BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-05-_____

DOCKET NO. UG-05-_____

EXHIBIT No. ____(WEA-2)

WILLIAM E. AVERA

REPRESENTING AVISTA CORPORATION

SPECULATIVE GRADE RISK PREMIUM

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	1993-1997	Aug-98 - Dec-03	Mar 2005
Speculative Grade Yield Spread (a)	3.87%	6.84%	2.80%
Long-term Government Bond Yield (b)	4.61%	4.61%	4.61%
Implied Speculative Grade Yield	8.48%	11.45%	7.41%
Less:			
Triple-B Industrial Bond Yield (c)	6.08%	6.08%	6.08%
Current Speculative Grade Risk Premium	2.40%	5.37%	1.33%
Ratio -- Utility/Industrial A-BBB Yield Spread (d)	55.86%	55.86%	55.86%
Implied Speculative Grade Risk Premium - Utilities	**1.34%**	**3.00%**	**0.74%**

(a) Moody's Credit Perspectives, Jul. 14, 2003 at 35; Jul. 26, 2004 at 42; Mar. 14, 2005 at 55.
(b) Average of the daily yields on 20-year constant maturity Treasury bonds for February 2005 reported by the U.S. Department of the Treasury at www.treas.gov.
(c) Average for January 2005 from Mergent Bond Record (Feb. 2005).
(d) Relative yield spread between single-A and triple-B bonds reported by Moody's for public utilities and industrials over the twelve-month period Feb. 2004 - Jan. 2005.

CAPITAL STRUCTURE

			At December 31, 2004 (a)			Value Line Projected 2007-09 (b)		
	Sym	Company	Long-term Debt	Preferred	Common Equity	Long-term Debt	Preferred	Common Equity
1	BKH	Black Hills Corp.	50.3%	0.5%	49.2%	46.5%	0.5%	53.0%
2	HE	Hawaiian Electric	48.4%	1.4%	50.2%	43.0%	1.5%	55.5%
3	IDA	IDACORP, Inc.	51.2%	0.0%	48.8%	49.0%	0.0%	51.0%
4	MDU	MDU Resources Group	36.0%	0.6%	63.4%	27.5%	0.5%	72.0%
5	PNM	PNM Resources Group	47.1%	0.5%	52.4%	42.5%	0.5%	57.0%
6	PNW	Pinnacle West Capital	52.0%	0.0%	48.0%	47.0%	0.0%	53.0%
7	PSD	Puget Energy, Inc.	54.1%	6.8%	39.1%	51.5%	0.0%	48.5%
8	SRE	Sempra Energy	34.2%	0.0%	65.8%	32.5%	1.5%	66.0%
9	XEL	Xcel Energy	55.8%	0.9%	43.3%	48.0%	1.0%	51.0%
		Average	**47.7%**	**1.2%**	**51.1%**	**43.1%**	**0.6%**	**56.3%**

(a) Company Form 10-K and Annual Reports
(b) The Value Line Investment Survey (Feb. 11, 2005).

DISCOUNTED CASH FLOW MODEL

EXPECTED DIVIDEND YIELD

Company	(a) Stock Price	(a) Estimated Dividends Next 12 Mos.	Implied Dividend Yield
Black Hills Corp.	$ 30.65	$ 1.28	4.2%
Hawaiian Electric	$ 26.31	$ 1.24	4.7%
IDACORP, Inc.	$ 28.17	$ 1.20	4.3%
MDU Resources Group	$ 27.09	$ 0.74	2.7%
PNM Resources Group	$ 25.35	$ 0.74	2.9%
Pinnacle West Capital	$ 41.18	$ 1.91	4.6%
Puget Energy, Inc.	$ 22.81	$ 1.00	4.4%
Sempra Energy	$ 39.65	$ 1.16	2.9%
Xcel Energy	$ 17.52	$ 0.87	5.0%
Average			**4.0%**

(a) The Value Line Investment Survey, Summary and Index (Mar. 4, 2005).

DISCOUNTED CASH FLOW MODEL

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EARNINGS GROWTH RATES

			Projected				Historical	
			(a)	(b)	(c)	(d)	(b)	(b)
	Sym	Company	IBES	Value Line	First Call	Reuters	Past 10 Yr	Past 5 Yr
1	BKH	Black Hills Corp.	4.0%	NMF	4.0%	8.0%	8.5%	11.0%
2	HE	Hawaiian Electric	3.0%	4.0%	2.5%	3.4%	2.5%	3.0%
3	IDA	IDACORP, Inc.	5.0%	1.0%	4.5%	4.7%	1.5%	NMF
4	MDU	MDU Resources Group	8.0%	7.5%	8.0%	7.6%	9.5%	11.5%
5	PNM	PNM Resources Group	4.0%	NMF	4.1%	5.0%	12.5%	4.5%
6	PNW	Pinnacle West Capital	3.0%	1.5%	3.0%	4.6%	NMF	1.5%
7	PSD	Puget Energy, Inc.	7.0%	8.5%	5.0%	6.1%	NMF	NMF
8	SRE	Sempra Energy	7.0%	5.0%	6.0%	7.7%	4.5%	9.0%
9	XEL	Xcel Energy	4.0%	2.5%	3.5%	4.1%	NMF	NMF
		Average	**5.0%**	**4.3%**	**4.5%**	**5.7%**	**6.5%**	**6.8%**

NMF -- No Meaningful Figure

NA -- Not Available

(a) I/B/E/S International growth rates from Standard & Poor's Earnings Guide, (Feb. 2005).
(b) The Value Line Investment Survey (Feb. 11, 2005). Negative growth rates recorded as No Meaningful Figure.
(c) First Call Earnings Estimates from www.finance.yahoo.com (Mar. 9, 2005).
(d) Reuters earnings growth rates from www.investor.reuters.com (Mar. 9, 2005).

DISCOUNTED CASH FLOW MODEL

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SUSTAINABLE GROWTH RATE

	(a)	(a)	(a)	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
	Projections 2007-09			2003		Mid-Year					
Company	EPS	DPS	Net Book Value	Net Book Value	Annual Change	Adjustment Factor	"b"	Adjusted "r"	"b x r" growth	"sv" Factor	Sustainable Growth
Black Hills Corp.	$2.25	$1.40	$25.25	$21.72	3.1%	1.0151	37.8%	9.0%	3.4%	0.17%	3.59%
Hawaiian Electric	$2.00	$1.30	$17.00	$14.36	3.4%	1.0169	35.0%	12.0%	4.2%	0.71%	4.90%
IDACORP, Inc.	$2.10	$1.20	$26.55	$22.54	3.3%	1.0164	42.9%	8.0%	3.4%	0.31%	3.76%
MDU Resources Group	$2.25	$0.86	$19.75	$12.66	9.3%	1.0444	61.8%	11.9%	7.4%	1.15%	8.50%
PNM Resources Group	$1.60	$0.86	$21.55	$17.84	3.9%	1.0189	46.3%	7.6%	3.5%	0.03%	3.53%
Pinnacle West Capital	$3.15	$2.15	$35.85	$31.00	2.9%	1.0145	31.7%	8.9%	2.8%	0.01%	2.84%
Puget Energy, Inc.	$2.00	$1.12	$20.00	$16.71	3.7%	1.0180	44.0%	10.2%	4.5%	0.13%	4.61%
Sempra Energy	$3.75	$1.00	$31.25	$17.17	12.7%	1.0598	73.3%	12.7%	9.3%	1.37%	10.69%
Xcel Energy	$1.50	$1.05	$14.75	$12.95	2.6%	1.0130	30.0%	10.3%	3.1%	0.72%	3.81%
Average											**5.1%**

(a) The Value Line Investment Survey (Feb. 11, 2005).
(b) Annual growth in book value per share from 2003 to 2007-09.
(c) Equal to 2(1+b)/(2+b), where b = annual change in net book value.
(d) (EPS-DPS)/EPS.
(e) (EPS/2007-09 Net Book Value) x Mid-Year Adjustment Factor.
(f) (d) x (e).
(g) "s" equals projected market-to-book ratio x growth in common shares. "v" equals (1- 1/projected market-to-book ratio).
(h) (f) + (g).

AUTHORIZED RATES OF RETURN – CURRENT ESTIMATE

YEAR	(a) ALLOWED ROE	(b) AVERAGE PUBLIC UTILITY BOND YIELD	RISK PREMIUM
1974	13.10%	9.27%	3.83%
1975	13.20%	9.88%	3.32%
1976	13.10%	9.17%	3.93%
1977	13.30%	8.58%	4.72%
1978	13.20%	9.22%	3.98%
1979	13.50%	10.39%	3.11%
1980	14.23%	13.15%	1.08%
1981	15.22%	15.62%	-0.40%
1982	15.78%	15.33%	0.45%
1983	15.36%	13.31%	2.05%
1984	15.32%	14.03%	1.29%
1985	15.20%	12.29%	2.91%
1986	13.93%	9.46%	4.47%
1987	12.99%	9.98%	3.01%
1988	12.79%	10.45%	2.34%
1989	12.97%	9.66%	3.31%
1990	12.70%	9.76%	2.94%
1991	12.55%	9.21%	3.34%
1992	12.09%	8.57%	3.52%
1993	11.41%	7.56%	3.85%
1994	11.34%	8.30%	3.04%
1995	11.55%	7.91%	3.64%
1996	11.39%	7.74%	3.65%
1997	11.40%	7.63%	3.77%
1998	11.66%	7.00%	4.66%
1999	10.77%	7.55%	3.22%
2000	11.43%	8.14%	3.29%
2001	11.09%	7.72%	3.37%
2002	11.16%	7.50%	3.66%
2003	10.97%	6.61%	4.36%
2004	10.73%	6.20%	4.53%
Average		9.59%	3.17%

Regression Output	
Constant	0.07299
Std Err of Y Est	0.00557
R Squared	0.79192
No. of Observations	31
Degrees of Freedom	29
X Coefficient(s)	-0.43083
Std Err of Coef.	0.04101

Current Equity Risk Premium	
Avg. Yield over Study Period	9.59%
Jan. 2005 Avg. Utility Bond Yield (c)	5.80%
Change in Bond Yield	-3.79%
Risk Premium/Interest Rate Relationship	-43.08%
Adjustment to Average Risk Premium	1.63%
Average Risk Premium over Study Period	3.17%
Adjusted Risk Premium	**4.80%**

(a) Regulatory Research Associates, Major Rate Case Decisions, January 1990 - December 2004, *Regulatory Focus* (January 2005); Major Rate Case Decisions, *Regulatory Focus*, (January 16, 1990); Argus, *UtilityScope Regulatory Service* (January 1986).

(b) Moody's *Public Utility Manual* (2003); Moody's *Credit Perspectives* (various editions); Mergent Bond Record (various editions).

(c) Mergent Bond Record (February 2005).

AUTHORIZED RATES OF RETURN – RATE YEAR ESTIMATE

YEAR	(a) ALLOWED ROE	(b) AVERAGE PUBLIC UTILITY BOND YIELD	RISK PREMIUM
1974	13.10%	9.27%	3.83%
1975	13.20%	9.88%	3.32%
1976	13.10%	9.17%	3.93%
1977	13.30%	8.58%	4.72%
1978	13.20%	9.22%	3.98%
1979	13.50%	10.39%	3.11%
1980	14.23%	13.15%	1.08%
1981	15.22%	15.62%	-0.40%
1982	15.78%	15.33%	0.45%
1983	15.36%	13.31%	2.05%
1984	15.32%	14.03%	1.29%
1985	15.20%	12.29%	2.91%
1986	13.93%	9.46%	4.47%
1987	12.99%	9.98%	3.01%
1988	12.79%	10.45%	2.34%
1989	12.97%	9.66%	3.31%
1990	12.70%	9.76%	2.94%
1991	12.55%	9.21%	3.34%
1992	12.09%	8.57%	3.52%
1993	11.41%	7.56%	3.85%
1994	11.34%	8.30%	3.04%
1995	11.55%	7.91%	3.64%
1996	11.39%	7.74%	3.65%
1997	11.40%	7.63%	3.77%
1998	11.66%	7.00%	4.66%
1999	10.77%	7.55%	3.22%
2000	11.43%	8.14%	3.29%
2001	11.09%	7.72%	3.37%
2002	11.16%	7.50%	3.66%
2003	10.97%	6.61%	4.36%
2004	10.73%	6.20%	4.53%
Average		9.59%	3.17%

Regression Output	
Constant	0.07299
Std Err of Y Est	0.00557
R Squared	0.79192
No. of Observations	31
Degrees of Freedom	29
X Coefficient(s)	-0.43083
Std Err of Coef.	0.04101

Current Equity Risk Premium	
Avg. Yield over Study Period	9.59%
2006 Avg. Utility Bond Yield (c)	7.00%
Change in Bond Yield	-2.59%
Risk Premium/Interest Rate Relationship	-43.08%
Adjustment to Average Risk Premium	1.12%
Average Risk Premium over Study Period	3.17%
Adjusted Risk Premium	4.29%

(a) Regulatory Research Associates, Major Rate Case Decisions, January 1990 - December 2004, *Regulatory Focus* (January 2005); Major Rate Case Decisions, *Regulatory Focus*, (January 16, 1990); Argus, *UtilityScope Regulatory Service* (January 1986).

(b) Moody's *Public Utility Manual* (2003); Moody's *Credit Perspectives* (various editions); Mergent Bond Record (various editions).

(c) Projected yield on public utility bonds for 2006 based on interest rate forecasts reported by EIA, *Annual Energy Outlook* (2005); GlobalInsight, *Review of the U.S. Economy: Long-term Focus* (Summer 2004), and Blue Chip Financial Forecasts (Feb. 1, 2005).

REALIZED RATES OF RETURN

	S&P ELECTRIC UTILITIES (a)			S&P SINGLE-A PUBLIC UTILITY BONDS (b)		
	CLOSE PRICE	DIV	ANNUAL REALIZED RETURN	CLOSE YIELD	PRICE	ANNUAL REALIZED RETURN
1945	$16.34		(c)	2.73%	(d)	
1946	$15.53	$0.73	-0.49%	2.72%	$100.18	2.91%
1947	$12.89	$0.75	-12.17%	3.04%	$94.87	-2.41%
1948	$12.37	$0.71	1.47%	3.05%	$99.82	2.86%
1949	$14.60	$0.80	24.49%	2.70%	$105.88	8.93%
1950	$14.49	$0.88	5.27%	2.81%	$98.05	0.75%
1951	$16.07	$0.92	17.25%	3.31%	$92.16	-5.03%
1952	$18.28	$0.95	19.66%	3.25%	$101.06	4.37%
1953	$18.97	$0.99	9.19%	3.33%	$98.68	1.93%
1954	$22.39	$1.03	23.46%	3.15%	$102.85	6.18%
1955	$24.06	$1.09	12.33%	3.39%	$96.23	-0.61%
1956	$23.61	$1.13	2.83%	4.19%	$88.60	-8.01%
1957	$24.85	$1.19	10.29%	3.97%	$103.20	7.39%
1958	$33.14	$1.24	38.35%	4.51%	$92.42	-3.61%
1959	$33.42	$1.30	4.77%	4.80%	$96.09	0.60%
1960	$39.35	$1.37	21.84%	4.64%	$102.26	7.06%
1961	$49.28	$1.44	28.89%	4.66%	$99.61	4.25%
1962	$48.60	$1.52	1.70%	4.33%	$104.73	9.39%
1963	$51.97	$1.63	10.29%	4.51%	$97.49	1.82%
1964	$58.21	$1.74	15.36%	4.47%	$100.59	5.10%
1965	$58.05	$1.90	2.99%	4.86%	$94.71	-0.82%
1966	$53.49	$2.04	-4.34%	5.61%	$90.59	-4.55%
1967	$49.90	$2.16	-2.67%	6.50%	$89.61	-4.78%
1968	$51.95	$2.27	8.66%	7.01%	$94.25	0.75%
1969	$42.65	$2.33	-13.42%	8.43%	$85.88	-7.11%
1970	$45.62	$2.40	12.59%	8.44%	$99.91	8.34%
1971	$44.18	$2.47	2.26%	7.70%	$107.78	16.22%
1972	$43.50	$2.53	4.19%	7.74%	$99.66	7.37%
1973	$32.85	$2.51	-18.71%	8.10%	$96.25	3.98%
1974	$22.03	$2.49	-25.36%	9.25%	$89.27	-2.63%
1975	$30.56	$2.57	50.39%	9.63%	$96.63	5.89%
1976	$35.17	$2.58	23.53%	8.37%	$112.58	22.21%
1977	$35.67	$2.74	9.21%	8.81%	$95.71	4.08%
1978	$31.38	$2.94	-3.78%	9.75%	$91.55	0.36%
1979	$28.44	$3.10	0.51%	11.47%	$86.31	-3.94%
1980	$27.19	$3.20	6.86%	13.39%	$86.48	-2.05%
1981	$29.33	$3.42	20.45%	15.66%	$86.06	-0.54%
1982	$36.15	$3.62	35.59%	12.21%	$126.20	41.86%
1983	$37.14	$3.84	13.36%	12.95%	$94.63	6.83%
1984	$42.26	$4.06	24.72%	12.39%	$104.16	17.11%
1985	$48.82	$4.15	25.34%	10.54%	$115.76	28.16%
1986	$58.31	$4.21	28.06%	9.12%	$113.37	23.90%
1987	$49.78	$4.34	-7.19%	10.09%	$91.49	0.61%
1988	$53.87	$4.37	16.99%	10.02%	$100.62	10.71%
1989	$66.55	$4.28	31.48%	9.36%	$106.11	16.13%
1990	$63.47	$4.45	2.06%	9.60%	$97.82	7.18%
1991	$77.25	$4.57	28.91%	8.93%	$106.41	16.01%
1992	$76.78	$4.68	5.45%	8.64%	$102.84	11.77%
1993	$81.71	$4.71	12.56%	8.74%	$99.03	7.67%
1994	$66.30	$4.65	-13.17%	8.68%	$100.59	9.33%
1995	$81.62	$4.67	30.15%	7.97%	$107.32	16.00%
1996	$76.75	$4.61	-0.32%	6.57%	$116.22	24.19%
1997	$91.49	$4.47	25.03%	6.91%	$96.17	2.74%
1998	$100.86	$4.39	15.04%	7.26%	$96.18	3.09%
1999	$77.42	$4.35	-18.93%	8.41%	$88.55	-4.19%
2000	$113.00	$4.42	51.67%	8.25%	$101.61	10.02%
2001	$99.70	$3.56	-8.62%	8.30%	$99.50	7.75%
2002	$77.85	$3.88	-18.02%	6.12%	$126.26	34.56%
2003	$92.63	$3.52	23.51%	5.88%	$102.95	9.07%
AVERAGE 1946-2003			10.55%			6.67%

REALIZED RATE OF RETURN	
S&P ELECTRIC UTILITIES	10.55%
SINGLE-A PUBLIC UTILITY BONDS	6.67%
EQUITY RISK PREMIUM	3.87%

(a) S&P's Security Price Index Record (2002), The Analysts' Handbook (1967, 1999, 2001, 2002, Monthly Supplement January 2004).
(b) S&P's Security Price Index Record (1996), S&P Bond Guide (Jan. ed. 1997-2004).
(c) Computed by adding gain or loss (ending stock price - beginning stock price) to annual dividends and dividing by beginning stock price
(d) Computed as sum of capital gain or loss plus interest income, divided by beginning price.

CAPITAL ASSET PRICING MODEL

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FORWARD-LOOKING RISK PREMIUM - CURRENT ESTIMATE

Market Rate of Return		
Dividend Yield (a)	1.8%	
Growth Rate (b)	12.1%	
Market Return (c)		13.9%
Less: Risk-Free Rate (d)		
Long-term Treasury Bond Yield		4.6%
Market Risk Premium (e)		9.3%
Utility Proxy Group Beta (f)		
Black Hills Corp.	1.00	
Hawaiian Electric	0.65	
IDACORP, Inc.	0.90	
MDU Resources Group	0.85	
PNM Resources Group	0.85	
Pinnacle West Capital	0.85	
Puget Energy, Inc.	0.75	
Sempra Energy	0.95	
Xcel Energy	0.80	
		0.84
Utility Proxy Group Risk Premium (g)		7.9%
Plus: Risk-free Rate (d)		
Long-term Treasury Bond Yield		4.6%
Implied Cost of Equity (h)		**12.5%**

(a) Average dividend yield for the S&P 500 at month-end February 2005 from www.standardandpoors.com
(b) Average IBES growth rate for the firms in the S&P 500 based on data from Standard & Poor's *Earnings Guide* (Feb. 2005).
(c) (a) + (b)
(d) Average of the daily yields on 20-year Treasury bonds for February 2005 reported by the U.S. Department of the Treasury at www.treas.gov.
(e) (c) - (d).
(f) The Value Line Investment Survey, *Summary and Index* (Mar. 4, 2005).
(g) (e) x (f).
(h) (d) + (g).

CAPITAL ASSET PRICING MODEL

Schedule WEA-8
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FORWARD-LOOKING RISK PREMIUM - RATE YEAR ESTIMATE

Market Rate of Return		
Dividend Yield (a)	1.8%	
Growth Rate (b)	12.1%	
Market Return (c)		13.9%
Less: Risk-Free Rate (d)		
Long-term Treasury Bond Yield		5.8%
Market Risk Premium (e)		8.1%
Utility Proxy Group Beta (f)		
Black Hills Corp.	1.00	
Hawaiian Electric	0.65	
IDACORP, Inc.	0.90	
MDU Resources Group	0.85	
PNM Resources Group	0.85	
Pinnacle West Capital	0.85	
Puget Energy, Inc.	0.75	
Sempra Energy	0.95	
Xcel Energy	0.80	
		0.84
Utility Proxy Group Risk Premium (g)		6.8%
Plus: Risk-free Rate (d)		
Long-term Treasury Bond Yield		5.8%
Implied Cost of Equity (h)		**12.6%**

(a) Average dividend yield for the S&P 500 at month-end February 2005 from www.standardandpoors.com
(b) Average IBES growth rate for the firms in the S&P 500 based on data from Standard & Poor's *Earnings Guide* (Feb. 2005).
(c) (a) + (b)
(d) Projected yield on 20-year Treasury bonds for 2006 based on interest rate forecasts reported by EIA, Annual Energy Outlook (2005), GlobalInsight, Review of the U.S. Economy: Long-term focus (Summer 2004), and Blue Chip Financial Forecasts, Vo. 23, No. 12 (Feb. 1, 2005).
(e) (c) - (d).
(f) The Value Line Investment Survey, *Summary and Index* (Mar. 4, 2005).
(g) (e) x (f).
(h) (d) + (g).

CAPITAL ASSET PRICING MODEL

Schedule WEA-9
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HISTORICAL RISK PREMIUM - CURRENT ESTIMATE

Market Risk Premium		
Long-Horizon Equity Risk Premium (a)		7.2%
Utility Proxy Group Beta (b)		
Black Hills Corp.	1.00	
Hawaiian Electric	0.65	
IDACORP, Inc.	0.90	
MDU Resources Group	0.85	
PNM Resources Group	0.85	
Pinnacle West Capital	0.85	
Puget Energy, Inc.	0.75	
Sempra Energy	0.95	
Xcel Energy	0.80	
		0.84
Utility Proxy Group Risk Premium (c)		6.0%
Plus: Risk-free Rate (d)		
Long-term Treasury Bond Yield		4.6%
Implied Cost of Equity (e)		**10.6%**

(a) Arithmetic mean return on Large Company Stocks from 1926-2003 reported by Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, Valuation Edition, 2004 Yearbook*, at 252.
(b) The Value Line Investment Survey, *Summary and Index* (Mar. 4, 2005).
(c) (a) x (b).
(d) Average of the daily yields on 20-year constant maturity projected yields for February 2005 reported by the U.S. Department of the Treasury at www.treas.gov.
(e) (c) + (d).

CAPITAL ASSET PRICING MODEL

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HISTORICAL RISK PREMIUM - RATE YEAR ESTIMATE

Market Risk Premium		
Long-Horizon Equity Risk Premium (a)		7.2%
Utility Proxy Group Beta (b)		
Black Hills Corp.	1.00	
Hawaiian Electric	0.65	
IDACORP, Inc.	0.90	
MDU Resources Group	0.85	
PNM Resources Group	0.85	
Pinnacle West Capital	0.85	
Puget Energy, Inc.	0.75	
Sempra Energy	0.95	
Xcel Energy	0.80	
		0.84
Utility Proxy Group Risk Premium (c)		6.0%
Plus: Risk-free Rate (d)		
Long-term Treasury Bond Yield		5.8%
Implied Cost of Equity (e)		**11.8%**

(a) Arithmetic mean return on Large Company Stocks from 1926-2003 reported by Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, Valuation Edition, 2004 Yearbook*, at 252.
(b) The Value Line Investment Survey, *Summary and Index* (Mar. 4, 2005).
(c) (a) x (b).
(d) Projected yield on 20-year Treasury bonds for 2006 based on interest rate forecasts reported by EIA, Annual Energy Outlook (2005), GlobalInsight, Review of the U.S. Economy: Long-term focus (Summer 2004), and Blue Chip Financial Forecasts, Vo. 23, No. 12 (Feb. 1, 2005).
(e) (c) + (d).

APPENDIX A

QUALIFICATIONS OF WILLIAM E. AVERA

QUALIFICATIONS OF WILLIAM E. AVERA

I received a B.A. degree with a major in economics from Emory University. After serving in the United States Navy, I entered the doctoral program in economics at the University of North Carolina at Chapel Hill. Upon receiving my Ph.D., I joined the faculty at the University of North Carolina and taught finance in the Graduate School of Business. I subsequently accepted a position at the University of Texas at Austin where I taught courses in financial management and investment analysis. I then went to work for International Paper Company in New York City as Manager of Financial Education, a position in which I had responsibility for all corporate education programs in finance, accounting, and economics.

In 1977, I joined the staff of the Public Utility Commission of Texas (PUCT) as Director of the Economic Research Division. During my tenure at the PUCT, I managed a division responsible for financial analysis, cost allocation and rate design, economic and financial research, and data processing systems, and I testified in cases on a variety of financial and economic issues. Since leaving the PUCT in 1979, I have been engaged as a consultant. I have participated in a wide range of assignments involving utility-related matters on behalf of utilities, industrial customers, municipalities, and regulatory commissions. I have previously testified before the Federal Energy Regulatory Commission, as well as the Federal Communications Commission, the Surface Transportation Board (and its predecessor, the Interstate Commerce Commission), the Canadian Radio-Television and Telecommunications Commission, and regulatory agencies, courts, and legislative committees in over 30 states.

I was appointed by the PUCT to the Synchronous Interconnection Committee to advise the Texas legislature on the costs and benefits of connecting Texas to the national electric transmission

grid. In addition, I served as an outside director of Georgia System Operations Corporation, the system operator for electric cooperatives in Georgia.

I have served as Lecturer in the Finance Department at the University of Texas at Austin and taught in the evening graduate program at St. Edward's University for twenty years. In addition, I have lectured on economic and regulatory topics in programs sponsored by universities and industry groups. I have taught in hundreds of educational programs for financial analysts in programs sponsored by the Association for Investment Management and Research, the Financial Analysts Review, and local financial analysts societies. These programs have been presented in Asia, Europe, and North America, including the Financial Analysts Seminar at Northwestern University. I hold the Chartered Financial Analyst (CFA®) designation and have served as Vice President for Membership of the Financial Management Association. I also have served on the Board of Directors of the North Carolina Society of Financial Analysts. I was elected Vice Chairman of the National Association of Regulatory Commissioners (NARUC) Subcommittee on Economics and appointed to NARUC's Technical Subcommittee on the National Energy Act. I also have served as an officer of various other professional organizations and societies. A resume containing the details of my experience and qualifications is attached.

WILLIAM E. AVERA

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Economic and Financial Counsel

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Summary of Qualifications

Ph.D. in economics and finance; Chartered Financial Analyst (CFA ®) designation; extensive expert witness testimony before courts, alternative dispute resolution panels, regulatory agencies and legislative committees; lectured in executive education programs around the world on ethics, investment analysis, and regulation; undergraduate and graduate teaching in business and economics; appointed to leadership positions in government, industry, academia, and the military.

Employment

Principal, FINCAP, Inc. (Sep. 1979 to present)	Financial, economic and policy consulting to business and government. Perform business and public policy research, cost/benefit analyses and financial modeling, valuation of businesses (over 100 entities valued), estimation of damages, statistical and industry studies. Provide strategy advice and educational services in public and private sectors, and serve as expert witness before regulatory agencies, legislative committees, arbitration panels, and courts.
Director, Economic Research Division, Public Utility Commission of Texas (Dec. 1977 to Aug. 1979)	Responsible for research and testimony preparation on rate of return, rate structure, and econometric analysis dealing with energy, telecommunications, water and sewer utilities. Testified in major rate cases and appeared before legislative committees and served as Chief Economist for agency. Administered state and federal grant funds. Communicated frequently with political leaders and representatives from consumer groups, media, and investment community.
Manager, Financial Education, International Paper Company New York City (Feb. 1977 to Nov. 1977)	Directed corporate education programs in accounting, finance, and economics. Developed course materials, recruited and trained instructors, liaison within the company and with academic institutions. Prepared operating budget and designed financial controls for corporate professional development program.

Lecturer in Finance, The University of Texas at Austin (Sep. 1979 to May 1981) Assistant Professor of Finance, (Sep. 1975 to May 1977)	Taught graduate and undergraduate courses in financial management and investment theory. Conducted research in business and public policy. Named Outstanding Graduate Business Professor and received various administrative appointments.
Assistant Professor of Business, University of North Carolina at Chapel Hill (Sep. 1972 to Jul. 1975)	Taught in BBA, MBA, and Ph.D. programs. Created project course in finance, Financial Management for Women, and participated in developing Small Business Management sequence. Organized the North Carolina Institute for Investment Research, a group of financial institutions that supported academic research. Faculty advisor to the Media Board, which funds student publications and broadcast stations.

Education

Ph.D., Economics and Finance, University of North Carolina at Chapel Hill (Jan. 1969 to Aug. 1972)	Elective courses included financial management, public finance, monetary theory, and econometrics. Awarded the Stonier Fellowship by the American Bankers' Association and University Teaching Fellowship. Taught statistics, macroeconomics, and microeconomics. Dissertation: *The Geometric Mean Strategy as a Theory of Multiperiod Portfolio Choice*
B.A., Economics, Emory University, Atlanta, Georgia (Sep. 1961 to Jun. 1965)	Active in extracurricular activities, president of the Barkley Forum (debate team), Emory Religious Association, and Delta Tau Delta chapter. Individual awards and team championships at national collegiate debate tournaments.

Professional Associations

Received Chartered Financial Analyst (CFA) designation in 1977; Vice President for Membership, Financial Management Association; President, Austin Chapter of Planning Executives Institute; Board of Directors, North Carolina Society of Financial Analysts; Candidate Curriculum Committee, Association for Investment Management and Research; Executive Committee of Southern Finance Association; Vice Chair, Staff Subcommittee on Economics and National Association of Regulatory Utility Commissioners (NARUC); Appointed to NARUC Technical Subcommittee on the National Energy Act.

Teaching in Executive Education Programs

University-Sponsored Programs: Central Michigan University, Duke University, Louisiana State University, National Defense University, National University of Singapore, Texas A&M University, University of Kansas, University of North Carolina, University of Texas.

Business and Government-Sponsored Programs: Advanced Seminar on Earnings Regulation, American Public Welfare Association, Association for Investment Management and Research, Congressional Fellows Program, Cost of Capital Workshop, Electricity Consumers Resource Council, Financial Analysts Association of Indonesia, Financial Analysts Review, Financial Analysts Seminar at Northwestern University, Governor's Executive Development Program of Texas, Louisiana Association of Business and Industry, National Association of Purchasing Management, National Association of Tire Dealers, Planning Executives Institute, School of Banking of the South, State of Wisconsin Investment Board, Stock Exchange of Thailand, Texas Association of State Sponsored Computer Centers, Texas Bankers' Association, Texas Bar Association, Texas Savings and Loan League, Texas Society of CPAs, Tokyo Association of Foreign Banks, Union Bank of Switzerland, U.S. Department of State, U.S. Navy, U.S. Veterans Administration, in addition to Texas state agencies and major corporations.

Presented papers for Mills B. Lane Lecture Series at the University of Georgia and Heubner Lectures at the University of Pennsylvania. Taught graduate courses in finance and economics in evening program at St. Edward's University in Austin from January 1979 through 1998.

Expert Witness Testimony

Testified in over 200 cases before regulatory agencies addressing cost of capital, rate design, and other economic and financial issues.

Federal Agencies: Federal Communications Commission, Federal Energy Regulatory Commission, Surface Transportation Board, Interstate Commerce Commission, and the Canadian Radio-Television and Telecommunications Commission.

State Regulatory Agencies: Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Idaho, Illinois, Indiana, Kansas, Maryland, Michigan, Missouri, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Virginia, Washington, West Virginia, and Wisconsin.

Testified in over 30 cases before federal and state courts, arbitration panels, and alternative dispute tribunals (over 60 depositions given) regarding damages, valuation, antitrust liability, fiduciary duties, and other economic and financial issues.

Board Positions and Other Professional Activities

Audit Committee and Outside Director, Georgia System Operations Corporation (electric system operator for member-owned electric cooperatives in Georgia); Chairman, Board of Print Depot, Inc. and FINCAP, Inc.; Co-chair, Synchronous Interconnection Committee, appointed by Governor George Bush and Public Utility Commission of Texas; Operator of AAA Ranch, a certified organic producer of agricultural products; Appointed to Organic Livestock Advisory Committee by Texas Agricultural Commissioner Susan Combs; Appointed by Texas Railroad Commissioners to study group for *The UP/SP Merger: An Assessment of the Impacts on the State of Texas; A*ppointed by Hawaii Public Utilities Commission to team reviewing affiliate relationships of Hawaiian Electric Industries; Chairman, Energy Task Force, Greater Austin-San Antonio Corridor Council; Consultant to Public Utility Commission of Texas on cogeneration policy and other matters; Consultant to Public Service Commission of New Mexico on cogeneration policy; Evaluator of Energy Research Grant Proposals for Texas Higher Education Coordinating Board.

Community Activities

Board Member, Sustainable Food Center; Chair, Board of Deacons, Finance Committee, and Elder, Central Presbyterian Church of Austin; Founding Member, Orange-Chatham County (N.C.) Legal Aid Screening Committee.

Military

Captain, U.S. Naval Reserve (retired after 28 years service); Commanding Officer, Naval Special Warfare (SEAL) Engineering Support Unit; Officer-in-charge of SWIFT patrol boat in Vietnam; Enlisted service as weather analyst (advanced to second class petty officer).

Bibliography

Monographs

Ethics and the Investment Professional (video, workbook, and instructor's guide) and *Ethics Challenge Today* (video), Association for Investment Management and Research (1995)

"Definition of Industry Ethics and Development of a Code" and "Applying Ethics in the Real World," in *Good Ethics: The Essential Element of a Firm's Success*, Association for Investment Management and Research (1994)

"On the Use of Security Analysts' Growth Projections in the DCF Model," with Bruce H. Fairchild in *Earnings Regulation Under Inflation*, J. R. Foster and S. R. Holmberg, eds. Institute for Study of Regulation (1982)

An Examination of the Concept of Using Relative Customer Class Risk to Set Target Rates of Return in Electric Cost-of-Service Studies, with Bruce H. Fairchild, Electricity Consumers Resource Council (ELCON) (1981); portions reprinted in *Public Utilities Fortnightly* (Nov. 11, 1982)

"Usefulness of Current Values to Investors and Creditors," *Research Study on Current-Value Accounting Measurements and Utility*, George M. Scott, ed., Touche Ross Foundation (1978)

"The Geometric Mean Strategy and Common Stock Investment Management," with Henry A. Latané in *Life Insurance Investment Policies*, David Cummins, ed. (1977)

Investment Companies: Analysis of Current Operations and Future Prospects, with J. Finley Lee and Glenn L. Wood, American College of Life Underwriters (1975)

Articles

"Should Analysts Own the Stocks they Cover?" *The Financial Journalist*, (March 2002)

"Liquidity, Exchange Listing, and Common Stock Performance," with John C. Groth and Kerry Cooper, *Journal of Economics and Business* (Spring 1985); reprinted by National Association of Security Dealers

"The Energy Crisis and the Homeowner: The Grief Process," *Texas Business Review* (Jan.–Feb. 1980); reprinted in *The Energy Picture: Problems and Prospects*, J. E. Pluta, ed., Bureau of Business Research (1980)

"Use of IFPS at the Public Utility Commission of Texas," *Proceedings of the IFPS Users Group Annual Meeting* (1979)

"Production Capacity Allocation: Conversion, CWIP, and One-Armed Economics," *Proceedings of the NARUC Biennial Regulatory Information Conference* (1978)

"Some Thoughts on the Rate of Return to Public Utility Companies," with Bruce H. Fairchild in *Proceedings of the NARUC Biennial Regulatory Information Conference* (1978)

"A New Capital Budgeting Measure: The Integration of Time, Liquidity, and Uncertainty," with David Cordell in *Proceedings of the Southwestern Finance Association* (1977)

"Usefulness of Current Values to Investors and Creditors," in *Inflation Accounting/Indexing and Stock Behavior* (1977)

"Consumer Expectations and the Economy," *Texas Business Review* (Nov. 1976)

"Portfolio Performance Evaluation and Long-run Capital Growth," with Henry A. Latané in *Proceedings of the Eastern Finance Association* (1973)

Book reviews in *Journal of Finance* and *Financial Review*. Abstracts for *CFA Digest*. Articles in *Carolina Financial Times*.

Selected Papers and Presentations

"The Who, What, When, How, and Why of Ethics", San Antonio Financial Analysts Society (Jan. 16, 2002). Similar presentation given to the Austin Society of Financial Analysts (Jan. 17, 2002)

"Ethics for Financial Analysts," Sponsored by Canadian Council of Financial Analysts: delivered in Calgary, Edmonton, Regina, and Winnipeg, June 1997. Similar presentations given to Austin Society of Financial Analysts (Mar. 1994), San Antonio Society of Financial Analysts (Nov. 1985), and St. Louis Society of Financial Analysts (Feb. 1986)

"Cost of Capital for Multi-Divisional Corporations," Financial Management Association, New Orleans, Louisiana (Oct. 1996)

"Ethics and the Treasury Function," Government Treasurers Organization of Texas, Corpus Christi, Texas (Jun. 1996)

"A Cooperative Future," Iowa Association of Electric Cooperatives, Des Moines (December 1995). Similar presentations given to National G & T Conference, Irving, Texas (June 1995), Kentucky Association of Electric Cooperatives Annual Meeting, Louisville (Nov. 1994), Virginia, Maryland, and Delaware Association of Electric Cooperatives Annual Meeting, Richmond (July 1994), and Carolina Electric Cooperatives Annual Meeting, Raleigh (Mar. 1994)

"Information Superhighway Warnings: Speed Bumps on Wall Street and Detours from the Economy," Texas Society of Certified Public Accountants Natural Gas, Telecommunications and Electric Industries Conference, Austin (Apr. 1995)

"Economic/Wall Street Outlook," Carolinas Council of the Institute of Management Accountants, Myrtle Beach, South Carolina (May 1994). Similar presentation given to Bell Operating Company Accounting Witness Conference, Santa Fe, New Mexico (Apr. 1993)

"Regulatory Developments in Telecommunications," Regional Holding Company Financial and Accounting Conference, San Antonio (Sep. 1993)

"Estimating the Cost of Capital During the 1990s: Issues and Directions," The National Society of Rate of Return Analysts, Washington, D.C. (May 1992)

"Making Utility Regulation Work at the Public Utility Commission of Texas," Center for Legal and Regulatory Studies, University of Texas, Austin (June 1991)

"Can Regulation Compete for the Hearts and Minds of Industrial Customers," Emerging Issues of Competition in the Electric Utility Industry Conference, Austin (May 1988)

"The Role of Utilities in Fostering New Energy Technologies," Emerging Energy Technologies in Texas Conference, Austin (Mar. 1988)

"The Regulators' Perspective," Bellcore Economic Analysis Conference, San Antonio (Nov. 1987)

"Public Utility Commissions and the Nuclear Plant Contractor," Construction Litigation Superconference, Laguna Beach, California (Dec. 1986)

"Development of Cogeneration Policies in Texas," University of Georgia Fifth Annual Public Utilities Conference, Atlanta (Sep. 1985)

"Wheeling for Power Sales," Energy Bureau Cogeneration Conference, Houston (Nov. 1985).

"Asymmetric Discounting of Information and Relative Liquidity: Some Empirical Evidence for Common Stocks" (with John Groth and Kerry Cooper), Southern Finance Association, New Orleans (Nov. 1982)

"Used and Useful Planning Models," Planning Executive Institute, 27th Corporate Planning Conference, Los Angeles (Nov. 1979)

"Staff Input to Commission Rate of Return Decisions," The National Society of Rate of Return Analysts, New York (Oct. 1979)

"Electric Rate Design in Texas," Southwestern Economics Association, Fort Worth (Mar. 1979)

"Discounted Cash Life: A New Measure of the Time Dimension in Capital Budgeting," with David Cordell, Southern Finance Association, New Orleans (Nov. 1978)

"The Relative Value of Statistics of Ex Post Common Stock Distributions to Explain Variance," with Charles G. Martin, Southern Finance Association, Atlanta (Nov. 1977)

"An ANOVA Representation of Common Stock Returns as a Framework for the Allocation of Portfolio Management Effort," with Charles G. Martin, Financial Management Association, Montreal (Oct. 1976)

"A Growth-Optimal Portfolio Selection Model with Finite Horizon," with Henry A. Latané, American Finance Association, San Francisco (Dec. 1974)

"An Optimal Approach to the Finance Decision," with Henry A. Latané, Southern Finance Association, Atlanta (Nov. 1974)

"A Pragmatic Approach to the Capital Structure Decision Based on Long-Run Growth," with Henry A. Latané, Financial Management Association, San Diego (Oct. 1974)

"Multi-period Wealth Distributions and Portfolio Theory," Southern Finance Association, Houston (Nov. 1973)

"Growth Rates, Expected Returns, and Variance in Portfolio Selection and Performance Evaluation," with Henry A. Latané, Econometric Society, Oslo, Norway (Aug. 1973)

APPENDIX B

QUANTITATIVE ANALYSES

APPENDIX B

QUANTITATIVE ANALYSES

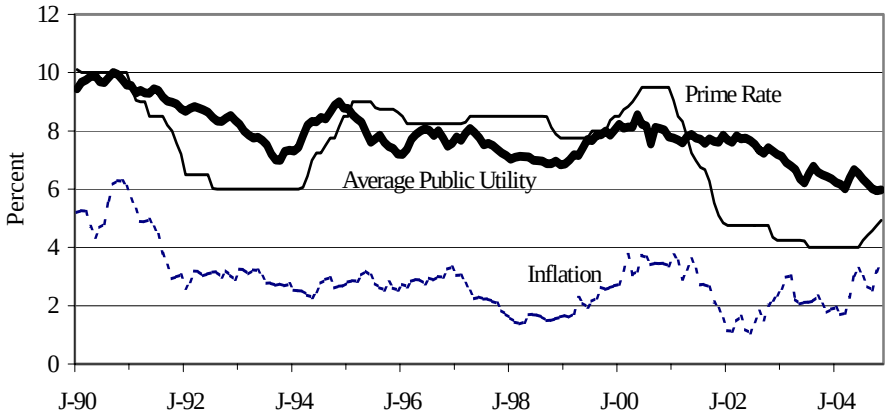
Q. What is the purpose of this appendix your testimony

A. The purpose of this appendix is to present the details underlying my quantitative analyses of the cost of equity for the proxy group of electric utilities. First, I review general conditions in the capital markets and general economy. Next, I examine the concept of the cost of equity, along with the risk-return tradeoff principle fundamental to capital markets. Finally, I describe DCF and risk premium analyses conducted to estimate the cost of equity for the reference group of electric utilities.

A. Capital Markets and Economy

Q. What has been the pattern of interest rates over the last decade?

A. Average long-term public utility bond rates, the monthly average prime rate, and inflation as measured by the consumer price index since 1990 are plotted in the graph below. After rising to approximately 10 percent in mid-1990, the average yield on long-term public utility bonds generally fell as economic conditions weakened in the aftermath of the 1991 Gulf war, with rates dipping below 7 percent in late 1993. Yields subsequently rose again in 1994, before beginning a general decline, with investors requiring approximately 5.8 percent from average public utility bonds in January 2005:



Q. Are investors likely to anticipate any substantial decline in interest rates going forward?

A. No. Since early 2001, a great deal of attention has been focused on the actions of the Federal Reserve as they have moved successively to lower short-term interest rates in response to weakness in the United States economy. But while interest rates are currently at relatively low levels, investors are unlikely to expect any further significant declines going forward. The general expectation is that interest rates will continue to rise with strengthening economic growth, with Value Line citing "the strong possibility of rising interest rates in 2005."[1] Indeed, the Federal Reserve on March 22, 2005 raised interest rates for the seventh time since June 2004 and has signaled it is likely to continue to act at a "measured" pace. The latest quarter-point increase raised the federal funds rate to 2.75 percent, more than double the 46-year low of 1.00 percent in effect when the Fed began its credit-tightening campaign in 2004.

[1] The Value Line Investment Survey (Dec. 17, 2004) at 459.

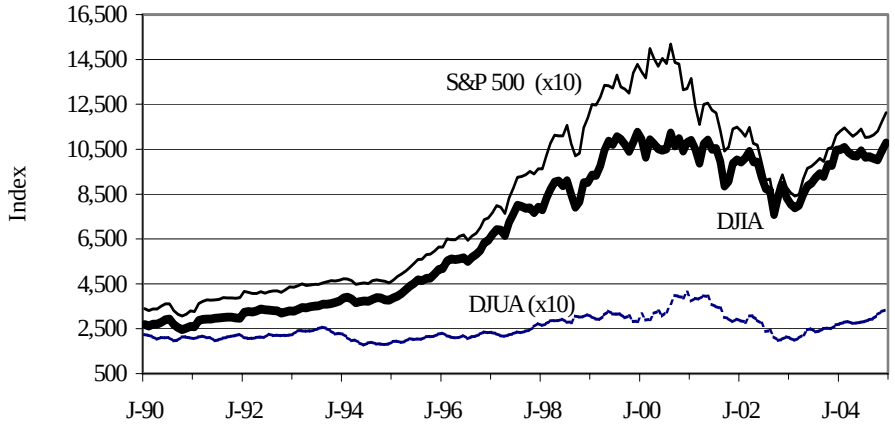
Consistent with general expectations for higher interest rates, the most recent forecast of the Energy Information Administration ("EIA"), a statistical agency of the DOE, anticipates that the double-A public utility bond yield will increase from approximately 6.23 percent in 2004 to 7.07 in 2005, increasing to 7.42 percent over the next five years.[2] Similarly, GlobalInsight (formerly DRI/WEFA), a widely referenced forecasting service, calls for double-A public utility bond yields to average 6.69 percent in 2005, reaching 7.62 percent by 2009.[3] The February 1, 2005 edition of Blue Chip Financial Forecasts ("Blue Chip") also anticipates that bond yields will rise significantly over the 2005-2006 period covered by its projections.[4]

Q. How has the market for common equity capital performed?

A. Between 1990 and early 2000 stock prices pushed steadily higher as the longest bull market in United States history continued unabated. While the S&P 500 had increased over four times in value by August 2000, mounting concerns regarding prospects for future growth, particularly for firms in the high technology and telecommunications sectors, pushed equity prices lower, in some cases precipitously. While common stock prices have recovered strongly from their lows, the market remains volatile, with share values routinely changing in

[2] Energy Information Administration, "Annual Energy Outlook 2005", Table 19.
[3] GlobalInsight, "The U.S. Economy, The 25-Year Focus", Table 33 (Summer 2004).
[4] Blue Chip Financial Forecasts (Feb. 1, 2004) at 2.

full percentage points during a single day's trading. The graph below plots the performances of the Dow-Jones Industrial Average, the S&P 500, and the Dow Jones Utility Average since 1990 (the latter two indices were scaled for comparability):



Q. What is the outlook for the United States economy?

A. The economic picture has since brightened since the downturn that began in 2001, with gross domestic product surging in the last half of 2003 and growing in excess of 4 percent for 2004. Manufacturing activity has rebounded and construction spending and retail sales have both increased. Nevertheless, businesses have been reluctant to expand hiring and uncertainties over the durability of the economic recovery continue to be magnified by overhanging government and trade deficits, higher energy prices, as well as continued conflict and instability in Iraq and the ongoing threat of terrorism, which undermines consumer confidence and contributes to global economic uncertainty. These

factors cause the outlook to remain tenuous, with persistent stock and bond price volatility providing tangible evidence of the uncertainties faced by the United States economy.

Q. How do these economic uncertainties affect utilities?

A. Uncertainties over the extent and durability of the economic recovery have combined to heighten the risks faced by utilities. Stagnant economic growth would undoubtedly mean flat sales, while the potential for higher inflation and interest rates that are likely accompany a prolonged economic rebound would place additional pressure on the adequacy of existing service rates. Meanwhile, continued conflict and instability in the Middle East raises concerns over renewed volatility in oil and gas prices, which inevitably leads to investor and customer consternation. While the economy may ultimately return to a path of steady growth and the volatility in the capital and energy markets may abate, the underlying weaknesses now present cause considerable uncertainties to persist, which increase the risks faced by the utility industry.

B. Risk-Return Tradeoff Principle

Q. What fundamental economic principle underlies a determination of the cost of equity?

A. Unlike debt capital, there is no contractually guaranteed return on common equity capital since shareholders are the residual owners of the utility.

Nonetheless, common equity investors still require a return on their investment; with the cost of equity being the minimum "rent" that must be paid for the use of their money. This cost of equity typically serves as the starting point for determining a fair rate of return on common equity.

The cost of equity concept is predicated on the notion that investors are risk averse, and will willingly bear additional risk only if they expect compensation for doing so. In capital markets where relatively risk-free assets are available (*e.g.*, U.S. Treasury securities) investors can be induced to hold more risky assets only if they are offered a premium, or additional return, above the rate of return on a risk-free asset. Since all assets compete with each other for investors' funds, more risky assets must yield a higher expected rate of return than less risky assets in order for investors to be willing to hold them.

Given this risk-return tradeoff, the required rate of return (k) from an asset (i) can be generally expressed as:

$$k_i = R_f + RP_i$$

where: R_f = Risk-free rate of return; and

RPi = Risk premium required to hold risky asset i.

Thus, the required rate of return for a particular asset at any point in time is a function of: 1) the yield on risk-free assets, and 2) its relative risk, with investors demanding correspondingly larger risk premiums for assets bearing greater risk.

Q. Does the risk-return tradeoff principle actually operate in the capital markets?

A. Yes. The risk-return tradeoff is readily observable in certain segments of the capital markets where required rates of return can be directly inferred from market data and generally accepted measures of risk exist. Bond yields, for example, reflect investors' expected rates of return, and bond ratings measure the risk of individual bond issues. The observed yields on government securities, which are considered free of default risk, and bonds of various rating categories demonstrate that the risk-return tradeoff does, in fact, exist in the capital markets.

Q. Does the risk-return tradeoff observed with fixed income securities extend to common stocks and other assets?

A. It is generally accepted that the risk-return tradeoff evidenced with long-term debt extends to all assets. Documenting the risk-return tradeoff for assets other than fixed income securities, however, is complicated by two factors. First, there is no standard measure of risk applicable to all assets. Second, for most assets – including common stock – required rates of return cannot be directly observed. Nevertheless, it is a fundamental tenet that investors exhibit risk aversion in deciding whether or not to hold common stocks and other assets, just as when choosing among fixed income securities. This has been supported and demonstrated by considerable empirical research in the field of finance and

is confirmed by reference to historical earned rates of return, with realized rates of return on common stocks exceeding those on government and corporate bonds over the long-term.

Q. Is this risk-return tradeoff limited to differences between firms?

A. No. The risk-return tradeoff principle applies not only to investments in different firms, but also to different securities issued by the same firm. Debt, preferred stock, and common equity vary considerably in risk because they have different characteristics and priorities.

When investors loan money in the form of debt (*e.g.*, long-term bonds), they enter into a contract whereby the utility agrees to pay the bondholders a specified amount of interest and to repay the principal of the loan in full. The bondholders have a senior claim on available cash flow for these payments, and if the utility fails to make them, they may force it into bankruptcy and liquidation for settlement of unpaid claims. Similarly, when a utility sells investors preferred stock, the utility promises to pay preferred stockholders specified dividends and, typically, to retire the preferred stock on a predetermined schedule. While the rights of preferred stockholders to available cash flow for these payments are junior to creditors, and preferred stockholders cannot compel bankruptcy, their claims are senior to those of common shareholders.

The last investors in line are common shareholders. They only receive the cash flow, if any, that remains after all other claimants – employees, suppliers, governments, lenders, and preferred stockholders – have been paid. As a result, the rate of return that investors require from a utility's common stock, the most junior and riskiest of its securities, is considerably higher than the yield on the utility's long-term debt or preferred stock, which have more certain, senior claims.

Q. What does the above discussion imply with respect to estimating the cost of equity?

A. Although the cost of equity cannot be observed directly, it is a function of the returns available from other investment alternatives and the risks to which the equity capital is exposed. Because it is unobservable, the cost of equity for a particular utility must be estimated by analyzing information about capital market conditions generally, assessing the relative risks of the company specifically, and employing various quantitative methods that focus on investors' required rates of return. These various quantitative methods typically attempt to infer investors' required rates of return from stock prices, interest rates, or other capital market data.

C. Discounted Cash Flow Analyses

Q. How are DCF models used to estimate the cost of equity?

A. The use of DCF models is essentially an attempt to replicate the market valuation process that sets the price investors are willing to pay for a share of a company's stock. The model rests on the assumption that investors evaluate the risks and expected rates of return from all securities in the capital markets. Given these expected rates of return, the price of each stock is adjusted by the market until investors are adequately compensated for the risks they bear. Therefore, we can look to the market to determine what investors believe a share of common stock is worth. By estimating the cash flows investors expect to receive from the stock in the way of future dividends and capital gains, we can calculate their required rate of return. In other words, the cash flows that investors expect from a stock are estimated, and given its current market price, we can "back-into" the discount rate, or cost of equity, that investors presumptively used in bidding the stock to that price.

Q. What market valuation process underlies DCF models?

A. DCF models are derived from a theory of valuation which assumes that the price of a share of common stock is equal to the present value of the expected cash flows (i.e., future dividends and stock price) that will be received while holding the stock, discounted at investors' required rate of return, or the cost of equity. Notationally, the general form of the DCF model is as follows:

$$P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \cdots + \frac{D_t}{(1+k_e)^t} + \frac{P_t}{(1+k_e)^t}$$

where: P_0 = Current price per share;
P_t = Expected future price per share in period t;
D_t = Expected dividend per share in period t;
k_e = Cost of equity.

That is, the cost of equity is the discount rate that will equate the current price of a share of stock with the present value of all expected cash flows from the stock.

Q. Has this general form of the DCF model customarily been used to estimate the cost of equity in rate cases?

A. No. In an effort to reduce the number of required estimates and computational difficulties, the general form of the DCF model has been simplified to a "constant growth" form. But converting the general form of the DCF model to the constant growth DCF model requires a number of strict assumptions. These include:

- A constant growth rate for both dividends and earnings;
- A stable dividend payout ratio;
- The discount rate exceeds the growth rate;
- A constant growth rate for book value and price;
- A constant earned rate of return on book value;
- No sales of stock at a price above or below book value;
- A constant price-earnings ratio;
- A constant discount rate (i.e., no changes in risk or interest rate levels and a flat yield curve); and
- All of the above extend to infinity.

Given these assumptions, the general form of the DCF model can be reduced to the more manageable formula of:

$$P_0 = \frac{D_1}{k_e - g}$$

where: g = Investors' long-term growth expectations.

The cost of equity (K_e) can be isolated by rearranging terms:

$$k_e = \frac{D_1}{P_0} + g$$

This constant growth form of the DCF model recognizes that the rate of return to stockholders consists of two parts: 1) dividend yield (D_1/P_0), and 2) growth (g). In other words, investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation.

Q. Are the assumptions underlying the constant growth form of the DCF model met in the real world?

A. In practice, none of the assumptions required to convert the general form of the DCF model to the constant growth form are ever strictly met. Nevertheless, where earnings are derived from stable activities, and earnings, dividends, and book value track fairly closely, the constant growth form of the DCF model offers a reasonable working approximation of stock valuation that provides useful insight as to investors' required rate of return.

Q. How did you implement the DCF model to estimate the cost of equity for Avista?

A. Avista's past financial challenges and weakened credit standing hinder the application of the DCF model directly to the Company. As an alternative, the cost of equity is often estimated by applying the DCF model to publicly traded firms engaged in the same business activity. In order to reflect the risks and prospects associated with Avista's jurisdictional utility operations, my DCF analyses focused on a reference group of other utilities composed of those companies included by Value Line in their Electric Utilities (West) Industry group. Excluded from my analyses were six firms that either do not pay common dividends or were rated below investment grade by S&P (including Avista).

Given that these nine utilities are all engaged in utility operations in the western region of the U.S., investors are likely to regard this group as facing similar market conditions and having comparable risks and prospects. The Supreme Court recognized the relevance of geographical location in *Bluefield*, noting that utilities are entitled to earn a return equal to those being made by firms of comparable risk "in the same general part of the country."[5] Indeed, there are important factors distinguishing western utilities from those located in other regions, including customer density and the complexities associated with greater

[5] *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923).

reliance on hydroelectric generation. As noted in my testimony, the ongoing uncertainties associated with hydroelectric generation and western power markets are important considerations in evaluating investors' required rate of return for Avista.

Q. What other considerations support the use of a proxy group in estimating the cost of equity for Avista?

A. Apart from recognizing the inherent risks and prospects for a utility operating in the west, reference to a proxy group of utilities is essential to insulate against vagaries that can result when the stochastic process involved in estimating the cost of equity is applied to a single company. The cost of equity is inherently unobservable and can only be inferred indirectly by reference to available capital market data. To the extent that the data used to apply the DCF model does not capture the expectations that investors have incorporated into current stock prices, the resulting cost of equity estimates will be biased. For example, the potential for mergers or acquisitions or the announced sale of a major business segment would undoubtedly influence the price investors would be willing to pay for a utility's common stock. But because such factors are not typically reflected in the growth rates used to apply the DCF model, cost of equity estimates for any single company may fail to reflect investors' required rate of return. Indeed, using even a limited group of companies increases the

potential for error, as the FERC noted in its July 3, 2003 *Order on Initial Decision* in Docket No. RP00-107-000:

> Both Staff and Williston agreed that a proxy group of only three companies presented problems because "a single company will have a magnified influence on the group results." It was with those changing market dynamics in mind that witnesses of both Staff and Williston proposed to expand the group of proxy companies to determine a zone of reasonableness.[6]

A proxy group composed of western utilities is consistent not only with the shared circumstances of energy markets in the west, but also with the need to ensure against the potential that a single cost of equity estimate may not reflect investors' required rate of return.

Q. Why did you excluded from your benchmark group firms that do not pay common dividends or have below investment grade bond ratings?

A. As discussed earlier, under the DCF approach, observable stock prices are a function of the cash flows that investors' expected to receive, discounted at their required rate of return. Because dividend payments are a key parameter required to apply the DCF method, this hinders application of the DCF model to firms that do not pay common dividends. Meanwhile, the financial stress and lack of stability that accompanies below investment grade bond ratings greatly complicates any determination of investors' long-term expectations that form the basis for DCF applications.

[6] *Williston Basin Interstate Pipeline Co.*, 104 FERC ¶ 61,036, at 14-15 (Jul. 3, 2003).

Q. How is the constant growth form of the DCF model typically used to estimate the cost of equity?

A. The first step in implementing the constant growth DCF model is to determine the expected dividend yield (D_1/P_0). This is usually calculated based on an estimate of dividends to be paid in the coming year divided by the current price of the stock. The second, and more controversial, step is to estimate investors' long-term growth expectations (g). Since book value, dividends, earnings, and price are all assumed to move in lock-step in the constant growth DCF model, estimates of expected growth are sometimes derived from historical rates of growth in these variables under the presumption that investors expect these rates of growth to continue into the future. Alternatively, a firm's internal growth can be estimated based on the product of its earnings retention ratio and earned rate of return on equity. This growth estimate may rely on either historical or projected data, or both. A third approach is to rely on security analysts' projections of growth as proxies for investors' expectations. The final step is to sum the dividend yield and estimated growth rate to arrive at an estimate of the cost of equity.

Q. How was the dividend yield for the proxy group of utilities determined?

A. Estimates of dividends to be paid by each of these utilities over the next twelve months, obtained from Value Line, served as D_1. This annual

dividend was then divided by the corresponding stock price for each utility to arrive at the expected dividend yield. The expected dividends, stock price, and resulting dividend yields for the firms in the reference group of western utilities are presented on Schedule WEA-3. As shown there, dividend yields for the eight firms in the electric utility proxy group ranged from 2.7 percent to 5.0 percent, with the average being 4.0 percent.

Q. What are investors most likely to consider in developing their long-term growth expectations?

A. In constant growth DCF theory, earnings, dividends, book value, and market price are all assumed to grow in lockstep and the growth horizon of the DCF model is infinite. But implementation of the DCF model is more than just a theoretical exercise; it is an attempt to replicate the mechanism investors used to arrive at observable stock prices. Thus, the only "g" that matters in applying the DCF model is that which investors expect and have embodied in current market prices. While the uncertainties inherent with common stock make estimating investors' growth expectations a difficult task for any company, in the case of utilities, the problem is exacerbated due to the unsettled conditions in the industry.

Q. Are historical dividend growth rates likely to provide a meaningful guide to investors' growth expectations for electric utilities?

A. No. In response to more accentuated business risks in the industry, utilities adopted dividend policies that were much more conservative than in the past. As a result, dividend growth in the utility industry has remained largely stagnant in recent years as utilities conserved financial resources to provide a hedge against heightened uncertainties. Responding to this trend, investors' focus increasingly shifted from dividends to earnings as a measure of long-term growth, as payout ratios for firms in the electric utility industry trended downward from approximately 80 percent historically to on the order of 60 percent.[7]

Q. What about projected dividend growth rates?

A. As the industry recovers from the financial challenges of the last several years, some electric utilities have begun to reevaluate their dividend policies and reinstate increases to their quarterly payout. While investors have recently expressed renewed interest in dividend payments, Value Line's most recent forecast indicates *negative* projected growth rates for three of the nine firms in the proxy group, while another is listed as "Nil".[8] Negative or zero growth rates imply a cost of equity equal to, or below, the utility's dividend yield.

[7] See, *e.g.*, The Value Line Investment Survey (Sep. 15, 1995 at 161, Sep. 5, 2003 at 154).
[8] The Value Line Investment Survey (Feb. 11, 2005).

Such nonsensical results provide little guidance as to investors' expectations for the electric utility proxy group.

Q. What other trends do investors consider in developing growth expectations?

A. Trends in earnings, which ultimately support future dividends and share prices, are likely to play a pivotal role in determining investors' long-term growth expectations. Indeed, the importance of earnings in evaluating investors' expectations and requirements is well accepted in the investment community. As noted in *Finding Reality in Reported Earnings* published by the Association for Investment Management and Research:

> [E]arnings, presumably, are the basis for the investment benefits that we all seek. "Healthy earnings equal healthy investment benefits" seems a logical equation, but earnings are also a scorecard by which we compare companies, a filter through which we assess management, and a crystal ball in which we try to foretell the future.[9]

Value Line's near-term projections and its Timeliness Rank, which is the principal investment rating assigned to each individual stock, are also based primarily on various quantitative analyses of earnings. As Value Line explained:

> The future earnings rank accounts for 65% in the determination of relative price change in the future; the

[9] Association for Investment Management and Research, "Finding Reality in Reported Earnings: An Overview", p. 1 (Dec. 4, 1996).

> other two variables (current earnings rank and current price rank) explain 35%.[10]

The fact that investment advisory services, such as Value Line and I/B/E/S International, Inc. ("IBES"), focus on growth in earnings indicates that the investment community regards this as a superior indicator of future long-term growth. Indeed, *Financial Analysts Journal* reported the results of a survey conducted to determine what analytical techniques investment analysts actually use.[11] Respondents were asked to rank the relative importance of earnings, dividends, cash flow, and book value in analyzing securities. Of the 297 analysts that responded, only 3 ranked dividends first while 276 ranked it last. The article concluded:

> Earnings and cash flow are considered far more important than book value and dividends.[12]

Q. What are security analysts currently projecting in the way of earnings growth for the firms in the electric utility proxy group?

A. The consensus earnings growth projections for each of the firms in the reference group of electric utilities reported by IBES and published in S&P's *Earnings Guide* are shown on Schedule WEA-4. Also presented are the earnings growth projections reported by Value Line, First Call Corporation ("First Call"),

[10] The Value Line Investment Survey, *Subscriber's Guide*, p. 53.
[11] Block, Stanley B., "A Study of Financial Analysts: Practice and Theory", *Financial Analysts Journal* (July/August 1999).
[12] *Id.* at 88.

and Reuters. As shown there, these security analysts' projections suggested growth the order of 4.3 to 5.7 percent for the reference group of electric utilities:

Electric Utility Proxy Group

Service	Growth Rate
IBES	5.0%
Value Line	4.3%
First Call	4.5%
Multex	5.7%

Q. What other earnings growth rates might be relevant in assessing investors' current expectations for electric utilities?

A. Short-term projected growth rates may be colored by lingering uncertainties regarding the near-term direction of the economy in general and the spate of challenges recently faced in the electric power industry specifically. Consider the example of Value Line, which has assigned its Utilities sector the lowest ranking of all 10 sectors it covers for year-ahead stock price performance.[13] Value Line noted that "[t]he electric utility industry carries one of our lowest industry Timeliness ranks."[14] While this cautious outlook may be indicative of relatively low near-term growth projections, it does not necessarily reflect investors' long-term expectations for the industry.

Given this unsettled near-term outlook, historical growth in earnings might also provide a meaningful guide to investors' future expectations. Accordingly, earnings growth rates for the past 10- and 5-year periods reported

[13] The Value Line Investment Survey, *Selection 7 Opinion* (Feb. 11, 2005) at 1878.
[14] The Value Line Investment Survey (Dec. 31, 2004) at 695.

by Value Line for the firms in the electric utility group are also presented on Schedule WEA-4. As shown there, 10-year historical earnings growth rates for the group of eight electric utilities averaged 6.5 percent, or 6.8 percent over the most recent 5 year period.

Q. How else are investors' expectations of future long-term growth prospects often estimated for use in the constant growth DCF model?

A. Based on the assumptions underlying constant growth theory, conventional applications of the constant growth DCF model often examine the relationships between retained earnings and earned rates of return as an indication of the sustainable growth investors might expect from the reinvestment of earnings within a firm. The sustainable growth rate is calculated by the formula, g = br + sv, where "b" is the expected retention ratio, "r" is the expected earned return on equity, "s" is percent of common equity expected to be issued annually as new common stock, and "v" is the equity accretion rate.

Q. What is the purpose of the "sv" term?

A. Under DCF theory, the "sv" factor is a component of the growth rate designed to capture the impact of issuing new common stock at a price above, or below, book value. When a company's stock price is greater than its book value per share, the per-share contribution in excess of book value associated with new stock issues will accrue to the current shareholders. The

higher book value per share leads to higher expected earnings and dividends, with the "sv" factor incorporating this additional growth component.

Q. What growth rate does the earnings retention method suggest for the proxy group?

A. The sustainable, "br + sv" growth rates for each firm in the proxy group are shown on Schedule WEA-5. For each firm, the expected retention ratio (b) was calculated based on Value Line's projected dividends and earnings per share. Likewise, each firm's expected earned rate of return (r) was computed by dividing projected earnings per share by projected net book value. Because Value Line reports end-of-year book values, an adjustment was incorporated to compute an average rate of return over the year, consistent with the theory underlying this approach to estimating investors' growth expectations. Meanwhile, the percent of common equity expected to be issued annually as new common stock (s) was equal to the product of the projected market-to-book ratio and growth in common shares outstanding, while the equity accretion rate (v) was computed as 1 minus the inverse of the projected market-to-book ratio. As shown there, this method resulted in an average expected growth rate for the group of nine utilities of 5.1 percent.

Q. What did you conclude with respect to investors' growth expectations for the reference group of western utilities?

A. Based on the growth measures discussed above, I concluded that investors currently expect growth on the order of 5.0 to 6.5 percent for the average firm in the utility proxy group.

Q. What cost of equity was implied for the proxy group of utilities using the DCF model?

A. Combining the 4.0 percent average dividend yield with the 5.8 percent midpoint of my representative growth rate range implied a DCF cost of equity for this group of electric utilities of 9.8 percent. As discussed in my testimony, however, it would be unreasonable to establish an ROE based on this single DCF result.

D. Risk Premium Analyses

Q. Briefly describe the risk premium method.

A. The risk premium method of estimating investors' required rate of return extends to common stocks the risk-return tradeoff observed with bonds. The cost of equity is estimated by first determining the additional return investors require to forgo the relative safety of bonds and to bear the greater risks associated with common stock, and by then adding this equity risk premium to the current yield on bonds. Like the DCF model, the risk premium method is capital market oriented. However, unlike DCF models, which indirectly impute

the cost of equity, risk premium methods directly estimate investors' required rate of return by adding an equity risk premium to observable bond yields.

Q. How did you implement the risk premium method?

A. I based my estimates of equity risk premiums on (1) surveys of previously authorized rates of return on common equity, (2) realized rates of return, and (3) alternative applications of the Capital Asset Pricing Model ("CAPM").

Authorized returns presumably reflect regulatory commissions' best estimates of the cost of equity, however determined, at the time they issued their final order. Such returns should represent a balanced and impartial outcome that considers the need to maintain a utility's financial integrity and ability to attract capital. Moreover, allowed returns are an important consideration for investors and have the potential to influence other observable investment parameters, including credit ratings and borrowing costs. Thus, this data provides a logical and frequently referenced basis for estimating equity risk premiums.

Under the realized-rate-of-return approach, equity risk premiums are calculated by measuring the rate of return (including dividends, interest, and capital gains and losses) actually realized on an investment in common stocks and bonds over long historical periods. The realized rate of return on bonds is

then subtracted from the return earned on common stocks to measure equity risk premiums.

The CAPM approach measures the market-expected return for a security as the sum of a risk-free rate and a risk premium based on the portion of a security's risk that cannot be eliminated by holding a well-diversified portfolio. Under the CAPM, risk is represented by the beta coefficient (β), which measures the volatility of a security's price relative to the market as a whole. While beta is not without controversy, the CAPM is routinely referenced in the financial literature and in regulatory proceedings.

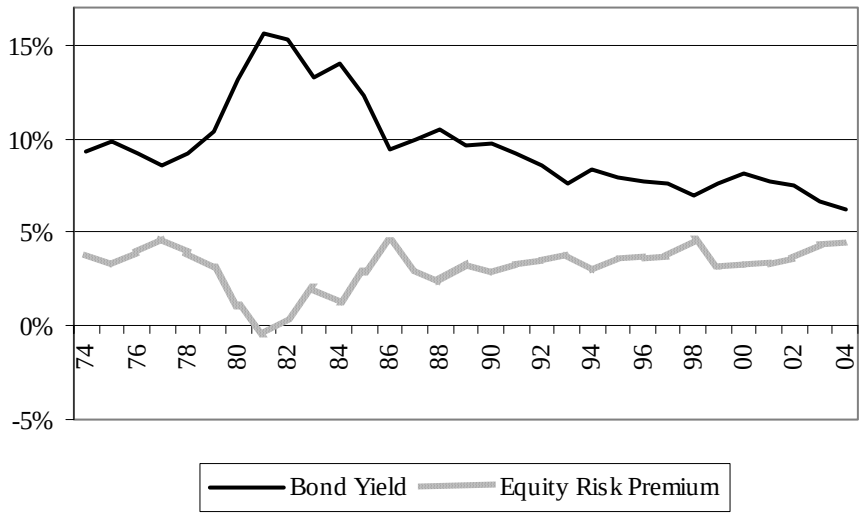
Q. How did you implement the risk premium approach using surveys of allowed rates of return?

A. While the purest form of the survey approach would involve querying investors directly, surveys of previously authorized rates of return on common equity are frequently referenced as the basis for estimating equity risk premiums. The rates of return on common equity authorized electric utilities by regulatory commissions across the U.S. are compiled by Regulatory Research Associates ("RRA") and published in its Regulatory Focus report. In Schedule WEA-6, the average yield on public utility bonds is subtracted from the average allowed rate of return on common equity for electric utilities to calculate equity risk premiums for each year between 1974 and 2004. Over this 31-year period,

these equity risk premiums for electric utilities averaged 3.17 percent, and the yield on public utility bonds averaged 9.59 percent.

Q. Is there any risk premium behavior that needs to be considered when implementing the risk premium method?

A. Yes. There is considerable evidence that the magnitude of equity risk premiums is not constant and that equity risk premiums tend to move inversely with interest rates. In other words, when interest rate levels are relatively high, equity risk premiums narrow, and when interest rates are relatively low, equity risk premiums widen. To illustrate, the graph below plots the yields on public utility bonds (solid line) and equity risk premiums (shaded line) shown on Schedule WEA-6:



The graph clearly illustrates that the higher the level of interest rates, the lower the equity risk premium, and vice versa. The implication of this inverse

relationship is that the cost of equity does not move as much as, or in lockstep with, interest rates. Accordingly, for a 1 percent increase or decrease in interest rates, the cost of equity may only rise or fall, say, 50 basis points. Therefore, when implementing the risk premium method, adjustments may be required to incorporate this inverse relationship if current interest rate levels have changed since the equity risk premiums were estimated.

Q. What cost of equity is implied by surveys of allowed rates of return on equity?

A. As illustrated above, the inverse relationship between interest rates and equity risk premiums is evident. Based on the regression output between the interest rates and equity risk premiums displayed at the bottom of page 1 of Schedule WEA-6, the equity risk premium for electric utilities increased approximately 43 basis points for each percentage point drop in the yield on average public utility bonds. As illustrated there, with the yield on average public utility bonds in January 2005 being 5.80 percent, this implied a current equity risk premium of 4.80 percent for electric utilities. Adding this equity risk premium to the January 2005 yield on triple-B public utility bonds of 5.95 percent produces a current cost of equity for the utilities in the benchmark group of approximately 10.8 percent.

Q. What else should be considered in applying risk premium methods?

A. As noted earlier, because there is widespread consensus that interest rates will increase materially as the economy continues to strengthen, I also applied the alternative risk premium methods based on a forecasted bond yield for the 2006 rate year.

Q. What cost of equity was produced by the authorized rate of return approach after incorporating the 2006 bond yield forecast?

A. As shown on page 2 of Schedule WEA-6, incorporating a forecasted yield for 2006 and adjusting for changes in interest rates since the study period implied an equity risk premium of 4.29 percent for electric utilities. Adding this equity risk premium to the implied yield on triple-B public utility bonds for the 2006 rate year of 7.2 percent resulted in an implied cost of equity of approximately 11.5 percent.

Q. How did you apply the realized-rate-of-return approach?

A. Widely used in academia, the realized-rate-of-return approach is based on the assumption that, given a sufficiently large number of observations over long historical periods, average realized market rates of return will converge to investors' required rates of return. From a more practical perspective, investors may base their expectations of future earned returns on those realized in the past, with average realized rates of return for historical periods being

widely reported in the financial press and by investment advisory services as a guide to future performance. By focusing on data for utilities specifically, my realized rate of return approach avoided the need to make assumptions regarding relative risk (*e.g.*, beta) that are often embodied in applications of this method.

Stock price and dividend data for the electric utilities included in the S&P 500 Composite Index ("S&P 500") are available for the period 1946 through 2003. As shown in Schedule WEA-7, over this 58-year period realized rates of return for these utilities have exceeded those on single-A public utility bonds by an average of 3.87 percent. In contrast to other risk premium approaches, the realized-rate-of-return method assumes that equity risk premiums are stationary over time; therefore, no adjustment for the inverse relationship between equity risk premiums and interest rates was made. Adding this 3.87-percent equity risk premium to the January 2004 yield of 5.95 percent on triple-B public utility bonds produces a current cost of equity for the electric utility proxy group of approximately 9.8 percent.

Once again, however, this does not consider the anticipated increase in bond yields through the rate year. Adding this 3.87 percent equity risk premium to the 7.2 percent forecasted yield on triple-B public utility bonds for 2006 implies cost of equity of approximately 11.1 percent.

Q. Please describe your application of the CAPM.

A. The CAPM is a theory of market equilibrium that measures risk using the beta coefficient. Under the CAPM, investors are assumed to be fully diversified, so the relevant risk of an individual asset (*e.g.*, common stock) is its volatility relative to the market as a whole. Beta reflects the tendency of a stocks' price to follow changes in the market. A stock that tends to respond less to market movements has a beta less than 1.00, while stocks that tend to move more than the market have betas greater than 1.00. The CAPM is mathematically expressed as:

$$R_j = R_f + \beta_j(R_m - R_f)$$

Where: R_j = required rate of return for stock *j*;
R_f = risk-free rate;
R_m = expected return on the market portfolio; and,
β_j = beta, or systematic risk, for stock j.

I applied the CAPM to the nine companies in the utility proxy group using market risk premiums ($R_m - R_f$) based on (1) forward-looking estimates of investors' required rates of return and (2) historical realized rates of return.

Q. Please describe your forward-looking application of the CAPM.

A. Application of the CAPM to the utilities in the proxy group based on a forward-looking estimate for investors' required rate of return from common stocks is presented on Schedule WEA-8. Rather than using historical data, the expected market rate of return was estimated by conducting a DCF

analysis on the firms in the S&P 500. The dividend yield was obtained from S&P, with the growth rate equal to the average of the composite earnings growth projections published by IBES for each firm. Based on the average of the individual IBES growth rates for the firms in the S&P 500,[15] current estimates imply an average projected growth rate for the firms in the S&P 500 over the next five years of 12.1 percent. Combining this average growth rate with a contemporaneous yield of 1.8 percent results in a current cost of equity estimate for the market as a whole of approximately 13.9 percent. Subtracting a 4.6 percent risk-free rate based on the February 2005 average yield on 20-year Treasury bonds from the 13.9 percent forward-looking rate of return produced a market equity risk premium of 9.3 percent. Multiplying this risk premium by the average Value Line beta of 0.84 for the utilities in the proxy group, and then adding the resulting 7.9 percent risk premium to the January 2005 average long-term Treasury bond yield, resulted in a current cost of equity of approximately 12.5 percent.

Q. What cost of equity is implied by this forward-looking application of the CAPM after incorporating 2006 projected government bond yields?

A. As shown on page 2 of Schedule WEA-8, interest rate projections published by EIA, GlobalInsight and Blue Chip imply a projected yield on 20-

[15] As reported in S&P's *Earnings Guide* (Feb. 2005).

year Treasury bonds of 5.8 percent for the 2006 rate year, which results in a market risk premium of 8.1 percent. Once again multiplying the market risk premium by the average Value Line beta of 0.84 for the electric utilities in the proxy group, and then adding the resulting 6.8 percent risk premium to the 5.8 percent long-term Treasury bond yield for 2006, implied a cost of equity of approximately 12.6 percent.

Q. What other CAPM analyses did you conduct to estimate the cost of equity?

A. I also applied the CAPM using risk premiums based on historical realized rates of return. This approach to estimating investors' equity risk premiums is premised on the assumption that, given a sufficiently large number of observations over long, historical periods, average realized market rates of return will converge to investors' required rates of return.

Q. What CAPM cost of equity is produced based on historical realized rates of return for stocks and long-term government bonds?

A. I applied the CAPM using data published by Ibbotson Associates, which is perhaps the most exhaustive and widely referenced annual study of realized rates of return. Application of the CAPM based on historical realized rates of return is presented in Schedule WEA-9. In their *2004 Yearbook, Valuation Edition*, Ibbotson Associates reported that, over the period 1926 through 2003, the arithmetic mean realized rate of return on the S&P 500 exceeded that on long-

term government bonds by 7.2 percent. Multiplying this historical market risk premium by the average Value Line beta of 0.84 produced an equity risk premium of 6.0 percent for the electric utility proxy group. As shown on page 1 of Schedule WEA-9, adding this equity risk premium to the January 2005 average yield on 20-year Treasury bonds of 4.6 percent resulted in an implied cost of equity of 10.6 percent. As shown on page 2 of Schedule WEA-9, after incorporating a the 5.8 percent projected government bond yield for 2006, application of the CAPM based on historical realized rates of return implied a cost of equity of 11.8 percent.

Q. What else should be considered in evaluating CAPM cost of equity estimates based on historical realized rates of return?

A. The CAPM model, like the DCF approach, is an *ex-ante*, or forward-looking model based on expectations of the future. As a result, in order to accurately estimate required returns the CAPM must be applied using data that reflects the expectations of actual investors. While reference to historical data represents one way to apply the CAPM, these realized rates of return reflect, at best, an indirect estimate of investors' current requirements. Because my forward-looking applications of the CAPM look directly at current expectations in the capital markets, these results are apt to provide a more meaningful guide to investors' required rate of return.

Q. Please summarize the results of your risk premium analyses.

A. The cost of equity estimates implied by my risk premium analyses are summarized in the following table:

	Cost of Equity Estimate
Risk Premium Approach	
Authorized Returns	
Current Estimate	10.8%
Rate Year Estimate	11.5%
Realized Rates of Return	
Current Estimate	9.8%
Rate Year Estimate	11.1%
CAPM - Forward-looking	
Current Estimate	12.5%
Rate Year Estimate	12.6%
CAPM - Historical	
Current Estimate	10.6%
Rate Year Estimate	11.8%