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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-04-01 DIRECT TESTIMONY OF CLINT KALICH

FOR AVISTA CORPORATION

(ELECTRIC ONLY)

I. INTRODUCTION

Q. Please state your name, the name of your employer, and your business address.

A. My name is Clint Kalich. I am employed by Avista Corporation at 1411 East Mission Avenue, Spokane, Washington.

Q. In what capacity are you employed?

A. I am the Manager of Power Supply Planning & Analysis, in the Energy Resources Department of Avista Utilities.

Q. Please state your educational background and professional experience.

A. I graduated from Central Washington University in 1991 with a Bachelor of Science Degree in Business Economics. Shortly after graduation I accepted an analyst position with Economic and Engineering Services, Inc. (now EES Consulting, Inc.), a northwest management-consulting firm located in Bellevue, Washington. While employed by EES, I worked primarily for municipalities, public utility districts, and cooperatives in the area of electric utility management. My specific areas of focus were economic analyses around new resource development, rate case proceedings involving the Bonneville Power Administration, integrated (least-cost) resource planning, and demand-side management program development. In late 1995 I left Economic and Engineering Services, Inc. to join Tacoma Power in Tacoma, Washington. I provided key analytical and policy support in the areas of resource development, procurement, and optimization, hydroelectric operations and re-licensing, unbundled power supply rate-making, contract negotiations, and system operations. I helped develop, and ultimately managed, Tacoma Power's industrial market

access program serving one-quarter of the company's retail load. In mid-2000 I joined Avista Utilities as a Senior Power Resource Analyst. Early in 2001 I was promoted to my current capacity. I assist the Company in the areas of resource analysis, dispatch modeling, resource procurement, integrated resource planning, and rate case proceedings. Much of my career has involved resource dispatch modeling of the nature described in this testimony.

Q. What is the scope of your testimony in this proceeding?

A. My testimony will describe the Company's use of the AURORA dispatch model, hereinafter referred to as the "Dispatch Model," including key inputs, assumptions, and results. A table of contents for my testimony is as follows:

Q. Are you sponsoring exhibits in this proceeding?

A. Yes. I am sponsoring one confidential exhibit marked as Exhibit No. 11. All information contained in the exhibit was prepared under my direction.

II. EXECUTIVE SUMMARY

Q. Please provide an overview of your direct testimony.

A. My testimony will describe the hourly dispatch model used by the Company in this case. I will briefly explain the Dispatch Model's advantages over the monthly model

used in previous filings before this Commission. I will explain the Company's experience using this model and how it dispatches resources, including hydroelectric projects.

I will also explain the key assumptions driving the Dispatch Model's market forecast of electricity prices. Included in the discussion will be the variables of natural gas, Western Electricity Coordination Council (WECC) loads and resources, and hydroelectric conditions. I will explain how the Company's retail loads were developed for the proforma period, and ultimately how the Company's generation resources and various contracts were modeled. I will describe how the model dispatches our resources and contracts in a manner that maximizes benefits to customers. Finally, I will explain the modeling results that were utilized by Witness Johnson to complete his power supply proforma adjustment calculations.

III. THE DISPATCH MODEL

Q. What modeling changes has the Company made in the calculation of normal power supply costs from the prior general rate case?

A. In this case the Company has used the AURORA system dispatch model for the determination of power supply costs. The model optimizes the dispatch of Company-owned resources and contracts in each hour of the proforma year. Rather than using monthly average dispatch values, as was done with the model used in prior rate cases, the Dispatch Model more accurately reflects true system dispatch by evaluating future resource decisions on an hourly basis.

Q. What benefits does the Dispatch Model offer for this type of analysis?

A. There are two primary benefits. The first is that the Dispatch Model generates hourly electricity prices across the WECC, accounting for its specific mix of resources and loads. The Northwest marketplace is not insulated from the rest of the WECC, as we experienced during the 2000-01 energy crisis. The Dispatch Model more accurately reflects the impact of regions outside the Northwest, limited by known transfer (transmission) capabilities. Ultimately, the Dispatch Model allows the Company to generate robust price forecasts in-house instead of relying on exogenous forecasts.

The second benefit is potentially even more significant. The Company owns a number of resources, including hydroelectric plants and natural gas-fired peaking units, which have the capability of serving customer loads during the more valuable on-peak hours. By optimizing regional loads and resources on an hourly basis, the Dispatch Model is able to more accurately value the capabilities of these resources. For example, actual 2003 on-peak prices were 18 percent greater than off-peak prices. By comparison, the Dispatch Model prices for the proforma period averaged 19 percent.

Q. Please briefly describe the Dispatch Model used to dispatch the Company's portfolio for the proforma period.

A. The AURORA Electric Market Model was developed by EPIS, Inc. of West Linn, Oregon. AURORA is a fundamentals-based tool that contains demand and resource data for all of the WECC, including resources owned by the Company. AURORA employs multi-area, transmission-constrained dispatch logic to simulate real market conditions. Its true economic dispatch captures the dynamics and economics of electricity markets—both

short-term (hourly, daily, monthly) and long-term. On an hourly basis the Dispatch Model develops an available resource stack, sorting resources from lowest cost to highest cost. It then compares this resource stack with forecasted load to arrive at the least-cost market-clearing price.

Q. What experience does the Company's have using AURORA?

A. The Company purchased AURORA in April of 2002. Since that time it has been used for numerous studies, including the 2003 Integrated Resource Plan ("IRP").

Q. What efforts has the Company made to make the AURORA model available to Commission Staff?

A. The license negotiated by the Company for AURORA was structured in such a way that it is extended to both Idaho and Washington Commission Staff. Members of both Commission Staffs attended the initial user training session with Company staff, and have attended the two annual AURORA conferences where modeling topics were discussed and additional training was provided. Each annual license renewal provides for an additional two days of on-site training, which is available to Commission Staff upon request.

IV. ASSUMPTIONS AND CALCULATIONS

Q. Are the assumptions utilized for the Dispatch Model in this proceeding similar to those used in the 2003 Integrated Resource Plan filed with this Commission last year?

A. Yes, with a few exceptions. First, forward market natural gas prices are constantly changing. Given the importance of this variable in setting wholesale electricity

prices, it has been updated to reflect more recent forward market prices. Specifically, the Company set prices based on forward curves available on December 10, 2003. Second, Colstrip fuel prices are modified to reflect actual mining budgets. The Kettle Falls fuel price is also modestly different from the IRP, and reflects updated calculations based upon current fuel supplies. Avista loads were updated to reflect weather-adjusted 2002 actual values, including Potlatch Corporation's 2002 net load. Finally, two new wholesale power contracts have been included in the Dispatch Model; one to reflect the Company's reserve contract obligations, and another to represent a pending wind energy contract.

Q. How does the Dispatch Model determine the output from the Company's hydroelectric projects?

A. The model begins by "peak-shaving" loads using hydro resources. It determines which hours represent the highest loads and allocates to them as much hydroelectric energy as possible. Over the proforma period, the Dispatch Model dispatches 69.6 percent of the Company's hydro generation during on-peak hours. Since on-peak hours represent only 57 percent of the year, this demonstrates a substantial shift of hydro resources to the more valuable (expensive) hours.

Q. How does the Dispatch Model's utilization of Company hydro resources compare to actual history at the plants?

A. As explained above, over the proforma period the Dispatch Model shapes 69.6 percent of available hydroelectric energy into the on-peak hours. This compares with a 5-year average through 2003 of 65.9 percent, and an average since 1989 of 67.3 percent.

Q. On a broader scale, what calculations is the Dispatch Model performing?

A. The Dispatch Model's goal is to minimize overall system operating costs across the WECC, including Avista's portfolio of loads and resources. The dispatch model generates a wholesale electric market price forecast by evaluating all resources in the WECC simultaneously in a least-cost equation to meet regional loads. As the Dispatch Model progresses from hour to hour, it "operates" those resources necessary to meet load. With respect to the Company's portfolio, the Dispatch Model tracks the hourly output and fuel costs associated with the Company's generation. It also calculates, on an hourly basis, energy quantities for the Company's contractual rights and obligations. In every hour the Company's loads and obligations are compared to determine a net position. This position is then balanced using the wholesale electricity market. The cost or value of this energy is calculated based on the electric market-clearing price for the specified hour.

The thermal fuel costs and market transaction values are provided to Witness Johnson, where he adds other resource and contract revenues and expenses to determine the net power supply expense.

Q. How does the Dispatch Model determine electric market prices, and how are they used to calculate market purchases and sales?

A. The Dispatch Model calculates electricity prices for the entire WECC, separated into numerous areas. One of these areas represents the Mid-Columbia index in the study. The load in each area is compared to available resources, including available transmission, to determine the price for each hour. Ultimately, the market price for the hour is set based on the last resource in the stack to be dispatched. This resource is referred to as

the "marginal resource." Given the prominence of natural gas-fired resources on the margin, this fuel is a key variable in the determination of hourly wholesale electricity prices.

Q. What is the Company assuming for natural gas prices in the proforma period?

A. Natural gas prices are a function of average commodity cost, transportation, and taxes where applicable. For the proforma, natural gas prices were set using forward prices as of December 10, 2003. Due to the varied locations of our plants, the average price for the period ranges from a low of $4.40 per decatherm at Rathdrum, to a high of $4.63 per decatherm for Northeast, Boulder Park, and the Kettle Falls CT. The average price at Coyote Springs 2 is $4.48 per decatherm. For comparison, the average Henry Hub price for the period is $4.85 per decatherm. See Table 1 in the following section for a listing of the monthly natural gas prices assumed for each of the Company's gas-fired plants.

V. RESULTS

Q. What is the average forecast wholesale electric market price of power over the proforma period?

A. For the proforma period the average wholesale market price is $39.48 per megawatt-hour, as presented below in Table 1. Natural gas prices for the Company's natural gas-fired plants are shown as well. The averages are weighted to account for the actual number of hours in each month of the proforma period.

Table 1

Proforma Market Prices

Month	Northwest Power Prices			Gas Prices		
	On-Peak ($/MWh)	Off-Peak ($/MWh)	Flat ($/MWh)	CSII ($/dth)	Rathdrum ($/dth)	NE/BP/KFCT ($/dth)
Sep-04	47.88	37.84	43.64	4.501	4.421	4.648
Oct-04	45.65	37.55	42.08	4.496	4.416	4.643
Nov-04	44.36	37.89	41.63	4.683	4.603	4.837
Dec-04	46.64	39.05	43.46	4.836	4.756	4.996
Jan-05	41.47	35.87	39.00	4.946	4.866	5.111
Feb-05	41.88	37.10	39.83	4.906	4.826	5.069
Mar-05	43.38	37.27	40.82	4.716	4.636	4.871
Apr-05	36.70	31.20	34.38	4.221	4.141	4.357
May-05	35.67	28.22	32.38	4.116	4.036	4.247
Jun-05	35.88	27.90	32.51	4.111	4.031	4.242
Jul-05	42.29	37.15	40.02	4.116	4.036	4.247
Aug-05	46.99	39.59	43.89	4.121	4.041	4.253
Average	42.40	35.59	39.48	4.478	4.398	4.624

Q. What are the outputs from the Dispatch Model?

A. The Dispatch Model tracks the Company's portfolio during each hour of the proforma study. Fuel costs and generation for each resource are summarized by month. Total market sales and purchases, and their revenues and costs, are also determined. These values are provided to Witness Johnson for his calculations of total power supply expense; they are contained in Confidential Exhibit No. 11. Page 1 of the exhibit also contains a monthly summary of modeled energy for each of our contracts.

Q. Why does the Dispatch Model forecast relatively low levels of generation for some of the Company's natural gas-fired plants during the proforma period?

A. The WECC is currently over-built, meaning that there is more generation available than is needed to serve load. Until the WECC returns to a closer balance of loads and resources, we expect that our less-efficient gas-fired plants will not run for significant periods.

Boulder Park provides a good example of this. In the proforma period it is forecast to run at a capacity factor of 18 percent, but a Dispatch Model run for 2010 resulted in a capacity factor of 52 percent. This increased operation illustrates the expectation that load growth will eventually erode the regional generation surplus.

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

A. Yes