BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-07_____

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DIRECT TESTIMONY OF

TARA L. KNOX

REPRESENTING AVISTA CORPORATION

I. INTRODUCTION

Q. Please state your name, business address and present position with Avista Corporation?

A. My name is Tara L. Knox and my business address is 1411 East Mission Avenue, Spokane, Washington. I am employed as a Rate Analyst in the State and Federal Regulation Department.

Q. Would you briefly describe your duties?

A. I am responsible for preparing the regulatory cost of service models for the Company, as well as providing support for the preparation of results of operations reports.

Q. Would you describe your educational background and professional experience?

A. I am a 1982 graduate of Washington State University with a Bachelor of Arts degree in General Humanities, and a Master of Accounting degree in 1990. As an employee in the Rate Department at Avista since 1991, I have attended several ratemaking classes, including the EEI Electric Rates Advanced Course that specializes in cost allocation and cost of service issues. I have also been a member of the Cost of Service Working Group since 1999, which is a discussion group made up of technical professionals from utilities throughout the United States and Canada concerned with cost of service issues.

Q. What is the scope of your testimony in these proceedings?

A. My testimony and exhibits will cover the Company's electric and natural gas cost of service studies performed for this proceeding and the weather normalization adjustments to retail usage. I also address the issue of common costs in the retail revenue credit.

II. WEATHER NORMALIZATION

Q. Would you please briefly summarize your testimony related to electric weather normalization?

A. Yes. The Company's weather normalization adjustment calculates the change in kWh usage required to adjust actual loads during the 2006 test period to the amount expected if weather had been normal. This adjustment incorporates the effect of both heating and cooling on weather-sensitive customer groups. The weather adjustment is developed from regression analysis of ten years of billed usage per customer and billing period heating and cooling degree-day data. The resulting seasonal weather sensitivity factors are applied to monthly test period customers and the difference between normal heating/cooling degree-days and monthly test period observed heating/cooling degree-days.

Company witness Mr. Hirschkorn includes the Washington adjustment to normal usage as part of the Revenue Adjustment for pro forma results of operations. Company witness Mr. Kalich includes the combined Washington and Idaho adjustment

to reflect the normal load shape for 2008 pro forma loads in the modeling for the Pro Forma Power Supply costs.

Q. Would you please briefly summarize your natural gas weather normalization testimony?

A. Yes. The natural gas weather adjustment is developed from a regression analysis of ten years of billed usage per customer and billing period heating degree-day data. The resulting seasonal weather sensitivity factors are applied to monthly test period customers and the difference between normal heating degree-days and monthly test period observed heating degree-days. This calculation produces the change in therm usage required to adjust existing loads to the amount expected if weather had been normal. Mr. Hirschkorn includes the adjustment to normalize usage as part of the Revenue/Gas Supply Adjustment for pro forma results of operations.

Q. What does the Company use for "normal" degree days?

A. The NOAA (National Oceanographic and Atmospheric Administration) publishes Monthly Station Normals for the Spokane airport weather station. The current published normals are based on the years 1971 to 2000 and are updated every ten years.

Q. Are these processes different from the methods employed in the Company's prior cases?

A. Yes. This process includes a number of changes from the prior method related to the data included in the regression analysis. These changes address issues raised by the parties to the last general rate case.

Q. How is this process different from prior cases?

A. In prior cases, the Company utilized five years of data to develop the weather sensitivity factors. Commission Staff was concerned that five years did not include enough data points, and recommended using ten years of data. The Company was concerned that data from that long ago would be influenced by changes in customer usage from appliance consumption, heating source mix, air conditioning saturation, etc. A test of the results using five years vs ten years of data revealed that the sensitiviy factors produced were very similar and we were therefore comfortable accepting the ten year recommendation.

In the past, annual average sensitivity factors were derived and applied uniformly to all heating and cooling degree days throughout the year. In this new process the definition of the independent variables has been adjusted to produce seasonal sensitivity factors. Seasonal sensitivity factors change depending on the time of year, therefore under the new method it is important to determine when the deviations from normal heating and cooling degree days occurred, which is why we now use a monthly calculation to determine the adjustment volumes. This modification addressed both Company concerns that applying the annual factors on a monthly basis

produced some counter-intuitive results during shoulder and summer months, and Staff concerns (particularly for natural gas) that the baseload value should approximate observed summer usage.

Finally, in the prior process, two statistical tests were used to determine whether a regression result was acceptable. Namely, the t-statistic for all independent variables must be greater than the absolute value of two, and the adjusted R-square statistic must be greater than sixty percent. For the new method we have added a third test to satisfy concerns that auto-correlation of error terms may have been present in the data. Now, in addition to the first two tests the regression result must also pass the Durbin-Watson test for auto-correlation at five percent significance.

Q. What was the impact of electric weather normalization on the 2006 test year?

A. Weather was warmer than normal during the 2006 test year both in the summer and in the winter with offsetting impacts. The adjustment to normal required the addition of 488 heating degree-days and the deduction of 221 cooling degree-days. The net adjustment to Washington sales volumes was an addition of 1,308,972 kWhs which is approximately two hundredths of one percent of billed usage.

Q. What was the impact of natural gas weather normalization on the 2006 test year?

A. Weather was warmer than normal during the 2006 test year. The adjustment to normal required the addition of 488 heating degree-days. The adjustment to sales volumes was an addition of 7,751,383 therms which is approximately three percent of billed usage.

III. ELECTRIC COST OF SERVICE

Q. Please briefly summarize your testimony related to the electric cost of service study.

A. I believe the Base Case cost of service study presented in this case is a fair representation of the costs to serve each customer group. The Base Case study shows Residential Service Schedule 1 and Extra Large General Service Schedule 25 earn substantially less than the overall rate of return under present rates. Pumping Service Schedule 31 earns somewhat less than the overall rate of return under present rates. General Service Schedule 11 and Large General Service Schedule 21 and Street and Area Lights earn substantially more than the overall rate of return under present rates.

Q. Are you sponsoring any exhibits related to the electric cost of service study?

A. Yes. I am sponsoring Exhibit No.__(TLK-2), electric cost of service study process description; and Exhibit No. ___(TLK-3), electric cost of service study model output.

Q. Were these exhibits prepared by you?

A. Yes.

Q. Please identify the Company's electric cost studies presented to this Commission in the last five years.

A. An Electric cost of service study was presented to this Commission in Docket No. UE-050482.

Q. What is an electric cost of service study and what is its purpose?

A. An electric cost of service study is an engineering-economic study, which separates the revenue, expenses, and rate base associated with providing electric service to designated groups of customers. The groups are made up of customers with similar load characteristics and facilities requirements. Costs are assigned in relation to each group's characteristics, resulting in an evaluation of the cost of the service provided to each group. The rate of return by customer group indicates whether the revenue provided by the customers in each group recovers the cost to serve those customers. The study results are used as a guide in determining the appropriate rate spread among the groups of customers. Exhibit No. ___(TLK-2) explains the basic concepts involved in performing an electric cost of service study. It also details the specific methodology and assumptions utilized in the Company's Base Case cost of service study.

Q. What is the basis for the electric cost of service study provided in this case?

A. The electric cost of service study provided by the Company as Exhibit No.___(TLK-3) is based on the 2006 test year pro forma results of operations presented by Company witness Ms. Andrews in Exhibit No.___(EMA-2).

Q. Would you please explain the cost of service study presented in Exhibit No. ___(TLK-3)?

A. Yes. Exhibit No. ___(TLK-3) includes the Excel spreadsheet model calculation of the cost of service results. This detail has been divided into three distinct segments.

Part 1 is composed of a series of summaries of the study results. The summary on page 1 shows the results of the study by FERC account category. The rate of return by rate schedule and the ratio of each schedule's return to the overall return are shown on Lines 39 and 40. This summary was provided to Mr. Hirschkorn for his work on rate spread and rate design. The results will be discussed in more detail later in my testimony.

Pages 2 and 3 are both summaries that show the revenue to cost relationship at current and proposed revenue. Costs by category are shown first at the existing schedule returns (revenue); next the costs are shown as if all schedules were providing equal recovery (cost). These comparisons show how far current and proposed rates are, from rates that would be in alignment with the cost study. Page 2 shows the costs segregated into production, transmission, distribution, and common functional

categories. Page 3 segregates the costs into demand, energy, and customer classifications.

Part 2 is the cost of service calculations from the spreadsheet called "Assign" showing the functionalization, classification, and allocation of each line item in the study. The supporting schedules required to run the model, made up of the allocation and classification factors used in the study, are shown on pages 31 through 35.

Finally, Part 3 is the spreadsheet called "Proforma." This worksheet shows the segregation of Ms. Andrew's pro forma results of operations into the detailed accounting data used in this study.

Q. Does the Company's electric Base Case cost of service study follow the methodology filed in the Company's last electric general rate case in Washington?

A. Yes. The Base Case cost of service study was prepared using the same methodology applied to the study presented in Docket No. UE-050482.

Q. Given that the specific details of this methodology are described in Exhibit No.___(TLK-2), would you please give a brief overview of the key elements and the history associated with those elements?

A. In general the cost study follows the methodology established in Docket No. UE-920499 for Puget Sound Power and Light (now PSE). Production and transmission costs are classified to energy and demand by a peak credit analysis. The definition of peaks and peak credit are specific to Avista and were accepted by the

Commission for Avista in Docket No. UE-991606 and confirmed in Docket No. UE-050482. Distribution costs are classified and allocated by the basic customer theory[1] that was derived directly from the methodology approved for Puget in Docket No. UE-920499. Administrative and general costs are first directly assigned to production, transmission, distribution, or customer relations functions. The Commission found this process acceptable in Avista's Docket No. UE-991606. The remaining administrative and general costs are categorized as common costs and have been allocated by a variety of factors as approved by this Commission for Puget in Docket No. UE-920499. The specific factors and items they are applied to are described in detail in Exhibit No. ___(TLK-2), see pages 5 and 9.

Q. What are the results of the Company's Base Case cost of service study?

A. The following table shows the rate of return and the relationship of the customer class return to the overall return (relative return ratio) at present rates for each rate schedule:

[1] Basic customer theory classifies only meters, services and street lights as customer-related plant; all other distribution facilities are considered demand-related.

Table 1

Customer Class	Rate of Return	Return Ratio
Residential Service Schedule 1	3.87%	0.66
General Service Schedule 11	11.13%	1.90
Large General Service Schedule 21	8.41%	1.44
Extra Large General Service Schedule 25	3.79%	0.65
Pumping Service Schedule 31	4.71%	0.81
Lighting Service Schedules 41 - 49	8.79%	1.50
Total Washington Electric System	5.85%	1.00

As can be observed from the above table, residential and extra large general service schedules (1 and 25) show significant under-recovery of the costs to serve them, the pumping service schedule (31) shows moderate under-recovery, while the general, large general, and lighting service schedules (11, 21, and 41 - 49) show over-recovery of the costs to serve them. However, only general service schedule 11 currently provides a rate of return higher than the rate of return requested in this case. The summary results of this study were provided to Mr. Hirschkorn as an input into development of the proposed rates.

Q Is there something else that should be noted with regards to the cost study results?

A. Yes. As shown on page 1, lines 38 and 41 of Exhibit No.___(TLK-3) both Schedule 1 and Schedule 25 do not provide enough net income to cover the interest

expense (debt cost) associated with their rate base. Consequently, these two groups receive income tax benefits that improve their respective net income and rate of return results. Simply comparing the relative return ratios in Table 1 fails to acknowledge that these schedules do not cover their debt cost at present rates.

IV. COMMON COSTS AND THE RETAIL REVENUE CREDIT

Q. Would you please address the issue of the allocation of common costs related to the retail revenue credit?

A. Yes. Item 7(3) of the Settlement Stipulation approved by Order No. 3 in Docket No. UE-060181 dated June 16, 2006 approving modifications to the ERM states:

> "(3) Consideration of the allocation of common costs related to the retail revenue credit will be addressed in the next GRC;"

The Company is not proposing that common costs be included in the retail revenue credit rate of $0.04415 per kilowatt-hour.

Q. Why should common costs be excluded from the production property adjustment and the retail revenue credit?

A. The proposed retail revenue credit rate in this case is calculated directly from the same production and transmission related costs used to calculate the pro forma production property adjustment. Production and transmission rate base, revenues and expenses have been pro formed to 2008 rate year levels. The production property adjustment was applied to these pro forma fixed and variable costs in order to spread

the costs to 2006 test year billing determinants. It follows that the same costs that have been adjusted by the production property adjustment should also be the costs used to determine the retail revenue credit.

An under-collection of costs could occur if these common costs are included in the retail revenue credit. Other than labor, no attempt has been made to reflect inflation or other changes that will affect distribution or administrative and general costs between the 2006 test year and the 2008 rate year, although it is highly likely that these costs will increase. Furthermore, as new customers are added, the portion of their revenue from the embedded rates to recover administrative and general costs as well as distribution costs are used to recover the costs associated with line extension allowances. Therefore, if a portion of the common (administrative and general) costs are included in the retail revenue credit and the same common cost revenue is intended to defray incremental distribution investment, a shortfall in cost recovery will occur.

Common costs were inadvertantly picked up in the first retail revenue credit rate derived from the cost of service study presented in Docket No. UE-011595 since that study combined common costs into the other functional categories of costs, i.e. production, transmission, and distribution. The cost of service studies in the last general rate case and in this case do not combine common costs with other cost categories, rather the common costs have their own separate category.

Q. Do you have an exhibit that shows the calculation of the proposed retail revenue credit rate showing how it ties to the production property adjustment?

A. Yes. Exhibit No. ___(TLK-4) begins with the identification of the production and transmission revenue, expense and rate base amounts included in each of Ms. Andrews actual, restating, and pro forma adjustments to 2006 results of operations (not including the production property adjustment). The values on line 36, labeled Pro Forma Total, reflect production and transmission revenues, expenses, and rate base necessary to serve 2008 retail loads. The values on line 40, labeled 2006 Production/Transmission Costs, are the amounts on line 36 multiplied by the production property factor in order to reflect the proportion of those costs required to serve 2006 retail loads. The difference between the 2006 and 2008 values is the production property adjustment Ms. Andrews included in her calculation of revenue requirement in this case.

The proposed retail revenue credit rate is the revenue requirement on the total production and transmission components of pro forma results of operations divided by retail load. Page 2 of Exhibit No.___(TLK-4) shows the calculation of the proposed revenue requirement associated with production and transmission costs in this case. The rate of return and debt cost percentages on line 2 are inputs from the proposed cost of capital. The rate base and net expense values are the same costs calculated on page 1 to determine the production property adjustment. Revenue related expenses have been

specifically excluded from the production/transmission revenue requirement for the retail revenue credit. The proposed retail revenue credit rate is $0.04415 per kWh. There are two columns showing that the retail revenue credit rate produced by this revenue requirement calculation is the same whether you look at the costs before or after the production property adjustment. The calculation of the retail revenue credit rate will need to be revised based on the final production and transmission costs and rate of return that are approved by the Commission.

V. NATURAL GAS COST OF SERVICE

Q. Are you sponsoring any exhibits related to the natural gas cost of service study?

A. Yes. I am sponsoring Exhibit No.___(TLK-5), natural gas cost of service study process description; and Exhibit No. ___(TLK-6), natural gas cost of service study model output.

Q. Were these exhibits prepared by you?

A. Yes.

Q. Please identify the natural gas cost studies presented to this Commission in the last five years.

A. Natural gas cost of service studies were filed with this Commission in Docket No. UG-050483 and Docket No. UG-041515.

Q. Please describe the natural gas cost of service study and its purpose.

A. A natural gas cost of service study is an engineering-economic study which separates the revenue, expenses, and rate base associated with providing natural gas service to designated groups of customers. The groups are made up of customers with similar usage characteristics and facility requirements. Costs are assigned in relation to each groups' characteristics, resulting in an evaluation of the cost of the service provided to each group. The rate of return by customer group indicates whether the revenue provided by the customers in each group recovers the cost to serve those customers. The study results are used as a guide in determining the appropriate rate spread among the groups of customers. Exhibit No.__(TLK-5) explains the basic concepts involved in performing a natural gas cost of service study. It also details the specific methodology and assumptions utilized in the Company's Base Case cost of service study.

Q. What is the basis for the natural gas cost of service study provided in this case?

A. The cost of service study provided by the Company as Exhibit No.__(TLK-6) is based on the 2006 test year pro forma results of operations presented by Ms. Andrews in Exhibit No.__(EMA-3).

Q. Would you please explain the cost of service study presented in Exhibit No.__(TLK-6)?

A. Yes. Exhibit No. __(TLK-6) includes the Excel spreadsheet model calculation of the cost of service results. This detail has been divided into three distinct segments.

Part 1 is composed of a series of summaries of the study results. Page 1 shows the results of the study by FERC account category. The rate of return and the ratio of each schedule's return to the overall return are shown on lines 38 and 39. This summary is provided to Mr. Hirschkorn for his work on rate spread and rate design. The results will be discussed in more detail later in my testimony. The additional summaries show the costs organized by functional category (page 2) and classification (page 3), including margin and unit cost analysis at current and proposed rates.

Part 2 is the cost of service calculation from the spreadsheet called "Assign" showing the functionalization, classification, and allocation of each line item in the study. The supporting schedules required to run the model are shown on pages 28 through 44.

Finally, Part 3 is the spreadsheet called "Proforma." This worksheet shows the segregation of Ms. Andrew's pro forma results of operations into the detailed accounting data used in this study.

Q. Does the Natural Gas Base Case cost of service study utilize the methodology from the Company's last natural gas case in Washington?

A. Yes. The Base Case cost of service study was prepared using the same methodology applied to the study presented in Docket No. UG-050483.

Q. What are the key elements that define the cost of service methodology?

A. Gas costs and underground storage costs are tied to the current purchased gas tracker methodology. Natural gas main investment has been segregated into large and small mains. Large usage customers that take service from large mains do not receive an allocation of small mains. Meter installation and services investment is allocated by number of customers weighted by the relative current cost of those items. System facilities that serve all customers are classified by the peak and average ratio that reflects the system load factor, then allocated by coincident peak demand and throughput, respectively. Demand side management costs are treated in the same way as system facilities. General plant is allocated by the sum of all other plant. Administrative & general expenses are segregated into labor related, plant related, revenue related, and "other". The costs are then allocated by factors associated with labor, plant in service, or revenue, respectively. The "other" A&G amounts get a combined allocation that is one-half based on O&M expenses and one-half based on throughput. A detailed description of the methodology is included in Exhibit No.__(TLK-5).

Q. Does this methodology follow previously approved methods?

A. Yes, with the exception of Company-specific purchased gas and related items, the methodology I have presented here, and in prior cases before this Commission, replicates the methodology established in Docket No. UG-940814 for Washington Natural (now PSE).

Q. What are the results of the Company's natural gas cost of service study?

A. I believe the Base Case cost of service study presented in this filing is a fair representation of the costs to serve each customer group. The study indicates that Residential Service Schedule 101 is earning slightly less than the overall return, Large Firm Service Schedule 121 is earning considerably less than the overall return, and all other schedules are earning more than the overall return to varying degrees. Small Firm and Interruptiible Service schedules are slightly above unity, but below the requested return, whereas Transportation Service is earning slightly over the requested return.

The following table shows the rate of return and the relative return ratio at present rates for each rate schedule:

Table 2

Customer Class	Rate of Return	Return Ratio
Residential Service Schedule 101	7.36%	0.98
Small Firm Service Schedule 111	8.08%	1.08
Large Firm Service Schedule 121	5.20%	0.69
Interruptible Service Schedule 131	8.77%	1.17
Transportation Service Schedule 146	9.65%	1.29
Total Washington Natural Gas System	7.50%	1.00

The summary results of this study were provided to Mr. Hirschkorn as an input into development of the proposed rates.

Q. Does this conclude your pre-filed direct testimony?

A. Yes.