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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF AVISTA CORPORATION FOR THE AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR ELECTRIC AND NATURAL GAS SERVICE TO ELECTRIC AND NATURAL GAS CUSTOMERS IN THE STATE OF IDAHO	)	CASE NO. AVU-E-04-1 CASE NO. AVU-G-04-1 DIRECT TESTIMONY OF TARA L. KNOX

FOR AVISTA CORPORATION

(ELECTRIC AND NATURAL GAS)

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 Rates and Regulation Department.

Q. Would you briefly describe your duties?

A. I am responsible for preparing data for and maintaining the regulatory cost of service models for the Company as well as providing support in the preparation of results of operations reports and miscellaneous other duties as required.

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

A. I graduated from Washington State University with a Bachelor of Arts degree in General Humanities in 1982 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 these proceedings and the weather normalization adjustments to retail usage.

ELECTRIC SERVICE

ELECTRIC WEATHER NORMALIZATION

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

A. The Company's weather normalization adjustment incorporates the effect of both heating and cooling on weather sensitive customer groups. The weather adjustment is developed from regression analysis of five years of billed usage per customer, billing period heating degree day data and billing period cooling degree day data. The resulting weather sensitivity coefficients for each customer subgroup are multiplied by the average number of customers in each subgroup during the test period and the difference between normal heating/cooling degree days and test period observed heating/cooling degree days. This calculation produces the change in kWh usage required to adjust existing loads to the amount expected if weather had been normal. Mr. Hirschkorn includes the adjustment to normal usage as part of the Revenue Adjustment for pro forma results of operations. Mr. Kalich includes the adjustment to normal loads in the modeling for the Pro Forma Power Supply Adjustment for pro forma results of operations.

Q. Is this different from the method employed in the Company's prior cases?

A. Yes, although the actual methodology has changed very little. The prior method did not include the effect of weather sensitive cooling. During the regression phase of the process, more combinations of variables are tested to arrive at the best fit. Also, the time period used for the analysis was modified to reflect exactly five heating seasons, July through June, rather than the five and one-half heating seasons included in the prior method.

The application of the results of the regression analysis is the same as the prior method, only now we apply both the difference between normal and actual cooling degree days as well as normal and actual heating degree days.

Q. Why is it important to include cooling sensitivity in the electric weather normalization process?

A. Analysis of the billed usage data since the late 1990's have indicated that summer weather sensitive usage has become significant for many of the customer groups. This is most likely reflective of increased saturation of the air conditioning market in the region. Although normally a winter peaking utility, in recent years the Company has experienced summer peaks near the same level as the winter peaks. In fact, in 2002 the annual system peak occurred during July. Without incorporating cooling sensitivity the prior method would add usage during an abnormally hot summer due to fewer than normal heating degree days.

ELECTRIC COST OF SERVICE

Q. Would you 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. For comparison purposes, I have also provided results of an alternative scenario to illustrate the impact of different allocation decisions in the cost of service process.

The Base Case study shows Residential Service Schedule 1 and Extra Large General Service Schedule 25 (not including the Potlatch Lewiston plant) earn substantially less than the overall rate of return under present rates. General Service Schedule 11, Large General Service Schedule 21, and Pumping Service Schedule 31 earn substantially more than the overall rate of return under present rates (although less that the requested rate of return). The Potlatch Lewiston plant (at Schedule 25 rates) and Street and Area Lights earn close to 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. 16 divided into the following Schedules: Schedule 1, electric cost of service study process description; Schedule 2, Electric Base Case cost of service study model output; and Schedule 3, alternate scenario summary results.

Q. Was this exhibit prepared by you or under your supervision?

A. Yes.

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 apportions 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 groups' characteristics, resulting in an evaluation 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. Schedule 1 of Exhibit No. 16 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. 16, Schedule 2 is based on the 2002 test year pro-forma results of operations presented by Mr. Falkner in Exhibit No. 14.

Q. Would you please describe what is shown in Schedule 2?

A. Exhibit No. 16, Schedule 2 is the Electric Cost of Service Study. The exhibit shows 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 Mr. Falkner's pro forma results of operations into the detailed accounting data used in this study.

Base Case Cost of Service - Electric

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 Idaho?

A. The methodology is the same as the cost of service study filed in Case No. WWP-E-98-11 with one modification.

Q. Please explain this modification.

A. Administrative and general costs that cannot be directly assigned to production, transmission, distribution, or customer relation's functions are left in the common cost category. In Avista's 1998 case these common costs were allocated to customer groups by a 60% customer-40% energy allocation factor. In this case the allocation factor for these common costs has been modified to reflect a four-factor allocation based on direct O&M, direct labor, net direct plant, and number of customers. With this change the

same four-factor allocation used on common costs at the utility and jurisdictional levels is now also applied at the customer group level.

Q. Why did you choose to make this modification?

A. As I was replicating the methodology from WWP-E-98-11 to prepare the cost studies for this case, I considered the need to update the common cost allocator. The four-factor allocator is accepted in all of the Company's jurisdictions for determining the appropriate sharing of common costs for results of operations. It is primarily based on other costs within the study, and reflects a variety of relationships rather than being solely dependent on a single comparison. The four-factor provides a balanced approach that I consider more appropriate than the factor used in the last case.

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 ratio of the schedule return to the overall return (relative return ratio) at present rates for each rate schedule:

Table 1

Customer Class	Rate of Return	Return Ratio
Residential Service Schedule 1	1.97%	0.42
General Service Schedule 11	9.70%	2.06
Large General Service Schedule 21	8.12%	1.73
Extra Large General Service Schedule 25	1.17%	0.25
Potlatch Ex Lg Gen Service Schedule 25P	5.24%	1.11
Pumping Service Schedule 31	7.24%	1.54
Lighting Schedules 41 – 49	4.55%	0.97
Total Idaho Electric	4.71%	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 summary results of this study were provided to Mr. Hirschkorn as an input into development of the proposed rates.

Q. Would you please explain the significance of Schedules 25 and 25P in the table above?

A. There are currently 15 customers served on Schedule 25 including the 100 average megawatt load from the Potlatch facilities in Lewiston, Idaho (Potlatch Lewiston). Potlatch Lewiston alone has nearly three times the usage of the other fourteen Schedule 25 customers combined. Prior to 2002 Potlatch Lewiston was served on a special contract with a sharing of their retail revenue between the Idaho and Washington jurisdictions. Since January of 2002 Potlatch Lewiston has been served at Schedule 25 rates. This is the first Idaho embedded cost study to reflect Potlatch Lewiston's full 100 average megawatt load. In this case Potlatch Lewiston has been evaluated as a separate cost of service class, due primarily to the load being significantly higher than other Schedule 25 customers.

Q. Why is the rate of return for Potlatch Lewiston higher than the rate of return for the remainder of Schedule 25?

A. There are two primary factors driving the cost differences between the Potlatch Lewiston plant and the other Schedule 25 customers.

First, Potlatch Lewiston has a significantly higher load factor (98% at the time of the system peak compared to 77% for the rest of Schedule 25). The cost study reflects load factor through the relative allocation of energy related costs compared to demand related

costs. Schedule 25 customers are allocated approximately ten percent of energy related costs and nine percent of demand related costs. Potlatch on the other hand is allocated approximately twenty-eight percent of energy related costs but only twenty percent of demand related costs. The net effect is less demand related production and transmission costs are allocated to the Potlatch Lewiston plant relative to their consumption than the rest of schedule 25 customers that have a lower load factor.

Second, Potlatch Lewiston is excluded from allocations of demand related primary distribution plant. This includes FERC accounts 364 through 368 comprised of poles, conduit, and overhead or underground conductors & devices. The situation at the Potlatch Lewiston plant is unique in that they receive primary voltage power at the 115 kV substation that is dedicated to them. No Company owned primary distribution plant is interconnected with that substation, therefore exclusion from the allocation is appropriate. The cost of the substation is directly assigned to Potlatch. The net effect is less distribution facility costs are assigned or allocated to the Potlatch Lewiston plant relative to their consumption than the rest of Schedule 25 customers who do receive the benefit of the interconnected primary distribution system.

Alternative Scenario

Q. Were the results of the Base Case methodology compared to the methodology from Case No. WWP-E-98-11 (Avista's last general rate filing)?

A. Yes, the alternative scenario shown in Exhibit No. 16, Schedule 3 represents the results using the methodology from Case No. WWP-E-98-11. The only difference is the

allocation factor used for common costs. In this scenario common costs are allocated 60% by number of customers and 40% by annual customer level consumption. The effect of the prior methodology is to have a heavier emphasis on number of customers. Table 2 below shows the relative return ratios from this scenario in comparison to the Base Case.

Table 2

Customer Group	Base Case	WWP-E-98-11	Difference
Residential Service Schedule 1	0.42	0.22	-0.20
General Service Schedule 11	2.06	1.99	-0.07
Large General Service Schedule 21	1.73	1.97	+0.24
Extra Large General Service Schedule 25	0.25	0.44	+0.19
Potlatch Ex Lg Gen Service Schedule 25P	1.11	1.19	+0.08
Pumping Service Schedule 31	1.54	1.66	+0.12
Lighting Schedules 41 – 49	0.97	1.39	+0.42

Residential and General Service schedules that have relatively low usage per customer show lower relative rates of return in this scenario which emphasizes the number of customers. The change in non-metered lighting service is dramatic because most individual area light customers that also take service on another schedule are counted as customers only on their metered service schedule. The municipal street lighting customers that do receive separate bills for lighting service and therefore are counted as lighting customers tend to have hundreds of lights. This phenomenon causes changes in the amount of customer allocation to have a greater effect on the results for lighting service.

Q. What conclusions do you draw from the results of these two cost of service studies?

In both scenarios residential and extra large general service customers are providing less than the cost to serve them. General service, large general service, and pumping service customers are consistently above the overall rate of return. Potlatch Lewiston is close to the overall return. Lighting service is also close to the overall return in the Base Case.

NATURAL GAS SERVICE

NATURAL GAS WEATHER NORMALIZATION

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

A. No change has been made to the historical methodology used to calculate natural gas weather sensitivity. The weather adjustment is developed from regression analysis of five and one-half years of billed usage per customer and billing period heating degree day data. The resulting weather sensitivity coefficient for each customer subgroup is multiplied by the average number of customers in the subgroup during the test period and the difference between normal heating degree days and test period 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 normal usage as part of the Revenue/Gas Supply Adjustment for pro forma results of operations.

Q. Is this different from the method employed in the Company's prior cases?

A. No. This method has been utilized in the Company's last Idaho natural gas general rate filing as well as the semi-annual commission basis reporting.

Q. The Company is proposing to modify the weather normalization methodology for electric usage, why not for natural gas usage as well?

A. The change to the electric methodology was necessary to reflect the impact of air conditioning load during the summer months. Natural gas is not used for air conditioning, the usage per customer data shows no cooling sensitivity, and the current regression fit statistics for the weather sensitive subgroups are excellent. Therefore, there is no need to change the existing methodology.

NATURAL GAS COST OF SERVICE

Q. Would you please briefly summarize your testimony related to the Company's natural gas cost of service study?

A. Yes. 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 study indicates that General Service Schedule 101 (primarily residential customers) is earning slightly less than the overall return, all other schedules are earning more than the overall return but less than the requested return.

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

A. Yes. I am sponsoring Exhibit No. 17 divided into the following Schedules: Schedule 4, natural gas cost of service study process description; and Schedule 5, natural gas cost of service study model output.

Q. Was this exhibit prepared by you or under your supervision?

A. Yes.

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 apportions 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. 17, Schedule 4 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. 17, Schedule 5 is based on the 2002 test year pro-forma results of operations presented by Mr. Falkner in Exhibit No. 15.

Q. Would you please describe what is shown in Schedule 5?

A. Exhibit No. 17, Schedule 5 is the Natural Gas Cost of Service Study. The exhibit shows 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 Mr. Falkner's pro-forma results of operations into the detailed accounting data used in this study.

Q. When was the last time the Company filed a natural gas cost of service study with the Idaho Public Utilities Commission?

A. The last natural gas cost of service study was filed with Case No. WWP-G-88-5. Purchased gas cost allocations have been examined and approved by the Commission with each periodic purchased gas tracker filing that has occurred in the interim. Distribution base rates have not been adjusted since February of 1990.

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

A. No. The Base Case cost of service methodology for distribution, customer services, and administrative & general costs is based on the most recent methodology employed by Avista in the Washington jurisdiction. This methodology, accepted in Washington since 1994, resulted from a fully litigated cost of service case specifically intended to determine appropriate natural gas distribution rates in the era of transportation service (WUTC Docket No. UG-940814). The result was a compromise methodology accepting ideas promulgated by Washington Natural Gas Company (now Puget Sound Energy), the Commission Staff, and Public Counsel.

Purchased gas costs reflect the Idaho accepted methodology that has evolved with industry changes through periodic tracker filings. Underground storage costs use the allocation method required by the Idaho Commission order in Case No. WWP-G-88-5.

Q. What are the key elements that define this methodology?

A. 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. 17, Schedule 4.

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

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

Table 3

Customer Class	Rate of Return	Return Ratio
Residential Service Schedule 101	4.76%	0.95
Small Firm Service Schedule 111	6.04%	1.21
Large Firm Service Schedule 121	6.27%	1.25
Interruptible Service Schedule 131	7.44%	1.49
Transportation Service Schedule 146	7.88%	1.57
Total Idaho Natural Gas System	5.00%	1.00

These results indicate that Schedule 101 is currently earning slightly less than the overall return. The other schedules are earning more than the overall return by varying

degrees. 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.