees

Q. What are hook-up fees?

A. A hook-up fee is a fee charged to a customer connecting new electric load to the utility system when this load causes additional system costs which should not be borne by all ratepayers.

Q. Were hook-up fees proposed by the company?

A. No. However, they were discussed by the Rate Design Collaborative Group (Group).

Q. What did the Group decide?

A. The Group discussed but reached no agreement on whether there were cost effective measures for site built housing that could be effectively enforced at the time of the new hook-up. The Group agreed that there are cost effective conservation measures that exceed code for new manufactured housing. Manufactured houses are being addressed in the regional Manufactured Housing Assistance Program.

Q. Do you recommend hook-up fees?

A. No, but they should continue to be discussed.

4. Rates for Customers on Low Incomes

Q. Has Puget proposed a specific rate for customers on low incomes?

A. No.

Q. Why not?

A. The Rate Design Collaborative Group discussed alternative rate designs for people on low incomes (see section 7 on page 13 of Exh. 11). From a cost basis, the Group found that a portion of the cost of a low income rate may be offset by a decrease in account write-offs and the costs of disconnection. However, for an energy-constrained system such as Puget's, there were fewer benefits to other Puget ratepayers from having a rate for low income households than there would be for ratepayers on a system with excess capacity. It is also recognized that there is a need for legislation in this area.

Q. Are there any other ways in which an electric utility can help its low income customers?

A. Yes. Low income customers can participate in Puget's conservation programs. These programs not only reduce their bills but the energy savings lowers costs for all ratepayers on an energy-constrained system.

Q. Do you recommend that the Commission consider a rate design proposal for low income customers?

A. There are policy reasons why the Commission may find an alternative rate for low income households to be appropriate. I would suggest that the Commission consider further the need for appropriate policy on the low income issue and the possible need for legislative involvement. It would be helpful if the Commission could set forth its perspective on this issue so that interested persons would know whether alternative rates are acceptable to the Commission and under what economic and/or legal circumstances.

5. Conservation Rate

Q. What is a conservation rate?

A. A conservation rate provides a lower rate to those customers who have completed an identified level of conservation measures on their premises with their own funds.

Q. Did Puget propose a conservation rate?

A. No.

Q. Was a conservation rate considered by the Rate Design Collaborative Group?

A. Yes, but there was no consensus over how a conservation rate could be implemented fairly and at low cost.

Q. Should there be a conservation rate?

A. At this point, the best conservation rate seems to be a rate that reflects marginal cost. This option is more equitable

and easier to administer than other options considered so far.

Q. What is your recommendation?

A. I recommend that rates continue to be moved toward marginal cost so that customers receive a price signal of when it is cheaper to do conservation or take economic action other than to purchase more electricity.

B. Commercial and Industrial Classes

1. Break-up of Schedule 24

Q. What has Puget proposed for Schedule 24, the commercial class rate?

A. Puget has broken the former Schedule 24 into Schedules 24, 25 and 26. This is shown in Exh. 570. These schedules apply to commercial customers requiring secondary voltage service at a demand level of under 50 kw, between 50 kw and 350 kw, and above 350 kw, respectively.

Q. Why has Puget up broken the former Schedule 24?

A. By separating commercial customers based on their demand use, cost allocation to this diverse customer class can be refined. In particular, these customers will receive a more effective price signal, and the perceived declining energy rate can be eliminated.

Q. Do you propose the Commission accept Schedules 24, 25 and 26

as proposed by Puget?

A. Yes, with one exception. The energy charge in Schedule 25 declines for use of over 20,000 kwh (Exh. 570, Schedule 25). Such a rate wrongly implies that the costs of producing electricity decrease with higher use levels.

Q. Why did Puget propose it?

A. Puget proposed it because if Schedule 25 had a one block energy rate like Schedules 24 and 26, some customers on Schedule 25 would have rate increases of over 10 percent, while the class as a whole would have a rate decrease of about 6 percent. (Tr. Vol. III, page 168, line 1, through page 169, line 20, in Docket No. UE-920499.)

Q. What is staff's position on Puget's proposal?

A. It is appropriate that some customers within Schedule 25 receive a rate increase. Staff believes that those customers who would receive such an increase would be limited to those with high energy consumption or ~low load factors. The ~~the~~ increase for these customers would therefore send the proper price signal at all levels of use. As a result of implementing demand charges those customers may seek to decrease their level of demand by reducing peak loads to improve their load factors. Similarly, by having an inverted block rate instead of a declining block rate, customers will see the proper price signal regarding increased energy use beyond the initial block.

Q. Are you proposing that Schedule 25 have one energy block

instead of two?

A. No. It is possible, as Puget stated, that having one block could lead to increases over 10 percent. Therefore, staff proposes that two blocks be used but that the declining block rate structure be removed.

Q. Would this change result in a smaller increase for those customers whose bills would go up under Schedule 25?

A. Yes. Also, to more fairly distribute the costs of the class, I recommend that a fee should be charged for all kW, and not just for all kW over 50 kW.

Q. What rate would you charge for the first 50 kW?

A. I suggest that the rate for the first 50 kW should be half the rate per kW for all over 50 kW.

Q. What rate would you charge for the two energy blocks?

A. The first block could be something less than the average of the rates per kWh proposed by Puget for the two blocks and the second block could be something more than that average. I recommend that Puget develop these rates because the company has the billing data.

Q. Should the size of the blocks change?

A. The size of the blocks should be changed from the first 20,000 kWh and all over 20,000 kWh if necessary. Puget could run a billing frequency study to determine where the break between the blocks should be in order to minimize bill impacts.

Q. Please summarize the staff's proposal for Schedule 25.

A. I recommend that:

1) The basic charge should be $23.50, as proposed by Puget.

2) There should be a charge for all demand. The first 50 kW could be charged at half the rate proposed by Puget for all kW over 50 kW. Then all kW over 50 kW should be set at the rates proposed by Puget. This rate could be refined by Puget based on its analysis of billing data and revenue requirements.

3) The two energy charge blocks should have ~~declining~~ inverted block rates, set at rates appropriate to recover Puget's class revenue requirements.

4) The size of the blocks could be altered after running a billing frequency study to determine the size of most Schedule 25 customers' bills. These results could then be used to refine the size of the blocks to decrease the number of commercial customers affected by a rate increase.

Q. Please summarize the purpose of staff's proposal.

A. The purpose of this proposal is to avoid encouraging inefficient use of electricity and poor load factors. Having a declining block rate and no charge for the first 50 kW would encourage both these features and therefore these features should be eliminated from Schedule 25 as proposed above by staff.

2. Schedules 29 and 35

Q. To whom do Schedules 29 and 35 apply?

A. Schedule 29 applies to customers with needs for seasonal irrigation and drainage pumping services at secondary voltage level. Schedule 35 applies to customers with needs for seasonal irrigation and drainage pumping services at primary voltage level.

Q. What has Puget proposed for Schedules 29 and 35?

A. Puget proposes keeping these schedules, located in Exh. 570 of the general rate case filing. However, Puget has brought Schedule 29 rates more in line with other commercial schedules, particularly Schedule 25, while including the Bonneville Power Administration (BPA) credit for irrigation farmers. And, similarly, Schedule 35 is more in line with Schedule 31, which applies to primary general service.

Q. What is your view of Puget's proposal?

A. It would be preferable to see Schedules 29 and 35 eliminated in the future. With the proposed increased seasonality reflected in Schedules 25 and 31, irrigation farmers would be served well under these schedules. They would still see the lower costs in the summer. However, because there is a credit provided by the Bonneville Power Administration (BPA) for these customers, Schedules 29 and 35 cannot be eliminated immediately unless another mechanism for distributing this

credit can be found.

Q. What is your recommendation?

A. There is a rate case at BPA currently. The future of the BPA credit has yet to be decided. If the status of the BPA credit changes, then Schedules 29 and 35 would need to be reconsidered by the Commission at that time. However, until that time, I recommend that Schedules 29 and 35 be approved as filed by Puget.

3. Schedule 43

Q. To whom does Schedule 43 apply?

A. Schedule 43 is available for total-electric schools requiring a limited interruptible primary voltage service.

Q. What has Puget proposed for this tariff applicable to schools?

A. Puget has proposed freezing the tariff to current customers by not allowing new customers after the effective date of the tariff, as reflected in Exh. 570, Schedule 43.

Q. Do you agree with this proposal?

A. [~~Yes, except that the tariff should be phased out to new customers over 12 months and the language in the tariff needs to be revised.~~]

Yes, except that the grandfathering of new schools should be allowed as long as they have received an approved Energy

Conservation Report from the Washington State Energy Office by October 1, 1993 and service is connected before October 1, 1994. These requirements realistically meet the needs of affected parties. This firm cut-off date should be sufficient and no further exceptions need be made.

Q. Why do you believe the tariff should be phased out to new customers?

A. This rate cannot be justified economically for Puget's ratepayers. Schools on this rate are paying less than their cost of service. The peak load interruption required under these schedules is during a time when there is very little school load on the system. This schedule in effect causes schools to use electricity when such use is not economic.

Q. Why do you think the tariff should be phased out over 12 months instead of frozen immediately upon the effective date of the tariff, as Puget proposes?

A. The tariff needs to be phased out gradually because there are new schools that have already committed to building electrically-heated buildings and are either currently under construction or have the architectural plans drawn up. To prevent these schools from being under Schedule 43 would create economic hardship for these schools and their communities. [~~However, after 12 months, no new schools should be admitted to this schedule.~~] However, by October 1, 1994,

no new schools should be admitted to this schedule. By that time, schools involved in new construction can anticipate that this schedule will close and therefore will not plan the construction of the school buildings around the current Schedule 43.

Q. Do you have any other modifications to Puget's proposal?

A. Yes. I recommend that as well as phasing out Schedule 43, staying on this schedule should be made conditional upon doing all conservation investment recommended as cost-effective under Puget's Schedule 83 by September 30, 1996.

Q. Why do you recommend this?

A. This at least makes the use of electricity in such electrically-heated buildings more efficient and can help lessen the economic impact on these schools as their bills increase to match costs.

Q. Do you have any other recommendations on revising the language in this schedule other than adding the condition for conservation?

A. ~~Yes. I recommend that the second paragraph of Schedule 43 be changed to eliminate the requirement that the customer be all-electric.~~

~~Q. Why?~~

~~A. Removal of this condition removes the promotional nature of this tariff. Such promotion is unjustified when the price of~~

~~electricity for heat for these customers is below cost.~~

~~Q. How should the language be changed?~~

~~A. [The word "total-electric" should removed from the title of Schedule 43. In the second paragraph of Schedule 43 it should state that "This schedule is limited to any permanently located school whose water heating and/or space conditioning requirements are supplied electrically" instead of saying "... whose total water heating and space conditioning requirements are supplied electrically." (Emphasis added.) This will allow current school customers to consider whether they could change part of their heating system and possibly lower their costs while still being able to remain on the schedule for schools.]~~

Yes. I recommend that an addition be made to the second paragraph of Schedule 43. Currently, in the second paragraph, it is stated that Schedule 43 is limited to schools whose total water heating and space conditioning requirements are supplied electrically. The following sentence should be added: "Schools currently under Schedule 43 which switch some of their electric load to other fuel sources will no longer be eligible for Schedule 43 but may receive service under Schedule 31."

Q. Why?

A. The addition of the second sentence removes the promotional

nature of this tariff. Such promotion is unjustified when the price of electricity for heat for these customers is below cost. Also, allowing these customers to go on Schedule 31 if they switch some of their load to other fuel sources will provide a smooth transition from Schedule 43, in terms of rate impact.

4. Schedules 30 and 48

Q. What are Schedules 30 and 48?

A. These are two new experimental tariffs. Schedule 30 provides optional primary general service for the first 20 customers to sign up, and Schedule 48 provides optional high voltage general service for the first 20 customers to sign up.

Q. What has Puget proposed for Schedules 30 and 48?

A. Puget has proposed a marginal cost rate with the energy and demand blocks customized for each customer. (Shown on pages 46 through 48 of Exh. 8, and under Schedules 30 and 48 in Exh. 570.)

Q. Why does the company propose to customize the energy and demand blocks?

A. Puget proposes customizing the blocks (not the rates for each block) to provide a price signal to each customer based on its consumption and demand.

Q. Why are customized blocks necessary instead of having one

tailblock for the whole class?

A. The diversity of the industrial class would mean that, under the usual tariff, some customers would never reach the tailblock and see marginal costs while others would find the majority of their bill in the tailblock.

Q. Can Schedules 30 and 48 be split up like 24 to reflect costs fairly to all customers in the industrial class?

A. No. There are not enough distinct groups of customers to make this possible. It is close to a situation in which a separate schedule would be needed for every customer. The purpose of customized blocks is to achieve this under two schedules.

Q. What is your position on Puget's proposed Schedules 30 and 48?

A. Ideally, the marginal cost pricing should be mandatory to all new primary general service and high voltage general service customers. It should not be made available to existing customers at this developmental stage, nor should it be voluntary for new customers. Otherwise only those who benefit will sign up.

Q. Would it be discriminatory to restrict schedules to new customers only?

A. It seems no more discriminatory than freezing schedules to current customers, which has been done frequently.

Q. Why has Puget it made it voluntary?

A. Because Puget has never run this Schedule before, as stated on

page 48 of Exh. 8, and because it wants to experiment first to see what happens (Tr. Vol. II, page 266, line 12 through page 267, line 6.).

Q. Why isn't this reasonable?

A. Because it is very likely that only those customers who see a decrease in their bills will sign up. This will make the experiment useless and push more costs onto other ratepayers.

Q. What do you recommend?

A. As stated above, ideally Schedules 30 and 48 should be mandatory for all new primary general service and high voltage general service customers only.

5. Reactive Power

Q. What is reactive power?

A. Reactive power is the portion of "apparent power" that does no work. The other portion of apparent power is real power which produces energy or work and is measured in kilowatts. Reactive power must be supplied to most types of magnetic equipment, such as motors. It is supplied by generators or by electrostatic equipment, such as capacitors. (From "Glossary of Electric Utility Terms", Edison Electric Institute.)

Q. Please provide an example of the effect of reactive power.

A. If the lights dim when an electric motor starts, the dimming

is caused by reactive power.

Q. What impact does a customer's reactive power requirement have on the company's electric utility system?

A. As Puget witness Mr. Hoff stated, this additional requirement may require an increase in the capacity of distribution and substation transformers, distribution and transmission conductors, and generation. (Exhibit T-8, page 58, line 21 through page 59, line 3.)

Q. What has Puget proposed to address this issue?

A. In Exhibit 570, Schedule 80, Sheet No. 80-v, under point 26 "Power Factor Adjustment," Puget has included a section to charge customers an appropriate fee for their reactive power requirements. This proposal would apply to Schedules 25, 26, 29, 31, 35, and 43. (Exhibit T-8, page 59, lines 7-12.)

Q. Do you believe that Puget's proposal is reasonable?

A. Yes. I think it addresses the need to cover the cost of reactive power requirements.

SYNOPSIS

The Commission actions suggested by staff below attempt to improve the cost of service study submitted by Puget and to reasonably reflect these costs of service in rate design. Major considerations included the need to recover appropriate costs from

customers who cause them, the need to change rates gradually when the change may be large, the need to send appropriate price signals to encourage cost-effective conservation activities or other appropriate economic decisions, and the need to consider the bills of households on low incomes. Overall, the aim is to develop rates which are fair, just and reasonable, and easily understood.

RECOMMENDATIONS FOR COMMISSION ACTION

Below is a summary of Commission action as recommended by staff in this testimony. Staff proposes that the Commission require Puget Power to adjust its rate design filing in the following manner.

1. Non-generation related transmission costs should be classified in the same manner as generation related transmission costs, using the peak credit method.

2. In future rate cases the use of gas, with a partial use of oil to account for one or more unusually cold weather peaking days in a test year, should be employed in assumptions about the data for the peak credit method.

3. The basic customer charge approach should be used as proposed by Puget and endorsed by staff.

4. For the residential class, the tail block of Schedule 7 should be set at 400 kWh's. This change should be introduced gradually over the next one or two rate cases or similar proceedings to avoid rate shock to customers.

5. A residential interruptible water heat rate schedule should not be introduced at this time. The net benefit to ratepayers is minimal.

6. Hook-up fees should continue to be addressed although there is no recommendation currently.

7. The Commission could set forth its perspective on the issue of alternative rates for low income households so that interested persons would know whether alternative rates are acceptable to the Commission and under what economic and/or legal circumstances.

8. In the interest of encouraging conservation of electricity, rates should move toward reflecting marginal costs so that customers receive a proper price signal regarding their decision to use electricity.

9. For Schedule 25 (commercial customers with over 50 KW but less

than 350 KW of demand), the following should be done.

a) The basic charge should be $23.50, as proposed by Puget.

b) There should be a charge for all demand. The first 50 kW could be charged at half the rate proposed by Puget for all kW over 50 kW. Then all kW over 50 kW should be set at the rates proposed by Puget. This rate could be refined by Puget based on its analysis of billing data and revenue requirements.

c) The two energy charge blocks should have inverted block rates.

d) The size of the blocks could be altered after running a billing frequency study to determine the size of most Schedule 25 customers' bills. These results could then be used to refine the size of the blocks to decrease the number of commercial customers affected by a rate increase.

With these changes, Schedule 25 rates would discourage inefficient use of electricity and poor load factors.

10. There is a pending rate case at BPA. The future of the BPA credit to Schedules 29 and 35 has yet to be decided. If the status of the BPA credit changes, then Schedules 29 and 35 (for seasonal irrigation needs) would need to be reconsidered by the Commission at that time. However, until that time,

Schedules 29 and 35 should be approved as filed by Puget.

11. [~~Schedule 43 (for schools) should be phased out to new customers over 12 months. Staying on the schedule should be made conditional upon doing all conservation investment recommended as cost-effective under Puget's Schedule 83. The word "total" should be removed from the second paragraph in Schedule 43 and the word "and" should be replaced with "and/or" in the same paragraph.~~]

Schedule 43 (for schools) should be phased out by allowing the grandfathering of new schools as long as they have received an approved Energy Conservation Report from the Washington State Energy Office by October 1, 1993 and service is connected before October 1, 1994. This firm cut-off date should be sufficient and no further exceptions need be made beyond October 1, 1994. Staying on the schedule should be made conditional upon doing all conservation investment recommended as cost-effective under Puget's Schedule 83 by September 30, 1996. Finally, the following sentence should be added to the second paragraph of Schedule 43: "Schools currently under Schedule 43 which switch some of their electric load to other fuel sources will no longer be eligible for Schedule 43 but may receive service under Schedule 31."

12. Schedules 30 and 48 should be mandatory for all new primary general service and high voltage general service customers only.

SUMMARY, PURPOSE AND IMPACT OF MAJOR RECOMMENDATION

Overall, the cost of service study as submitted by Puget Power is reasonable, with a few minor exceptions. Staff's major concern is that non-generation related transmission costs should be classified in the same manner as generation related transmission costs, using the peak credit method. The peak credit method reflects the fact that transmission facilities are sized and operated to meet both demand and energy requirements of the utility system, and not purely demand requirements. Changing to the peak credit method for non-generation related transmission costs would result in a $3 million reduction of costs allocated to the residential class.