DAVID J. MEYER
SENIOR VICE PRESIDENT AND GENERAL COUNSEL
AVISTA CORPORATION
P.O. BOX 3727
1411 EAST MISSION AVENUE
SPOKANE, WASHINGTON 99220-3727
TELEPHONE: (509) 495-4316
FACSIMILE: (509) 495-4361

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 CASE NO. AVU-G-04-01 DIRECT TESTIMONY OF DR. WILLIAM T. WILSON SENIOR ECONOMIST ERNST & YOUNG, LLP

FOR AVISTA CORPORTATION

(ELECTRIC AND NATURAL GAS)

I. INTRODUCTION

Q. Please state your name, business address and present position with Ernst & Young LLP?

A. My name is Dr. William T. Wilson and my business address is 233 South Wacker Drive, Chicago, Illinois. My present position is Senior Economist.

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

A. I received a B.A. degree in economics and finance from Towson State University in 1986. I received both my masters and Ph.D. in economics (with a concentration in finance) from Purdue University in 1991. I was assistant professor of economics at Ohio Northern University in Ada, Ohio for three years. My business experience includes five years as Vice President and Senior Economist at Comerica Bank in Detroit. I am currently Senior Economist with Ernst & Young.

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

A. My testimony in this proceeding will recommend a range of values for the cost of equity capital for Avista Corporation, dba Avista Utilities, (Avista) to be used in the revenue requirement calculation in this case. I will describe my methodology for assessing industry risk and operating company specific risk, discuss how this methodology was developed, and explain why this methodology provides an important insight into the process of assessing an electric utility's cost of equity capital.

Q. Are you sponsoring any exhibits along with your testimony?

A. Yes, I am sponsoring Exhibit No. 4, which was prepared under my direction.

Q. What are your conclusions regarding the required return on equity for investors in Avista?

A. Avista's cost of equity capital is between 13.10% - 13.32% with a bias towards the high end of the range due to Avista's relative risk ranking in relation to other regulated electric operating companies.

II. BACKGROUND ON THE OPERATING RISK METHODOLOGY

Q. Please describe the methodology you utilized for conducting your analysis.

A. My analysis utilized the Ernst & Young Operating Approach (OPERA) methodology for electric utilities. This is a straightforward methodology that incorporates two simple steps to estimate an electric utility operating company's cost of equity capital. The first step is to compute a target cost of equity for the average risk electric utility operating company. The second step is to assess the relative risk of a specific operating company in relation to the universe of other firms in the industry. Prior to discussing the details of the methodology, I will provide some background on the development of the methodology as well as some research and analysis for consideration by this Commission.

Q. Why did Ernst & Young develop this methodology?

A. We developed this methodology in response to a disturbing trend we discovered while doing work in the industry. The volatility of operating earnings as a percentage of ratebase among regulated electric utility operating companies has markedly increased during the 1998-2002 period, when compared to prior periods. We are concerned

that firms and regulators are not incorporating this marked increase in the volatility of operating results into the determination of the cost of equity capital.

Q. Please explain what you mean by earnings volatility?

A. Earnings volatility is calculated as the standard deviation of the return on ratebase of electric utility operating companies during a given year. Standard deviation is the traditional measure used by finance professionals to measure earnings volatility. Higher volatility implies higher risk.

Q. Why is consideration of earnings volatility important?

A. It is important because it is indicative of the operating risk faced by these firms. Investors are concerned with both risk as well as return. Economists and finance professionals consider volatility to be the primary measure of risk. An investment with an average return of 12% and a standard deviation of 3% is clearly inferior to an investment yielding a return of 12% but having a standard deviation of only 1.8%. This is due to the greater probability that, in any given year, the return received will be different from the expected. For investors, predictability of earnings is an important factor. Therefore careful consideration of changes to earnings volatility is important for regulators to consider.

Q. What specifically did your work reveal about the volatility of earnings among utility operating companies?

A. In examining the period from 1991 through 1997, 116 electric utility operating companies as a group demonstrated a very tight distribution of return-on-ratebase, with standard deviation of returns of approximately 1.55% to 1.97%, as shown on page 1 of Exhibit No. 4. In 1998-99, standard deviation of returns-on-ratebase jumped to over 2% in

1998 and almost 3% in 1999. The industry standard deviation of returns reached almost 5% in 2000 and remained well above 3% in 2001-2002. In discussing the events that occurred in California from 2000-2002 with industry colleagues, an argument has been made that the financial results of these firms during this time period are an anomaly and should be excluded from analysis. While I do not necessarily agree with the logic underlying this argument, the data excluding the three California IOUs (reducing the sample size to 113 from 2000-2002) still demonstrate a risk measure approaching 3% during the 2000-2002 timeframe. Thus, earnings volatility among electric utility operating companies as a group has approximately doubled over the past 5 years. The graph on page 1 of Exhibit No. 4 shows this change in earnings volatility.

Q. What did you observe about the average actual rate of return on ratebase earned during this same period?

A. For the twelve-year period 1991-2002, actual returns on ratebase for regulated electric utility operating companies averaged 8.47% with a high of 8.72% and a low of 8.06%, as shown on page 2 of Exhibit No. 4. Therefore, during this time period, while the standard deviation of returns across the industry increased, the average return on ratebase for the industry remained relatively stable.

Q. What is the reaction of a typical investor to these developments?

A. From the standpoint of a prospective investor, this is not an attractive scenario. Risk – exemplified by the standard deviation of returns across the industry – is increasing dramatically, yet returns are remaining the same. Since one of the strongest principles in the investing world is the risk-return trade-off, an investor who bears a higher

risk is rewarded with an expectation of higher returns as compensation for bearing that additional degree of risk. What my work demonstrates is that risk and return are moving in different directions for regulated utility operating companies. This fact is likely to make investors less willing to invest capital in companies in this industry.

Q. As industry risk was increasing, what was happening to allowed returns?

A. As industry risk was increasing, the average allowed return on equity, (i.e., the return on equity granted for regulated utility operating companies in rate cases decided in that year) fell from 11.43% to 11.16%, as illustrated on page 3 of Exhibit No. 4.

Q. What factors were affecting allowed rates of return for utilities?

A. Since most cost of capital methodologies for electric utilities are highly dependent upon the risk-free rate, falling interest rates were a significant factor in the lowering of allowed returns to be granted by state utility commissions. These lower allowed returns have not recognized the increased volatility of earnings and increased risk in the industry.

Q. Please explain the composition of the group of electric utility operating companies from which you developed your conclusions.

A. It includes the operating entities in the industry with 2002 ratebase assets of greater than $250 million. A list of the operating companies utilized is provided on page 4 of Exhibit No. 4.

Q. What sources of data did you use?

A. The data were gathered from several sources including FERC Form 1 filings, Platt's PowerDat industry database, Regulatory Research Associates reports and SEC filings.

The data were reviewed thoroughly and adjustments were made to address one-time charges/credits and data reporting inconsistencies. These adjustments were made to more accurately reflect the recurring earnings stream investors are valuing. The result of these adjustments effectively reduced the volatility that investors would have seen in annual results. That is, apart from these adjustments, the earnings would exhibit more volatility and more risk.

Q. Please summarize your findings related to these utilities?

A. A primary concern I have is that the risk profile of electric utility operating companies is increasing dramatically. However, few in the industry are focusing on this issue. Most attention is being targeted at the problems of merchant energy companies. There is a perception that electric utility operating companies are low risk businesses. The results of this work demonstrate that the perception is incorrect.

Q. What steps did you then take to further your understanding of these findings?

A. First, I wanted to analyze the factors driving earnings. Also, I wanted to develop new tools to permit utility managers and regulators to better understand the changed risk profile of regulated electric utility operating companies. This risk profile should then be reflected in setting the rates of return for regulated companies.

Q. How did you translate this work into a cohesive methodology?

A. Using detailed industry data, I constructed a model that demonstrated a strong ability to identify relationships between operating, regulatory and franchise factors, and actual returns. This model allows us to analyze regulated electric utility operating companies

across the industry and assess their risk relative to one another. By analyzing reward-risk measures at the industry-level and at the individual firm level, our methodology provides a fact-based, empirically supported insight into the investment attributes considered by providers of equity capital.

Q. What is the value of this methodology to firms, regulators and investors?

A. This methodology provides an analytical tool to assist firms, regulators and investors to gauge the risk-return characteristics of regulated utility operating companies and to identify the effect of specific operational and regulatory factors on individual firms. Many changes have occurred during the past ten years, as discussed in Dr. Avera's testimony. There is much less consistency across the industry as compared to ten years ago. The intention of this methodology is to incorporate additional rigor and analysis into the very complex process of determining a firm's cost of capital.

III. METHODOLOGY STEPS

Q. What are the steps utilized to compute the target cost of equity for the average risk electric utility operating company?

A. The first step of the OPERA methodology computes a target cost of equity for the average risk electric utility operating company by comparing industry return and industry risk. Utilizing the framework developed by William Sharpe for measuring the return-risk profile of equity portfolio managers, the OPERA utilizes the Sharpe ratio:

$$\text{Sharpe Ratio} = \frac{\text{Returns} - \text{Risk-Free Rate}}{\text{Risk (the standard deviation of Returns)}} \qquad \text{Equation (1)}$$

Q. What is the origin of the Sharpe Ratio?

A. The ratio is named after its founder, William Sharpe, of Stanford University, who won the Nobel Prize in Economics in 1990 (Harry Markowitz and Merton Miller were co-recipients). These three Nobel Laureates are credited for creating the intellectual framework with which money managers evaluate the risks and rewards of their investments. Sharpe first introduced the ratio in 1966 (*Journal of Business*, January 1966) to gauge the performance of mutual funds. Today is it is a universally accepted measure of investment performance.

Q. Is the Sharpe Ratio widely referenced?

A. Yes. The measure itself has gained considerable acceptance within the field of finance. Sharpe originally proposed the term *reward-to-variability ratio* as the name of his investment performance measure. Other authors have termed the original version the Sharpe Index (Radcliff, 1990, p. 286) and (Haugen, 1993, p. 315) and the Sharpe Measure (Bodie, Kane and Marcus,1993, p.804), (Elton and Gruber,1991, p.652) and (Reilly, 1989, p.803). Generalized versions have also appeared under various names (see for example Capaul, Rowley and Sharpe, 1993, p.33). In more recent literature, Kazemi, Mahdavi and Schneeweis (January 2003) examine how a portfolio's Sharpe Ratio can be increased even when the return distribution significantly differs from normal. Lettau and Uhlig (2000) show how the Sharpe Ratio can provide a convenient tool for theorists searching for models capable of explaining asset pricing while Kevin Dowd (2000) examines a new way to improve the Sharpe Ratio.

Q. Is the Sharpe Ratio easy to understand and use?

A. Yes. It postulates that investors care about two things: return (over the risk-free rate) and risk (standard deviation of returns). The Sharpe Ratio is easy to understand because it is a distinct quantitative measure that can easily be compared across investments. A fall in this ratio over time would indicate to investors that the rate of return on a particular investment or fund is falling *per unit of risk.* For example, an increase in risk (i.e. – a rise in the standard deviation of returns) that was not compensated for by a commensurate increase in return would make the investor worse off *even if total returns were not falling.* Conversely, an increase in the Sharpe Ratio would indicate that investors' returns (over the risk-free rate) are rising for each unit of risk.

Q. Why is the Sharpe ratio important?

A. The ratio provides an unbiased look at an investment's performance. It is based solely on a quantitative measure (i.e. no subjectivity). It is a widely held assumption among economists and finance professionals that investors will only willingly accept higher risk if they are compensated by higher expected returns (over and above the risk-free rate). The Sharpe Ratio gives investors an important tool to evaluate and compare the risk-return characteristics of any given investment. The Sharpe Ratio is also useful in comparing the performance of different types of investments and different investing styles.

Q. Where is the Sharpe Ratio used and why?

A. Financial managers use the Sharpe Ratio in some form to evaluate the *reward-risk* ratio of an investment. Given the rapid growth of mutual funds across the globe over the past decade, the ratio is an effective tool to evaluate relative fund performance. For example,

Morningstar (see www.morningstar.com) provides a popular risk-adjusted rating system for most mutual funds. Because it uses standard deviation, the Sharpe Ratio can be used to compare risk-adjusted returns across all asset categories. In short, it's ideal for investors and fund managers to gauge whether they are getting adequate returns relative to the risk they are bearing.

Q. Since you are using operating returns and Dr. Sharpe's equation is commonly applied to market returns, is the application here valid?

A. Absolutely. Since the operating entities are not public companies, we are substituting accounting or operating returns for market returns.

Q. From an historical perspective, what has the Sharpe Ratio been for regulated electric operating utilities?

A. Historical data from 1991 to 1998 demonstrate industry Sharpe Ratios varying from a high of 2.82 to a low of 2.23 and an average of 2.58, as shown on page 5 of Exhibit No. 4. From 1999 to 2002, the ratio plummeted to an average of 1.96, demonstrating that regulated electric utility companies have not been awarded returns commensurate to the level of risk.

Q. Why is Allowed ROE utilized in this calculation?

A. From a practical standpoint, individual state utility regulators, such as the Idaho Public Utilities Commission, are somewhat limited in affecting either of the other inputs (Risk-free rate and Volatility) and, therefore, must focus on the piece of the ratio over which they have influence.

Q. Is the Sharpe Ratio an appropriate measure to gauge returns for utilities?

A. Yes. Looking solely at returns (i.e. – return on rate base) for the operating companies comprising the sample set would have given a false sense of security to investors because average annual returns have not materially changed for the industry over the past decade. The same cannot be said about risk. One of the most salient trends that we have clearly documented has been the increased volatility of returns on rate base experienced by these same operating companies over the past decade. The precipitous fall in the Sharpe Ratio documents that investors have not been adequately compensated for the rise in risk.

Q. Why is the fall in the Sharpe Ratio for the industry a problem?

A. Investors care about risk as much as they care about returns. If investors are not being adequately compensated for risk, they will take their capital elsewhere. A decrease in the Sharpe Ratio demonstrates a change from the historic reward-risk ratio has occurred in the electric utility industry and may indicate that capital attraction could become more difficult if this trend continues or accelerates. Dr. Avera's testimony highlights investors' heightened perceptions of risk regarding the utility business in general, and utilities in the Western United States in particular. This has translated into an unwillingness to invest in utility securities, especially equity, unless the anticipated return is adequate to compensate for the increased risk. There is no requirement that investors allocate a portion of their portfolio to utility securities. If they are not comfortable with the reward-risk ratio, they invest in other industries.

Q. Why is the Sharpe Ratio relevant to Avista's cost of equity capital?

A. As stated earlier, investors consider two factors when deploying capital: 1) risk and 2) return in excess of the risk-free rate. By utilizing the information provided by the Sharpe Ratio, the Commission can more precisely incorporate the viewpoint of investors into decisions on equity allowance. Again, an investment with an average return of 12% and a standard deviation of 3% is clearly inferior to an investment yielding a return of 12% but having a standard deviation of only 1.8%. Since many of the current methodologies utilized in estimating a firm's cost of equity *do not directly address the volatility of returns* – the primary measure of risk – the additional insight provided by this analysis is helpful in determining the appropriate cost of equity capital.

Q. How is the Sharpe Ratio used to calculate a target cost of equity for the average risk electric utility operating company?

A. The Sharpe Ratio formula can be expressed to solve for equity allowance by simply rearranging the Sharpe Ratio (Equation 1) and solving for return:

Returns = (Sharpe Ratio * Risk) + Risk-Free Rate Equation (2)

From 1991 to 1998, the average Sharpe Ratio for the industry was 2.58, as shown on page 5 of Exhibit No. 4. Including the very low Sharpe Ratios from the past 4 years, the average becomes 2.37 over the twelve-year period from 1991 through 2002, as shown on page 5. Therefore, the use of a Sharpe Ratio of 2.50 is reasonable and will return the industry's reward-risk ratio almost to the levels observed from 1991 to 1998. For Risk, we observe the consistent rise in standard deviation of returns across the industry and, for conservatism purposes, estimate 2.8%. This number represents a decrease from the 2002 figure and is

slightly less than the trailing 4-year average from 1999-2002, excluding the three California IOUs, as illustrated on page 1 of Exhibit No. 4. For the Risk-Free rate, 5.2% is used, consistent with Dr. Avera's testimony. Substituting each of these averages in Equation (2) gives us:

Returns = (2.5 * 2.8%) + 5.2% = **12.2%**

The result is a target cost of equity for the average risk electric utility operating company of 12.2%.

IV. DETERMINING THE COMPANY SPECIFIC OPERATING RISK

Q. Why is it important to examine the operating risks of individual firms?

A. In order to properly interpret and utilize the industry data discussed in the previous pages, it is necessary to understand the drivers of the returns of individual companies. Each regulated electric operating utility is distinct, and is in at least some ways, different from all of its peers. These include, but are not limited to, differences in franchise territory, customer types, load profiles, regulatory rules, average retail rate and value chain responsibilities. By analyzing the operating risks of individual firms, a more rigorous and empirically-based standard can be utilized in identifying which of these operating characteristics affect shareholder risk, therefore, allowing for the assignment of the most appropriate equity allowance.

Q. How is the relative risk of Avista calculated?

A. I analyzed the operational and financial results of 113 regulated electric utilities over the time period of 2000-2002. By utilizing regression analysis to identify relationships between variables (regulatory, operating, and franchise variables) and actual

financial results, I developed a predictive model. Specifically, Return on Ratebase was utilized as the dependent variable and 12 variables were identified as being significant, six at greater than 97% confidence. The actual operating results of the utilities were then entered into the predictive model to produce a set of predicted results. The utilities were then ranked on a relative risk basis. Firms displaying the greatest negative variance of predicted results vs. allowed return were designated as highest risk.

Q. What are the twelve variables you identified as impacting returns?

A. The twelve variables we identified as being significant are as follows:

1. **Allowed return** – the equity allowance set by the state commissions
2. **Test year utilized** – forecasted or historical test period
3. **Regulatory jurisdiction** – multi-state versus single state
4. **Fuel cost / total revenue** – fuel cost as a percentage of total revenue
5. **Load factor** - net retail MWh sold / [Peak Load * 8760]
6. **Fuel concentration** – diversity of fuel use
7. **Bad debt** – doubtful retail accounts
8. **Retail load growth** – annual change in retail load growth
9. **Retail rate** – average retail rate
10. **Vertical integration** –presence or absence of energy production
11. **Purchased power / total revenue** – cost of purchased power as a share of revenue
12. **Weather** – annual cooling degree days.

Page 6 of Exhibit No. 4 contains an explanation of each variable.

Q. Could you please provide an example or two, with an explanation, of the variables used in the regression analysis?

A. Yes. I will discuss load factor and test year.

Q. What does your analysis indicate about load factor?

A. It shows that companies with high load factors have greater risk than companies with lower load factors.

Q. Isn't this finding different than what is commonly assumed in the utility industry?

A. Yes, this finding is different than what has been commonly assumed in the utility industry. For many years, higher load factors have generally been thought of as a positive thing for utility companies. This stems from the fact that higher load factors mean greater system throughput and therefore better utilization of assets, and as a result, lower average system cost (other things being equal). What our analysis demonstrates, however, is that firms with higher load factors face greater risk of lower returns.

Several reasons account for this. First, a higher load factor implies a higher concentration of large, high-usage industrial and institutional customers. Due to their size and usage patterns, these customers have considerable negotiating leverage with the utility. This leverage is manifested in a number of ways. Let me suggest two. First, the large customer can extract concessions from the utility by threatening to close a facility, install self-generation, move production to another location or seek legislative provisions that would allow purchases from third party suppliers. Secondly, larger customers tend to be better represented in regulatory and legislative forums. This increases the likelihood that their concerns will be addressed. As a result, margins for large, high load factor customers are often smaller than for smaller, lower load factor customers.

Another factor driving this finding is that the greater concentration of industrial load exposes the company to greater general macroeconomic risk, since many industrial customers' business activity is dependent on the economy. Similarly, some utilities have significant exposure to specific industry risk, e.g., aluminum markets, steel production, etc.

As a result, companies with higher load factors are exposed to much greater volume risk than those companies with lower load factors.

Q. Please explain your finding regarding test year.

A. I found that companies for which a future test year is used in regulatory proceedings have lower risk than those for which a historical test year is utilized. The analysis shows that when regulators use historical test years (versus forecasted) to determine revenue requirements and set rates, firms earn lower returns. Using a historical test year results in making rates based upon information that is at least one year old. Even with the best of intentions, setting prices for next year and following years based upon last year's revenues and expenses is likely to result in suboptimal results. If a utility company has its revenue requirements, and therefore rates, set on a year prior to when the rates will be in effect, the rates will recover less than the current total costs (other things being equal). In this fashion, utilities that are required to use historical test years are in effect, always trying to play catch up, as new investment and increases in costs are not captured in the current rate cycle. Most importantly, since a utility's operating and debt costs still have to be paid in full, the short fall directly impacts returns on equity.

Q. Does this model identify the measurable risks impacting returns for electric utilities?

A. Yes. The model is built upon empirical data – actual results from 113 operating companies over a three-year period of time. The data were gathered from many sources including FERC Form 1 filings, Platt's PowerDat industry database, Regulatory Research Associates reports and SEC filings. The statistical significance of the individual

variables is demonstrated by the P-values listed in the ANOVA table on page 7 of Exhibit No. 4.

Q. Why is Return on Ratebase used instead of Return on Equity?

A. Across the universe of 113 electric utility operating companies, capital structures vary significantly, and in some instances the difference between actual and regulatory capital structures may skew results. Utilizing Return on Ratebase normalizes these variances and focuses upon the return to all capital providers. Additionally, the use of standard deviation of the Return on Ratebase across the industry in the Sharpe Ratio is used for conservatism. If standard deviation of the Return on Equity across the industry were to be utilized, a wider variance would occur.

Q. How is relative risk translated into an estimate for the cost of equity?

A. In looking at historical Commission decisions across the U.S. for the last ten years, a range of approximately 224 basis points, on average, separates the highest allowed return on equity from the lowest allowed return on equity in a given year, as shown on page 8 of Exhibit No. 4. This range does not seem inappropriate to differentiate between firms facing different operating, franchise and regulatory risks. Using this range and our previously calculated target cost of equity for the average risk electric utility operating company of 12.20%, a bandwidth from 11.08% to 13.32% is established. Since Avista is determined to have the fourth highest relative risk in the industry (4th out of 113 companies), a range of 13.10% to 13.32%, representing the top decile of risk, is recommended.

Q. How is it that Avista ranks fourth from the top?

A. In examining the eleven variables (other than Return on Ratebase) that have statistical significance in affecting actual returns, Avista is riskier than average on seven, and about average on the other four. This clearly indicates that Avista faces considerable risk in many facets of its electric utility business. A few of the top factors affecting Avista's risk profile in comparison to the 'average' electric utility are Purchased Power / Total Revenue, Average Retail Rate, Vertically Integrated Operations, High Load Factor and Weather.

V. REVIEW OF THE RECOMMENDED COST OF EQUITY FOR AVISTA

Q. Would you summarize your recommendations for Avista's cost of equity capital?

A. Yes. Based upon a thorough and rigorous review of the reward-risk profile of regulated electric utility operating companies and the specific operating risks of Avista, the analysis would support a cost of equity capital for Avista between 13.10% and 13.32%.

Q. How does the OPERA methodology assess the relative risk and cost of capital of the peer group companies presented in Dr. Avera's testimony?

A. The results of the OPERA analysis for most of the regulated electric operating companies in Dr. Avera's testimony are presented below. Sempra's San Diego Gas & Electric was excluded from the analysis due to the unusual market structure and operating results experienced in California.

Operating Company	Risk Ranking (1=highest risk)	Cost of Equity Range
Arizona Public Service	102	11.19 – 11.41%
Avista Utilities	4	13.10 – 13.32%
Black Hills Corp	90	11.43 – 11.65%
Hawaiian Electric	45	12.33 – 12.55%
Maui Electric	72	11.79 – 12.01%
MDU Resources	96	11.31 – 11.53%
Northern States Power – MN	59	12.05 – 12.27%
Northern States Power – WI	50	12.23 – 12.45%
PNM	47	12.29 – 12.51%
PS Colorado	15	12.93 – 13.15%
Puget Sound	21	12.81 – 13.03%
Southwestern Public Service Co.	11	13.01 – 13.23%

Q. How does the OPERA methodology assess the relative risk and cost of capital of the WECC companies?

A. The results of the OPERA analysis for the WECC companies are presented below. San Diego Gas & Electric, Pacific Gas & Electric and Southern California Edison were excluded from the analysis due to the unusual market structure and operating results experienced in California.

Operating Company	Risk Ranking (1=highest risk)	Cost of Equity Range
Arizona Public Service	102	11.19 – 11.41%
Avista Utilities	4	13.10 – 13.32%
Black Hills Corp	90	11.43 – 11.65%
El Paso Electric	63	11.97 – 12.19%
Idaho Power	17	12.89 – 13.11%
Nevada Power	2	13.10 – 13.32%
Northwestern Energy	6	13.10 – 13.32%
PacifiCorp	22	12.79 – 13.01%
PNM	47	12.29 – 12.51%
PS Colorado	15	12.93 – 13.15%
Portland General Electric	8	13.07 – 13.29%
Puget Sound	21	12.81 – 13.03%
Sierra Pacific Power	1	13.10 – 13.32%
Tucson Electric	54	12.15 – 12.37%

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

A. Yes