BEFORE THE WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

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

DOCKET NOS. UE-050482 AND UG-050483

DIRECT TESTIMONY OF STEPHEN G. HILL (SGH-1T)

ON BEHALF OF

PUBLIC COUNSEL

August 26, 2005

DIRECT TESTIMONY OF STEPHEN G. HILL (SGH-1T)

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1   **I. INTRODUCTION / SUMMARY**

2   **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND ADDRESS.**

3   A. My name is Stephen G. Hill. I am self-employed as a financial consultant, and principal

4   of Hill Associates, a consulting firm specializing in financial and economic issues in

5   regulated industries. My business address is P.O. Box 587, Hurricane, West Virginia,

6   25526 (e-mail: sghill@compuserve.com).

7   **Q. BRIEFLY, WHAT IS YOUR EDUCATIONAL BACKGROUND?**

8   A. After graduating with a Bachelor of Science degree in Chemical Engineering from

9   Auburn University in Auburn, Alabama, I was awarded a scholarship to attend Tulane

10   Graduate School of Business Administration at Tulane University in New Orleans,

11   Louisiana. There I received a Master's Degree in Business Administration. More

12   recently, I have been awarded the professional designation, "Certified Rate of Return

13   Analyst" by the Society of Utility and Regulatory Financial Analysts. This designation is

14   based upon education, experience and the successful completion of a comprehensive

15   examination. I have also been elected to the Board of Directors of that national

16   organization. A more detailed account of my educational background and occupational

17   experience appears in Exhibit __(SGH-2).

18   **Q. HAVE YOU TESTIFIED BEFORE THIS OR OTHER REGULATORY**

19   **COMMISSIONS?**

20   A. Yes, I have previously presented testimony in this jurisdiction and have testified on cost

21   of capital, corporate finance and capital market issues in more than 225 regulatory

22   proceedings before the following regulatory bodies: the West Virginia Public Service

1   Commission, the Texas Public Utilities Commission, the Oklahoma State Corporation

2   Commission, the Public Utilities Commission of the State of California, the Public

3   Service Commission of New Hampshire, the Georgia Public Service Commission, the

4   Public Utilities Commission of the State of Minnesota, the Ohio Public Utilities

5   Commission, the Insurance Commissioner of the State of Texas, the North Carolina

6   Insurance Commissioner, the Rhode Island Public Utilities Commission, the City Council

7   of Austin, Texas, the State of Maine Public Service Commission, the South Carolina

8   Public Service Commission, the Public Utilities Commission of the State of Hawaii, the

9   New Mexico Corporation Commission, the Wisconsin Public Service Commission, the

10   State of Texas Railroad Commission, the Public Service Commission of Utah, the Illinois

11   Commerce Commission, the Kansas Corporation Commission, the Indiana Utility

12   Regulatory Commission, the Virginia Corporation Commission, the Public Service

13   Commission of Maryland, the Pennsylvania Public Utilities Commission, the Montana

14   Public Service Commission, the Maine Public Utilities Commission, the Vermont Public

15   Service Board, the Federal Communications Commission and the Federal Energy

16   Regulatory Commission. I have also testified before the West Virginia Air Pollution

17   Control Commission regarding appropriate pollution control technology and its financial

18   impact on the company under review.

19   **Q. ON BEHALF OF WHOM ARE YOU TESTIFYING IN THIS PROCEEDING?**

20   A. I am testifying on behalf of the Attorney General of Washington, Public Counsel (PC).

21   **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

22   A. In this testimony, I present the results of studies I have performed related to the

1   appropriate return on equity to be applied to the electric and gas distribution utility

2   operations of Avista Utilities (Avista, the Company), an operating division of Avista

3   Corporation (AVA, the Parent). Avista Corporation has four business segments: Avista

4   Utilities, Energy Marketing and Resource Management, Avista Advantage and "Other".[1]

5   Avista Capital, a subsidiary of Avista Corporation, is the parent company of all the

6   operations in the non-utility business segment.

7   In addition to my testimony regarding the Company's current cost of equity

8   capital for its electric and gas utility operations, I review the cost of capital testimony

9   provided by Dr. William Avera and discuss the shortcomings contained in that testimony.

10   **Q. MR. HILL ARE YOU AWARE THAT THE COMMISSION STAFF AND THE**

11   **COMPANY HAVE REACHED A SETTLEMENT OF THE ISSUES IN THIS**

12   **PROCEEDING?**

13   A. Yes, I am aware of the settlement. I am also aware that the settlement includes a return

14   on common equity of 10.4%, a capital structure similar to that which I recommend and an

15   equity tracking mechanism. The equity cost analysis presented in my testimony indicates

16   that the Company's actual cost of equity capital is well below 10.4%.

17   Because the Company and Staff will file testimony supporting the settlement

18   concurrent with the filing of this testimony, I will not comment on the details of the

19   settlement at this time. I will comment on the settlement in the rebuttal phase of this

20   proceeding.

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[1] "Other" operations are comprised of Avista Ventures, Pentzer Corporation, Avista Development,
Advanced Manufacturing and Development, as well as other operations of Avista Capital.

1 **Q. HAVE YOU PREPARED EXHIBITS IN SUPPORT OF YOUR TESTIMONY**?

2 A. Yes, Exhibits__(SGH-3) through (SGH-5) contain additional detail regarding certain

3 aspects of my narrative testimony in this proceeding. Exhibits __(SGH-6) through

4 (SGH-17) provide the analytical support for the conclusions reached regarding the overall

5 cost of capital for the integrated electric and gas distribution utility operations of Avista

6 Utilities presented in the body of the testimony. These Exhibits were prepared by me and

7 are correct to the best of my knowledge and belief.

8 **Q. PLEASE SUMMARIZE YOUR TESTIMONY AND FINDINGS CONCERNING**

9 **THE RATE OF RETURN THAT SHOULD BE UTILIZED IN SETTING RATES**

10 **FOR AVISTA'S UTILITY OPERATIONS IN THIS PROCEEDING.**

11 A. My testimony is organized into four sections. First, I discuss the cost of capital standard

12 as a measure of the return to be allowed for regulated industries, and review the current

13 economic environment in which my equity return estimate is made.

14 Second, I review the Company's requested capital structure as well as the manner

15 in which it has recently capitalized its consolidated operations and its utility-only

16 operations. I provide an assessment of an appropriate ratemaking capital structure that

17 will balance economic efficiency and financial safety and recommend a regulatory

18 mechanism that will facilitate Avista Utilities' return to sound financial footing.

19 Third, I evaluate the cost of equity capital for similar-risk utility operations using

20 Discounted Cash Flow (DCF), Capital Asset Pricing Model (CAPM), Modified Earnings-

21 Price Ratio (MEPR), and Market-to-Book Ratio (MTB) analyses. Fourth, I comment on

22 the pre-filed cost of capital testimony submitted by Company witness, Dr. William

1   Avera.

2   I have estimated the equity capital cost of gas and electric utility companies to fall

3   in a range of 8.75% to 9.50%. Within that range, due to the Company's somewhat higher

4   financial risk (even with a hypothetical capital structure), I estimate the equity cost of the

5   Company's utility operations to be in the upper end of a reasonable range of equity costs

6   for fully-integrated gas and electric utilities —9.25%.

7   Applying that 9.25% equity capital cost to an appropriate ratemaking capital

8   structure that balances financial strength and economy along with the embedded cost

9   rates requested by the Company produces an overall cost of capital of 8.64% (see

10   Exhibit__SGH-17). That overall return would afford the Company an opportunity to

11   achieve a pre-tax interest coverage of 2.27 times. According to Avista Corporation's

12   2004 S.E.C. form 10-K (pp. 69, 70), the average pre-tax interest coverage for the

13   consolidated parent company operations over the past three years was 1.62 times, and

14   1.50 times for the utility operation. Therefore, the equity return and capital structure I

15   recommend offers the Company an opportunity to substantially exceed its prior pre-tax

16   interest coverage levels and, thereby, improve its current bond rating. The equity return I

17   recommend is sufficient to support or improve the Company's current bond rating and

18   fulfills the requirement of providing the Company an opportunity to earn a return which

19   is commensurate with the risk of its utility operations and serves to support and maintain

20   the Company's ability to attract capital.

21 **Q. MR. HILL, CAN YOU BRIEFLY EXPLAIN WHY YOUR RECOMMENDED**

22   **RETURN ON EQUITY FOR AVISTA UTILITIES IS BELOW 10 PERCENT?**

1 A. Yes. Simply put, the current and expected market-based cost of capital is relatively low.

2 As I explain subsequently in my testimony, long-term interest rates (an indicator of

3 overall capital cost rates), even with recent increases in short-term Treasury rates, remain

4 near 40-year lows. I also present objective capital market evidence that investor return

5 expectations are far more modest than they have been in the past.

6 Also, the Company's own testimony in the instant case supports the accuracy of

7 an equity return recommendation below 10%. Company witness Avera's unadjusted

8 Discounted Cash Flow analyses, absent unnecessary flotation cost adders, indicate

9 current equity capital cost rates for Avista of 9.8%. When updated using the most current

10 data, his DCF methodology indicates a current cost of equity for Avista of 9.3%.

11 **Q. HAVE OTHER REGULATORY BODIES DETERMINED SINGLE-DIGIT**

12 **EQUITY RETURNS TO BE APPROPRIATE OVER THE LAST YEAR?**

13 A. Yes, while *Public Utilities Fortnightly* reports that the majority of the equity return

14 awards over the last year (October 2003-October 2004) have been in the 10% to 10.5%

15 range, capital costs have been low and there have been many single-digit equity return

16 awards over the past couple of years.[2] Regulatory jurisdictions of New York, New

17 Jersey, Arkansas, Tennessee, Colorado, Connecticut, New Hampshire, Indiana, and

18 Wyoming have set equity returns below 10% during 2003 and 2004.[3] In addition, the

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[2] *Public Utilities Fortnightly*, November 2004, pp. 49-51; 30 out of 50 equity return awards over the
October 2003 through November 2004 period were 10.5% or below.
[3] New York: Rochester Gas & Electric, 9.96%, NY PUC Lexis 140 (3/7/03); St. Lawrence Gas Co., 9.5%,
NY PUC Lexis 427 (8/4/03); Crown Point Telephone Corp., 8.93%, NY PUC Lexis 474 (8/27/03); Chazy
& Westport Telephone Corp., 8.01%, NY PUC Lexis 475 (8/27/03); Fishers Island Electric, 9.0%, NY
PUC Lexis 497 (9/19/03). New Jersey: Jersey Central Power & Light, 9.5%, NJ PUC Lexis 248 (8/1/03);
Rockland Electric Co., 9.75%, NJ PUC Lexis 259 (7/31/03). Arkansas: Arkansas Western Gas Co., 9.9%,
Ark. PUC Lexis 397 (7/17/03). Tennessee: Tennessee-American Water Co., 9.9%, Case No. 03-00118

1   West Virginia Public Service Commission last year set the equity return of a water utility

2   company at 7.0%.[4] More recently, the New Hampshire Public Service Commission

3   determined the cost of equity capital of integrated electric utility operations for Public

4   Service Company of New Hampshire to be 9.4%. [5]

5   **Q. MR. HILL, DO YOU INTEND THAT THE RETURNS YOU CITE, ALLOWED**

6   **BY OTHER REGULATORS FOR OTHER COMPANIES IN OTHER**

7   **JURISDICITONS, BE USED TO DETERMINE THE COST OF CAPITAL IN**

8   **THIS PROCEEDING?**

9   A. No. The cost of common equity capital should be determined in any regulatory

10   proceeding by a reasoned review of current capital market data and proper application of

11   econometric models. The determination of an appropriate ratemaking cost of capital

12   based on current capital costs of utilities similar in risk to Avista Utilities is the primary

13   focus of my testimony in this proceeding. I believe that analysis should form the basis of

14   the return to be allowed in this proceeding. I mention the other cases simply to inform

15   this Commission that other regulators in other jurisdictions have, over the past two years,

16   elected to allow utilities to earn returns that are relatively close to the current cost of

17   common equity capital—and those returns are below 10%.

(6/27/03). Wyoming: Lower Valley Energy, Inc., 9.21%, Wyo. PUC Lexis, 128 (4/30/03), Colorado:
Phillips County Telephone, 9.5%, Col. PUC Lexis 1428 (12/31/03), Connecticut: Connecticut Light &
Power, 9.85%, Docket No. 03-07-02 (12/17/03), New Hampshire: Kearsarge Telephone Company, 8.89%,
Docket No. DT 01-221, Verizon New Hampshire, 8.82%, Docket No. DT 02-110; Indiana: Indiana-
American Water Company, Docket No. 42520, 9.25% (12/18/04).
[4] W.V.P.S.C. Case No. 03-0353-W-42T, West Virginia-American Water Works, January 2, 2004.
[5] Docket No. DE 04-177, Public Service Company of New Hampshire, New Hampshire Pubic Utilities
Commission Order No. 24,473, June 8, 2005.

1 **Q. WHY SHOULD THE COST OF CAPITAL SERVE AS A BASIS FOR THE**

2 **PROPER ALLOWED RATE OF RETURN FOR A REGULATED FIRM?**

3 A. The Supreme Court of the United States has established, as a guide to assessing an

4 appropriate level of profitability for regulated operations, that investors in such firms are

5 to be given an opportunity to earn returns that are sufficient to attract capital and are

6 comparable to returns investors would expect in the unregulated sector for assuming the

7 same degree of risk. The Bluefield and Hope cases provide the seminal decisions

8 [Bluefield Water Works v. PSC, 262 US 679 (1923); FPC v. Hope Natural Gas

9 Company, 320 US 591 (1944)]. These criteria were restated in the Permian Basin Area

10 Rate Cases, 390 US 747 (1968). However, the Court also makes quite clear in Hope that

11 regulation does not guarantee profitability and, in Permian Basin, that, while investor

12 interests (profitability) are certainly pertinent to setting adequate rates, those interests do

13 not exhaust the relevant considerations.

14   As a starting point in the rate-setting process, then, the cost of capital of a

15 regulated firm represents the return investors could expect from other investments, while

16 assuming no more and no less risk. Since financial theory holds that investors will not

17 provide capital for a particular investment unless that investment is expected to yield

18 their opportunity cost of capital, the correspondence of the cost of capital with the

19 Court's guidelines for appropriate earnings is clear.

20 **Q. MR. HILL, IN YOUR SUMMARY YOU HAVE USED PHRASES LIKE "THE**

21 **COST OF EQUITY," "OVERALL COST OF CAPITAL," AND "CAPITAL**

22 **STRUCTURE." PRIOR TO EXPLAINING THE DETAILS OF YOUR ANALYSIS**

1   **IN THIS PROCEEDING, CAN YOU PROVIDE THE COMMISSION SOME**

2   **DEFINITIONS OF THE TERMINOLOGY YOU WILL USE AS WELL AS THE**

3   **SCOPE OF THE ISSUES ADDRESSED IN YOUR TESTIMONY?**

4   A. Yes, I can.

5   In order to build a utility infrastructure—in this case, an electric and gas utility

6   system—a firm must attract capital (money) from investors that is, in turn, used to

7   construct the facilities (utility plant) necessary to meet its public service obligation. In

8   very simple terms, the value of the utility plant appears on the asset side of the

9   company's balance sheet (the electric and gas plant comprises the utility's assets), and is

10   equal in value to the monies received from investors which were used to build the plant,

11   which appear on the liabilities side of the company's balance sheet (the capital received

12   from investors comprises the utility's liabilities).[6]

13   Investors provide capital to the firm in several different forms. The relative

14   percentages or the mix of those different forms of capital provided by investors is called

15   the capital structure. For a utility operation, the capital structure represents the source of

16   the investor-supplied funds with which the firm has built its utility plant. The capital

17   structure is generally comprised of common equity (monies supplied by investors when

18   they purchase the stock of a company and by profits retained by the company), long-term

19   debt (monies supplied by investors who buy notes and bonds issued by the company),

20   short-term debt (monies supplied by investors who buy the commercial paper issued by

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[6] In reality of course, a utility has more assets than its plant investment (such as cash or other liquid
investments) as well as more liabilities than the capital provided by investors (such as accounts payable).
However, for the overview discussion here those details can be overlooked.

1   the company or by banks that lend money to the company on a short-term basis), and an

2   equity/debt hybrid called preferred stock (monies supplied by investors that buy the

3   preferred stock of the company). Each of those types of securities—each type of capital

4   provided by investors—has a cost rate associated with it. Moreover, the cost rate of each

5   type of security is directly related to its relative investment risk.

6   The debt securities of a firm are the least risky to the investor because they are

7   issued with a contractual agreement by the firm to pay a certain percentage rate of

8   interest on the value of the debt (the face amount of the bond), and the bondholders are,

9   legally, first-in-line for payment when the firm honors its obligations. In other words,

10   there is more certainty that the bondholder will receive her promised return than will the

11   equity holder of the same firm because the bondholder must be paid first. As an example,

12   a $1000 bond with a coupon rate of 6% would provide the investor a contractual return of

13   $60 annually [$1000 x 6% = $60] every year until the bond matures, at which time the

14   investor would receive back from the company the face value of the bond—$1000.

15   Because debt securities are the most certain income stream to the investor, they carry the

16   least risk and investors require the lowest return for that type of corporate security.

17   Therefore, debt is the generally cheapest form of capital for the company.

18   Within the "debt" category of securities there are many types of debt, each with

19   varying degrees of risk. Short-term debt, which is debt with maturities generally less

20   than one year is the least risky to investors, and least costly to the firm. Short-term debt

21   is the least risky due to the term structure of interest rates. Investors most often require

22   greater compensation to assume the risk of investing in a longer-term debt security due to

1   uncertainty regarding the level of inflation and interest rates in the distant future and

2   tying up their money for a longer period of time. The additional risk of investing in

3   longer-term debt securities is called maturity risk. Short-term debt generally offers

4   investors a lower yield (return) than does long-term debt and is, thus, less costly to the

5   firm.

6   Long-term debt can be secured by the physical assets of the company. That is, in

7   case of bankruptcy the assets of the firm can be sold, and the monies raised from the sale

8   of those assets is used, first, to honor the firm's obligation to the bondholders whose debt

9   was secured by those assets. That type of bond is called a mortgage bond. In effect, the

10   physical property of the utility is mortgaged to secure the debt obligation. Utilities also

11   issue a type of bond called a "debenture," which is, simply, unsecured debt. That type of

12   bond represents a promise to pay interest and principal but is not secured by physical

13   assets. Unsurprisingly, investors require a slightly higher return for investing in a

14   debenture rather than a mortgage bond of the same company—their principal is more

15   secure with the latter. The fact that mortgage debt is more secure than unsecured debt is

16   also shown in Avista's current bond ratings. While Standard & Poor's currently rates

17   Avista's unsecured medium- and long-term debt at just below investment grade ("BB+"),

18   the Company's mortgage debt is rated at a higher, investment grade level, "BBB-". The

19   difference in bond rating is due to the lower-risk attributes of secured debt.

20   Also, it is important to note that interest on debt is tax-deductible. That is, prior

21   to paying income taxes, the firm will deduct its interest expense from its operating

22   earnings. Therefore, the cost of utility debt to ratepayers is simply the interest expense of

1   the debt, there is no additional tax impact as with common equity. Overall, debt is the

2   cheapest form of financing for a company because debt holders have a superior claim to

3   any other security in the event of bankruptcy and debt holders are more likely to recover

4   their investment even in a worst case scenario, i.e., bankruptcy.

5   **Q. WHAT IS PREFERRED STOCK?**

6   A. From the firm's point of view, occupying the next higher rung on the cost of capital scale

7   is preferred stock. Preferred stock is a hybrid security that has some aspects of common

8   equity and some aspects of debt. Preferred is debt-like in that there is a pre-determined,

9   contractual interest rate offered the investor (which is the cost of that type of capital to

10   the company). In other words, investors purchase the preferred stock of a firm knowing

11   what the quarterly dividend is going to be. Unlike common stock, the quarterly dividend

12   associated with preferred stock does not increase over time—it remains at the

13   contractually stated level.

14   There are many varieties of preferred stock, but one primary difference between

15   preferred stock and debt is that if the preferred dividend is not met, the preferred stock

16   holders are not able to require that the firm liquidate its assets to pay the promised cash

17   flows as the debt-holders can. If a preferred dividend is omitted, however, the firm is

18   often required to accrue and eventually pay that deferred dividend. So, to the investor,

19   the income stream from a preferred stock investment is less secure than that of a debt

20   holder but more secure than that of a common stock holder. The cost rate of preferred

21   stock, absent any income tax considerations, then, is higher than debt, and preferred stock

22   is a more expensive form of capital for the firm than debt.

1   Preferred stock also has some aspects of equity capital in that, as I noted above,

2   the dividend can be omitted without bankruptcy considerations for the firm. Also

3   preferred stockholders have an ownership interest in the firm (something bondholders do

4   not have) and can vote on corporate-related issues. Preferred dividends are not tax-

5   deductible to the company that issues the preferred stock and require an income tax

6   addition to the cost rate in a ratemaking context. In other words, ratepayers have to

7   provide not only the dividends on the preferred stock but also the income tax payments

8   that must be paid on those monies earned by the utility.

9   It is important to understand that the cost to the Company of preferred stock, and

10   long- and short-term debt is contractually set. That is, the annual return that will be

11   realized by investors and, thus, the cost to the utility for all of those types of capital is set

12   out contractually and is relatively easily determined for ratemaking purposes. Of course,

13   there can be differences of opinion on projected short-term debt interest rate levels or the

14   amount of debt refinancing expense to include in the embedded cost rates, but the rate

15   impact of those differences are usually minor. The determination of the cost of common

16   equity capital, a primary focus of this testimony, is quite a different matter.

17 **Q. WHY IS THE DETERMINATION OF THE COST OF COMMON EQUITY**

18   **CAPITAL DIFFERENT FROM THE DETERMINATION OF THE COST OF**

19   **THE OTHER TYPES OF CAPITAL USED BY UTILITY COMPANIES?**

20 A. The cost of common equity capital to the utility is the return investors require in the

21   marketplace for the stock of a security of similar risk. In that regard, the cost of common

22   equity is similar to the cost of any other type of capital. For example, the cost of debt to

1   the utility is the return investors require in the marketplace for similar-risk debt securities.

2   The difference is that debt is issued with a rate of return (a percentage yield) established

3   by contractual agreement. With common equity capital, there is no such contractual

4   agreement and the investors' required return—the cost of common equity capital to the

5   firm must be estimated using econometric models such as the Discounted Cash Flow

6   (DCF) or Capital Asset Pricing Model (CAPM).

7   The cost of common equity can also be thought of, simply, as the profit the utility

8   will be allowed to earn. For example, if the Commission sets rates for Avista using a cost

9   of common equity of 10%, then they are setting rates which, under normal operating

10   conditions and the auspices of efficient management, will result in a profit of 10% on the

11   common equity investment in the firm, after all operating expenses, depreciation,

12   purchased power expenses and taxes have been paid.

13   Common equity is the most expensive form of capital for a firm. Common stock

14   dividends are not tax deductible and, because of that fact, from a ratepayer point of view,

15   common equity capital is roughly twice as expensive as debt capital. For example,

16   assume the cost of long-term debt for a utility firm is 6% and the cost of common equity

17   is 10%, after tax. In order for the utility to be able to pay the income taxes that will be

18   due on its 10% common equity return (which, again, is the company's profit), ratepayers

19   will have to provide the 10% return as well as the taxes on that 10% return, or a 15.4%

20   pre-tax return on equity [10% / (1-35%tax rate) = 10%/65% = 15.4%]. Therefore, the

21   cost of common equity to the ratepayer is more than twice that of debt capital (in our

22   example, 15.4% v. 6%).

1   For that reason, the selection of the ratemaking capital structure is important to

2   ratepayers as well as to the utility. If the capital structure used for ratemaking purposes

3   contains more common equity capital than is commensurate with the risk of the utility

4   operation, or more common equity than the utility actually employs, that factor can

5   impart capital costs to the ratepayer that exceed the utility's actual costs and are

6   economically inefficient.

7   Finally, because the common dividend is not contractually guaranteed, common

8   equity is the least risky form of capital to the utility firm from a financial risk perspective.

9   Firms that have relatively high levels of common equity capital in their capital structure

10   mix have concomitantly lower financial risk and, conversely, firms such as Avista that

11   have relatively low levels of common equity capital in their capital structure mix (high

12   levels of debt capital) have higher financial risk.

13 **Q. WHAT DETERMINES THE MIX OF THE DIFFERENT TYPES OF CAPITAL**

14   **IN THE CAPITAL STRUCTURE OF A FIRM?**

15 A. The manner in which a firm is most economically capitalized is a function of the

16   volatility of the income stream generated by the assets of the firm or, in other words, the

17   firm's operating (business) risk. For example, if a firm has an income stream that is not

18   volatile and which can be predicted with near certainty, then a capital structure consisting

19   of even 100% debt would not be problematic or risky. In fact, it would be the most cost-

20   effective capital structure in that instance because debt is the least expensive form of

21   investor-supplied capital for a firm and, without the possibility of operating income being

22   insufficient to meet the debt service requirements, a 100% debt capital structure would be

1   the prudent choice.

2   As the income stream of a firm becomes more volatile (more risky), financial

3   theory holds that the amount of debt used should decline in order to avoid a default event

4   (the failure to meet the required debt service costs). Although the reduction of lower-cost

5   debt and the addition of higher-cost common equity will raise the firm's overall cost of

6   capital, that increase is appropriate and economically efficient because it more

7   appropriately matches the firm's financial risk with the increase in business risk. In that

8   way, given an increased level of business risk, the cost of capital is minimized and the

9   financial health of the firm is better assured.

10   An example of how the amount of debt in the capital structure varies with the

11   operational or business risk of a firm is found in a recent publication by Standard &

12   Poor's regarding utility business risk. A June 2004 publication by Standard & Poor's, in

13   which that bond rating agency re-aligned its business risk profile scores for utility

14   companies, indicates that the companies with higher business risk are required to have a

15   lower debt ratio (less debt, more equity) in order to earn the same bond rating as a firm

16   with lower business risk.[7]

17   For example, Standard & Poor's indicates that energy merchant/marketing

18   companies have high business risk. On a scale of 1 to 10 with, 10 representing the

19   highest risk, energy trading companies have an average business risk profile score of 9.

20   In order to achieve a bond rating of "BBB", companies with a business risk profile of 9,

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[7] Standard & Poor's Ratings Direct, New Business Profile Scores Assigned for U.S. Utility and Power Companies: Financial Guidelines Revised, June 2, 2004.

1   according to Standard & Poor's, should have a total debt ratio ranging between 40% and

2   50% of total capital. (A debt ratio between 40% and 50% corresponds to an equity ratio

3   between 50% and 60%.)

4   In contrast, fully-integrated combination utilities, like Avista Utilities, have lower

5   business risk than energy trading companies, and have an average risk profile score of

6   about 5. According to Standard & Poor's, in order to achieve a "BBB" bond rating, those

7   companies should be capitalized with a total debt ratio between 50% and 60% of total

8   capital (or an equity ratio between 40% and 50% of total capital). Therefore, companies

9   with lower business risk (like utility operations) are effectively capitalized with more

10   debt and less equity than companies with higher business risk (like energy trading

11   companies).

12   **Q. DOES THIS CONCLUDE YOUR OVERVIEW OF THE TERMS AND**

13   **CONCEPTS USED IN YOUR TESTIMONY?**

14   A. Yes, it does.

15   **II. ECONOMIC ENVIRONMENT**

16   **Q. WHY IS IT IMPORTANT TO REVIEW THE ECONOMIC ENVIRONMENT IN**

17   **WHICH AN EQUITY COST ESTIMATE IS MADE?**

18   A. The cost of equity capital is an expectational, or *ex ante*, concept. In seeking to estimate

19   the cost of equity capital of a firm, it is necessary to gauge investor expectations with

20   regard to the relative risk and return of that firm, as well as that for the particular risk-

21   class of investments in which that firm resides. Because this exercise is, necessarily,

1   based on understanding and accurately assessing investor expectations, a review of the

2   larger economic environment within which the investor makes his or her decision is most

3   important. Investor expectations regarding the strength of the U.S. economy, the

4   direction of interest rates and the level of inflation (factors that are determinative of

5   capital costs) are key building blocks in the investment decision. Those factors should be

6   reviewed by the analyst and the regulatory body in order to assess accurately investors'

7   required return—the cost of equity capital to the regulated firm.

8   **Q. WHY DO YOU BELIEVE AN EQUITY RETURN IN THE RANGE OF 8.75% to**

9   **9.50% IS REASONABLE FOR A COMBINATION ELECTRIC AND GAS**

10   **UTILITY IN TODAY'S ECONOMIC ENVIRONMENT?**

11   A. The overall level of fixed-income capital costs has been relatively low for several years,

12   and continues to be low at the current time. Although, as shown in the chart below, there

13   has been upward movement in *short-term* interest rate levels over the past year as the

14   economy has improved, long-term interest rates have remained relatively steady.

15   Moreover, as the economy began to improve at mid-year 2004 and as short-term rates

16   started to climb in response to Federal Reserve credit-tightening, long-term rates actually

17   fell. This indicates that even though the Fed has raised short-term interest rates, investors

18   may not be convinced that the overall level of economic growth will be sufficient to

19   warrant an increase in long-term interest rates.

1   **GRAPH I.**

RECENT INTEREST RATE CHANGES
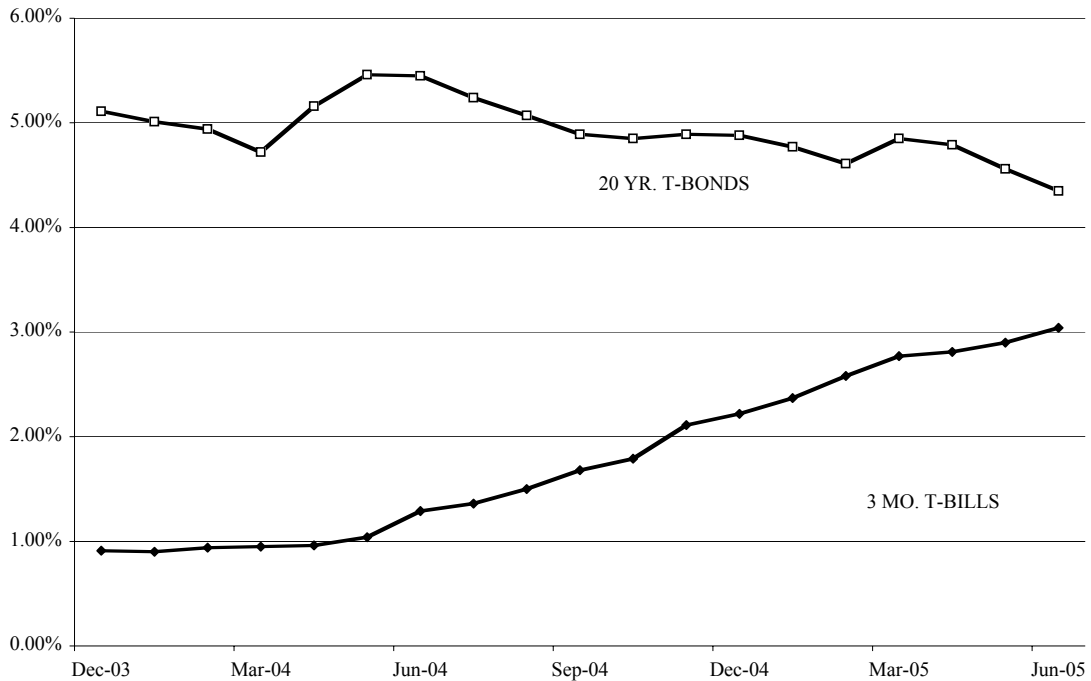
2

3   (Data from Federal Reserve Statistical Release H.15)

4   Also, there are examples in the capital marketplace indicating that investor return

5   requirements are low by historical standards. A recent A.G. Edwards report on the gas

6   utility industry, which is relatively similar in risk to the electric utility industry, shows

7   that market return expectations for gas utility stocks are well below historical earned

8   returns.[8] The report states that, for a sample of 20 large and small gas distributors, the

9   median total return expectation (dividend yield plus expected growth—a DCF-type

10   calculation) is 8.4%.

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[8] A.G. Edwards, "Gas Utilities Quarterly Review," April 4, 2005.

1   In addition, in a letter recently published by Public Utilities Fortnightly, an

2   electric industry analyst confirms that investors currently expect single-digit returns from

3   their utility investments:

4   "Finally, let's get real about investor expectations,
5   now that investors have begun to get real. Articles on the
6   topic fill the financial journals. They feature variants on
7   this theme: Over time the average equity investment
8   produces an annual total return (dividends plus stock price
9   appreciation) of 6.5 per cent per year in real terms, the bulk
10   of which comes from the dividend component. Add
11   inflation expectations to that number, and you get an 8.5 to
12   9.5 percent return in nominal terms. The average back-to-
13   basics utility yields about 5 to 6 percent and might grow 3
14   to 4 percent per year, which adds up to produce a total
15   return expectation of 8 to 10 percent per year, not far from
16   the return the journals posit for the market." (Hyman,
17   Leonard, Senior Consultant, R.J. Rudden Associates,
18   "Letters to the Editor, *Public Utilities Fortnightly*, August
19   2004, p. 10)

20

21   The "articles in the financial journals," to which the author of the preceding quote

22   refers, relate to recent research involving the market risk premium. The market risk

23   premium is the additional return above the risk-free rate of interest that investors expect

24   to earn by investing in stocks rather than risk-free U.S. Treasury securities. The

25   "traditional" view (largely supported by the earned return data over the past 70 years

26   published by Ibbotson Associates) assumes that investors require a risk premium of about

27   6.5% above the risk-free rate to invest in stocks. [9] With a current long-term T-Bond yield

28   of approximately 5%, that traditional assumption indicates an investor expectation of an

29   11.5% return for the stock market in general [5% + 6.5% = 11.5%]. Of course, expected

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[9] Ibbotson Associates is a investor service firm that publishes historical data related to the stock and bond markets from 1926 through the most recent year. The publications are updated each year.

1   utility returns would be lower, because utilities have less investment risk than the stock

2   market generally.

3   However, the new research referenced in the letter quoted above indicates that

4   Ibbotson data is skewed upward and the actual market risk premium is much, much

5   lower—in the range of 3% to 4.5%.[10] In other words, the recent academic research

6   indicates that current investor return requirements are considerably lower than has been

7   traditionally assumed. Even Roger Ibbotson, whose firm (Ibbotson Associates) is

8   probably the largest purveyor of historical market return data, recently published a paper

9   confirming that risk premium expectations for the future are now below what they were

10   in the past. While Ibbotson's projected risk premium of 4% to 6% for investors, is lower

11   than historical return averages indicate, his estimates are at the upper end of the spectrum

12   produced by the current research.[11] With a current T-Bond yield of about 5%, the new

13   information regarding expected equity risk premiums confirms that investor's stock

14   market return expectations range from approximately 8% to 10%—i.e., single digit equity

15   returns.

16   The information available to investors in the capital markets confirms that my

17   8.75%-9.50% equity return range for the combination electric and gas utility operations

18   under consideration here is reasonable, if not overly conservative (i.e., too high). In

19   addition, those data represent information to which investors are exposed in the equity

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[10] Fama, E., French, K., "The Equity Premium," *The Journal of Finance*, Vol. LVII, No. 2, April 2003, pp.
637-659.
[11] Ibbotson, R, Chen, P., "Long-Run Stock Returns: Participating in the Real Economy," *Financial
Analysts Journal*, January/February 2003, pp. 88-89.

1   marketplace for rate-regulated companies and underscore the fact that, currently, investor

2   return requirements for that type of equity investment are low by historical standards.

3 **Q. ARE THERE OTHER INDICATIONS THAT CAPITAL COSTS ARE AT**

4   **HISTORICALLY LOW LEVELS?**

5 A. Yes. Another indication of the reason investors are willing to buy and hold stocks that

6   offer what seem to be "low" returns is shown in Exhibit__(SGH-6), page 1. It depicts

7   Moody's Baa-rated bond yields from 1984 through June 2005. Page 1 of

8   Exhibit__(SGH-6) shows that interest rates and capital costs remain very low relative to

9   the interest rate levels that existed in the mid-1980s, and have continued a general

10   downward trend begun in 2000.

11   Also, page 2 of Exhibit__ (SGH-6), which presents the year-average Moody's

12   Baa-rated bond yields for each year over the past 37 years (1968-2005), shows that Baa-

13   rated bond yields in 2004 were below the bond yield levels seen in the U.S. in the late

14   1960s. Also, the most recent average Baa-rated utility bond yield, 5.58%, falls below the

15   lower range of interest rates that have existed over the past 40 years. [12] (See Exhibit__

16   (SGH-6), page 2) Simply put, a fundamental reason that the current cost of common

17   equity capital for electric utility operations of 8.75% to 9.50% is reasonable is that capital

18   cost rates are lower than they have been in more than thirty years.

19   The above data indicate that capital costs, even with the recent short-term credit

20   tightening by the Federal Reserve Bank (the Fed), remain at low levels and generally

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[12] Value Line *Selection & Opinion*, most recent six weekly editions (6/24/05-7/29/05, inclusive), 20/30-
year Baa-rated utility bond yield averages.

1   support the efficacy of my range of equity capital costs. However, it is important to note

2   here that equity capital cost rates and bond yields do not move in lock-step fashion over

3   time. In fact, the variability of that return differential is a fundamental reason why risk

4   premium type analyses—which attempt to quantify the additional return over bond yields

5   required by equity investors—are not reliable as primary indicators of equity capital cost.

6   Therefore, it is necessary to perform an independent cost of equity capital analysis, rather

7   than to simply "index" the cost of capital to current interest rates.

8 **Q. PLEASE BRIEFLY DESCRIBE THE INTEREST RATE CHANGES THAT**

9   **HAVE OCCURRED IN THE U.S. ECONOMY OVER THE PAST FEW YEARS**

10   **AND HOW THEY IMPACT CAPITAL COST RATE EXPECTATIONS FOR THE**

11   **FUTURE.**

12 A. The substantial interest rate decline that occurred following the historically high interest

13   rates in the early 1980s spurred increased economic activity in the U.S. The rate of

14   growth in the U.S. Gross Domestic Product (GDP) began to increase rapidly by the end

15   of 1987 and showed signs of continuing to gain strength. That increased economic

16   activity, in turn, led to increased inflation expectations (a rapid rate of economic growth

17   creates shortages in labor and materials, driving up the price of those factors of

18   production, which ultimately results in higher prices in all sectors of the economy). The

19   expectation of increased inflation, in turn, caused the Fed to act aggressively to slow

20   down what was widely believed to be an overheating economy. The very sharp interest

21   rate rise that followed in late 1987 and 1988, shown on page 1 of Exhibit__ (SGH-6),

1   succeeded in damping down the economy, reducing inflationary pressures, and allowing

2   interest rates to fall again.

3   Since that time, the interaction between the Federal Reserve's moves to expand or

4   restrain the money supply and burgeoning inflation has been a primary influence in the

5   U.S. macro-economy and the level of interest rates. Overall, as inflation has remained

6   calm and economic activity has been moderate, interest rates have trended downward, but

7   that general downward direction has been interrupted when investors (and/or the Fed)

8   believed that falling interest rates would spur too-rapid economic growth. Rapid

9   economic growth can create unwanted inflation. Anticipating that higher inflation and

10   interest rates might be the result of rapid economic expansion, investors have reacted to

11   positive economic news (e.g., increasing GDP growth rates, lower unemployment) or

12   negative inflation news (e.g., increasing commodity prices, factory capacity or labor

13   shortages) by bidding down debt prices and driving up interest rates.

14   As shown on page 2 of Exhibit__ (SGH-6), Baa-rated debt yielded 7.87%, on

15   average, in 1999, while, in 2000, equivalently rated debt was priced to yield 8.36%, on

16   average. That cost rate increase was due to investors' concerns regarding the continued

17   strength of the U.S. economic expansion and the potential for increased inflation caused

18   by what was perceived to be a rapid level of growth. However, that rapid rate of

19   economic growth did not come to pass, and the interest rate increases engineered by the

20   Federal Reserve in 2000 to slow down a rapidly growing economy worked a little too

21   well, resulting in declining economic growth.

1   Then, in response to an economy that was slowing down, the Fed elected to

2   increase the supply of money by dramatically lowering the Federal Funds rate. The

3   Federal Funds rate is the rate at which money center banks can lend funds on an

4   overnight basis—a fundamental building block of capital costs in the U.S. In order to

5   revive what became a slowing economy, the Fed lowered short-term interest rates eleven

6   times in 2001 (and again in early November 2002 as well as at mid-year 2003). By 2003,

7   Baa-rated debt was trading at prices that produced yields averaging 6.76% and in 2004

8   that average fell further to 6.39%.

9   More recently, in response to a recovering economy, the Fed has reversed course

10 and has begun raising short-term interest rates. Over the past year, the Federal Funds rate

11 has moved upward from about 1% to about 3.25% currently. As shown previously,

12 however, long-term rates have actually declined slightly over the last six months.

13   As Value Line notes in its most recent Quarterly Review regarding economic

14 growth, inflation and the interest rate environment, the current expectation is that as the

15 economy continues to expand during 2005 and 2006, inflation and interest rates will

16 increase to some degree. Importantly, with regard to the estimation of capital costs, the

17 interest rates projected by Value Line through 2008, even with anticipated increases, will

18 remain below the levels that existed in 1999 and 2000. The following excerpts from

19 Value Line explain how a relatively low interest rate environment will be preserved:

20   **Economic Growth**: As noted above, the economy didn't
21   get out of the gate quickly this year, although it didn't
22   stumble either. The trend was more mixed than not, with
23   the deceleration in GDP growth largely the result of
24   slowdown in personal spending and nonresidential
25   construction activity [chart omitted]. Since the end of the

1 first quarter, we have seen continuing resilience on the
2 housing front [chart omitted], a pickup in retail spending
3 [chart omitted] and the nice gain in April payrolls [chart
4 omitted]. Conversely, there has been a further deceleration
5 in the rate of manufacturing-sector improvement [chart
6 omitted] and an easing in industrial production and factory
7 use. We see no reason, at this point, to expect a noticeable
8 shift in the demand pattern over the balance of this quarter
9 or the second half [of 2005]. In all, we expect growth to
10 average just over 3% in the final three quarters of this year.
11 We expect GDP growth to stabilize in the area of 3%-3.3%
12 in 2006.

14 **Inflation**: Here, as well, we think that moderation and
15 stability will be the rule over the next several years. That
16 should not imply that there will not be selective pricing
17 disruptions from time to time. The sharp runup in oil prices
18 over the past two years should leave no doubt that inflation
19 flare-ups can take place within the general confines of
20 aggregate pricing stability. On the whole, though, we sense
21 that a quick response by an ever-vigilant Federal Reserve
22 Board should limit the inflation risk. That is as long as
23 GDP growth stays in the 3.0%-3.2% area over the next two
24 years and in the 3.5% range through the final years of this
25 decade.

27 **Interest Rates**: The Federal Reserve has now raised short-
28 term interest rates (specifically the Federal Funds rate)
29 eight times since last June and we believe that this rate
30 cycle has yet to run its course. That's because the lead
31 bank seems intent on balancing the risks between
32 stabilizing inflation and sustaining the maturing business
33 cycle. All told, the Federal Funds rate has risen from
34 1.00% to 3.00% in the interim. Interestingly, the Fed's
35 tightening has calmed inflation fears sufficiently to push
36 certain long-term rates—including the 10-year Treasury
37 note rate—down modestly in recent weeks. The drop in
38 certain long-term interest rates (notably mortgages) will
39 help to prop up an already vigorous housing market as well
40 as the U.S. economy in general. At this point, we think the
41 Fed is more than halfway through its tightening cycle and
42 that the Federal Funds rate will peak at around 4% late this
43 year. (The Value Line Investment Survey, *Selection &*
44 *Opinion*, May 27, 2005, pp. 1707-8).

1   In that most recent Quarterly Economic Review, Value Line projects long-term

2   Treasury bond rates will average 4.8% in 2005 and 5.3% through 2006. The recent six-

3   week average 30-year T-bond yield is 4.31% (data from Value Line, *Selection &*

4   *Opinion*, six weekly editions, June 24 through July 29, 2005, inclusive).

5   Also, while Value Line projects that short-term Treasury Bill rates will rise from

6   1.4% in 2004 to 4.2% in 2009, that investor service publication projects a much smaller

7   increase in corporate bond yields: 5.6% in 2004 to 6.8% in 2009. Finally, those projected

8   interest rate levels (4.2% for T-Bills and 6.8% for AAA-rated Corporate Bonds) are well

9   below the average levels for those securities in 2000 [5.8% for T-Bills and 7.6% for

10   Corporate Bonds]. Therefore, the indicated expectation is that interest rates are likely to

11   move somewhat higher in coming years (as long as the economic recovery stays on

12   track), but will remain at relatively low levels for some time to come.

13 **Q. IS IT REASONABLE TO CONLUDE THAT UTILITY INVESTORS ARE**

14   **AWARE OF THE EXPECTATIONS FOR SOMEWHAT HIGHER INTEREST**

15   **RATES IN THE FUTURE, AND HAVE REACTED TO THAT NEWS?**

16 A. Yes. A widely accepted tenet of modern finance is that U.S. capital markets are efficient

17   in quickly assimilating into stock prices news that impacts stock valuation. Higher

18   interest rates have been forecast for some time and, it is reasonable to believe, utility

19   investors have incorporated that expectation into the stock prices they are willing to

20   provide for utility stocks.

1 **Q. ARE THERE ADDITIONAL REASONS TO BELIEVE THAT COMMON**

2 **EQUITY CAPITAL COSTS FOR UTILITIES ARE GENERALLY LOWER**

3 **TODAY THAN THEY HAVE BEEN IN THE PAST?**

4 A. Yes. The recently enacted change in the Federal tax law lowered the tax rate on

5 dividends. Under the old law, dividends were taxed at rates that typically were

6 approximately 30%; now dividends are taxed at no more than 15%.[13] The result of this

7 tax cut is that investors are keeping a greater percentage of dividends, and dividend-

8 paying stocks such as utilities have become more valuable than they were before the

9 change in the tax law. In other words, because investors can now keep more of their

10 dividends from their utility investment, they are willing to pay more for those same

11 stocks, resulting in a lower cost of equity capital.

12 The impact of the tax change on the stock prices of utilities has been recognized

13 by an investor advisory service, in the context of the gas utility industry:

14 "**Tax reform has resulted in a fundamental shift in the**
15 **group's trading range.** We estimate that the reduction in
16 dividend and capital gains taxes should result in a 10%
17 increase in the average gas utility stock price. Prior to tax
18 reform, the median gas utility P/E [price/earnings ratio]
19 traded in a range of 11.5X to 14.5X. With the tax
20 reduction, we believe the new trading range in now 12.5X
21 to 16.0X." (A. G. Edwards, Gas Utilities Quarterly Review,
22 July 6, 2004, p. 5).
23

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[13] Prior to the tax law change, federal personal income tax rates were 10%,15%,27%,30%,35%,or 38.6% depending upon the relevant income bracket, and dividends were taxed at that rate. Under the newly passed law, the 27% drops to 25%, the 30% to 28%, the 35% to 33% and the 38.6% to 35%. Since the old 27% tax bracket applied to married couples with a combined income of no more than $47,450, it is reasonable to say that the dollar weighted dividends paid to most individual investors were in brackets of between 27% and 38.6%.

1   A simple example will facilitate understanding how the tax law change has

2   lowered the cost of equity. Assume a utility with a dividend of $0.50, a stock price of

3     $10, and a long-term investor-expected growth rate of 5.5%. A simple DCF estimate of

4   the cost of equity for that utility would be 10.5%, comprised of a dividend yield of 5.0%

5   ($0.50/$10) and a growth rate of 5.5%. When the tax law changes, investors increase the

6   price they are willing to provide for that stock by 10%, to $11 per share [10$/share x 1.10

7   = $11/share]. Due to the re-valuation of the stock to $11/share, the dividend yield now

8   becomes 4.5% [$0.50/$11 = 4.545%, rounded to 4.5%]. Because the tax law does not

9   affect the company or its utility operations, its anticipated long-term growth does not

10   change; it remains at 5.5%. The new cost of equity, however is 10% (4.5% dividend

11   yield + 5.5% growth rate), roughly 50 basis points below the pre-tax change cost of

12   equity capital. In sum, another factor contributing to the relatively low cost of common

13   equity capital for utilities in the current capital markets is the recent dividend tax law

14   change.

15 **Q. DOES THE CURRENT LEVEL OF MARKET-TO-BOOK RATIOS EXISTING**

16   **IN THE UTILITY INDUSTRY, ALONG WITH INVESTORS' EXPECTATIONS**

17   **REGARDING THE RETURN ON EQUITY THAT ELECTRIC AND GAS**

18   **UTILITIES ARE EXPECTED TO EARN, SUPPORT YOUR EQUITY COST**

19   **ESTIMATE IN THIS PROCEEDING?**

20 A. Yes. It is a long-held and widely-understood tenet of regulatory finance that when

21   investors are providing market prices above the book value of utility stocks, the return

22   investors expect (the cost of capital) is below the return the utility will earn on that book

1   value. In other words, when market prices are above book value, investors expect

2   utilities to earn accounting returns (ROEs, returns on book value) that are greater than the

3   market-based cost of equity capital for those companies.

4   In the current market environment, the market price of combination gas and

5   electric utility stocks is 82% higher than their book value (i.e., M/B = 1.82).[14] Moreover,

6   Value Line reports that electric utilities are expected to earn returns on the book value of

7   their equity capital over the next three to five years of 11.0% to 11.5%.[15] Those data

8   indicate that it is unreasonable to believe the cost of equity capital for electric utilities is

9   even near, much less above 11% (e.g. 10.8%-11.8%, as Dr. Avera indicates), and that the

10   lower cost of equity that I recommend, is more representative of investor expectations.

11   **Q. WHY DOES AN EXPECTED RETURN ON EQUITY OF 11% TO 11.5% AND A**

12   **MARKET-TO-BOOK RATIO WELL IN EXCESS OF 1.0 MEAN THAT THE**

13   **COST OF EQUITY CAPITAL IS WELL BELOW 11%?**

14   A. I provide the answer to that question in detail below. However, it is important to first

15   understand the difference between the expected return (the return on equity, ROE), i.e.,

16   the 11% to 11.5% figures cited above, and the cost of common equity capital, which we

17   must estimate using the DCF and other econometric models.

18   **Q. WHAT IS THE DIFFERENCE BETWEEN THE EXPECTED RETURN AND**

19   **THE COST OF CAPITAL?**

20   A. The expected return is commonly referred to as the "ROE" and is the return on

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[14] AUS Utility Reports (formerly CA Turner), July 2005, p. 10.
[15] The Value Line Investment Survey, *Ratings & Reports*, July 1, 2005, p. 695.

1   equity that investors expect the utility to earn. That return is an accounting return. For

2   example if a company has $100 of common equity on its books of account (its balance

3   sheet), and it earns a $10 profit (net income), its ROE (return on book equity) is 10%

4   [$10/$100].

5   The ROE is based, in part, on the return allowed by the regulator, the company's

6   operating efficiency and on other income available to the firm (if the firm has unregulated

7   operations). The cost of equity capital is the return investors require to commit equity

8   capital to a particular enterprise. That is the cost of equity capital to the firm—the

9   minimum return investors require in order to invest in a particular type of company. That

10   return is a market-based return, because whatever return the investor receives (yield +

11   dividend growth) will be measured against the market price the investor provided to

12   purchase the stock.

13   Regulators seek to set the allowed return equal to the cost of equity capital for the

14   same reason they set the return allowed on utility debt equal to the cost of that type of

15   capital. Utility rates should be cost-based. That includes the cost of money—equity and

16   debt. Investors understand that utility returns are allowed and earned on the book value

17   (original cost less depreciation) of the utility's plant investment. That long-standing

18   regulatory paradigm has been in existence for many, many years and, through

19   informationally efficient markets, utility investors are aware of that fact.

20   **Q. PLEASE EXPLAIN IN MORE DETAIL WHY A UTILITY'S MARKET-TO-**

21   **BOOK RATIO IS INDICATIVE OF THE RELATIONSHIP BETWEEN THE**

22   **EXPECTED RETURN AND THE COST OF EQUITY CAPITAL.**

1 A. A simple example will illustrate this important point. Assume that a utility has a book

2   value of equity capital equal to $10 per share. Let's also assume, for simplicity of

3   exposition, this utility pays out all its earnings in dividends. If regulators allow the utility

4   a 12% return on that equity, investors will expect the company to earn (and pay out)

5      $1.20 per share. If investors require a 12% return on this investment, they will be willing

6   to provide a market price of $10 per share for this stock ($1.20 dividends/$10 market

7   price = 12% required return). In that case, the allowed/expected return (12%) is equal to

8   the cost of capital (investors' required return, 12%), and the per-share market price is

9   equal to the book value (M=B, or M/B=1.0).

10   To conform our example to the market situation that presently exists with electric

11   and gas utilities, let's assume that investors' required return (the utility's cost of equity

12   capital) falls to 10%, but the utility continues to be allowed a 12% return on the equity

13   portion of its rate base investment. Investors would be drawn to a utility stock in a risk

14   class for which they require a 10% return but which was expected to pay out a 12%

15   return. This increased demand by investors would result in an increase in the market

16   price of the stock until the total share yield equaled the investors' required return. In our

17   example, that point would be $12 per share ($1.20 dividends/$12 market price = 10%

18   required return). In that case, the allowed/expected return (12%) is greater than the

19   required return (10% - the cost of equity capital) *and* the per-share market price

20   ($12/share) exceeds the book value ($10/share), producing a market-to-book ratio greater

21   than one ($12/$10 = 1.20).

1   Therefore, the market-to-book / expected return relationship that actually exists

2   today in the market for utility stocks indicates that investors expect that those companies

3   will earn a return on the book value of their equity (ROE) which exceeds the cost of

4   equity capital.

5   **Q. HOW CAN ELECTRIC AND GAS UTILITIES HAVE PROJECTED BOOK**

6   **EQUITY RETURN OF 11% to 11.5% AND A COST OF EQUITY OF 8.75% to**

7   **9.50%?**

8   A. It's really very simple. Investors currently expect that utilities will earn accounting

9   returns (ROEs) that are greater than the cost of equity capital (investors' <u>required</u> return).

10   Because of that fact, investors are willing to provide market prices for those utility stocks

11   that are substantially in excess of their book value.

12   If investors were providing stock prices (market prices) that approximated the

13   book value of electric utilities, that is if M/B ≈ 1.0, and those companies were expected to

14   earn an 11% return on book value, then it would be reasonable to believe that the cost of

15   capital (investors' market-required return) would approximate 11%.

16   However, investors in today's market are willing to provide a stock price that is

17   considerably <u>more</u> than book value for a group of stocks that is expected to earn an 11%

18   return on book value. Therefore, the investors' expected return on that stock price (the

19   cost of equity capital to the firm) must be <u>less</u> than the expected return on book value—

20   i.e., less than 11%. Currently, investors are paying about 180% of book value for their

21   utility investments. Therefore, they must require a return below the 11% expected to be

1   earned on book value. In that regard, the range cost of equity estimates I provide in this

2   proceeding (between 8.75% and 9.50%) is reasonable.

3   Finally, the market price/book value data cited above provides dramatic evidence

4   that Dr. Avera's equity return estimate of 10.8% to 11.8% cannot represent investor's

5   expectations. If an investor required an 11.5% return on a stock that she expected to earn

6   11% to 11.5% on book value, would she pay <u>more</u> than book value for that stock?

7   Clearly, the answer is no. Therefore, Dr. Avera's cost of equity estimate cannot be

8   accurate.

9   **Q. DOES THIS RELATIONSHIP BETWEEN MARKET PRICE, BOOK VALUE,**

10   **THE EARNED RETURN AND THE COST OF CAPITAL HOLD FOR**

11   **UNREGULATED FIRMS?**

12   A. No. Unlike regulated firms, there is no nexus between the book value of an unregulated

13   firm and its earnings. Therefore, a market price above book value is not indicative of

14   whether or not an unregulated firm is earning its cost of capital. For a utility firm

15   however, there is a direct connection between its book value (effectively, the value of its

16   rate base) and the return it will earn. This has been the manner in which utilities have

17   been regulated and their earnings determined for many years. Investors are aware of that

18   fact. Therefore, a market price well above book value indicates that investors expect that

19   firm to earn a return above the return they require to invest in that type of firm (the cost

20   of equity capital). Similarly, a utility market price below book value connotes an investor

21   expectation that that firm will earn an ROE that is below that which investors require (the

22   firm's cost of equity capital).

1 **Q. IS THE RELATIONSHIP BETWEEN A UTILITY'S MARKET-TO-BOOK**

2 **RATIO, THE EXPECTED BOOK RETURN, AND THE COST OF EQUITY**

3 **CAPITAL YOU HAVE JUST OUTLINED WELL DOCUMENTED IN THE**

4 **REGULATORY FINANCIAL LITERATURE?**

5 A. Yes. The DCF model is often referred to as the "Gordon model" because of the

6 definitive work Professor Myron Gordon has done regarding the DCF model and the cost

7 of equity capital of utilities. Professor Gordon has explained that the market-to-book

8 value ratio is greater than (equal to, less than) one when the ratio of the allowed (or

9 expected) rate of return to the cost of capital is greater than (equal to, less than) one.

10 Gordon, M.J., The Cost of Capital to a Public Utility, 63-64 (1974). There is additional

11 support in the financial literature for the value of market-to-book ratios in regulation.[16]

12   At page 48 of his Direct Testimony in this proceeding, Dr. Avera cites Dr. Roger

13 Morin as authority. Dr. Morin also has recognized the theoretical relationship between

14 utility market price, book value, ROE and the cost of equity capital. With "P"

15 representing the stock price, "B" the per share book value, "r" the expected return on

16 equity (the ROE), and "K" the cost of equity capital, Dr. Morin states:

17   "From Equation 10-6, it is clear that the market-to-book, or
18   P_0/B, will be unity [1.0] if r = K, greater than unity if r > K,
19   and less than unity if r < K:
20   >   >
21   P/B = 1.0 as r = K."
22   <   <
23   (Morin, R. Regulatory Finance, Utilities' Cost of Capital,
24   Public Utilities Reports, Inc., Arlington VA, 1994, p. 248)

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[16] Kolbe, Read, Hall, The Cost of Capital, Estimating the Rate of Return for Public Utilities, 25-33
(1986); Lawrence Booth, ("The Importance of Market-to-Book Ratios in Regulation," NRRI Quarterly
Bulletin, Vol. 18, No. 4, at 415-16 (Winter 1997)

1   It is important to realize that the relationship between market price and book

2   value for a utility operation is not a linear or one-for-one relationship. That is, just

3   because the stock price of a particular utility is, say, 50% above its book value does not

4   indicate that its cost of equity is 50% below the utility's expected book return. Also,

5   there are differences between book value and rate base, which means that, even if a utility

6   is allowed and expected to earn its cost of equity capital, the market price may not

7   exactly equal book value. For utility operations, it will approximate book value,

8   however, as supported in the financial literature noted above. Therefore, while market-

9   to-book ratios do not provide a definitive answer with regard to a utility's cost of equity

10   capital, when they are reviewed in conjunction with expected returns on book equity,

11   market-to-book ratios provide valuable information regarding the proper range of equity

12   capital costs for utilities.

13 **Q. MR. HILL, ARE YOU INDICATING THAT UTILITY STOCK PRICES SHOULD**

14   **EQUAL THEIR BOOK VALUE?**

15 A. No. Regulation is not designed to be a stock price setting mechanism, and regulators

16   should not target any particular stock price in the ratesetting process. Investors set the

17   market price, depending on the risk/return matrix presented to them in the current and

18   expected market environment. However, the relationship among utility market price,

19   book value, expected ROE and the cost of capital is well known and offers valuable

20   information regarding the reasonableness of a cost of equity estimate. Without making

21   any determination of what electric utility stock prices ought to be, we can observe these

22   facts: utility market prices are about 80% higher than book value. Utilities are projected

1   to earn a return on book value of 11% to 11.5%. Because utility investors are paying

2   substantially <u>more</u> than book value for a share of utility stock, their required market

3   return (the cost of equity capital to the utility) must be well below that expected 11% to

4   11.5% return on book value.

5   **Q. PLEASE SUMMARIZE THE INFORMATION YOU HAVE PRESENTED WITH**

6   **REGARD TO THE ECONOMIC ENVIRONMENT AND THE COST OF**

7   **COMMON EQUITY FOR AVISTA.**

8   A. I have estimated the cost of common equity for combination electric and gas utilities like

9   Avista Utilities to be in the range of 8.75% to 9.50%. That range of equity costs is

10   supported by many objective factors in the capital market place today.

11   First, the general level of capital costs, as evidenced by current interest rate levels,

12   remains near a 40-year lows. Even with the modest interest rate increases expected over

13   the next few years, capital costs will continue to be at relatively low levels. Second,

14   investor services and investment analysts are advising clients to expect utility returns well

15   below 10%, and below the equity cost estimates I recommend. Third, changes in the tax

16   law with respect to dividends have made utilities more valuable to investors and, thus,

17   have reduced investor return requirements. Fourth, long-standing and widely-understood

18   relationships between utility market price, book value and expected equity return indicate

19   that equity returns below 10% are reasonable. Fifth, the most recent research in the field

20   of financial economics regarding the market risk premium and investor-required returns,

21   supports forward-looking investor expectations for common equity returns in the 8% to

22   10% range. In sum, the objective evidence available to investors in the capital

1   marketplace today confirms the reasonableness of the 8.75% to 9.50% range of equity

2   capital costs for integrated electric utilities presented in this testimony.

3   **III. CAPITAL STRUCTURE**

4   **Q. WHAT IS THE CAPITAL STRUCTURE REQUESTED BY THE COMPANY IN**

5   **THIS PROCEEDING?**

6   A. The Company's requested capital structure is shown on Exhibit No.__(MKM-2) attached

7   to the Direct Testimony of Company witness Malyn Malquist. Mr. Malquist is Avista

8   Corporation's Chief Financial Officer and Treasurer. That capital structure is projected

9   to year-end 2006 and consists of 44.00% common equity, 1.42% preferred stock, 5.18%

10   trust preferred securities, and 49.40% total (long- and short-term) debt.

11   **Q. IS THAT CAPITAL STRUCTURE SIMILAR TO THE MANNER IN WHICH**

12   **AVISTA HAS BEEN CAPITALIZED RECENTLY?**

13   A. No. The Company's requested capital structure contains a higher percentage of common

14   equity and a lower percentage of debt capital than the Company has actually utilized over

15   the past five quarters. As shown on page 1 of Exhibit__(SGH-7) attached to my

16   testimony, the equity capital portion of Avista's capital structure has ranged from about

17   38% to 39.5% of total capital, but at no time was the Company's common equity ratio

18   above 40%, much less as high as the 44% level it requests in this proceeding. On

19   average, over the most recent five quarters, Avista Corporation has been capitalized with

20   38.88% common equity, 1.57% preferred stock, 5.84% preferred trust securities, and

21   53.71% total debt.

1   **Q. COMPANY WITNESS MALQUIST, IN HIS EXHIBIT__(MKM-2) SHOWS A**

2   **YEAR-END 2004 CAPITAL STRUCTURE FOR AVISTA CORPORATION**

3   **THAT CONTAINS ALMOST 41% COMMON EQUITY. PAGE 1 OF YOUR**

4   **EXHIBIT__(SGH-7) SHOWS ABOUT 38.5% COMMON EQUITY. WHY IS**

5   **THERE A DIFFERENCE?**

6   A. The consolidated Avista Corporation capital structures shown on page 1 of my

7   Exhibit__(SGH-7) are taken directly from the Company's published S.E.C. quarterly and

8   annual reports. In other words, those are the capital ratios reported to the investment

9   community by Avista Corporation, and, therefore, form the basis of investor opinion

10   regarding the financial risk of the consolidated Company (utility operations and

11   unregulated operations). For that reason, I believe they are the most accurate

12   representation of Avista Corporation's consolidated capital structure.

13   In presenting his year-end 2004 capital structure, Mr. Malquist has made some

14   alterations to the Company's published consolidated balance sheet. First, he has

15   excluded approximately $10 Million of common stock-related expense that appears on

16   the balance sheet as a reduction to the total common equity. Of course, when one

17   excludes a negative amount, it adds to the total. Also, Mr. Malquist has eliminated $13.5

18   Million of preferred trust securities from the amounts that appear on the balance sheet

19   because those amounts are allocated to a non-utility enterprise. There are also other

20   small changes to Mr. Malquist's year-end 2004 capital structure, but they are minor.

1 **Q. IS THE CONSOLIDATED CAPITAL STRUCTURE OF AVISTA**

2 **CORPORATION THE SAME AS THE CAPITAL STRUCTURE OF AVISTA**

3 **UTILITIES**?

4 A. No. Avista Corporation is a different entity than Avista Utilities; they are capitalized

5 very differently and the Company (here, I refer to the management of Avista

6 Corporation) makes very clear to the investment community that only a portion of the

7 common equity capital that appears on its consolidated balance sheet is invested in its

8 utility operations.

9   As the Company notes in its 2004 S.E.C. Form 10-K, Avista Corporation is really

10 a combination of two different companies. One company, Avista Utilities (the company

11 at issue in this proceeding) is an integrated electric and natural gas distribution utility

12 company and is a division of Avista Corporation. The other company, Avista Capital, is

13 a wholly-owned subsidiary of Avista Corporation, and is the parent company of all of

14 Avista Corporation's non-utility business segments. Those companies are Energy

15 Marketing and Resource Management (Avista Energy and Avista Power), Avista

16 Advantage, and "Other" (Avista Ventures, Pentzer, Avista Development, Advance

17 Manufacturing and Development).

18   Avista Corporation very clearly states, on page 1 of its 2004 S.E.C. Form-10K

19 that part of the common equity that appears on its balance sheet is invested in Avista

20 Utilities and part of it is invested in Avista Capital (the unregulated operations):

21   "As of December 31, 2005, the Company had common
22   equity investments of $495.8 million and $257.4 million in
23   Avista Utilities and Avista Capital, respectively." (Avista
24   Corporation, 2004 S.E.C. Form 10-K, p. 1)

1   As shown on page 1 of Exhibit__ (SGH-7), the total common equity on Avista

2   Corporation's balance sheet at December 31, 2004 was $723.2 million. The $495.8

3   million invested in Avista Utilities and the $257.4 million invested in Avista Capital sum

4   to $723.2 million [$723.2 = $495.8 + $257.4].

5 **Q. IS THE DEBT THAT APPEARS ON THE BALANCE SHEET OF AVISTA**

6   **CORPORATION ALSO DIVIDED BETWEEN THE UTILITY AND THE**

7   **UNREGULATED OPERATIONS?**

8 A. No. All of the debt that appears on the consolidated balance sheet of Avista Corporation

9   is utility debt. As I noted previously, Avista Utilities is a <u>division</u> of Avista Corporation,

10   not a separate corporate entity (a subsidiary), and the utility debt, therefore, appears on

11   the balance sheet of Avista Corporation. The debt of Avista Capital, the unregulated

12   operations, is not reported on the balance sheet of Avista Corporation because it is

13   eliminated in the balance sheet consolidation process. The Company's responses to PC-

14   733 and PC-734 confirm that all of the debt on the consolidated balance of Avista

15   Corporation is utility debt and no part of it supports unregulated operations.

16 **Q. IF ALL OF THE DEBT ON THE AVISTA CORPORATION BALANCE SHEET**

17   **IS UTILITY DEBT BUT ONLY PART OF THE COMMON EQUITY IS UTILITY**

18   **EQUITY, THAT MEANS THAT THE UTILITY IS CAPITALIZED WITH A**

19   **MUCH LOWER PERCENTAGE OF COMMON EQUITY THAN AVISTA**

20   **CORPORATION, DOESN'T IT?**

21 A. Yes. It is important for the Commission to understand that Avista Utilities is currently

22   capitalized with an amount of common equity that is not only below that which the

1   Company is requesting in this proceeding (44%) but well below the approximately 39%

2   equity ratio of the consolidated parent company, Avista Corporation.

3   **Q. HOW WAS AVISTA UTILITIES CAPITALIZED AT YEAR-END 2004?**

4   A. Page 2 of Exhibit__(SGH-7) shows that removing the $257.4 million of common equity

5   capital invested in Avista Capital from the total amount of common equity on Avista

6   Corporation's year-end 2004 balance sheet, while keeping the amount of debt as reported

7   on the balance sheet, provides an indication of how Avista management has elected to

8   capitalize its utility operations. At year-end 2004 Avista Utilities was capitalized with a

9   common equity ratio of approximately 30% of total capital. The actual capital structure

10   consisted of 29.26% common equity, 1.76% preferred stock, 6.69% preferred trust

11   securities, and 62.29% total debt.

12   **Q. BY REQUESTING IN ITS INITIAL FILING THAT THIS COMMISSION SET**

13   **RATES USING A 44% COMMON EQUITY RATIO WHILE AVISTA UTILITIES**

14   **IS ACTUALLY CAPITALIZED WITH A 30% EQUITY RATIO, WHAT IS THE**

15   **COMPANY ASKING THIS COMMISISON TO DO?**

16   A. By requesting that rates be set for Avista Utilities with a common equity ratio that

17   substantially exceeds the actual amount of common equity invested in that enterprise, the

18   Company is requesting that this Commission require Avista's customers to provide an

19   equity return on a significant portion of its rate base that is actually financed with debt.

20   The difference in the allowed return on equity (what ever it is) and the actual cost of debt

21   will flow to the Company's bottom line and allow it to earn a rate of return higher than its

22   cost of capital.

1 **Q. CAN YOU ESTIMATE THE COST TO CONSUMERS IN WASHINGTON OF**

2 **SETTING RATES WITH MORE COMMON EQUITY THAN THE COMPANY**

3 **ACTUALLY HAS?**

4 A. Yes. Because common equity, on a pre-tax ratemaking basis is about twice as costly as

5 debt capital, the Company's requested capital structure will be substantially more costly

6 than the capital structure with which it has actually been capitalized.

7 Page 3 of Exhibit__(SGH-7) shows that the pre-tax (ratemaking) overall cost of

8 capital based on the Company's requested capital structure and the capital cost rates

9 requested by the Company (including the requested 11.5% equity return) is 12.40%. The

10 pre-tax overall cost of capital based on Avista's actual consolidated capital structure

11 (which includes unregulated equity as well as utility) and the Company's requested

12 capital cost rates is 11.91%. That overall capital cost difference between what Avista is

13 requesting and its recent actual consolidated capital structure, multiplied by the

14 Company's requested rate base for gas and electric operations (almost $1 Billion)

15 indicates an annual capital cost over-recovery of $4.5 Million.

16 However, page 3 of Exhibit__(SGH-7) also shows that the pre-tax overall return

17 based on the actual utility-only capital structure of Avista Utilities is 11.01%—140 basis

18 points below the pre-tax overall return sought by the Company in this proceeding. That

19 return differential, multiplied times the Company's requested rate base indicates that the

20 Company is requesting that ratepayers provide approximately $13 Million more in capital

21 costs annually than the Company actually incurs.

1   **Q. IS THE CAPITAL STRUCTURE CONTAINING 44% COMMON EQUTIY**

2   **REQUESTED BY THE COMPANY IN THIS PROCEEDING SIMILAR TO THE**

3   **AVERAGE CAPTIAL STRUCTURE IN THE ELECTRIC AND GAS INDUSTRY**

4   **TODAY**?

5   A. The consolidated Avista Corporation capital structure projected to be in place at year-end

6   2006, has an equity capital ratio that is similar to but slightly higher than the average for

7   the industry. Exhibit__(SGH-7), page 4 shows common equity ratio as a percent of total

8   capital (i.e., including short-term debt) for the electric industry as published in the July

9   2005 edition of AUS (formerly C.A. Turner's) Utility Reports.

10   The average common equity ratio in the entire electric industry is 41%, (44% for

11   electric companies and 40% for combination gas and electric companies). The average

12   common equity ratio of the companies included in my similar-risk sample group is 43%.

13   **Q. IS IT REASONABLE TO SET RATES FOR AVISTA UTILITIES USING**

14   **AVISTA CORPORATION'S CONSOLIDATED CAPITAL STRUCTURE**

15   **BECAUSE IT IS SIMILAR TO INDUSTRY AVERAGES?**

16   A. No. Simply because the Company's projected capital structure is similar to industry

17   averages, does not make setting rates on that capital structure reasonable in this case.

18   First and foremost, the manner in which Avista management has elected to actually

19   capitalize its utility operations is very, very different from an industry average

20   capitalization. Allowing rates to be set on the Company's requested capital structure

21   would require ratepayers to provide an equity return on a large portion of utility rate base

22   actually financed by debt—a substantial subsidy by ratepayers.

1   Second, the Company has, in the past projected common equity levels which are

2   much higher than those actually realized. In Docket No. UG-041515 before this

3   Commission just last year, the Company projected that it would have a consolidated

4   common equity ratio of 46.72% by June 30, 2005. While the data for that date are not yet

5   final, the information for the first quarter of 2005 (March 31, 2005), shown on page 1 of

6   Exhibit__(SGH-7) indicates that Avista's actual common equity ratio will be well below

7   the level projected. At the end of the first quarter of 2005, Avista's consolidated

8   common equity ratio was 39% of total capital, a far cry from the 46.72% projected to

9   exist just a year ago.

10   **Q. DO YOU BELIEVE IT WOULD BE REASONABLE TO SET RATES FOR**

11   **AVISTA'S ELECTRIC AND GAS UTILITY OPERAITONS USING THE**

12   **COMPANY'S REQUESTED 44% COMMON EQUITY RATIO?**

13   A. No, I do not. Given the fact that Avista management has elected to capitalize its utility

14   operations with substantially less common equity and more debt than appears on its

15   consolidated balance sheet, it would be unreasonable to set rates for that entity using

16   *more* common equity and less debt than shown on the consolidated balance sheet (about

17   40% equity/60% debt).

18   **Q. DO YOU BELIEVE IT WOULD BE REASONABLE, THEN, TO SET RATES**

19   **USING AVISTA'S UTILITY-ONLY CAPITAL STRUCTURE CONTAINING**

20   **ONLY 29% COMMON EQUITY CAPITAL?**

1   A. No. While that ratemaking methodology would certainly better match rates and costs

2   (and be preferable to ratepayers in the short run), I believe that it would be financially

3   risky for the Company.

4   Avista has a corporate debt rating just below investment grade, at "BB+" and a

5   First Mortgage Bond rating at just above investment grade level, "BBB-". This current

6   financial position is due to many factors related to unregulated investment and the

7   California power market dislocations of 2001. However, chief among those problems, in

8   my view, is a financial position (capital structure) that does not match the operating risk

9   of Avista's portfolio of companies. While a reasonable common equity ratio for

10   combination gas and electric utilities may be 40% of total capital today (the average in

11   the industry), that is not an appropriate capital structure for a company like Avista that is

12   2/3 utility and 1/3 energy merchant.[17] In order for Avista to properly capitalize its utility

13   operations with an industry-average level of common equity, given its current 2/3 utility,

14   1/3 energy merchant mix of equity investment, its <u>consolidated</u> common equity ratio

15   would have to approach 50% of total capital. With a 50% consolidated common equity

16   ratio, it is reasonable to believe that Avista would regain its investment-grade bond rating

17   status.

18   However, the current consolidated common equity ratio for this Company is

19   approximately 40% and its utility operations are capitalized with about 30% common

20   equity, 70% debt. Setting rates with a 30% common equity ratio, I believe, would be

---

[17] As I noted in the first section of my testimony, energy merchants are the highest risk category and require
more equity and less debt in the capital structure compared to integrated electric utilities or gas distributors.

1   financially detrimental to the Company, possibly causing further bond rating erosion.

2   Therefore, I do not recommend that this Commission base rates on the Company's actual

3   utility-only capital structure.

4   **Q. WHAT IS YOUR RECOMMENDATION?**

5   A. I recommend that rates be set in this proceeding with a hypothetical capital structure that

6   contains less common equity than that requested by the Company, more common equity

7   than that actually utilized by the Company and approximately equal to the current

8   consolidated capital structure. That capital structure is shown on page 5 of

9   Exhibit__(SGH-7) and consists of 40% common equity, 1.57% preferred stock, 5.84%

10   preferred securities and 52.59% total debt (long- and short-term debt). The 40% common

11   equity was selected to be similar to industry averages and similar to Avista's actual

12   current consolidated common equity ratio. The percentage amounts of preferred stock

13   and preferred securities are the actual amounts utilized by Avista during the most recent

14   five quarters (shown on page 1 of Exhibit__(SGH-7)). The percentage of long- and

15   short-term debt comprises the remainder of the capitalization, and is slightly less that the

16   level actually used by Avista over the past five quarters.

17   **Q. MR. HILL, DOESN'T THIS CAPITAL STRUCTURE YOU RECOMMEND**

18   **ALSO RESULT IN A SUBSTANTIAL SUBSIDY BY RATEPAYERS OVER AND**

19   **ABOVE THE COMPANY'S ACTUAL CAPITAL COSTS?**

20   A. Yes it does. I believe that in the Company's current financial situation, some temporary

21   subsidy is necessary to protect the Company's financial health. I also believe that this

22   type of subsidy is unfair to ratepayers and recommend that there be a *quid pro quo*

1   associated with this ratemaking recommendation that will provide for the eventual

2   elimination of the ratepayer subsidy.

3   Along with setting rates with a capital structure that contains common equity

4   capital the utility does not have and provides financial support for the Company, this

5   Commission should provide incentive for the Company to improve the equity ratio of its

6   utility-only capital structure. I recommend that by the time of the next rate proceeding

7   for Avista in this jurisdiction (or not longer than three years), Avista Utilities' utility-only

8   capital structure contain at least 39% equity as a percent of total capital. When that level

9   of common equity capitalization is reached, ratepayers will no longer be providing an

10   equity return on rate base that is financed by debt, and the Company will be on much

11   firmer financial footing. As I noted previously, if the Company maintains its current

12   utility/unregulated mix, Avista Corporation's consolidated common equity ratio will have

13   to approach 50% of total capital in order for Avista Utilities' common equity ratio to

14   approach the target level.

15   **Q. HOW DO YOU RECOMMEND THAT THIS COMMISSION PROVIDE**

16   **INCENTIVE FOR THE COMPANY TO RECAPITALIZE ITS UTILITY**

17   **OPERATIONS?**

18   A. This Commission has recent prior experience in setting periodic capital structure

19   guidelines for utilities under its purview. In 2001, Puget Sound Energy was in a similar

20   position with regard to the capitalization of its utility operations. Its common equity ratio

21   was in the low-30% range and imparted too much financial risk. In Docket Nos. UE-

22   011570/UG-011571 and UE-011411 (consolidated), this Commission approved a

1   stipulation that set dates for the acquisition of specified equity ratio targets by the

2   company and offered a certain percentage reduction in rates if those targets were not met.

3   The settlement stipulation approved by the Commission is that proceeding noted in part:

4   **"Equity Growth Tracking**

5   The Participating Parties hereby agree to a mechanism that will both
6   verify and enforce PSE's obligation to achieve an equity capital ratio
7   based on the following target threshold schedule:
8   •   December 31, 2003: 34%
9   •   December 31, 2004: 36%
10   •   December 31, 2005: 39%
11   •   December 31 of Subsequent Years: 39 %
12
13   Such mechanism is set forth in the form of the gas and
14   electric discount tariff schedules attached to this Settlement
15   Stipulation as Exhibit A. If the Company fails to reach a
16   target threshold, the overall general rates will be reduced by
17   2%, as set forth in Exhibit A. After approval of this
18   Settlement Stipulation, the discount tariffs are self-
19   executing and, once approved as part of approval of this
20   Settlement Stipulation, will not require Commission
21   approval to implement any rate reduction or increase."
22   *WUTC v. PSE,* "Ninth Supplemental Order, Docket No.
23   UE-011570 and UG-011571 (March 28, 2002); also Docket
24   No. UE-011411 (consolidated), Third Supplemental Order.
25   (Appendix A, Settlement Stipulation, at pp. 6-7.)
26
27   Puget met the capital structure targets early.

28   I recommend that the Commission use a similar equity growth tracking

29   mechanism in the instant proceeding. The first target should be 33% common equity as a

30   percent of total capital for Avista Utilities and the date for meeting that target should be

31   December 31, 2006. The second and third common equity ratio targets for Avista

32   Utilities should be the same as those set out for Puget, 36% and 39%. Those goals should

1   be reached by year-end 2007 and 2008, respectively. I also recommend that the penalty

2   for not achieving those goals be the same as that imposed on Puget: a 2% reduction in

3   overall general rates that is automatic (i.e., that does not require Commission approval).

4   Finally, if the Company does not meet the common equity goals or files for additional

5   rates prior to the attainment of a 39% common equity ratio for Avista Utilities, I

6   recommend that the Commission utilize the Company's actual utility-only capital

7   structure when setting rates in the next rate proceeding.

8 **Q. DO YOU HAVE ANY ALTERNATIVE SUGGESTIONS FOR PROVIDING**

9   **INCENTIVE TO IMPROVE THE COMPANY'S UTILITY-ONLY COMMON**

10   **EQUITY RAITO?**

11 A. Yes. There is another option, which does not rely on negative incentives or penalties but,

12   instead relies on rewards for the recapitalization of Avista Utilities. Rates could be set

13   initially using the Avista Utilities' actual capital structure (approximately 30% common

14   equity, 70% debt). Then, at agreed-upon points in time, perhaps quarterly or semi-

15   annually, the Company's utility-only common equity ratio could be re-visited and, as the

16   common equity ratio was improved, rates could be adjusted (raised) to account for the

17   higher common equity and lower debt balances.

18   That second option would certainly not support rate stability, because rates would

19   change as the Company improved its capital structure. That plan would also have

20   administrative costs the other equity mechanism might not. Finally, the latter option

21   would probably not be seen favorably on Wall Street. However, it does offer positive

1   incentives to the Company to improve its capitalization rather than penalties and would,

2   most probably result in a more rapid remedy to Avista's capital structure concerns.

3   Ultimately, whether or not the Commission elects to provide specific annual

4   common equity ratio targets for Avista Utilities along with specified penalties if those

5   targets are not met, or sets rates with the current utility capital structure and allows rates

6   to increase as the Company improves its financial position, I leave to the discretion of the

7   Commission. While I recommend the former, I do not believe it matters precisely how

8   we get there (of course, the details are important); however, it does matter that we get to a

9   more financially healthy Avista utility operation. It matters that this Company's utility

10   operations reduce debt leverage and, most importantly, that the risk reduction burden be

11   removed from the shoulders of the Company's ratepayers as soon as possible.

12   Therefore, it is reasonable to set rates for Avista Utilities in this proceeding using

13   a capital structure with a common equity ratio equal to 40% of total capital *if and only if*

14   the Company either agrees to or is required by the Commission to increase its utility-only

15   common equity ratio to approximately 40% of total capital by the time of its next rate

16   proceeding in this jurisdiction.

17   **Q. HAVE YOU ADOPTED THE COMPANY'S PROJECTED EMBEDDED COSTS**

18   **OF LONG-TERM DEBT, PREFERRED SECURITIES AND PREFERRED**

19   **STOCK FOR PURPOSES OF DETERMINING AN OVERALL COST OF**

20   **CAPITAL IN THIS PROCEEDING?**

21   A. Yes. I have reviewed the Company's embedded cost rate estimation procedure and have

22   found it to be reasonable. While the Company does not project the embedded cost of

1   preferred stock to increase between 2004 and 2006 because that cost is fixed, it does

2   project cost rate increases in long-term debt and preferred securities. Most of the

3   increase is due to the expected increase in short-term debt costs, which as I have noted

4   previously have risen since the end of 2004. However, long-term debt costs (which were

5   also expected to rise when the Company made its projections) have not done so. In fact

6   they have declined. Therefore, prior to implementing any rate order produced in this

7   proceeding, I recommend that the Company be required to update its cost rate projections

8   for long-term debt and preferred securities, using the most recent data available for that

9   purpose.

10   **Q. ARE THERE OTHER ISSUES RELATED TO AVISTA UTILITIES' CAPITAL**

11   **STRUCTURE THAT YOU WISH TO BRING TO THE ATTENTION OF THIS**

12   **COMMISSION?**

13   A. Yes. The Company's embedded cost of debt is relatively high compared to other similar-

14   risk utilities and is related, primarily, to one 9.75% debt series issued in 2001. That debt

15   was issued during the time of the California-related power market upheaval in the Pacific

16   Northwest. That one debt series contributes significantly to the overall level of Avista's

17   embedded debt costs. In contrast, the Company just recently issued 15 year Senior Notes

18   at a coupon rate of 5.45%—roughly 500 basis points below the cost of the debt issued in

19   unfavorable circumstances in 2001.

20   My point here is that this expensive debt is scheduled to be re-financed in 2008

21   and the Company has in place interest rate swaps that will reduce the cost of that debt

22   prior to its redemption. However, those lower costs are not included in this rate

1   proceeding (see Avista response to PC DR-729). Therefore, while the Company's

2   interest coverages are relatively low currently, that is due primarily to one high-cost debt

3   issue, the cost of which will be reduced following this rate proceeding.

4   **IV. METHODS OF EQUITY COST EVALUATION**

5   A. DISCOUNTED CASH FLOW MODEL

6   **Q. PLEASE DESCRIBE THE DISCOUNTED CASH FLOW (DCF) MODEL YOU**

7   **USED TO ARRIVE AT AN ESTIMATE OF THE COST RATE OF COMMON**

8   **EQUITY CAPITAL FOR AVISTA UTILITIES IN THIS PROCEEDING.**

9   A. The DCF model relies on the equivalence of the market price of the stock (P) with the

10   present value of the cash flows investors expect from the stock, providing the discount

11   rate equals the cost of capital. The total return to the investor, which equals the required

12   return according to this theory, is the sum of the dividend yield and the expected growth

13   rate in the dividend.

14   The theory is represented by the equation,

15                    $$k = D/P + g,$$

16   where "k" is the equity capitalization rate (cost of equity, required return), "D/P" is the

17   dividend yield (dividend divided by the stock price) and "g" is the expected sustainable

18   growth rate.

19   **Q. WHAT GROWTH RATE (g) DID YOU ADOPT IN DEVELOPING YOUR DCF**

20   **COST OF COMMON EQUITY FOR THE COMPANY IN THIS PROCEEDING**?

21   A. The growth rate variable in the traditional DCF model is quantified theoretically as the

22   dividend growth rate investors expect to continue into the indefinite future. The DCF

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1   model is actually derived by 1) considering the dividend a growing perpetuity, that is, a

2   payment to the stockholder which grows at a constant rate indefinitely, and 2) calculating

3   the present value (the current stock price) of that perpetuity. The model also assumes that

4   the company whose equity cost is to be measured exists in a steady state environment,

5   i.e., the payout ratio and the expected return are constant and the earnings, dividends,

6   book value and stock price all grow at the same rate, forever. As with all mathematical

7   models of real-world phenomena, the DCF theory does not exactly "track" reality.

8   Payout ratios and expected equity returns do change over time. Therefore, in order to

9   properly apply the DCF model to any real-world situation and, in this case, to find the

10   long-term sustainable growth rate called for in the DCF theory, it is essential to

11   understand the determinants of long-run expected dividend growth.

12   **Q. CAN YOU PROVIDE AN EXAMPLE TO ILLUSTRATE THE DETERMINANTS**

13   **OF LONG-RUN EXPECTED DIVIDEND GROWTH**?

14   A. Yes, in Exhibit__ (SGH-3), I provide an example of the determinants of a sustainable

15   growth rate on which to base a reliable DCF estimate. In addition, in Exhibit__ (SGH-3),

16   I show how reliance on earnings or dividend growth rates alone, i.e., absent an

17   examination of the underlying determinants of long-run dividend growth, can produce

18   inaccurate DCF results.

19   **Q. DID YOU USE A SUSTAINABLE GROWTH RATE APPROACH, IN ADDITION**

20   **TO OTHER METHODS, TO DEVELOP AN ESTIMATE OF THE EXPECTED**

21   **GROWTH RATE FOR THE DCF MODEL?**

22   A. Yes. I have calculated both the historical and projected sustainable growth rate for a

1   sample of electric utility firms with similar-risk operations to Avista. However, I have

2   not relied exclusively on that type of growth rate analysis. In addition to the sustainable

3   growth rate analysis, I have also analyzed published data regarding both historical and

4   projected growth rates in earnings, dividends, and book value for the sample group of

5   electric utility companies. Through an examination of those data, which are available to

6   and used by investors, I am able to estimate investors' long-term growth rate

7   expectations. To that long-term growth rate estimate, I add any additional growth that is

8   attributable to investors' expectations regarding the on-going sale of stock for each of the

9   companies under review.

10   **Q. WHY HAVE YOU USED THE TECHNIQUE OF ANALYZING THE MARKET**

11   **DATA OF SEVERAL COMPANIES?**

12   A. I have used the "similar sample group" approach to cost of capital analysis because it

13   yields a more accurate determination of the cost of equity capital than does the analysis

14   of the data of one individual company. Any form of analysis in which the result is an

15   estimate, such as growth in the DCF model, is subject to measurement error, i.e., error

16   induced by the measurement of a particular parameter or by variations in the estimate of

17   the technique chosen. When the technique is applied to only one observation (e.g.,

18   estimating the DCF growth rate for a single company) the estimate is referred to,

19   statistically, as having "zero degrees of freedom." This means, simply, that there is no

20   way of knowing if any observed change in the growth rate estimate is due to

21   measurement error or to an actual change in the cost of capital. The degrees of freedom

22   can be increased and exposure to measurement error reduced by applying any given

1   estimation technique to a sample of companies rather than one single company.

2   Therefore, by analyzing a group of firms with similar characteristics, the estimated value

3   (the growth rate and the resultant cost of capital) is more likely to equal the "true" value

4   for that type of operation.

5   **Q. HOW WERE THE FIRMS SELECTED FOR YOUR ANALYSIS?**

6   A. In selecting a sample of electric firms to analyze, I screened all the electric and

7   combination electric and gas utility firms followed by Value Line. I selected companies

8   from that group that had a continuous financial history and had at least 40% of operating

9   revenues generated by electric utility operations. In addition, I eliminated companies that

10   were in the process of merging or being acquired <u>and</u> had realized an upward stock price

11   shift due to that activity or companies that had recently cut or omitted dividends. Also,

12   the companies in the selected sample had to have a bond rating from one major rating

13   agency ranging from "BB+" to "A-", generation assets, and a stable book value.[18] I have

14   eliminated from consideration companies that are only "wires" companies, which have

15   less operational risk than fully-integrated electrics, in order to properly match the risk of

16   the sample group with Avista. The sample group selection screening process I utilized is

17   shown in detail in Exhibit__(SGH-8) attached to this testimony.

18   Fifteen electric utilities passed the screening process. The companies included in

19   the sample group are: Central Vermont Public Service (CV), Energy East Corp. (EAS),

20   FirstEnergy Corp. (FE), Green Mountain Power (GMP), Northeast Utilities (NU),

21   Cinergy Corp. (CIN), Cleco Corp. (CNL), Empire District Electric (EDE), Entergy Corp.

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[18] Avista's First Mortgage Bonds are rated BBB- by Standard & Poor's.

1   (ETR), Avista Corp. (AVA), Hawaiian Electric Industries (HE), PNM Resources (PNM),

2   Pinnacle West Capital Corporation (PNW), Puget Energy, Inc. (PE) and UniSource

3   Energy (UNS). [Note: In the Exhibits accompanying this testimony, the sample group

4   companies are referred to by their stock ticker symbols, designated above in parentheses.]

5 **Q. HAS YOUR SELECTION PROCESS PRODUCED A SAMPLE GROUP THAT IS**

6   **SIMILAR IN RISK TO AVISTA?**

7 A. Yes, according to objective measures of investment risk, the risk of the sample group is

8   similar to that of Avista and, thus, will provide a reliable estimate of the Company's cost

9   of common equity capital. For example, Standard & Poor's recently revised its published

10   bond rating benchmarks and its business position (business risk) rankings.[19] Avista's

11   business position is 6 on a scale of 1 through 10 (1 being lowest risk and 10 being the

12   highest). The average business position of my sample group of electric utilities is 5.57.

13   It is important to recall that Avista's business risk position is based on the

14   combined business risk of its utility operation and its energy merchant operation. Given

15   that the business risk of an energy merchant operation is well above that of an integrated

16   utility operation, it is reasonable to believe that the stand-alone business risk of Avista

17   Utilities would be below the combined score of 6 awarded the Company's consolidated

18   operations. According to S&P's business position ranking, then, the sample group has

19   similar business risk to Avista.

20   The average common equity ratio of the companies in my sample group is 43%,

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[19] Standard & Poor's Ratings Direct, "New Business Profile Scores Assigned for US Utility and Power
Companies; Financial Guidelines Revised," June 2, 2004.

1   and the common equity ratio of the ratemaking capital structure I recommend is 40%.

2   From that perspective Avista's financial risk is similar to that of the sample group of

3   companies used to estimate the cost of equity capital.

4   Avista's bond rating is at the lower end of the spectrum of companies analyzed.

5   That lower bond rating is due, in part to the fact that Avista's capital structure is not

6   commensurate with its operational risk. As previously discussed in Section II of my

7   testimony, Avista Utilities is actually currently capitalized with a very low 30% common

8   equity ratio. However that difference in financial risk is mitigated to a large degree

9   through the use of a hypothetical capital structure containing 40% common equity

10   capital.

11   In sum, objective indicators imply that the investment risk of the sample group is

12   similar to but slightly lower than that of Avista.

13   **Q. HOW HAVE YOU CALCULATED THE DCF GROWTH RATES FOR THE**

14   **SAMPLE OF COMPARABLE COMPANIES?**

15   A. Exhibit__(SGH-9) pages 1 through 5, shows the retention ratios, equity returns,

16   sustainable growth rates, book values per share and number of shares outstanding for the

17   comparable companies for the past five years. Also included in the information presented

18   in Exhibit__ (SGH-9), are Value Line's projected 2005, 2006 and 2008-2010 values for

19   equity return, retention ratio, book value growth rates and number of shares outstanding.

20   In evaluating these data, I first calculate the five-year average sustainable growth

21   rate, which is the product of the earned return on equity (r) and the ratio of earnings

22   retained within the firm (b). For example, Exhibit__(SGH-9), page 4, shows that the

1   five-year average sustainable growth rate for Avista Utilities' parent company Avista

2   Corporation (AVA) is about 3.8%. The simple five-year average sustainable growth

3   value is used as a benchmark against which I measure the company's most recent growth

4   rate trends. Recent growth rate trends are more investor-influencing than are simple

5   historical averages. Continuing to focus on AVA, we see that sustainable growth in

6   2002-2004 was below the average growth for the five-year period, indicating a declining

7   historical trend in growth. Over the next three- to five-year period, Value Line projects

8   AVA's sustainable growth will rise above the recent five-year average to about 4.3%.

9   These data would indicate that investors expect AVA to grow at a rate in the future above

10   the growth rate that has existed, on average, over the past five years.[20] It is important to

11   note that, while the five-year projections are given consideration in estimating a proper

12   growth rate because they are available to and are used by investors, they are not given

13   sole consideration. Without reviewing all the growth rate data available to investors,

14   both projected and historic, sole reliance on projected information may be misleading.

15   Value Line readily acknowledges to its subscribers the subjectivity necessarily present in

16   estimates of the future:

17   We have greater confidence in our year-ahead ranking
18   system, which is based on proven price and earnings
19   momentum, than in 3- to 5-year projections. (Value Line
20   Investment Survey, Selection and Opinion, June 7, 1991,
21   p.854).
22

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[20] I have included the details of my growth rate analyses for Avista Corporation as an example of the
methodology I use in determining the DCF growth rate for each company in the industry sample. A
description of the growth rate analyses of each of the companies included in my sample group is set out in
Exhibit__(SGH-4). Exhibit__(SGH-10), page 1, attached to this testimony shows the internal, external and
resultant overall growth rates for all the companies analyzed.

1   Another factor investors consider is that AVA's book value growth is expected to

2   be relatively stable. Growing at a 5% level over the past five years, book value is

3   projected to increase at a 4% rate in the future. That rate also indicates that investors

4   expect AVA to grow at a lower rate in the future than the past, however that projected

5   growth rate is similar to the sustainable growth rate projection.

6   Also, as shown on Exhibit__ (SGH-10), page 2, AVA's dividend growth rate,

7   which was -11%, due to a dividend reduction in 1999, is expected to increase at a 6% rate

8   in the future. This confirms that future growth is likely to be higher than historical

9   growth, however, that growth rate projection would tend to raise long-term growth rate

10   expectations. Earnings growth rate data available from Value Line indicate that investors

11   can expect a far higher growth rate in the future (11%) than has existed over the past five

12   years (-6.5%).

13   The Value Line growth rate analysis is based on three-year base periods, i.e.,

14   averaging growth between three-year periods that are five years apart. In calculating its

15   projected earnings growth rates for Avista, Value Line used the average of earnings in the

16   2002-2004 period. Both 2002 and 2004 were sub-par earnings years for Avista. That

17   fact depresses the starting point for Value Line's projected growth projections, which

18   means that the 11% growth rate would not be considered to be a long-term sustainable

19   growth for AVA.

20   Also, other investor services project more modest earnings growth for AVA. First

21   Call and Zack's (investor advisory services that poll institutional analysts for growth

22   earnings rate projections) project earnings growth rate for AVA over the next five years

1   at a rate well below Value Line's sustainable growth forecasts—4.5% to 5.0%,

2   respectively.

3   AVA's projected sustainable growth, dividend and projected earnings growth

4   indicates that investors can expect higher growth than has occurred, on average, in the

5   past. A long-term sustainable growth rate of 5.5% is a reasonable expectation for AVA.

6 **Q. IS THE INTERNAL (b x r) GROWTH RATE THE FINAL GROWTH RATE YOU**

7   **USE IN YOUR DCF ANALYSIS?**

8 A. No. An investor's sustainable growth rate analysis does not end upon the determination

9   of an internal growth rate from earnings retention. Investor expectations regarding

10   growth from external sources (sales of stock) must also be considered and examined. For

11   AVA, page 4 of Exhibit__ (SGH-9) shows that the number of outstanding shares

12   increased at a 0.66% rate over the most recent five-year period. Value Line expects the

13   number of shares outstanding to increase at a 0.52% rate through the 2008-2010 periods.

14   An expectation of annual share growth of 0.5% is reasonable for this company.

15   In addition, the current market price of AVA is above its book value. As I noted

16   previously a utility market price above book value indicates that the utility is expected to

17   earn a return in excess of its cost of capital. If the external ("sv") portion of the

18   sustainable growth rate is estimated using a market-to-book ratio that is indicative of

19   over-earnings, then the growth rate will be effectively based on an expectation of

20   perpetual over-earnings and, thus, overstated. If that expected DCF growth rate,

21   predicated on the expectation of over-earning the cost of capital, is used to set the

22   allowed return the process becomes cyclical, leading to higher and higher allowed

1   returns.

2   Also, because a goal of regulation is to duplicate the strictures of the competitive

3   marketplace and, in so doing, to allow a utility to recover no more than its cost of capital,

4   it is reasonable to assume that the market price/book value ratio would have a tendency

5   toward unity over the long-term in order to mitigate the impact of over-earning on the

6   projected external growth rate.

7   Finally, although I have selected firms for analysis which derive at least 40% of

8   their revenues from electric operations, those firms are not "pure play" utilities—they do

9   have some other operations. That is certainly true for Avista Corporation, with its energy

10   trading operations. Those other operations, therefore, are likely to have an upward

11   impact on the market price and the market-to-book ratio of those companies.

12   Therefore, a reasonable estimate of investors' expectations for utility price/book

13   ratios is that it will range between current levels and 1.0. For the companies in the

14   sample group that have growth expectations related to the increase in the number of

15   shares outstanding, I have used the average as an estimate of investors' expectations for

16   the future. At the time of this analysis, AVA's market price is 114% of its book value

17   (M/B = 1.14). The result of combining expected long-term growth for that company

18   (5.50%) and external growth due to increase in the number of shares outstanding (0.5%),

19   yields an investor-expected long-term growth rate of 5.54% (see Exhibit__(SGH-10),

20   page 1 of 2).

21   **Q. HAVE YOU CHECKED THE REASONABLENESS OF YOUR GROWTH RATE**

22   **ESTIMATES AGAINST OTHER, PUBLICLY AVAILABLE, GROWTH RATE**

1   **DATA?**

2   A. Yes. Page 2 of Exhibit__ (SGH-10) shows the results of my DCF growth rate analysis as

3   well as 5-year historic and projected earnings, dividends and book value growth rates

4   from Value Line, earnings growth rate projections from First Call (and Zack's), the

5   average of Value Line and First Call growth rates and the 5-year historical compound

6   growth rates for earnings, dividends and book value for each company under study.

7   Exhibit__ (SGH-10), page 2, shows that my DCF growth rate estimate for the

8   electric utility sample group is 5.10%. That long-term growth rate estimate is higher than

9   Value Line's average projected earnings, dividend, and book value growth rate (4.71%)

10   for those same companies and also much higher than the historical growth rate average of

11   those same fundamental parameters (2.98%). In addition, my DCF growth rate estimate

12   for the electric companies is higher than First Call's, and Zack's projected earnings

13   growth rate estimate (4.28% and 4.75%, respectively). Given the weight of the evidence

14   available to investors, my DCF growth rates for these companies may be conservative

15   (i.e., on the high side), when compared to that published information available to

16   investors.

17   **Q. DOES THIS CONCLUDE THE GROWTH RATE PORTION OF YOUR DCF**

18   **ANALYSIS?**

19   A. Yes, it does.

20   **Q. HOW HAVE YOU CALCULATED THE DIVIDEND YIELDS?**

21   A. I have estimated the next quarterly dividend payment of each firm analyzed and

22   annualized them for use in determining the dividend yield. If the quarterly dividend of

1   any company was expected to be raised in the quarter following that in which the most

2   recent dividend was declared, I increased the current quarterly dividend by (1+g). For the

3   utility companies in the sample group, a dividend adjustment was unnecessary because

4   they either recently raised their dividend or were not projected to raise the dividend in

5   2005.

6   The next quarter annualized dividends were divided by a recent daily closing

7   average stock price to obtain the DCF dividend yields. I use the most recent six-week

8   period to determine an average stock price in a DCF cost of equity determination because

9   I believe that period of time is long enough to avoid daily fluctuations and recent enough

10   so that the stock price captured during the study period is representative of current

11   investor expectations.

12   Exhibit__ (SGH-11) indicates that the average dividend yield for the sample

13   group of electric utility companies is 3.76%. Value Line's most recent year-ahead

14   dividend yield projection for the companies in my sample group averaged 3.79%—

15   slightly higher than the dividend yield I use in my analysis (Value Line, *Summary &*

16   *Index,* July 29, 2005). That indicates that the dividend yield used in my DCF analysis is

17   representative of investor expectations.

18   Q. **WHAT IS YOUR COST OF EQUITY CAPITAL ESTIMATE FOR THE**

19   **ELECTRIC UTILITY COMPANIES, UTILIZING THE DCF MODEL?**

20   A. Exhibit__ (SGH-12) shows that combining the dividend yield and expected growth rate

21   for each company under review produces an average DCF cost of equity capital for the

22   entire group of electric utilities of 9.01%.

1   B. CORROBORATIVE EQUITY COST ESTIMATION METHODS

2   **Q. IN ADDITION TO THE DCF, WHAT OTHER METHODS HAVE YOU USED TO**

3   **ESTIMATE THE COST OF EQUITY CAPITAL OF AVISTA UTILITIES**?

4   A. I have used three additional econometric methods to estimate the cost of equity capital for

5   the group of firms selected as similar in investment risk to Avista. The three

6   methodologies are: 1) the Capital Asset Pricing Model (CAPM), 2) the Modified

7   Earnings-Price Ratio (MEPR) analysis, and 3) the Market-to-Book Ratio (MTB) analysis.

8   The similar risk sample group of firms analyzed with these three methods is the same as

9   that selected for the DCF analysis, discussed previously. The theoretical details of each

10   of those analyses are contained in Exhibit__ (SGH-5), attached to this testimony. The

11   calculations and data supporting the results of each of these models are shown in the

12   attached Exhibits.

13   Exhibit__ (SGH-13), attached to this testimony, shows the detail regarding the

14   CAPM analysis, which indicates a cost of capital for the electric companies ranging from

15   8.19% to 9.77%. Exhibit__ (SGH-14) and Exhibit__ (SGH-15) show the theoretical

16   basis and the data and calculations regarding the Modified Earnings Price Ratio (MEPR)

17   analysis, respectively. The MEPR analysis indicates a current cost of equity capital for

18   companies like Avista ranging from 8.34% to 8.38%. Exhibit__ (SGH-16), attached to

19   this testimony, contains the supporting detail for the Market-to-Book Ratio (MTB)

20   analysis. The MTB analysis indicates a current average cost of equity capital for the

21   electric utility sample group of 9.27% (near-term) to 9.08% (long-term).

1   C. SUMMARY

2   **Q. PLEASE SUMMARIZE THE RESULTS OF YOUR EQUITY CAPITAL COST**

3   **ANALYSES FOR THE SAMPLE GROUP OF SIMILAR-RISK ELECTRIC AND**

4   **GAS COMPANIES**.

5   A.   My analysis of the cost of common equity capital for the sample group of electric

6   and gas utility companies is summarized in the table below.

METHOD	COST OF EQUITY
DCF	9.01%
CAPM	8.19%/9.77%
MEPR	8.34%/8.38%
MTB	9.27%/9.08%

7   The DCF result noted above, which is my primary indication of the cost of equity

8   capital, is 9.01%. Averaging the lowest and the highest results of the corroborative

9   analyses (CAPM, MEPR, and MTB) produces an equity cost rate range of 8.54% to

10   9.14%—a range that includes DCF result at the upper end. The other corroborative

11   analyses indicate that my DCF results may overstate an accurate estimate of the cost of

12   common equity of electric utilities.

13   Given the results shown above, it would be reasonable to construct a current range

14   of equity capital costs with the DCF result at the upper end of that range. However, over

15   the next year or two capital costs may increase to some degree if the U.S. economy

16   continues to advance. Therefore, weighing all the evidence presented herein, I believe it

1   is reasonable to construct a current cost of equity range around the DCF estimate, and my

2   best estimate of the cost of equity capital for firms similar in risk to Avista is 8.75% to

3   9.50%. The mid-point of that range is 9.125%.

4 **Q. DOES YOUR EQUITY COST ESTIMATE INCLUDE AN INCREMENT FOR**

5   **FLOTATION COSTS?**

6 A. No, it does not.

7 **Q. CAN YOU PLEASE EXPLAIN WHY AN EXPLICIT ADJUSTMENT TO THE**

8   **COST OF EQUITY CAPITAL FOR FLOTATION COSTS IS UNNECESSARY?**

9 A. An explicit adjustment to "account for" flotation costs is unnecessary for several reasons.

10   First, Dr. Avera, at page 47 of his Direct Testimony likens flotation costs associated with

11   common stock issues to flotation costs associated with bonds and, therefore, should be

12   explicitly accounted for in the allowed return. As I discuss below any flotation cost

13   "adjustment" to the cost of equity occurs with investors in the marketplace and requires

14   no explicit additions by regulators. Moreover, even if Dr. Avera were correct that

15   flotation costs on stock are like flotation costs on bonds, the current relationship between

16   the electric utility sample group's stock price and its book value would indicate a

17   <u>reduction</u> to the market-based cost of equity, not an increase as Dr. Avera recommends.

18   When a bond is issued at a price that exceeds its face (book) value, and that

19   difference between market price and the book value is greater than the flotation costs

20   incurred during the issuance, the embedded cost of that debt (the cost to the company) is

21   *lower* than the coupon rate of that debt. In the current market environment for electric

22   utility common stocks, those stocks are selling at a market price 57% above book value.

1   The difference between the market price of electric utility stock and book value dwarfs

2   any issuance expense the companies might incur. Therefore, if common equity flotation

3   costs are, as Dr. Avera implies, like flotation costs with bonds, then, the adjustment to the

4   cost of common equity should be downward, not upward.

5   Second, flotation cost adjustments are usually predicated on the prevention of the

6   dilution of stockholder investment. Dr. Avera takes this position at page 47, lines 15

7   through 18 of his Direct Testimony. However, the reduction of the book value of

8   stockholder investment due to issuance expenses can occur only when the utility's stock

9   is selling at a market price at or below its book value.

10   In the current market environment for electric utility common stock, the

11   companies under review are selling at a 57% premium to book value (Exhibit__ (SGH-

12   10), p. 1). Therefore, every time a new share of that stock is sold, existing shareholders

13   realize an *increase* in the per share book value of their investment. No dilution occurs,

14   even without any explicit flotation cost allowance.

15   Third, the vast majority of the issuance expenses incurred in any public stock

16   offering are "underwriter's fees" or "discounts." Underwriter's fees or discounts are not

17   out-of-pocket expenses for the issuing company. On a per share basis, they represent

18   only the difference between the price the underwriter receives from the public and the

19   price the utility receives from the underwriter for its stock. As a result, underwriter's fees

20   are not an expense incurred by the issuing utility and recovery of such "costs" should not

21   be included in rates.

1   In addition, the amount of the underwriter's fees are prominently displayed on the

2   front page of every stock offering prospectus and, as a result, the investors who

3   participate in those offerings (e.g., brokerage firms, institutional investors) are quite

4   aware that a portion of the price they pay does not go to the company but goes, instead, to

5   the underwriters. By electing to buy the stock with that knowledge, those savvy investors

6   have effectively accounted for those issuance costs in their risk-return framework by

7   paying the offering price. Therefore, they do not need any additional adjustments to the

8   allowed return of the regulated firm to "account" for those costs.

9   Fourth, my DCF growth rate analysis includes an upward adjustment to equity

10   capital costs which accounts for investor expectations regarding stock sales at market

11   prices in excess of book value, and any further explicit adjustment for issuance expenses

12   related to increases in stock outstanding is unnecessary.

13   Fifth, research has shown that a specific adjustment for issuance expenses is

14   unnecessary.[21] There are other transaction costs which, when properly considered,

15   eliminate the need for an explicit issuance expense adjustment to equity capital costs.

16   The transaction cost that is improperly ignored by the advocates of issuance expense

17   adjustments is brokerage fees. Issuance expenses occur with an initial issue of stock in a

18   primary market offering. Brokerage fees occur in the much larger secondary market

19   where pre-existing shares are traded daily. Brokerage fees tend to increase the price of

20   the stock to the investor to levels above that reported in the Wall Street Journal, i.e., the

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[21] "A Note on Transaction Costs and the Cost of Common Equity for a Public Utility," Habr, D., National Regulatory Research Institute Quarterly Bulletin, January 1988, pp. 95-103.

1   market price analysts use in a DCF analysis. Therefore, if brokerage fees were included

2   in a DCF cost of capital estimate they would raise the effective market price, lower the

3   dividend yield and lower the investors' required return. If one considers transaction costs

4   that, supposedly, raise the required return (issuance expenses), then a symmetrical

5   treatment would require that costs which lower the required return (brokerage fees)

6   should also be considered. As shown by the research noted above, those transaction costs

7   essentially offset each other and no specific equity capital cost adjustment is warranted.

8   **Q. WITHIN THE RANGE OF COMMON EQUITY COST YOU HAVE**

9   **DETERMINED TO BE APPROPRIATE FOR FULLY-INTEGRATED**

10 **ELECTRIC AND GAS UTILITIES, WHAT IS THE APPROPRAITE POINT-**

11 **ESTIMATE FOR AVISTA'S UTILITY OPERATIONS?**

12 A. As I noted in Section II of my testimony. The companies in my sample group have

13 similar business risk to Avista, but have a slightly higher common equity ratio than the

14 40% with which I recommend rates be set in this proceeding. Because of that fact, an

15 appropriate return for Avista should be above the mid-point of that appropriate for the

16 sample group of companies. The mid-point of my equity cost range for electric utilities

17 similar in risk to Avista is 9.125%. In this instance, a return of 9.25% for Avista is

18 reasonable.

19 **Q. WHAT WOULD BE THE OVERALL COST OF CAPITAL FOR AVISTA'S**

20 **ELECTRIC AND GAS UTILITY OPERATIONS, BASED ON AN ALLOWED**

21 **EQUITY RETURN OF 9.25%?**

22 A. Exhibit__(SGH-17), attached to my testimony, shows that an equity return of 9.25%,

1   operating through a reasonable ratemaking capital structure and the Company's forward-

2   looking capital cost rates, produces an overall return of 8.64% for Avista.

3   Exhibit__(SGH-17) also shows that a 8.64% overall cost of capital affords the Company

4   an opportunity to achieve a pre-tax interest coverage level of 2.27 times.

5   According to Avista Corporation's 2004 S.E.C. form 10-K (pp. 69, 70), the

6   average pre-tax interest coverage for the consolidated parent company operations over

7   the past three years was 1.62 times, and 1.50 times for the utility operation. Therefore,

8   the equity return and capital structure I recommend offers the Company an opportunity to

9   substantially exceed its prior pre-tax interest coverage levels and, thereby, improve its

10   current bond rating. The equity return and capital structure I recommend offers the

11   Company an opportunity to meet that pre-tax interest coverage test and, thereby, maintain

12   or improve its current bond rating. Also, the equity return I recommend fulfills the legal

13   requirement of <u>Hope</u> and <u>Bluefield</u> of providing the Company the opportunity to earn a

14   return which is commensurate with the risk of the operation and serves to support and

15   maintain the Company's ability to attract capital.

16   **V. COMPANY COST OF CAPITAL TESTIMONY**

17   **Q. HOW HAS COMPANY WITNESS AVERA ESTIMATED THE COST OF**

18   **EQUITY CAPITAL IN THIS PROCEEDING?**

19   A. Company witness Avera has analyzed the cost of equity capital for Avista using a

20   standard DCF analysis as well as several risk premium analyses (standard bond yield plus

21   premium as well as Capital Asset Pricing Model analyses). As I will explain in detail

1   below, both Dr. Avera's DCF and Risk Premium analyses are flawed and produce equity

2   cost estimates that are biased upward.

3   **Q. PRIOR TO DISCUSSING ANY INFIRMITIES THAT EXIST IN DR. AVERA'S**

4   **COST OF EQUITY ANALYSIS, DO YOU HAVE ANY GENERAL COMMENTS**

5   **REGARDING HIS TESTIMONY?**

6   A. Yes. Dr. Avera's DCF results indicate that Avista's cost of equity capital is 9.8% (Avera

7   Direct, p. 40). Although that estimate is now out of date and, using his same

8   methodology, more recently available data indicates a lower cost of equity, as I will

9   discuss subsequently, Dr. Avera suggests that the Commission place little weight on his

10   DCF results. He opines that his DCF results are "different" from his other results and, for

11   that reason, his DCF results (not his other, higher results) should be questioned. He also

12   indicates that the near-term direction of the economy is "uncertain" and DCF growth

13   rates will be understated because of that reason.

14   Unfortunately, Dr. Avera has it backward. If there is disparity in his equity cost

15   estimates then it is his high Risk Premium (CAPM) results that should be questioned, not

16   his DCF. As I will demonstrate below, in producing his high CAPM results, Dr. Avera

17   has used an exaggerated market risk premium which is substantially in excess of long-

18   term historical risk premiums as well as the current expectations for future risk

19   premiums. While Dr. Avera's DCF is somewhat overstated due to the use of stale data,

20   that methodology is applied in a reasonable manner—i.e., one which has long been

21   accepted and used in regulation. Therefore, it is his DCF that provides the best indication

22   of the cost of equity, not his exaggerated CAPM analysis.

1   On the topic of the economy, Dr. Avera's opinion that the current recovery is

2   "uncertain" is not widely held. In Section I of this testimony, I cited Value Line's most

3   recent Quarterly Review of the U.S. economy. While the current economic expansion

4   has not begun with a great flurry of activity, it is proceeding at a steady and respectable

5   pace. Further, Value Line informs its subscribers that it expects 3% GDP growth during

6   the remainder of 2005 and it expects "GDP growth to stabilize in the area of 3%-3.3% in

7   2006." A stable economic growth expectation of 3%, in my view, does not constitute an

8   "uncertain" economic environment.

9   Also, I have testified in several proceedings with Dr. Avera and am familiar with

10   the equity cost estimation methods he has used over time. Dr. Avera began, in the early

11   1990s, to adopt the position that the DCF could not accurately estimate the cost of equity,

12   although his reasons for reaching that conclusion have changed over the years. When he

13   first began to discuss the "unreliability" of the standard DCF analysis, Dr. Avera's

14   rationale was that the volatility of stock prices in the late 1980s and early 1990s made

15   standard DCF equity cost estimates unreliable. Then, in the later 1990s (and at the time

16   of Avista's last electric rate proceeding) Dr. Avera's anti-DCF rationale was that the

17   changing nature of electric regulation had made the DCF unreliable. During that

18   previous period of time, he did not provide a standard DCF analysis, and, instead,

19   presented a multi-stage DCF analysis.

20   Regardless of the reasons he has provided over the years for downplaying the

21   equity cost estimates produced by a DCF analysis, the results of that rationale have been

22   consistent—higher equity cost estimates. In other words, no matter what the cause—

1   stock price volatility, restructuring, or now an uncertain economy—the standard DCF, in

2   Dr. Avera's view, produced results that he characterized as being too low.

3   Dr. Avera recognizes at page 40 of his Direct Testimony, that "the DCF model

4   has been routinely relied on in regulatory proceedings" as an indication of the cost of

5   equity capital. The DCF is, by far, the most utilized method to estimate equity costs in

6   regulated industries for one simple reason—it works, and it works well. Dr. Avera's

7   cautions to the Commission regarding reliance on his DCF results notwithstanding, his

8   DCF analysis provides the most accurate estimate of Avista's cost of equity capital

9   presented by the Company in this proceeding.

10   **Q. HAS THE "RELIABILITY" OF DCF EQUITY COST ESTIMATES BEEN**

11   **QUESTIONED BY UTILITY-SPONSORED RATE OF RETURN WITNESSES IN**

12   **OTHER REGULATORY PROCEEDINGS?**

13   A. Yes. As capital costs have declined during the last decade or more and the DCF has

14   (appropriately) produced lower and lower equity cost estimates, it has become the norm,

15   in my experience, that utility-sponsored rate of return witnesses attempt to convince

16   regulators that standard-DCF results are unacceptably low for one reason or another.

17   **Q. HAVE THOSE WITNESSES BEEN SUCCESSFUL IN THEIR ENDEAVOR TO**

18   **PERSUADE COMMISSIONS TO REDUCE THEIR USE OF THE DCF IN**

19   **REGULATION?**

20   A. No, in my experience, they have not, even though those efforts have been on-going for

21   more than a decade. The standard DCF continues to be the most widely used equity cost

22   estimation methodology used in regulation. That experience is confirmed by an article

1   appearing in the mid-1990s in Public Utility Reports, entitled "Cost of Equity

2   Determinations—State Regulators Turn Back Challenges to the DCF Model:"

3   "The discounted cash flow (DCF) model, the
4   methodology most frequently relied upon to establish
5   authorized ROE, has often engendered spirited debate over
6   the technical aspects of its application. Of late, however,
7   some utilities have shifted the focus of the debate, urging
8   that the DCF model no longer produces reasonable
9   results....
10   Despite utility claims in numerous rate proceedings
11   that the DCF model is producing unreasonably low
12   estimates of investor-expected return on investment in
13   utility equity, state regulators have not reduced their
14   reliance on the model as the primary tool in setting rate of
15   return. In fact the opposite may be true." (148 P.U.R. 4th,
16   Advance Sheets, p. i, iii (March 4, 1994)).
17
18   The article concludes by listing states in which regulators have stated their intent to

19   continue to rely on the DCF: Arizona, California, Colorado, Connecticut, District of

20   Columbia, Florida, Illinois, Maryland, Massachusetts, Minnesota, Pennsylvania, Rhode

21   Island and Utah. It has been my experience that this Commission also continues to rely

22   primarily on the results of DCF analyses.

23   **Q. MR. HILL, IS IT YOUR TESTIMONY THAT THE DCF IS INFALLIBLE AND IS**

24   **THE ONLY EQUITY COST ESTIMATION METHODOLOGY THAT SHOULD**

25   **BE CONSIDERED BY REGULATORS?**

26   A. No. I believe the DCF is the most reliable equity cost estimation methodology and

27   should provide the primary indication to regulators of the market-based cost of equity

28   capital—the return that should be allowed regulated firms. However, no simple algebraic

29   representation of complex investor behavior is infallible, and it is reasonable to estimate

30   the cost of common equity using other methodologies. I have been consistent in my

1   approach to using other methods to support and temper the results of my DCF analysis, as

2   I do in this testimony. As I noted previously, my three additional cost of equity analyses

3   bracket my DCF result and support its reasonableness. However, it is most important that

4   the other equity cost methods in addition to the DCF must be applied in a theoretically

5   responsible manner—something I believe Dr. Avera has failed to do in his CAPM

6   analysis in this proceeding.

7 **Q. DO YOU HAVE ANY COMMENTS REGARDING DR. AVERA'S SELECTION**

8   **OF COMPANIES IN HIS SIMILAR SAMPLE GROUP?**

9 A. While several of the companies in Dr. Avera's sample group are also in my own, I do

10   have some concerns with his selection process. For one thing, Dr. Avera was

11   unconcerned about the amount of revenues generated by regulated electric operations of

12   the companies he selected. Dr. Avera's sample group contains Black Hills Corp., MDU

13   Resources and Sempra Energy; mine does not. A U.S. Utility Reports (July 2005)

14   indicates that only 6% of MDU Resources revenues and 21% of Black Hills Corp's

15   revenues are from regulated electric utility operations. Also, Black Hills Corporation

16   mines coal, and has an oil and gas exploration business as well as a telecommunications

17   business. MDU Resources has gas pipeline, oil and gas production, mining and

18   construction materials production, utility line maintenance and independent power

19   production businesses. In addition, Value Line reports in its May 13 edition of *Ratings &*

20   *Reports*, that over one-half of Sempra Energy's profits last year came from its

21   unregulated businesses. My point here is that with substantial unregulated operations, the

22   cost of capital for those companies would overstate that appropriate for a pure-play

1   integrated gas and electric utility operation like Avista Utilities.

2   **Q. YOU MENTIONED THAT DR. AVERA'S 9.8% DCF RESULT IS NOW**

3   **SOMEWHAT OUT OF DATE AND OVERSTATED. CAN YOU ELABORATE?**

4   A. Yes. Dr. Avera's DCF methodology relies on published information in Value Line and

5   earnings growth rate projections from three different investor services. It is a simple

6   matter to update those data and analyze what a more recent version of his DCF analysis

7   would produce. If Dr. Avera updated his DCF analysis it would be lower.

8   Dr. Avera's DCF dividend yield is derived in his Schedule WEA-3 and is based

9   on the data published in the March 4 Value Line *Summary & Index*. He calculates the

10   year-ahead dividend yield to be 4.0% for his sample group of companies. Using the most

11   recent *summary & Index* available at the time of the preparation of this testimony (July

12   29, 2005) the average dividend yield of Dr. Avera's companies has fallen to 3.6%, as

13   shown in the Table I below.

14   / /

15   / / /

16   / / / /

17   / / / / /

18   / / / / / /

19   / / / / / / /

20   / / / / / / /

1 **TABLE I**

2 DR. AVERA'S DIVIDEND YIELD – UPDATED

Company	Stock Price	Estimated Dividends Next 12 Mos.	Implied Dividend Yield
Black Hills Corp.	$ 40.37	$ 1.30	3.2%
Hawaiian Electric	$ 27.48	$ 1.24	4.5%
IDACORP, Inc.	$ 31.45	$ 1.20	3.8%
MDU Resources Group	$ 30.50	$ 0.75	2.5%
PNM Resources Group	$ 29.01	$ 0.80	2.8%
Pinnacle West Capital	$ 45.68	$ 1.93	4.2%
Puget Energy, Inc.	$ 24.00	$ 1.00	4.2%
Sempra Energy	$ 42.62	$ 1.17	2.7%
Xcel Energy	$ 19.32	$ 0.86	4.5%
Average			**3.6%**

Data from the Value Line Investment Survey, Summary and Index (July 29, 2005).

3

4 **Q. HOW DID DR. AVERA CALCULATE HIS DCF GROWTH RATE?**

5 A. Dr. Avera presents most of his DCF growth rate data in his Schedule WEA-4. Those data

6 are earnings projections from investor advisory services (Value Line, IBES, First Call,

7 and Reuters). Dr. Avera also presents historical earnings data for his sample group of

8 companies. However, he presents only the positive historical earnings data and averages

9 only those positive data as representative of average historical earnings growth for the

10 entire sample group. Dr. Avera's earnings growth projections range from 4.3% to 5.7%

11 and his positive-only historical averages are 6.5% and 6.8%. The average earnings

12 growth rate projection (i.e., excluding historical data) shown in his WEA-4 is 4.9%.

78

1   In his Schedule WEA-5, Dr. Avera provides a sustainable growth rate analysis

2   based on Value Line data that indicates an average growth rate projection of 5% for his

3   sample group of companies. That 5% sustainable growth rate result is squarely in the

4   middle of the 4.3% to 5.7% projected earnings growth rates presented by Dr. Avera.

5   Adding that 5% sustainable growth to Dr. Avera's original 4% dividend yield would have

6   produced a DCF estimate of 9%.

7   However, in reviewing his data, Dr. Avera selected a growth rate range of 5% to

8   6.5% as a reasonable range of expected growth and used the mid-point of that range 5.8%

9   as his DCF growth rate. It appears that Dr. Avera's DCF growth rate selection was

10   heavily influenced by his historical earnings growth rates that considered only positive

11   historical growth.

12   While I would agree with Dr. Avera that investors would not project negative

13   growth into the long-term future for a company, I disagree strongly that investors would

14   close their eyes and pretend that negative earnings growth did not exist for any of the

15   companies in his sample group. Nevertheless, that is the operative assumption of Dr.

16   Avera's DCF growth rate analysis here. He would have this Commission believe that

17   investors would look at his group of utility companies and, in determining the long-term

18   rate of earnings and dividend growth to expect for the future, would average only the

19   positive historical growth rates, pretending the negative growth never happened. I do not

20   believe that represents the manner in which reasonable investors would estimate long-

21   term growth, and Dr. Avera's DCF growth rate is overstated for that reason.

1 **Q. WHAT ARE THE RESULTS OF DR. AVERA'S DCF GROWTH RATE**

2 **METHODOLOGY WHEN HIS DATA ARE UPDATED?**

3 A. Shown in Table II below are Dr. Avera's updated DCF growth rate data. I do not have

4 access to Standard & Poor's Earnings Guide for IBES projected earnings growth rates

5 and have substituted the projected earnings growth rates of another widely-used source:

6 Zacks Investment Research. The other data are the same as that used by Dr. Avera, only

7 published more recently. Finally, in Table II, I have shown all of the 5- and 10-year

8 historical growth rates published in Value Line, not only the positive values.

9 **TABLE II**

10 DR. AVERA'S DCF GROWTH RATES - UPDATED

Company	Projected				Historical	
	Zacks	**Value Line**	**First Call**	**Reuters**	**Past 10 Yr**	**Past 5 Yr**
Black Hills Corp.	6.0%	2.0%	5.0%	5.0%	6.0%	4.5%
Hawaiian Electric	3.5%	2.5%	3.0%	2.8%	2.0%	1.0%
IDACORP, Inc.	4.3%	6.0%	4.0%	4.2%	-1.5%	-9.0%
MDU Resources Group	7.7%	6.5%	8.0%	6.5%	10.5%	10.5%
PNM Resources Group	5.7%	4.5%	9.0%	12.0%	4.0%	-2.0%
Pinnacle West Capital	5.2%	3.5%	4.5%	5.0%	3.0%	-3.0%
Puget Energy, Inc.	4.8%	5.5%	4.0%	5.0%	-4.0%	-5.0%
Sempra Energy	5.9%	3.5%	5.0%	6.8%	6.0%	14.0%
Xcel Energy	4.2%	7.5%	3.0%	4.0%	-4.0%	-9.5%
Average	**5.3%**	**4.6%**	**5.1%**	**5.7%**	**2.4%**	**0.2%**

Value Line Investment Survey, Ratings & Reports, May 13, 2005
First Call, Reuters, Zack's from on-line services, August 9, 2005

11

12 Table II shows that the earnings growth rate projections published by the investor

80

1   services have increased slightly from those shown in Dr. Avera's testimony. The more

2   recent average of those forward-looking earnings growth rates is 5.2% versus his original

3   4.9%. However, updating Dr. Avera's sustainable growth rate analysis using the data

4   from the most recent Value Line indicates a projected growth rate for his sample group of

5   4.5%. That result is 50 basis points below the 5% growth rate provided in Dr. Avera's

6   Schedule WEA-5. Table II also shows that when one considers all of the historical

7   earnings growth rate data, not just the high numbers, the result is that historical earnings

8   growth does not offer much information with regard to what investors might expect for

9   long-run dividend or earnings growth for the companies in Dr. Avera's sample group.

10   Table II also shows the importance of looking "behind" the numbers to better

11   understand their implications for long-term growth—something Dr. Avera fails to do in

12   his mechanical DCF growth rate analysis. Notice that Value Line's most recent 5-year

13   average historical earnings growth for Sempra Energy is 14%. That calculation is

14   affected by the fact that Sempra was formed by a merger of Enova and Pacific

15   Enterprises in 1998, and the earnings in that year and the subsequent year were

16   negatively affected. Those poor earnings years provide the base-year measurement on

17   which Value Line calculates its 14% historical earnings growth rate. Therefore, it is

18   reasonable to believe that such a growth rate would not be a reliable indicator of future

19   long-term growth. However, Dr. Avera's methodology—especially one that would

20   ignore all negative historical growth rate indicators—ignores that type of underlying data

21   that I believe investors would consider in determining growth rate expectations.

22   In sum, even if we use the very highest average earnings growth rate projection

1   available in the updated information for Dr. Avera's sample companies (5.7%), that

2   growth in combination with a recent average year-ahead dividend yield for those

3   companies (3.6%), produces a DCF result of 9.3%—very similar to my 9.25%

4   recommendation in this proceeding.

5 Q. **DOES THIS CONCLUDE YOUR COMMENTS ON THE COMPANY'S DCF**

6   **ANALYSIS?**

7 A. Yes.

8 Q. **WHAT OTHER EQUITY COST ESTIMATION ANALYSES DOES DR. AVERA**

9   **PRESENT IN HIS TESTIMONY IN THIS PROCEEDING?**

10 A. Dr. Avera utilizes three kinds of risk premium analyses in his Direct Testimony in this

11   case: 1) a comparison of authorized rates of return to prevailing interest rates, 2)

12   historical realized rates of return, and 3) Capital Asset Pricing Model analyses (historical

13   and projected). Also in all of his risk premium analyses, Dr. Avera presents his results

14   based on current bond yields and projected bond yields. In my view, only the use of

15   current bond yields (i.e., the embodiment of investors' current expectations for the future)

16   provides a reliable estimate of the cost of equity capital. What the bond yields might or

17   might not be a year from now is not a basis for estimating the current cost of common

18   equity capital.

19 Q. **PLEASE EXPLAIN WHY CURRENT BOND YIELDS OFFER THE BEST**

20   **INDICATION OF THE COST OF CAPITAL TO BE USED IN A**

21   **RATESETTTING PROCEEDING SUCH AS THIS.**

22 A. First, investors are aware of current projections regarding the expectations for the

1   economy and the level of interest rates and incorporate those expectations into the price

2   they are willing to provide for bonds and, thus, the bond yield. One of the most widely-

3   accepted tenets of modern finance—the efficient market hypothesis—holds that all

4   publicly available information is included in security prices. That includes interest rate

5   forecasts. Therefore, the current yield does not need to be adjusted again for the same

6   expectations that are already included by investors. Basing risk premium estimates on

7   projected bond yields would be similar to basing DCF equity cost estimates on projected

8   stock prices. Dr. Avera has not attempted the latter and the Commission should not rely

9   on his equity cost estimates that rely on the former.

10   Second, the type of bond yield projections relied on by Dr. Avera are often

11   wrong. For example, Dr. Avera notes that interest rates are expected to increase and that

12   in January 2005, "BBB" utility debt yields averaged 5.95%. Value Line indicates that

13   over the most recent six weeks "BBB" utility bond yields averaged 5.58%—about 40

14   basis points *below* their level seven months ago. [22]

15   Also, Blue Chip Financial Forecasts (a forecasting service relied on by Dr.

16   Avera), in April 2003 forecast that the AAA Corporate Bond yield would be 6.8% by the

17   4th Quarter of 2004. Value Line reports that the AAA Corporate Bond yield in the 4th

18   Quarter of 2004 averaged 5.5%—130 basis points less that predicted by Blue Chip.[23] In

19   April of 2004, Blue Chip forecast that the AAA Corporate Bond Yield would be 6.5% by

20   the 3rd Quarter of 2005. The August 1, 2005 Federal Reserve Statistical Release H.15

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[22] Value Line *Selection & Opinion*, 6/24/05-7/29/05, inclusive.
[23] Value Line *Selection & Opinion*, Quarterly Economic Review, May 27, 2005, p. 1704.

1   indicates that the average AAA Corporate Bond Yield in July 2005 was 5.06%—144

2   basis points below the Blue Chip projection.

3   This Commission should assign little, if any, weight to Dr. Avera's Risk Premium

4   results that are based on projected bond yields.

5   **Q. HAS DR. AVERA CONSISTENTLY TESTIFIED IN FAVOR OF USING RISK**

6   **PREMIUM ANALYSES TO ESTIMATE THE COST OF EQUITY?**

7   A. No. In testimony on behalf of Southwest Bell Telephone before the Federal

8   Communications Commission (FCC; CC Docket No. 84-800) in a proceeding in which

9   the FCC was seeking comments as to whether or not an equity cost represcription process

10   using the risk premium would be advisable, Dr. Avera testified against the use of the risk

11   premium.

12   In the executive summary of his testimony before the FCC, Dr. Avera presented

13   the overall conclusion of his research on the risk premium:

14   "Based on a review of other empirical studies and
15   our independent research, we concluded that a formula
16   predicated upon the bond-yield-plus-risk-premium
17   methodology would not provide an adequate measure of the
18   changes in the cost of equity during the time intervals
19   between prescriptions since there would be no confidence
20   that the resulting interim cost of equity would be
21   reasonably accurate over a particular time period." (Ibid.,
22   p.2)
23
24   In his testimony on the risk premium in the instant case, Dr. Avera's CAPM

25   analysis relies, in part, on a measure of the market risk premium as the difference

26   between a forward-looking equity model (a DCF) and bond yields. Reviewing that type

1   of study in 1984, Dr. Avera testified before the FCC as follows:

2   "The studies of equity risk premium behavior that
3   employ forward-looking estimates of the cost of equity
4   have obvious advantages over the use of historical realized
5   rates of return. Nonetheless, the results must be interpreted
6   carefully. The cost of equity estimation models and
7   associated growth projection inputs are necessarily applied
8   in a mechanistic fashion. Estimating the cost of equity at
9   any particular point in time is clearly a difficult exercise;
10   accordingly, utilizing a single formula with mechanistically
11   derived inputs over a number of periods to generate
12   forward-looking cost of equity estimates is fraught with
13   potential inaccuracies." (Ibid., p. 12)
14
15   Another type of risk premium methodology presented by Dr. Avera in this

16   proceeding is one historical difference between stock returns and bond returns. Before

17   the FCC in the case cited above, Dr. Avera's comments on historical risk premium

18   studies were less than complimentary:

19   "While the results of empirical analyses based on
20   average realized rates of return may be indicative of return
21   relationships over a long historical horizon, such studies are
22   of little value in assessing the behavior of equity risk
23   premiums over time. Even as a measure of equity risk
24   premiums at a particular point in time, the use of historical
25   average realized rates of return has been criticized on a
26   number of grounds (e.g., the estimated premiums vary
27   significantly depending upon the method of averaging and
28   the time intervals employed). Perhaps of more concern for
29   present purposes is the fundamental assumption upon
30   which studies using the historical realized rates of return
31   approach rests. Realized rates of return for common stocks
32   over any particular holding period will inevitably be
33   different from what investors actually expected; indeed,
34   such deviations of realized return versus expected rates of
35   return are what cause holding common stock to be risky."
36   (Ibid., p. 9)
37
38   Other financial authors have also noted the drawbacks of risk premiums based on

1   historical realized rates of return:

2   "There are both conceptual and measurement
3   problems with using I&S [Ibbotson and Sinquefield] data
4   for purposes of estimating the cost of capital.
5   Conceptually, there is no compelling reason to think that
6   investors expect the same relative returns that were earned
7   in the past. Indeed, evidence presented in the following
8   sections indicates that relative expected returns should, and
9   do, vary significantly over time. Empirically, the measured
10   historic premium is sensitive both to the choice of
11   estimation horizon and to the end points. These choices are
12   essentially arbitrary, yet they can result in significant
13   differences in the final outcome." ("The Risk Premium
14   Approach to Measuring a Utility's Cost of Equity,"
15   Brigham, Shome and Vinson, <u>Financial Management,</u>
16   Spring 1985, p. 34)

18   This Commission, to my knowledge, has not relied on a risk premium analysis as

19   a primary indicator of equity capital costs, and has, instead relied primarily on the DCF.

20   Dr. Avera's testimony on the subject of risk premium fails to provide the Commission

21   with any new evidence to justify a change from that position, in my view. Moreover, his

22   prior testimony before the FCC provides evidence that the risk premium studies on which

23   Dr. Avera relies in this proceeding "would not provide an adequate measure of… the cost

24   of equity" (Avera Testimony, FCC Docket. 84-800, p. 2).

25 **Q. WHAT COMMENTS DO YOU HAVE REGARDING THE SPECIFICS OF EACH**

26   **OF DR. AVERA'S RISK PREMIUM ANALYSES?**

27 A. Dr. Avera's historical realized risk premium analysis is shown in his Schedule WEA-7

28   and compares the annual earned return of the S&P Electric Utilities to the annual return

29   on A-rated utility bonds from 1946 through 2003. Those data indicate that the average

30   yield differential over that time is 3.87%. When that differential is added to a January

1   2005 BBB bond yield of 5.95%, it produces an equity cost estimate of 9.8%. As I noted

2   above the current BBB utility bond yield is 5.58%. That more up-to-date yield indicates

3   a current cost of equity for Dr. Avera's sample group of 9.45%.

4   While that 9.45% is a relatively reasonable equity cost estimate, the risk premium

5   data on which it is based (Dr. Avera's Schedule WEA-7) illustrates an important

6   shortcoming of risk premium analyses. The measured risk premium is sensitive to the

7   choice of estimation period and the end points of that period; and, most importantly, the

8   choice of those endpoints is often arbitrary. In Dr. Avera's analysis, although he does not

9   provide that information, I assume his study period begins in 1946 because that's when

10   data were first available, not because of some economic importance to that date.

11   Nevertheless the start and end date of the study period have significant impact on the

12   outcome of the analysis.

13   Also, as shown in Table III below, taken from Dr. Avera's Schedule WEA-7, risk

14   premiums are not static and change over time. Since the beginning point of Dr. Avera's

15   historical risk premium study, 1946, the realized return difference between utility stocks

16   and utility bonds had declined.

17   / /

18   / / /

19   / / / /

20   / / / /

21   / / / / /

1   **TABLE III**

2   HISTORICAL RISK PREMIUM DATA

	Stock	Bond	Risk
Time Period	Return	Return	Premium
1946-2003	10.55%	6.67%	**3.87%**
1956-2003	10.65%	7.65%	**3.00%**
1966-2003	9.84%	9.06%	**0.79%**
1976-2003	12.87%	11.45%	**1.42%**
1986-2003	11.37%	11.47%	**-0.10%**
1996-2003	8.67%	10.90%	**-2.23%**

Data from Avera Schedule WEA-7.

3

4   Between 1946 and 2003, as Dr. Avera reports, utility stocks earned a return 3.87% higher

5   than bonds. Between 1956 (ten years later) and 2003, that return difference fell to 3%.

6   Moving forward to the 1966 to 2003 period (roughly the past 40 years) that return

7   differential fell to less than 1%, remained about 1% over the past thirty years, and then

8   continued to decline during the 1980s and 1990s until the risk premium was actually

9   negative.

10   Therefore, while Dr. Avera's 1946-2003 risk premium of 3.87% produces a rather

11   reasonable 9.45% equity cost estimate when combined with current bond yields, if

12   investors are influenced by more recent historical information, it is reasonable to believe

13   that the expected return premium for utility stock above utility bonds is much smaller

1   than the 3.87% used by Dr. Avera. So, too, would be the resultant cost of equity

2   estimate.

3 **Q. WHAT ARE YOUR COMMENTS REGARDING DR. AVERA'S CAPITAL**

4   **ASSET PRICING MODEL ANALYSIS?**

5 A. Dr. Avera has performed two types of CAPM analyses. One is based on long-term

6   historical market return data published by Ibbotson Associates, shown in his Schedule

7   WEA-9. The other is based on a projected DCF return on the broad stock market, and is

8   shown in his Schedule WEA-8. Both results are adjusted to include projected interest

9   rates. I have previously discussed the flaws in using projected interest rates to estimate

10   the current cost of equity and will confine my comments here to the flaws in Dr. Avera's

11   current CAPM estimates.

12   There are three parameters in any CAPM analysis: the risk-free rate, the beta and

13   the market risk premium. The risk-free rate used by Dr. Avera is the long-term Treasury

14   Bond yield. He uses 4.6%, which was the average yield in February 2005. Value Line

15   indicates the current T-Bond yield is 4.3%. That represents an overstatement of 30 basis

16   points in Dr. Avera's CAPM result.

17   As I have noted previously, three of Dr. Avera's sample group companies have

18   either low levels of electric utility investment or high levels of unregulated earnings.

19   Those companies also have high beta coefficients. Removing Black Hills, MDU

20   Resources and Sempra Energy from Dr. Avera's sample would produce a Value Line

21   beta of 0.82, rather than 0.84. In my view, that would provide a better indication of an

22   appropriate beta for a pure-play utility operation like Avista Utilities.

1   Regarding the market risk premium, Dr. Avera has used 7.2% for his historical

2   market risk premium and 9.3% for his forward-looking estimate.

3 **Q. WHAT ARE YOUR COMMENTS REGARDING THE SPECIFICS OF DR.**

4   **AVERA'S TWO MARKET RISK PREMIUMS?**

5 A. First, Dr. Avera uses a long-term historical differential reported by Ibbotson Associates

6   between the return on stocks and the yield on bonds. That is reported as 7.2% for the

7   1926-2004 period. However, Ibbotson Associates also publish differential between the

8   return on stocks and the return on bonds. That figure is reported as 6.6% for the 1926-

9   2004 period. The rationale for using the 7.2% historical figure is that there have been

10   unanticipated gains with bond investments and the historical yields better represents

11   investor expectations. However, there is no analog (i.e., yield) for stocks, and the metric

12   used by Ibbotson Associates is the earned return on either the S&P 500 or the NYSE

13   index. In my view, the return series are better balanced and have more meaning for

14   determining expectations if earned returns are used for both series. The difference

15   between the earned return series is 6.6% (i.e., the average historical return on stocks has

16   been 6.6% higher than the average historical return on bonds). However, Dr. Avera has

17   elected to use the 7.2% based on bond yields.

18   However, in a recent paper published by Ibbotson in the Financial Analysts'

19   Journal indicates that the maximum expected market risk premium (the return equity

20   investors expect over bond yields) is 6%, not the 7.2% used by Dr. Avera in his

1   testimony.[24] In that recently published paper, Dr. Ibboston discusses the current

2   theoretical debate over the market risk premium. That debate centers on the fact that

3   recent studies have shown that long-term historical risk premiums overstate current

4   investor expectations. As Ibbotson notes, the current research indicates that the market

5   risk premium going forward ranges from 0% to a maximum of about 5% (op cit., pp. 88,

6   89). Ibbotson disagrees with that current research and provides his analysis of the issue,

7   which shows a prospective market risk premium to range from 4% (based on a geometric

8   average) to 6% (based on an arithmetic average).

9   The point here is simple. Dr. Avera has selected a particular historical market risk

10 premium for his CAPM because Ibbotson published it, but, 1) Ibbotson also publishes a

11 6.6% risk premium in the same publication and 2) in a more current publication,

12 Ibbotson indicates the prospective market risk premium is 6% (at the upper end), not the

13 7.2% Dr. Avera has elected to use in this proceeding.

14   Second, Dr. Avera has also constructed a forward-based market risk premium

15 based on a DCF analysis of the S&P 500. Dr. Avera also advises the Commission to be

16 cautious about relying on DCF estimates, yet, he bases his preferred risk premium

17 methodology, in part, on a DCF analysis. If the DCF provides a reasonable estimate of

18 the expected return for the S&P 500 it is reasonable to believe it would provide an

19 accurate estimate of the cost of equity for utilities. This presents a conflict of logic in Dr.

20 Avera's testimony.

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[24] Ibbotson, R., Peng, C., "Long-Run Stock Returns: Participating in the Real Economy," *Financial Analysts' Journal*, January/February 2003, pp. 88-98.

1   Also, Dr. Avera's 9.3% risk premium that results from his forward-looking

2   analysis is substantially in excess of any other indication of forward-looking risk

3   premium currently being discussed in the theoretical financial literature. In fact, the

4   current consensus is that forward risk premiums are likely to be lower than historical risk

5   premiums, yet, Dr. Avera's methodology produces the reverse result.

6   Finally, there are alternative methods similar to that employed by Dr. Avera that

7   produce much different results. In the July 29, 2005 edition of Value Line's *Summary &*

8   *Index*, that investor services estimates that the 3- to 5-year stock price appreciation in the

9   Value Line universe of 1700 stocks will be 45%. That indicates a 9.7% rate of growth to

10 the mid-point of the projection period. That same publication also shows that the current

11 dividend yield of all dividend paying stocks is 1.6%. Because some of the stocks

12 followed by Value Line do not pay dividends, that 1.6% must be viewed as an estimate

13 on the high-side for the average dividend yield. Nevertheless, adding the current

14 dividend (1.6%) and the expected growth over the next four years (9.7%) indicates a

15 current cost of equity for the market of 11.3%. That market return, less the current T-

16 Bond yield of 4.3%, indicates a market-risk premium of 7.0%. That figure is still

17 substantially above current expectations according to the theoreticians, but well below the

18 9.3% derived through the same methodology by Dr. Avera.

19 Q. GIVEN THE INFIRMATIES CITED ABOVE, WHAT DO YOU BELIEVE

20   WOULD PROVIDE A MORE ACCURATE ESTIMATE OF THE CAPM COST

21   OF EQUITY FOR AVISTA?

22 A. The current long-term T-bond rate is about 4.3% (see Exhibit__(SGH-13). Dr. Avera's

1   0.84 average beta for his broad electric sample group is a bit higher than the 0.78 beta for

2   my sample group which was screened to be similar in risk to Avista. Removing the

3   companies that have little electric utility investment would reduce that beta to 0.82.

4   Ibbotson's current projection regarding the market risk premium of 6% based on T-bonds

5   as a risk-free rate is also reasonable. Although it must be remembered that it represents

6   the upper end of current market risk premium projections. Putting these factors together

7   provides a CAPM equity capital cost estimate for Avista of 9.2% [k = 4.3% + 0.82(6%) =

8   9.4%]. That equity cost estimate also gives no consideration to geometric average market

9   risk premiums and, as such, even though that result is far below the CAPM results

10   reported by Dr. Avera, it probably overstates the current cost of equity capital for electric

11   utilities.

12   **Q. WHARE ARE YOUR COMMENTS REGARDING DR. AVERA'S OTHER RISK**

13   **PREMIUM ANALYSIS—THE "ALLOWED RETURN" RISK PREMIUM?**

14   A. Dr. Avera's other risk premium analysis is one that compares historical allowed equity

15   returns to annual average bond yields. That study indicates that the average risk premium

16   between allowed returns for electric utilities and bond yields over the past 30 years is

17   3.17%. However, Dr. Avera concludes that a negative correlation exists between current

18   bond yields and risk premiums and, due to that relationship, imputes a larger risk

19   premium to reach an equity cost estimate of 10.6%.

20   It is important to understand at the outset that the annual cost rate differences

21   between the allowed returns and utility bond yields are not necessarily reliable indicators

22   of investor-required risk premiums. First, the allowed returns are simply averaged over

1   all the available rate case decisions during a calendar year. That means that the capital

2   market data that the regulatory body considered was drawn from a time prior to the

3   decision rendered and the allowed return might not correlate with decision-time-specific

4   macro-economic events. In some cases, that period of time between the hearing and the

5   decision can be substantial.

6   Second, the relative risk of the utility for which the equity return was determined

7   is not a factor in Dr. Avera's analysis. For example, the allowed return on equity for a

8   near-bankrupt firm would simply be averaged in with the other returns allowed during a

9   calendar year. Third, while the inclusion of an outlier may not be problematic in years in

10   which there are many rate case decisions, that would not be the case in years in which the

11   number of decisions is small, as in recent years. The source of Dr. Avera's data notes

12   that "[a]s the number of equity return determinations has declined, the average authorized

13   return now has less of a relationship to the return than the typical electric, gas, or

14   telecommunications company has an opportunity to earn."

15   **Q. YOU NOTED THAT DR. AVERA PLACES EMPHASIS ON A NEGATIVE**

16   **CORRELATION BETWEEN INTEREST RATES AND RISK PREMIUMS IN**

17   **REACHING HIS EQUITY COST ESTIMATE. PLEASE COMMENT ON THAT**

18   **ISSUE.**

19   A. Dr. Avera subtracts average bond yields for utilities from the equity returns allowed

20   utility companies over the past 30 years. Then, through a regression analysis, the

21   Company witness describes a relationship between bond yields and risk premiums and

22   uses that relationship, with the current cost of debt to estimate the Company's cost of

1   equity. Aside from the problems that exist generally with the data used in the analysis,

2   noted above, there are additional problems with this particular approach. Further, those

3   problems illustrate that Dr. Avera's adjustments to historically-derived risk premiums are

4   not reliable for equity cost estimation purposes.

5   Although Dr. Avera's regression analysis shows a relatively strong correlation

6   between risk premium and bond yields ($r^2 = 0.79$), that is not surprising because the

7   resultant risk premium is a direct arithmetic function of the prevailing bond yield. A high

8   correlation coefficient is not meaningful if the dependent and independent variables are

9   said to be "auto-correlated."

10   If regression variables are auto-correlated, the differences between the actual

11   values and the regression equation (the residuals) have a lagged correlation with their

12   own past values (i.e., they are not independent of each other). Therefore, the regression

13   equation will not necessarily serve as an accurate predictor of the relationship between

14   the variables because the residual error will continue to increase over time. This can be

15   especially problematic in time-series studies of the type included in Dr. Avera's risk

16   premium analysis.

17   Dr. Avera does not offer the Commission any information regarding whether his

18   data are auto-correlated. However, in the absence of any showing otherwise, it is

19   reasonable to conclude that those data series are auto-correlated based on the inclusion of

20   the risk premium as a variable. The risk premium is an arithmetic function of the bond

1   yield, which is the other parameter in the regression.[25] Therefore, results of Dr. Avera's

2   risk premium regression analysis may not be a reliable indicator of the cost of equity

3   capital and should be given little weight by this Commission.

4   **Q. ARE THERE OTHER STUDIES THAT EXAMINE THE RELATIONSHIP**

5   **BETWEEN RISK PREMIUMS AND INTEREST RATE LEVELS?**

6   A. Yes. Members of the Virginia Corporation Commission Staff published a study of that

7   relationship in 1995.[26] That paper is interesting in that it shows that within certain

8   shorter-term sub-periods an inverse relationship appears to exist, but over the entire 1980

9   through 1993 study period—as interest rates declined from the very high levels of the

10   early 1980s—absolute risk premium levels fell. Moreover, this study was based on

11   electric utility market return data and estimated rather than allowed equity cost rates.

12   The average risk premium between electric utility cost of equity and long-term

13   Treasury bond yields averaged 3.21% over the 1980-1993 study period and the average

14   T-bond yield was 9.77%. Given that the most recent six-week average T-Bond yield is

15   4.31%, the difference between the current T-Bond yield and that which existed, on

16   average, during the study period (9.77%), is 5.46%. Multiplying that yield difference by

17   the relationship found in the Virginia Commission Staff study produces a current risk

18   premium of 5.23% (5.46% x 0.37 = 2.02% + 3.21% = 5.23%). That "adjusted" risk

19   premium, added to the current T-Bond rate (4.31%) produces a cost of capital indication

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[25] One study of the correlation between risk premiums and bond yields recognizes that there is "severe positive autocorrelation" in the historical risk premium/bond yield data. (Harris, R., Marston, F., "The Market Risk Premium: Expectational Estimates Using Analyst's Forecasts," *Journal of Applied Finance*, 2001, pp. 6-16, footnote 7)

[26] Maddox, F., Pippert, D., and Sullivan, R., "An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry," Financial Management, Vol. 24, No. 3, Autumn 1995, pp. 89-95.

1   of 9.54% (4.31% + 5.23%).

2   Therefore, if one elects to believe such data are reliable (which I do not), there are

3   studies of the relationship between interest rates and risk premiums in the literature which

4   1) show a declining trend in risk premiums over the 1980s and early 1990s, 2) are based

5   on the cost of equity of electric utilities, not allowed returns and 3) produce equity cost

6   estimates which are substantially below those presented by Dr. Avera. Moreover, those

7   results tend to corroborate the equity cost estimates I provide in this testimony.

8   **Q. PLEASE SUMMARIZE THE FLAWS IN DR. AVERA'S RISK PREMIUM COST**

9   **OF EQUITY CAPITAL ANALYSIS.**

10   A. Dr. Avera's Risk Premium analyses of the cost of equity capital, 1) are based on studies

11   which, in prior testimony, he has rejected as being unreliable (the DCF), 2) ignore more

12   recent studies which indicate much lower risk premiums for electric utility operations, 3)

13   are based on a relationship between bond yields and risk premiums which he has not

14   shown to be statistically reliable for unobservable equity risk premiums and which does

15   not exist in readily observable risk premiums, and 4) are based on interest rate projections

16   that are already incorporated into current yields and have been unreliable in the past. I do

17   not believe Dr. Avera's risk premium analyses provide information that would be useful

18   to this Commission in its task of determining the cost of equity capital for Avista's gas

19   and electric utility operations.

20   **Q. DOES THIS CONCLUDE YOUR DISCUSSION OF DR. AVERA'S COST OF**

21   **CAPITAL ANALYSIS IN THIS PROCEEDING?**

22   A. Yes, it does.

1   **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY, MR. HILL?**

2   A. Yes, it does.