BEFORE THE WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

WUTC V. AVISTA CORPORATION d/b/a AVISTA UTILTIES

DOCKET NOS. UE-050482 AND UG-050483

DIRECT TESTIMONY OF JIM LAZAR (JL-1T)

ON BEHALF OF

PUBLIC COUNSEL

August 26, 2005

DIRECT TESTIMONY OF JIM LAZAR (JL-1T)
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LAZAR'S EXHIBIT LIST

Q. Please state your name, address, and occupation.

A. Jim Lazar, 1063 Capitol Way S. #202, Olympia, WA. I am a consulting economist specializing in utility rate and resource analysis.

Q. Please briefly summarize your qualifications?

A. I have been engaged in utility consulting continuously since 1982, and worked in the field sporadically prior to that time. I have appeared before this Commission on many occasions, including numerous rate-related proceedings involving Avista and it's predecessor, The Washington Water Power Company (WWP), since 1978. My other clients have included this Commission, the state Commissions of Idaho and Arizona, and numerous federal, state, and local governmental agencies. I was a witness in the Commission's generic electric rate design investigation in Cause U-78-05, and in numerous proceedings following that decision which implemented this guidance in cases involving Puget (Puget Sound Energy or Puget Sound Power and Light Company), Pacific (Pacific Power & Light or PacifiCorp), and Avista/WWP. I was also a witness in the Commission's first natural gas cost of service analysis, Cause U-86-100 (Cascade Natural Gas), and in numerous gas proceedings involving Avista/WWP, Northwest Natural Gas, Washington Natural Gas and Puget Sound Energy which followed that seminal decision.

Q. What has your role been as a consultant to the Commission?

A. I have assisted the Commission on several occasions with negotiations and analysis involving the Bonneville Power Administration and the residential and farm exchange program that the Washington-regulated electric utilities participate in. I was also retained by the Commission in 1996 to prepare a training program in utility cost allocation and rate design (the subject of this testimony) that was presented as a part of this Commission's tutorial for the newly-created regulatory commission of Kyrgyzstan. More recently, in 2003, the Commission retained me to assist in

negotiations with Pacific Power and Light Company on the subject of interstate cost allocation.

Q. On whose behalf are you appearing in this proceeding?

A. My testimony is sponsored by the Public Counsel Section, Office of the Attorney General (Public Counsel).

I. INTRODUCTION AND SUMMARY

Q. What is the purpose of your testimony?

A. I have been asked to review the electric and natural gas cost of service studies, and the electric and natural gas rate design proposals submitted by Avista Utilities, and to suggest alternatives that better meet the interest of the Company, electric and gas consumers, and the public at large.

Q. Please summarize your conclusions in this proceeding.

A. First, with respect to electric rates:

- The Company's electric cost of service study should be rejected as inconsistent with long-established principles adopted by this Commission.
- Any allowed rate increase should be spread between the classes in a manner that applies a below-average increase to small and large general-service customers, and the balance on an equal percentage basis to the remaining classes of customers.
- Any allowed residential rate increase should be applied to the second and third rate blocks, to bring these closer in line with incremental costs of providing utility service.
- In the small general service class, Schedule 11, any allowed increase should be applied to usage levels below 4,000 kWh per month only. No increase to the customer charge or the end-block rate should be imposed.
- I take no position with respect to the design of rates for larger general-service customers.

Second, with respect to natural gas rates:

- The Company's natural gas rate spread proposal should be accepted.
- Any allowed increase in the Schedule 101 rates should be applied to the usage rate per therm. No increase in the monthly customer charge should be imposed.

How is your testimony organized?

A. My testimony has the following elements:

- Introduction to Cost of Service Principles: Here I discuss what cost of service studies are, and how regulatory commissions use these studies. I also recount some of the history of cost of service decisions in Washington.

- Electric Cost of Service Results: I discuss the results of the Company's cost of service study and an alternative study I requested that they prepare using different assumptions.

- Electric Rate Spread Proposal: This section proposes a specific allocation of any approved revenue increase between customer classes.

- Electric Rate Design Principles: This section discusses the underlying principles of electric rate design, and recounts some important WUTC decisions that guide rate design.

- Residential Rate Design: I propose specific changes to residential rates to recover the allowed revenue increase.

- Small General Service Rate Design: I propose a specific approach to small commercial rate design to better align rates with costs.

- Natural Gas Ratemaking Principles: I discuss the differences between electric and gas ratemaking, and how the Commission should recognize these differences.

- Natural Gas Cost of Service Results: I briefly examine the Company's cost of service study, and note specific changes that should be explored in future studies.

- Natural Gas Rate Spread: I propose a specific apportionment of any allowed increase between customer classes.

- Natural Gas Rate Design: I propose a specific rate design for Schedule 101 to recover the revenue responsibility assigned to this residential and small commercial class of customers.

Q. What exhibits are you presenting in this proceeding?

A. I am sponsoring the following exhibits:

JL-2 Qualifications and Experience of Jim Lazar
JL-3 History of Cost of Service Analysis in Washington
JL-4 Electric Cost of Service Results

JL-5 Electric Rate Spread Between Classes
JL-6 Residential Electric Rate Design
JL-7 Small General Service Electric Rate Design
JL-8 Natural Gas Cost of Service Results
JL-9 Natural Gas Rate Spread Between Classes
JL-10 Residential/Small General Service Natural Gas Rate Design
JL-11 Glossary of Utility Terminology

II. INTRODUCTION TO COST OF SERVICE PRINCIPLES

Q. Please provide a basic introduction to the principles of allocation of utility costs between customer classes.

A. Cost of service studies divide the costs that a utility incurs between classes based on the characteristics of the costs, and the characteristics of the customer classes. There are three generic "families" of cost allocation approaches, and numerous variations on methodologies within each family. The types of studies include:

> **Embedded Cost of Service Studies:** These begin with the accounting costs used to set the revenue requirement, group them by function, classify them between those that are "customer-related," those that are "demand-related" and those that are "energy-related" and then allocate these costs between classes based on the number of customers, level of energy usage, and peak demand of each class.[1] Once the cost of serving each class is measured, the Commission then applies judgment in moving from current rates toward the results of the study. This Commission (and many others) have traditionally used this general approach.
>
> **Marginal Cost of Service Studies:** These studies ignore the actual costs contributing to the revenue requirement in determining class cost responsibility, instead focusing on the cost of new resources or "marginal costs" to determine the starting point for cost allocation. The marginal cost of extending service to a new customer is defined as the "marginal customer cost" and similarly the cost of new resources to meet peak demand and energy needs are defined as marginal demand and energy costs. The Commission then applies a proportionate or subjective methodology to set rates that reflect the marginal cost relationships. The

[1] "Customer" related costs are those that vary with the number of customers, such as meters and meter reading and billing costs. "Demand-related" costs are those that vary with the peak demand of customers, such as the incremental cost of installing larger wires and transformers. "Energy-related" costs are those that are related to the amount of energy provided, including fuel costs that vary directly with usage, capital costs that are related to avoiding fuel costs, and basic infrastructure costs where there would likely be no infrastructure in the absence of significant energy requirements.

Oregon Commission (and some others) have historically used this general approach.

Incremental Cost of Service Studies: These studies begin with a "baseline" set of utility resources and a baseline cost responsibility for each customer class. The cost of new resources needed since the baseline period is then apportioned among the classes on a marginal cost basis. Any remaining difference is then apportioned based on the subtotal of "baseline" costs plus "growth" costs. This approach has been used primarily where different customer classes have grown at significantly different rates, and the Commission desires to assign the cost (or benefit) of growth to the class with the fastest growth. Seattle used this approach to assign the costs of growth to the commercial sector for many years, and other Commissions have used this approach to set "economic development" rates to attract new businesses when utilities had excess capacity.

Q. Are there different methods that can be used within each "family" of cost of service approaches?

A. Yes. The specific assumptions used to define, classify, and allocate costs are extremely contentious in some proceedings, and the results can vary dramatically depending on the assumptions used. This Commission has consistently rejected certain methods, and consistently approved other methods. I have provided a history of cost of service analysis in Washington as Exhibit ___ (JL-3). Many of the decisions that have guided cost studies in Washington were made in contested proceedings during the 1980's, following a generic investigation the Commission conducted from 1978 – 1980 in Cause U-78-05.

Q. What is the ultimate result of any type of a cost of service study?

A. The "bottom line" of any cost of service study is a comparison of the revenue at current rates for each class to the revenue requirement for each class. The ratio of these two is referred to as the "Revenue to Cost Ratio" or sometimes the "Parity Ratio." For example, based on the Company's cost of service study, the pumping class is currently paying 102% of the revenue required to produce the system average rate of return, or "102% of parity." Table 1 below provides the revenue to cost ratios from Avista's study.

What do Commissions do with the results of cost of service studies?

A. Commissions generally use the results of cost of service studies as a guide to setting rates. They seldom mechanically follow the results, instead applying judgment to the results, taking into consideration such factors as customer acceptance, gradualism, and economic conditions in the utility service area in addition to cost data. This Commission has consistently stated that cost is only one consideration in setting rates, and I believe that is appropriate.

From the time it first began requiring such studies, the Commission has refrained from mechanical application of the results. In the generic proceeding I discussed earlier, the Commission stated:

> *"We shall avoid the mechanical application of the results of a given study and instead, as required by law, exercise our own considered judgment based upon the evidence in each proceeding to establish just and reasonable rates."*
>
> Cause U-78-05, Order, p. 6.

Q. What are the factors that enter into a fair rate design?

A. Professor J. Bonbright, author of the seminal treatise Principles of Public Utility Rates (1961), identified the following eight criteria as important to the design of utility rates; I believe they are just as appropriate today:

- Practical attributes of simplicity, understandability, public acceptability, and feasibility of application;
- Freedom from controversy in interpretation;
- Effectiveness of yielding total revenue requirement under the fair return standard;
- Stability of revenue;
- Stability of rate structure;
- Fairness in apportionment of total cost of service among different customers;
- Avoidance of undue discrimination;
- Efficiency in discouraging wasteful use while promoting justified use.

Q. Which of these are most important?

A. Different of these are important to different parties. The Company will be more concerned with the feasibility of application and the effectiveness at yielding the revenue requirement; the public will be more concerned with understandability, acceptability, and efficiency; the Commission may be most concerned with freedom from controversy.

Q. In general, what has been the thrust of this Commission's rate design history?

A. I believe that this Commission has been progressive in adopting costing principles that recognize *why* utilities incur costs, not just the engineering design principles that dictate *how* things are constructed. For example, the decision to build more expensive baseload coal-fired power plants was made to avoid exposure to higher costs for oil and gas, and the Commission has approved a methodology to recognize these additional fixed costs in the same way that the fuel costs would be recognized in rates.[2] The Commission has also stressed rate designs such as inverted residential rates that encourage energy conservation and price incremental usage in relationship to incremental cost.[3] This approach has resulted in huge energy cost savings for the state over the past twenty-five years, by encouraging efficient fuel choice (e.g. gas appliances over electric water heaters and furnaces), and by encouraging investment in energy efficiency measures where they are cheaper than new energy supply resources. My testimony recommends a continuation of these policies.

III. ELECTRIC COST OF SERVICE RESULTS

Q. Please summarize the Company's cost of service results?

[2] The "peak credit" method classifies the majority of the cost of coal-fired power plants as "energy-related" in recognition that the alternative would be to either pay for coal transportation or for higher cost fuel, either of which would be energy-related costs.

[3] Inverted rates are those where the price per unit for higher levels of usage is higher than the rate for smaller levels of usage. All three of the Washington-regulated investor-owned utilities have inverted residential electric rates.

A. The table below provides the revenue to cost ratio from the Company's cost of service study, Ms. Knox's Exhibit TLK-3.

Table 1. Company Cost of Service Study, Revenue: Cost Ratio

Class	Schedule	Revenue to Cost Ratio
Residential	1	89%
Small General Service	11	127%
Large General Service	21	116%
Extra Large General Service	25	91%
Pumping	Various	102%
Lighting	Various	104%

As explained above, these figures represent the ratio of revenues determined from the class at current rates to cost of providing service, at the system average rate of return. For example, the Company's ratio purports to show that the residential class pays only 89% of its cost of service.

Q. In your opinion, does the Company's study accurately convey the cost of serving customers?

A. No. The Company's study contains a serious error in methodology which makes the results unreliable as an indicator of relative cost.

Q. Please describe that error.

A. Ms. Knox used the ratio of the cost of specified "peaking" power plants to the cost of "baseload" power plants to classify the Company's production costs between "demand-related" costs and "energy-related" costs. This general method, called the "Peak Credit" method, was approved by the Commission in 1981. However, it has been significantly refined since that time. The Company's analysis does not reflect the refinements, and further, uses flawed data. The result is that too high a percentage of these costs are classified as "demand-related."

Q. What are the refinements that the Commission has approved?

A. In 1992, after an extended process involving Puget Sound Power and Light Company, the Commission refined the Peak Credit method to incorporate the following elements:

- The cost of "peaking capacity" was defined as the midpoint between a short-term capacity contract (the "low" estimate) and one-half of the cost of a peaking power plant (the "high" estimate). This reflected the fact that if a utility needed only peaking power, it might contract to buy surplus peaking capacity from a California utility that has a different peaking season, for example. It also reflected the fact that if a utility actually built a peaking plant, it could use that plant for other purposes, including backing up the hydro system in a drought, or selling peaking capacity out of region during the off-season.

- The Peak Credit ratio was computed by dividing the total cost (fixed and variable costs) of peaking resources by the total cost (fixed and variable) of baseload resources.

- The period over which peaking costs were to be assigned was the 200 highest hours of system demand.

WUTC v. PSE, Ninth Supplemental Order on Rate Design Issues, p. 8, Docket No. UE-920499 (August 17, 1993).

Q. Did Avista incorporate these refinements in its study?

A. No, it did not.

Q. Why do you stay that "too high" a percentage were treated as "demand-related" costs?

A. First, Ms. Knox used extremely expensive power plants as her "peaking" units. These include the Kettle Falls and Boulder Park combustion turbines, which had costs of $1,371/kilowatt and $1,305 per kilowatt, as set forth in her workpaper TLK-59. Power plants that are this expensive cannot and should not be acquired as "peaking" units. Typical peaking units include the incremental cost of adding "duct-firing" onto a combined-cycle unit like Coyote Springs. These options have costs in the $300 - $500 per kilowatt range. Those are the costs that the Company experienced for the

Northeast and Rathdrum combustion turbine units. In work for it's current Integrated Resource Plan, the Company estimated the cost of Natural Gas peaking units at $420 per kiloWatt.[4]

Second, Ms. Knox did not take only one-half of the cost, but rather used the entire cost of these units, failing to recognize that ownership of peaking power plants confers benefits outside of the system peak hours.

Third, Ms. Knox did not incorporate the cost of peaking fuel in the peaking calculation, nor baseload fuel in the baseload calculations. The Commission specified those refinements in its 9th Supplemental Order in Docket UE-920499 at page 9.

Q. Did you ask the Company to re-run the study with the refinements from the 1992 proceeding incorporated?

A. I attempted to do so, but the Company did not collect the data needed to prepare this type of analysis – it does not have 200-hour peak usage by customer class.

Q. What was the Company able to provide?

A. The Company did provide a revision of the study using a lower percentage of production and transmission costs classified as demand-related, but without the 200-hour data. Those results provide an indication of how a revised study would change the results, but still fall short of a reliable study. However, the changes between the Company study and this study provide an indication of how cost responsibilities would be changed with a more accurate study.

Q. Please describe the results of the alternative study, compared with the Company's study.

A. The table below compares the revenue to cost ratios for the two studies.

[4] Supply Side Options, 2005 Integrated Resource Plan, February 17, 2004, provided in response to PC Data Request No. 215.

Table 2. Comparison of Company Study and Alternative Study

Class	Company Study Revenue:Cost Ratio	Alternative Study Revenue:Cost Ratio
Residential (Sched 1)	89%	90%
Small General Service (Sched 11)	127%	127%
Large General Service (Sched 21)	116%	115%
Extra Large General Service (Sched 25)	91%	90%
Pumping	102%	100%
Lighting	104%	103%

Q. The results of the studies seem very close. What does this indicate?

A. There are two clear indications from this. The first is that the lack of 200-hour peaking data is an important element of the study, and the Company could not provide that. The second is that without this data, the study is relatively insensitive to the errors that Ms. Knox made.

IV. ELECTRIC RATE SPREAD

Q. What has the Commission historically done with results of this type in determining how a rate increase should be spread between the classes?

A. The Commission had taken different approaches at different times. Generally, when customer classes fall within a "range of reasonableness" of parity across a range of different cost study methodologies, the Commission has ordered a system average increase for those classes. In other words, a uniform percentage increase is ordered, which leaves the relative rate relationships the same. When a class is significantly outside the range of reasonableness, the Commission has sometimes ordered a greater or lesser than average increase as appropriate.

Q. What is your recommendation, based on these results?

A. Given the results above, most of the classes fall within a range of reasonableness of 90% to 110% of parity. I recommend that within this range, customers get the system

average increase. The small and large general service classes are significantly outside the range of reasonableness. Based on the sensitivity analysis in the alternative study the Company performed at my request, I do not believe that the refinements to the cost study I described above would change that result. Therefore I recommend that these classes receive less than the system average increase.

Q. **Do you have a specific recommendation as to how the rate increase in this proceeding should be spread between the classes?**

A. Yes. My Exhibit JL-5 presents this information. That exhibit applies 75% of the average increase to Schedule 11 (small general service), 85% of the average increase to Schedule 21 (large general service), and the residual increase to all other classes – those that fall within the 90% - 110% range of reasonableness, on a uniform percentage basis.

Q. How would this translate into rate adjustments by class?

A. That is, of course, dependent on the ultimate revenue requirement approved by the Commission. Public Counsel's testimony addresses a subset of adjustments to the Company's proposed results of operations, and concludes that an increase of $11.7 million is appropriate. This does not include significant power cost modeling issues which we understand will be addressed by ICNU. Therefore I have selected a hypothetical revenue level to illustrate the outcome of my analysis, which is one-half of the amount that is presented in Mr. Dittmer's Exhibit __ JRD-2 Schedule A. This amounts to a hypothetical increase of $5.87 million. The spread of that level of

increase is derived in my Exhibit ___(JL-5), and summarized below:

Table 3. Summary of Proposed Electric Rate Increase to Base Tariffs Based on Hypothetical Allowance = 50% of Dittmer Calculation Assuming Significant ICNU Adjustments Included

Class	Current Revenue	Proposed Increase	Increase %
Residential	$122,064,000	$2,813,000	2.3%
Small Gen Svc	$29,421,000	$452,000	1.5%
Large Gen Svc	$89,467,000	$1,559,000	1.7%
X Large Gen Svc	$34,839,000	$803,000	2.3%
Pumping	$6,068,000	$140,000	2.3%
Lighting	$4,291,000	$99,000	2.3%
Total	$286,150,000	$5,867,000	2.1%

V. ELECTRIC RATE DESIGN PRINCIPLES

Q. What are the most important principles in designing residential electric rates?

A. Nearly all analysts agree that electric rates should reflect system costs, but the manner in which this is done can lead to very different results. Some advocate averaging all resources together, charging an average price. Some advocate collecting fixed costs for power plants and distribution facilities through fixed charges, and only variable costs in the rate per unit.

This Commission has adopted a very progressive set of principles. In the 1978 generic investigation, this Commission adopted the principle of "baseline rates" in which every customer would be given their share of hydro power available to the utility at a hydro-related cost, and allowed to buy additional power at the cost of incremental power supplies. This led to the establishment of "inverted block" residential rates. In an "inverted block" design, the initial amount of usage (e.g. 600 kWh) is charged at a certain rate, and the next block (e.g. the next 700 kWh) is charged a higher rate.

Q. Does Avista have inverted block rates for residential customers?

A. Yes, they have a three-tiered rate. This reflects both the fact that the Company's supply of low-cost hydropower is limited, and the fact that the peak-oriented requirements of space conditioning usage is more expensive to serve.

Q. How is this relevant to this particular proceeding?

A. In this proceeding, the rate increase requested by Avista is explained entirely by increasing costs of thermal power generating facilities. All other costs, taken as a group, have remained relatively stable or declined. Therefore it is appropriate to reflect any increase in rates in this proceeding in the rate blocks associated with thermal power.

This is particularly appropriate given the high incremental cost of power to meet upper block needs on the Avista system. The upper blocks of residential usage primarily serve electric water heat and electric space conditioning; customers meet their basic lights and appliances needs in the first blocks (and those who have natural gas service often do not exceed the first block), and these can be served primarily with lower-cost hydropower.

Q. Has the Commission previously recognized the relationship between higher-cost power from new resources and the end-block rates for electric utilities?

A. Yes. In the generic rate investigation, Cause U-78-05, the Commission specifically adopted the principle that rates should reflect costs, and further, that "baseline" principles should be used in setting rates. (U-78-05, Order, p. 6; p. 21)

In several proceedings after that time, the Commission gradually widened the difference in rate blocks, so as to avoid extreme hardship for those customers with high usage levels. Avista responded, in part, by offering customers utility funded financial assistance to shift from electric space and water heating to natural gas – an efficient choice, since even the best natural gas power plants are only about 50%

efficient, while typical gas appliances are 60% - 90% efficient at converting gas into useful heating energy. In Puget's 1992 proceeding, the Company proposed a sharp reduction in the rate block inversion, seeking to retain electric water heating load. The Commission rejected this, stating:

> "The break between the two blocks should occur at 600 kWh per month, as proposed by Public Counsel. The level of 600 kWh will best reflect the actual cost of new resources in the end block, so customers can make economically efficient decisions at the margin. It will also equitably allocate the limited amount of low-cost power on Puget's system." [5]

More recently, Pacific Power has agreed in two rate proceedings to more steeply invert their residential rates.[6]

Q. Can you compare the residential rates of the three Washington electric utilities regulated by the Commission?

A. Yes. The table below shows the rate designs (without surcharges or credits) for each of the Washington-regulated utilities:

Table 4. Comparison of Residential Electric Rates, Washington IOUs

Residential Rates of Washington-Regulated Utilities Not including PCA or other Surcharge/Credits								
		Puget	Ratio		Pacific	Ratio	Avista	Ratio
Basic Charge		$ 5.75			$ 4.75		$ 5.00	
First 600		$0.06933			$0.04285		$0.04522	
Next 700		$0.08497	123%		$0.06766	158%	$0.05261	116%
Over 1300		$0.08497	123%		$0.06766	158%	$0.06167	136%
Weighted Average:		$0.08497	123%		$0.06766	158%	0.055901	1.24

For Puget and Pacific, which have two-block rates, a single ratio is shown; for Avista, which has a three-block rate, I have also calculated a weighted average of the second

[5] Docket UE-920499, 11th Supp. Order, p. 97.
[6] Pacific Power agreed to more steeply inverted rates as part of a settlement stipulation adopted by the Commission in Docket No. UE-991832. *WUTC v. PacifiCorp d/b/a Pacific Power & Light*, Third Supplemental Order (August 9, 2000). In addition, in the company's pending general rate case (UE-050684), Pacific Power has proposed to further invert residential rates (see esp. testimony of William R. Griffith).

and third block rates to show comparability to the block ratios of Puget and Pacific. This shows that Avista has a much less steeply inverted block rate than Pacific, and a much lower end-block rate that Puget. It also has a customer charge that is in-between the two. All of these are based on tariff rates, without surcharges or surcredits.

Q. What is your estimate of the cost of power to serve incremental needs, those reflected in the tail block of Avista's rate design?

A. This is an important, but somewhat complex calculation. First, one should look at the cost of new power resources available to Avista. Second, one needs to look at the "shape" of space conditioning usage, which is highly peak-oriented. Finally, one needs to factor in the cost of distribution facilities needed to deliver this highly peak-oriented power. Avista has not been able to provide data on its system that is really adequate to do this precisely for the residential class, but has done so for the small general service class, which has similar distribution voltages and customer size. Based on that, I estimated the cost of each rate block using the average cost of power on the Avista system (not the incremental cost of new resources), and the average load factor for each block of usage. The table below shows the result of that analysis:

Table 5. Estimated Cost of Avista's Rate Blocks

Residential Block Unit Costs						
		Load Factor	Demand Cost/kWh	Energy Cost / kWh	Total Cost / kWh	Ratio
First 600		60%	$ 0.0163	$ 0.0240	$ 0.04032	
Next 700		40%	$ 0.0245	$ 0.0240	$ 0.04848	1.20
Over 1,300		20%	$ 0.0489	$ 0.0240	$ 0.07293	1.81

Q. Is the estimate above of 7.3¢/kWh your estimate of the proper target rates for the upper blocks of usage?

A. No, this is lower than the target rates I would set for the upper blocks. The reason for

this is that the calculation above is prepared from the Company's cost of service study, which in turn averages hydropower and thermal resources together. It is more appropriate to look at the cost of serving these blocks with thermal, rather than hydro resources. I estimate that this would add an additional $.01 - $.02 / kWh to the upper-block rates. The table below shows the resulting block ratios if these types of adjustments are incorporated:

Table 6. Revised Estimated Cost of Avista's Rate Blocks

Residential Block Unit Costs Adjusted for Thermal Resources for Upper Blocks						
		Average Cost from COS Study	$.01/kWh Thermal adder	Ratio	$.02/kWh Thermal Adder	Ratio
First 600		$ 0.04032	$ 0.0403		$ 0.04032	
Next 700		$ 0.04848	$ 0.0585	1.45	$ 0.06848	1.70
Over 1,300		$ 0.07293	$ 0.0829	2.06	$ 0.09293	2.30

What the table above shows is that the end-block rate should be approximately two-times the initial block rate in order to recover both the peak-oriented and thermal-power costs associated with serving these end blocks.

Q. How will rate designs of this type affect low-income households?

A. Most low income households use below-average amounts of power. The Company's own Integrated Resource Plan analysis shows that there is a strong correlation between income and energy usage.[7] They will generally benefit from more steeply inverted rate designs. Some low-income households use large amounts of power. These higher volume users will benefit from the low income weatherization program that the Company offers, and the federal LIHEAP program as well as Avista's LIRAP program.

[7] Page 1-8 of the Company's Electric Sales Forecast chapter of the draft 2005 IRP indicates income elasticity of +.75, meaning that a 1% increase in income is expected to result in a 0.75% increase in electricity consumption. (Provided in Avista's Response to PC Data Request No. 210).

VI. RESIDENTIAL RATE DESIGN PROPOSAL

Q. What specific changes are you recommending for the residential rate design?

A. I am recommending that the rate for the basic charge and the first block of usage remain unchanged. One-half of the residential share of the rate increase should be assigned to the second block, and one-half to the third block. Because usage in the second block is much larger, this results in a larger increase to the end-block rate. The table below shows the current and proposed base rates, based upon the revenue requirement assumption described above, based on Mr. Dittmer's testimony and the expected ICNU adjustments to power supply costs.

Table 7. Residential Rate Design Proposal

Element		Current Base	Company-Proposed Base	Public Counsel Proposed Base	Company Proposed Increase	Public Counsel Proposed Increase
Basic Charge		$ 5.00	$ 5.50	$ 5.00	10%	0%
First 600		$ 0.04522	$ 0.05264	$ 0.04522	16%	0%
Next 700		$ 0.05261	$ 0.06003	$ 0.05474	14%	4%
Over 1,300		$ 0.06167	$ 0.06909	$ 0.06541	12%	6%

These proposed rates will be revised at the time of the rebuttal testimony to incorporate changes to the revenue requirement that Public Counsel believes appropriate, based on the evidence filed by other parties.

Q. Does this rate design fully implement the rate design principles you described above?

A. It moves toward, but does not reach the target 2:1 ratio between the end-block and first block that I described in the previous section.

Q. You have proposed no increase to the monthly basic charge. Why is that?

A. There are several reasons. First and foremost, from the perspective of efficient allocation of resources, it is more important to reflect a higher end-block rate, so that

incremental prices are closer to incremental costs. Second, the Company has not justified the higher customer charge it proposed. My Exhibit ___ (JL-6) includes a calculation of a cost-based customer charge, and shows that a decrease, not an increase, is more appropriate. This is a different result from the Company's analysis primarily because of the different cost of capital that Public Counsel recommends. Finally, Avista's proposed rate increase is driven by thermal power costs, not by meter reading and billing costs. Power costs are proportionate to usage, are therefore appropriately recovered in usage rates, not in the basic service rate.

VII. SMALL GENERAL SERVICE RATE DESIGN

Q. What is the principle issue you have identified with small general service rate design?

A. The small general service class consists of small business customers, including retail, restaurant, small offices, and other non-residential buildings typically smaller than 10,000 square feet in size. The Company's current rate design is characterized by an accidental feature, in which larger customers in this class pay higher rates than smaller customers. Unlike the residential class, where larger users exceed their hydro baseline, have "peakier" usage patterns, and need to pay for thermal resources, there is no similar "baseline" principle for general service customers. The usage of these customers is not homogenous enough to apply baseline allocations to.

Q. How does this accidental rate design feature work?

A. Customers using less than 20 kilowatts of demand pay a customer charge and a flat energy charge. Those using more than 20 kilowatts of demand *also* pay a demand charge. This is true regardless of load shape – larger customers pay more per kilowatt-hour than smaller ones, even if their usage patterns are otherwise identical with respect to season and time of day.

Q. How did this come about?

A. Prior to 1980, the Company had a two-block rate design for this class, so that when the demand charge "kicked in" a reduction in the energy charge offset this increase. That was eliminated in the rates filed after Cause U-80-13. For the past 25 years, the Company's general service rates have been unfair and illogical. While inverted residential rates are sound and cost-based, the same is not true for general service rates.

Q. Have you discussed this with the Company and Commission Staff?

A. Yes. The Company has agreed this should be corrected, and Staff has also indicated agreement. The Company has corrected this problem in its Idaho rates, but did not file to move towards correcting the problem here in Washington.

Q. What is your proposed approach to solving this problem?

A. The rate increase assigned to Schedule 11 should be applied only to the rate for the first 3,650 kilowatt-hours. This is approximately the amount used in conjunction with the first 20 kilowatts of demand. The Company used 3,650 kWh in Idaho as a break point in its small general service rate, and that is a reasonable approximation of the energy usage associated with 20 kilowatts of demand.

Q. Does your proposed rate design completely solve the problem?

A. No. It is a first step. This rate increase is modest in size, particularly for this class of customers. By applying all of the increase to the initial block, the level of inversion caused by the demand charge will be reduced. Over a period of years, applying this concept will eventually lead to a rate that is functionally flat, and does not penalize large users inappropriately. When the initial block rate is approximately 1.75¢ higher than the second block, the rate will be functionally flat.

Q. What if the Commission grants a larger increase than you are proposing? How would such a larger increase be most appropriately reflected in rates?

A. The first block should be increased by at least two-times the increase to the existing rate for usage in excess of 3,650 kWh. In this manner, all customers would see a rate increase, but we would gradually move toward a more fair rate for all customers.

Q. Would it be possible to eliminate the accidental inverted rate in one step?

A. Yes, it would be possible, but doing so would result in immediate rate decreases for larger customers. One principle of rate making is that no customer should get a decrease at the time of a general rate increase. This is an issue of "perceptions of equity and fairness" among customers, and failure to respect this can lead to considerable consumer discontent. Applying the increase in the manner I have proposed recognizes this principle.

Q. What is the effect of your proposal on the Schedule 11 rate?

A. The current and proposed base rate is shown below; these are exclusive of surcharges and credits.

Table 8. Current and Proposed Schedule 11 Rates

	Current Rate	Company-Proposed Rate	Public Counsel Proposed Rate
Customer Charge	$ 5.75	$ 6.00	$ 5.75
First 3,650 kWh	$ 0.07300	$ 0.07974	$ 0.07442
Over 3,650 kWh	$ 0.07300	$ 0.07974	$ 0.07300
			$ -
Excess Demand	$ 3.50	$ 3.50	$ 3.50

Q. Please summarize your recommendation with respect to the small general service rate.

A. I recommend that any allowed increase up to 5% be applied only to the first block of energy. If an increase in excess of 5% is permitted, it should be applied predominantly to the first block.

VIII. NATURAL GAS RATEMAKING PRINCIPLES

Q. Are the principles for rate making for natural gas utilities subject to some fundamental differences compared to those for electric service?

A. Yes. Electricity is a necessity in the 21st Century, and modern households will essentially all be connected to the electric utility. Natural gas service is discretionary – there is nothing that natural gas can "do" for a household that cannot be served with another fuel. Therefore natural gas rates generally are designed to attract profitable business, even if this means deviating from some more basic cost-based principles.

Q. How does this manifest itself in natural gas cost of service and rate design work?

A. Generally, a larger portion of the infrastructure costs of the gas system are treated as volumetric, or more "commodity-related" than in the electric system. For example, while the principles the Commission has adopted for cost allocation of electric distribution facilities (poles, wires, and transformers) look primarily at the peak demand for electricity for which those facilities are engineered, the equivalent facilities on a gas distribution system (pipes and regulators) are treated substantially as commodity-related.

Q. Why is this the case?

A. The decision to build a gas system is based on the expected annual sales volumes. If there is enough business to justify building the system, the utility will extend service. Many communities in counties served by Avista do not have any gas distribution service, and most rural areas do not have gas service. This is because the volume of business (commodity) is insufficient to pay for the infrastructure. It is not a peak-demand criteria, because it is relatively easy to serve peak demands for gas with propane service. An example of this is ski cabins in the mountains, where the annual usage is low, but the peak usage may be high. It is only cost-effective to install natural gas distribution systems where the total annual volume is high. As a result,

we do gas cost allocation studies differently.

Q. What is the most important difference in how this affects the utility business plan?

A. If the rates for natural gas are set with the fixed monthly charge too high, small-use customers in areas served by the distribution pipes will choose not to buy gas service. A good example is multi-family housing, where the use per customer may be very low. If a gas utility front-loads the costs, they risk alienating a very profitable group of customers who are very low-cost to serve, due to their proximity to each other.

Q. Does Avista recognize these principles in it's policies relating to the expansion of natural gas service?

A. Yes. Avista's Schedule 151 provides that the Company will invest up to three times the expected annual revenue to connect a new customer. If a gas line extension costs more than this, the customer must pay the difference. Therefore a customer using twice as much gas as an average customer (e.g., one with a swimming pool heated by gas) will receive a larger line extension allowance, and one using half as much gas (e.g., a multifamily customer with low heating usage) will receive a smaller line extension allowance. The line extension allowance includes the service pipe connecting the house to the distribution main under the street.

Q. Is this fundamentally different from the way the electric line extension tariff operates?

A. Yes. In the electric line extension tariff, Schedule 51, the amount of line extension allowance is not tied to the usage levels of customers. A uniform allowance applies, regardless of whether the customer uses electric heat or gas heat, and independent of their expected electricity consumption.

Q. How does this affect the assumptions in the cost of service study?

A. Because the only reason for building a gas distribution system is to provide

substantial quantities of the gas commodity, more of the cost categories are treated as commodity-related than in an electric cost study. The table below compares the basic infrastructure of gas and electric utilities, and how a cost of service study assumption might differ between them.

Table 9. Comparison of Electric and Gas Infrastructure Cost Allocation

Type of Facility Electric Utility	Equivalent Facility Gas Utility	Allocation Basis Electric Utility	Allocation Basis Gas Utility
Distribution Line	Distribution Pipe	100% Non-Coincident Demand	50% Demand, 50% Commodity
Line Transformer	Pressure Regulator	100% Non-Coincident Demand	50% Demand, 50% Commodity

Q. Was there a similar "generic" proceeding to establish natural gas costing principles as there was for the electric utilities?

A. No. The Commission has addressed gas costing methods case-by-case, creating a set of precedents that have been generally observed by the parties to this day. The primary proceedings were a Cascade proceeding in 1986 (U-86-100), a WWP proceeding in 1990 (UG-901459), and a Washington Natural Gas proceeding in 1994 (UG-940814). These are all discussed in my Exhibit ___ JL-3.

Q. Does the Company's cost study follow the principles that the Commission has previously adopted?

A. Generally, yes. However, as discussed above, the Company's line extension policy specifically includes the service pipe connection as a part of the line extension calculation, but the Company's cost of service study treats this as a customer-related cost, independent of any usage consideration. In my opinion this is a mismatch of cost causation (small-use customers must pay for the service pipe installation to receive service) and cost allocation (they are allocated these costs a second time through the cost of service study, even though they may have paid for it in a customer

contribution in aid of construction).

IX. NATURAL GAS COST OF SERVICE RESULTS

Q. Please describe the summary results of the Company's natural gas cost of service study.

A. The table below shows the results of the Company's study, expressed on a revenue to cost ratio basis, both including and excluding gas costs. In the case of the transportation customers, I have added in gas cost at the same cost as that assigned to the interruptible sales customers; it is impossible to know what these customers actually paid for natural gas in the unregulated market. I have done this only to provide a consistent picture of the relative equity of current rates.

Table 10. Avista's Gas Cost of Service Study (Revenue: Cost Ratio)

Class			Small	Medium	Large	Interruptible	Transport
Schedule			101	111	121	131	146
Revenue:Cost Ratio Without Gas			99%	105%	105%	143%	105%
Revenue:Cost Ratio With Gas			100%	101%	101%	104%	100%

Q. Have you re-run the Company's cost of service analysis at the Public Counsel revenue requirement, or incorporating the changes that you have identified to be appropriate?

A. Yes. I asked the Company to re-run the study treating the service pipe investment in a manner similar to the way these costs are treated in the line extension tariff.

Q. Does this have a significant effect on the proposed rate spread or rate design?

A. No. Because the Public Counsel revenue requirement for gas is so close to zero, I determined it would not be productive to do so. The Company study shows that all classes are close to parity. With changed assumptions, a different group of customers is slightly above and below parity. However, all classes still fall within a range of

reasonableness that would result in a uniform rate adjustment.

Q. How do the results of the two studies compare?

A. The table below compares the results of the study submitted by Avista, both with an without gas costs, and that prepared at my request.

Table 11: Avista and Public Counsel Cost of Service Results

Class	Residential	Medium GS	Large GS	Interruptible	Transport	Contracts
Schedule	**101**	**111**	**121**	**131**	**146**	**148**
Avista Study						
Excluding Gas Costs	99%	105%	105%	143%	105%	
Including Gas Costs	99.6%	100.9%	100.6%	104.2%	100.4%	
Public Counsel Study						
Excluding Gas Costs	107%	77%	75%	154%	106%	114%
Including Gas Costs	102%	95%	96%	105%	100%	101%

Q. What do these results indicate?

A. The results indicate that, including gas costs, all classes are very close to parity regardless of which study is used. If one excludes gas costs, the decision of which study to rely on is more important, with the Public Counsel study showing that the general service customers are underpaying significantly.

X. GAS RATE SPREAD RECOMMENDATION

Q. What is your recommendation with respect to gas rate spread?

A. I recommend that all customers receive a uniform percentage adjustment to margin.

Q. How does this differ from the Company's recommendation?

A. The Company has proposed widely varying rate adjustments by class, mechanically following the results of their cost study. It has even proposed a rate decrease for the interruptible customers.

Q. Why is the Company proposal inappropriate?

A. First, the Company's classes are all very close to parity. The accuracy of a cost of

service study is not so perfect that it is possible to discern minute differences. That is why I normally recommend that when classes are within a 90% - 110% range of parity (including gas costs), that a uniform percentage rate adjustment be applied. Second, in general I believe it is inappropriate to implement a rate reduction for one class in the context of an overall rate increase; this violates the "perceptions of equity and fairness" ratemaking principle I have discussed earlier.

Q. What has the Commission's policy been in the past on mechanical application of cost of service study results?

A. In the first natural gas cost of service proceeding, Cause U-86-100, the Commission determined that the large-volume industrial customers were paying far less than an equitable share of revenue, but based upon the economic conditions facing those customers, elected to *not* move rates toward cost for them, stating:

> *"As the Commission has stated in numerous orders relating to the electric industry, results of a properly-performed cost of service study will be only one factor considered by the Commission in determining the appropriate spread of rates among customer classes. The Commission has never mechanically applied cost of service study results in making rate spread decisions."*
>
> *"Other factors which the Commission has historically considered include acceptability of rate design to customers, elasticities of demand (the variation of demand when prices change), perceptions of equity and fairness, rate stability over time, and overall economic circumstances within the region."*
> Cause U-86-100, Fourth Supp. Order, p. 12.

Q. Have you prepared an exhibit showing how the rate adjustment proposed by Mr. Dittmer should be spread among the natural gas customer classes?

A. Yes. This is presented in my Exhibit __ JL-9, and summarized below.

Table 12. Summary of Gas Rate Increases

Class	Increase $	Increase %
Residential (Schedule 101)	$170,000	0.15%
Small Firm (Sched 111)	$36,000	0.09%
Large Firm (Sched 121)	$5,000	0.07%
Interruptible (Sched 131)	$324	0.07%
Transportation (Sched 146)	$6,000	0.005%
Special Contracts (Sched 148)	0	0%
Total	$218,000	0.13%

XI. RESIDENTIAL GAS RATE DESIGN

Q. What is the Company's proposal with respect to residential gas rate design?

A. The Company has proposed applying all of the increase to the rate per therm, and holding the customer charge at current levels.

Q. Do you support this approach?

A. Yes. Particularly since the likely increase resulting from this case, if any, will be less than a 1% overall increase, it makes sense to leave the customer charge unchanged.

Q. Have you prepared an exhibit showing how the residential gas rates would change, based on the revenue requirement proposed by Mr. Dittmer, and the rate spread and rate design recommendations you have discussed?

A. Yes. The Company's Schedule 101 applies to both residential and to very small commercial customers. This is set forth in my Exhibit JL-10, and summarized below.

Table 13. Summary of Proposed Residential (Schedule 101) Gas Rate Increase

Rate Element	Current Rate	Proposed Rate	Change %
Customer Charge	$5.50	$5.50	0%
All Therms	$.92361	$.92506	0.2%

XII. SUMMARY

Q. Please summarize your testimony in this proceeding with respect to electric rates.

A. My testimony has covered electric cost allocation and electric rate design with respect to electric cost allocation, I have examined the Company's cost of service study, prepared an alternative study, and based on the results of both studies, have recommended that the small and large general service classes, Schedules 11 and 21 respectively, receive a below-average increase, and that the remaining customer classes receive an equal percent increase.

With respect to residential electric rate design, I have proposed that any increase resulting from this proceeding be applied to the second and third blocks of the residential rate, holding the customer charge and the first block rate unchanged. The requested increase is driven primarily by rising fuel costs for thermal power, and that is appropriately reflected in the end-block rates.

With respect to small general service rate design, I have proposed that any allowed increase be applied to the energy charge for usage below 4,000 kilowatt-hours. This will begin to move this rate schedule in an appropriate direction, gradually eliminating the rate design error that was made in 1980, when the two-block rate design was eliminated without accounting for the fact that a demand charge applies only to users who exceed 20 kilowatts of demand.

Q. Please summarize your testimony with respect to natural gas rates.

A. I have reviewed the Company's natural gas cost of service study, and examined the impact of certain potential changes to it. I concluded that these changes would not materially affect the results, and I have not prepared a separate study. Based on the results of the Company's study and the study prepared for Public Counsel, I recommend that all classes receive a uniform percentage adjustment to the margin

over the cost of gas currently paid by each class of customers

With respect to rate design for Schedule 101, which encompasses residential and small commercial users, I have recommended (as has the Company) that the increase be applied to the rate per therm, not to the customer charge.

Q. Does this complete your prepared direct testimony?

A. Yes.