

STATE OF NORTH DAKOTA  
BEFORE THE NORTH DAKOTA PUBLIC SERVICE COMMISSION

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In the Matter of the Application of NORTHERN  
STATES POWER COMPANY for authority to  
Increase Rates for Electric Service in North Dakota

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Case No. PU-12-813

**DIRECT TESTIMONY OF  
CHARLES W. KING**

**Submitted on Behalf of the  
Staff of the North Dakota Public Service Commission**

July 17, 2013

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**QUALIFICATIONS**

**Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.**

A. My name is Charles W. King. I am President Emeritus of the economic consulting firm of Snavelly King Majoros & Associates Inc. ("Snavelly King"). My business address is Suite 306, 8100 Professional Place, Landover, MD 20785.

**Q. PLEASE DESCRIBE SNAVELLY KING.**

A. Snavelly King was founded by the late Carl M. Snavelly and me in 1970 to conduct research on a consulting basis into the rates, revenues, costs and economic performance of regulated firms and industries. The firm has a professional staff of 10 economists, accountants, engineers and cost analysts. Most of its work involves the development, preparation and presentation of expert witness testimony before federal and state regulatory agencies. Over the course of its 43-year history, members of the firm have participated in over 1000 proceedings before almost all of the state commissions and all Federal commissions that regulate utilities or transportation industries.

**Q. HAVE YOU PREPARED A SUMMARY OF YOUR QUALIFICATIONS AND EXPERIENCE?**

A. Yes. Attachment A is a summary of my qualifications and experience.

**Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN REGULATORY PROCEEDINGS?**

A. Yes. Attachment B is a tabulation of my appearances as an expert witness before state and federal regulatory agencies.

**Q. FOR WHOM ARE YOU APPEARING IN THIS PROCEEDING?**

A. I am appearing on behalf of the staff of the North Dakota Public Service Commission.

**Q. WHAT IS THE OBJECTIVE OF YOUR TESTIMONY?**

1

2 A. The objective of my testimony is to recommend the rate of return that should be allowed  
3 on the North Dakota jurisdictional rate base of the Northern States Power Company  
4 (“NSP” or “the Company”).

5 **I. SUMMARY**

6 **Q. WHAT HAVE YOU FOUND TO BE THE APPROPRIATE RATE OF RETURN**  
7 **ON NSP’S RATE BASE?**

8 A. Based on the analyses presented in this testimony, I find that the appropriate after-tax  
9 return to NSP’s rate base is **7.14 percent**, inclusive of a **9.0 percent** return on equity.

10 **Q. DO YOU HAVE A SCHEDULE THAT DISPLAYS THE DEVELOPMENT OF**  
11 **THIS RECOMMENDED RATE OF RETURN?**

12 A. Yes. Exhibit CWK-1 presents the calculation of my recommended rates of return on  
13 NSP’s total capital. Column A shows the investors’ capital in NSP as of March 31, 2013.  
14 Column B shows the percentage distribution of that capital. Column C shows the cost  
15 rates for each component of the capital structure, and column D shows the weighted  
16 returns. The bottom line of column D shows the overall return to capital for NSP’s North  
17 Dakota rate base.

18 **B. INVESTMENT OVERVIEW**

19 **Q. WHAT ARE THE RISK-RETURN CHOICES CONFRONTING THE AVERAGE**  
20 **INVESTOR AT THE PRESENT TIME?**

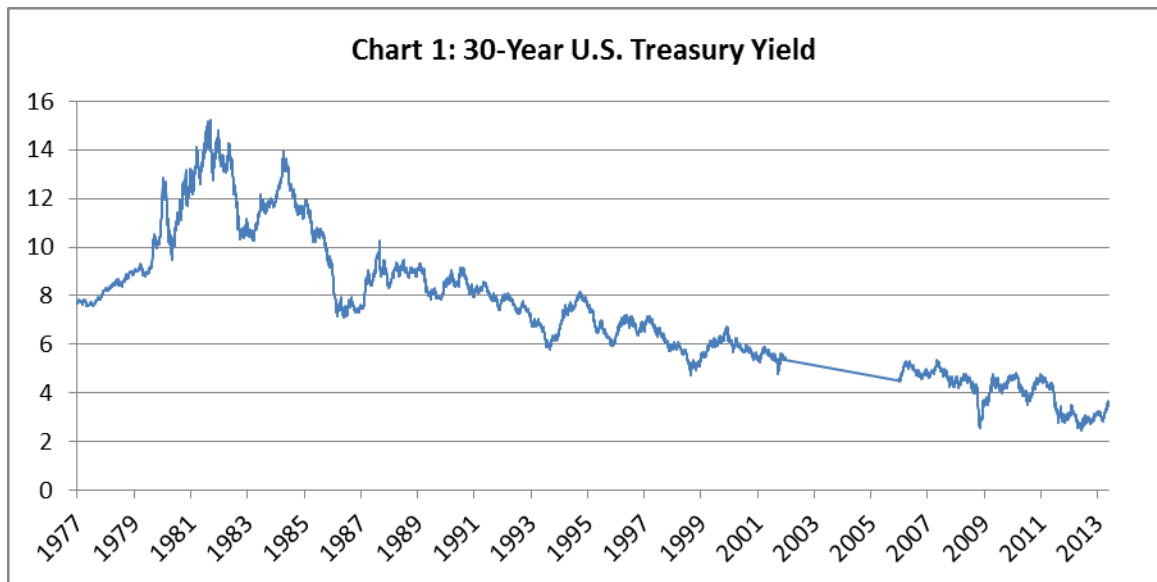
21 A. Consider the perspective of a hypothetical recent retiree who over a lifetime of hard work  
22 diligently accumulated \$1 million in savings. He has essentially three choices of  
23 investment vehicles for his money. In increasing order of risk, they are government  
24 bonds, corporate bonds, and common stocks. As a practical matter, he may invest in  
25 mutual funds, but those funds will in turn select among the same three vehicle categories.

26 **Q. HOW DESIRABLE ARE TREASURY BONDS AS AN INVESTMENT VEHICLE?**

1 A. Not very desirable. Our investor could seek maximum safety by purchasing a one-year  
2 treasury bill. Trouble is, at the current interest rate of 0.15 percent<sup>1</sup>, the one-year  
3 earnings on that sizable investment of \$1 million would only be \$1,500. Furthermore, if  
4 inflation were only 2 percent, then the \$1,500 of interest income on the treasury would be  
5 offset by \$20,000 of loss in purchasing power, for a net loss of \$18,500 as the outcome  
6 from making this “safe” investment in a one-year treasury bond.

7 Alternatively, our investor could buy a 30-year Treasury bond yielding approximately  
8 3.53 percent.<sup>2</sup> The trouble with that choice is that the interest rate paid on a 30-year U.S.  
9 treasury bond is fixed for the entire life of the bond. It stays the same whether interest  
10 rates go up or go down during the life of that bond. If interest rates go up, the investor  
11 who purchased a 30-year bond either a) loses the opportunity cost of being able to have  
12 earned a higher interest rate on bonds currently being issued or b) would have to sell the  
13 bond at what could be a substantial loss.

14 These somewhat unappetizing choices are a reflection of the following long-term trend:



15  
16

Source: <http://federalreserve.gov/releases/h15/data.htm> (week of 7/5/2013)

<sup>1</sup> <http://www.federalreserve.gov/releases/h15/data.htm> (week of 7/5/2013)

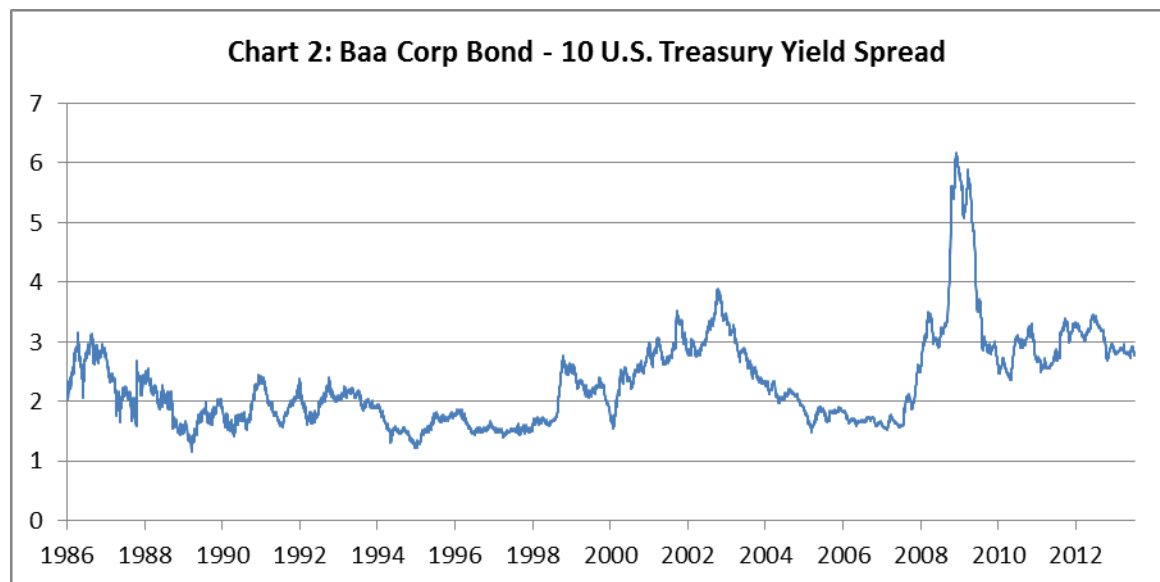
<sup>2</sup> Id.

1 The above graph shows that in the last half of 2012, the yield on 30-year Treasury was at  
2 its lowest levels than at any time since 1977<sup>3</sup>. The rate has been in a long-term  
3 downward trend since the very early 1980's when the annual yield peaked just below 16  
4 percent.

5 **Q. HOW DESIRABLE ARE CORPORATE BONDS AS AN INVESTMENT**  
6 **VEHICLE?**

7 A. The yield on corporate bonds is considerably greater than that on U.S. Treasuries. As of  
8 the week of June 21, 2013, Moody's Baa corporate bonds were yielding approximately  
9 5.39 percent.<sup>4</sup> Given inflation in the range of 2 to 3 percent, this still is not a very  
10 handsome return. While nominal earnings for our hypothetical retiree may be \$49,000, in  
11 real terms it is only about \$25,000. After taxes, it is less than that.

12 Part of the reason corporate bond returns are so low is that they are tied to some extent to  
13 the returns on government securities. The following graph charts the interest rate spread  
14 between corporate and Treasury bond yields over the past two decades:  
15



16 Source: <http://federalreserve.gov/releases/h15/data.htm> (week of 7/5/2013)  
17

<sup>3</sup> The yield for the 30-year Treasury note reached a low of 2.46 percent on 7/25/12.

<sup>4</sup> <http://federalreserve.gov/releases/h15/data.htm>

1 The above graph indicates that the Baa to 10-year U.S. Treasury Bond spread (risk  
2 premium) hovered around a level in roughly the 150 to 200 basis point range above 10-  
3 year U.S. Treasuries throughout most of the decade of the 1990s, and also in the middle  
4 of the next decade. The graph also illustrates that the risk premium climbed during the  
5 period from early 2000 through around 2003 – a risky period that included what is known  
6 as the “tech wreck” and, of course, the 9/11/2001 tragedy.

7 The above graph also indicates that the spread increased to approximately 600 basis  
8 points for a very short period following the Lehman Brothers collapse in 2008, a level  
9 that was more than 3 times as high as the risk premium that was typical of the 1990’s.  
10 Since then, the risk premium has settled back about 280 basis points, higher but still in  
11 the range of the risk premiums that prevailed in the mid 2000s.

12 **Q. HOW ABOUT STOCKS AS AN INVESTMENT VEHICLE?**

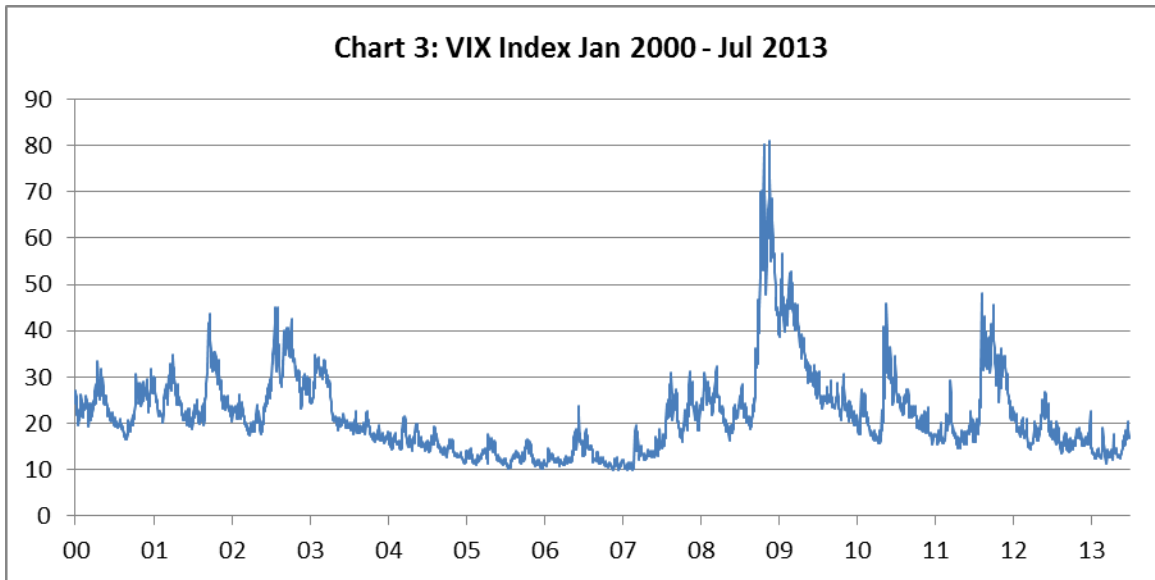
13 A. From an earnings standpoint, stocks are the big winners. As reported by Yahoo Finance,  
14 the consensus among analysts is that the S&P 500 stocks will advance by 8.4 percent this  
15 year and over 13.5 percent next year.<sup>5</sup> Based on these estimates, our investor stands to  
16 earn close to \$100,000 annually on his \$1 million investment in nominal terms.

17 Trouble is, there’s no assurance that our investor will receive his \$100,000. Stocks are  
18 risky; their returns uncertain. Just how uncertain, is tested by the VIX index, which  
19 measures the daily volatility of the stock market.<sup>6</sup> The higher the VIX index, the more  
20 uncertain the return on the average investment in stocks. The following chart reveals that  
21 the VIX index is itself highly volatile:

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<sup>5</sup> <http://finance.yahoo.com/q/ae?s=ALE+Analyst+Estimates>

<sup>6</sup> The Chicago Board Options Exchange (“CBOE”) Market Volatility Index (“VIX”) is based on options on the S&P 500 Index and reflects the market consensus expected volatility in the S&P 500 over the next 30 days. It is sometimes known as the “fear index.”



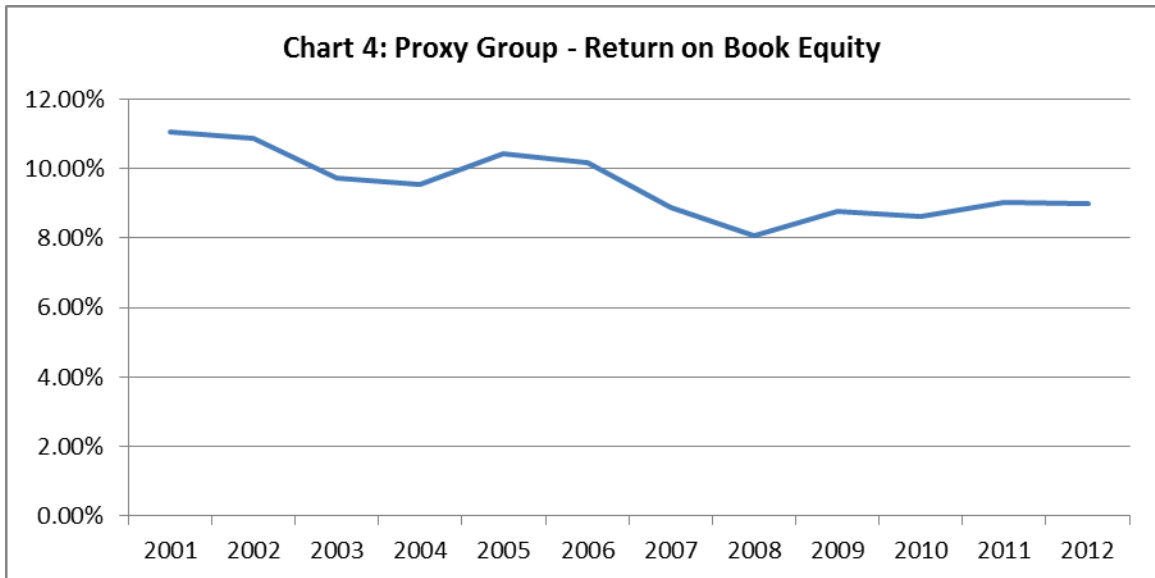
Source: <http://www.cboe.com/micro/vix/historical.aspx> (week of 7/5/2013)

The graph shows that there were three times during the 2001-2012 period when risk was extremely high. As of January 31, 2013, the VIX index is at a relatively low level of 14.28, which is 34 percent below the average daily closing level of 21.68 experienced over the full period covered by the chart.<sup>7</sup> But there is no assurance that the VIX may again jump by orders of magnitude in response to economic or political shocks in the near future.

**Q. HOW DO UTILITY STOCKS STACK UP IN THIS ARRAY OF INVESTMENT VEHICLES?**

A. Utility stocks fare quite well on the spectrum of risk-return relationships. Unlike bonds, the return on book investment in Ms. Bulkley's proxy utility companies has not declined over recent years:

<sup>7</sup> <http://www.cboe.com/micro/VIX/historical.aspx>



Source: Value Line Reports

The chart shows that earned returns on Ms. Bulkley's proxy utilities did decline from 2001 through 2007, but have recovered since. In 2011, they stood at approximately nine percent. Value Line forecasts the average return on book equity for Ms. Bulkley's Proxy Group of Electric Companies to be 9.68 percent in the 2016 to 2018 period.

As between utility and non-utility stocks, the best measure of relative risk is the beta, which measures the degree of co-variance between the subject stock and the market as a whole. A beta of 1.00 indicates a stock whose price varies exactly to the same extent and in lock step with the market. Stocks with betas less than 1.00 are stocks that vary less than the market and are therefore less risky. NSP Witness Bulkley shows the betas for her proxy electric utilities on her Schedule 6. The average of the Value Line betas is .715.

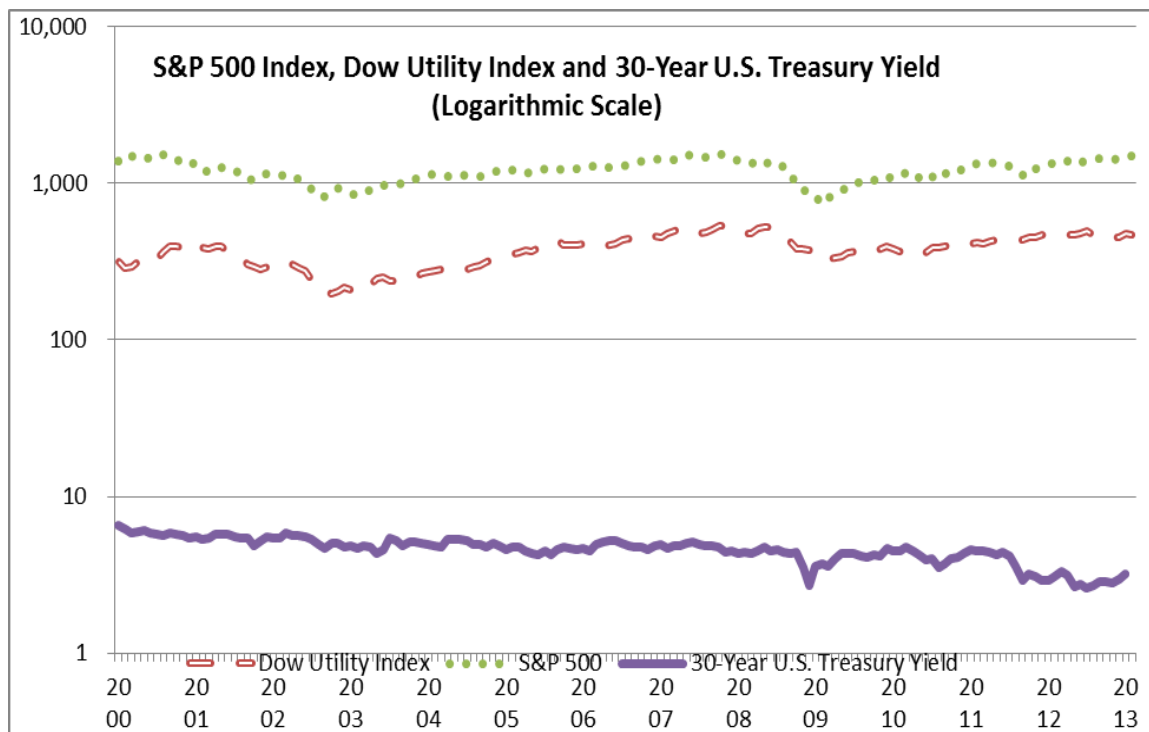
Another measure of the desirability, especially for our retiree, is the dividend yield. Two stocks may have the same long-term earnings potential, but the one with the higher dividend yield will be considered the less risky. That is because the dividend is here and now, while the prospects for stock value appreciation are in the future and by no means assured. Value line forecasts that the average dividend yield in 2013 for all the dividend-

1 paying stocks it reviews (about 1,700) will be 2.1 percent.<sup>8</sup> Ms. Bulkley reports on  
2 Schedule 3 of her exhibit that the average dividend yield for her 13 proxy electric utilities  
3 is 4.26 percent, twice the average for all stocks.

4 **Q. WHAT ARE THE IMPLICATIONS OF THE FOREGOING ANALYSIS ON THE**  
5 **SETTING OF AN ALLOWED RATE OF RETURN TO AN ELECTRIC**  
6 **UTILITY?**

7 A. The principal implication is that the desirability of utility stocks relative to other forms of  
8 investment has increased with the decline in interest rates. That increase in desirability,  
9 and the consequent increase in demand, have driven up the prices of utility stocks.  
10 Indeed, the prices of utility stocks, considered relatively low-risk, have been rising almost  
11 in lock step with stock prices in the broader market, as measured by the S&P stock index:

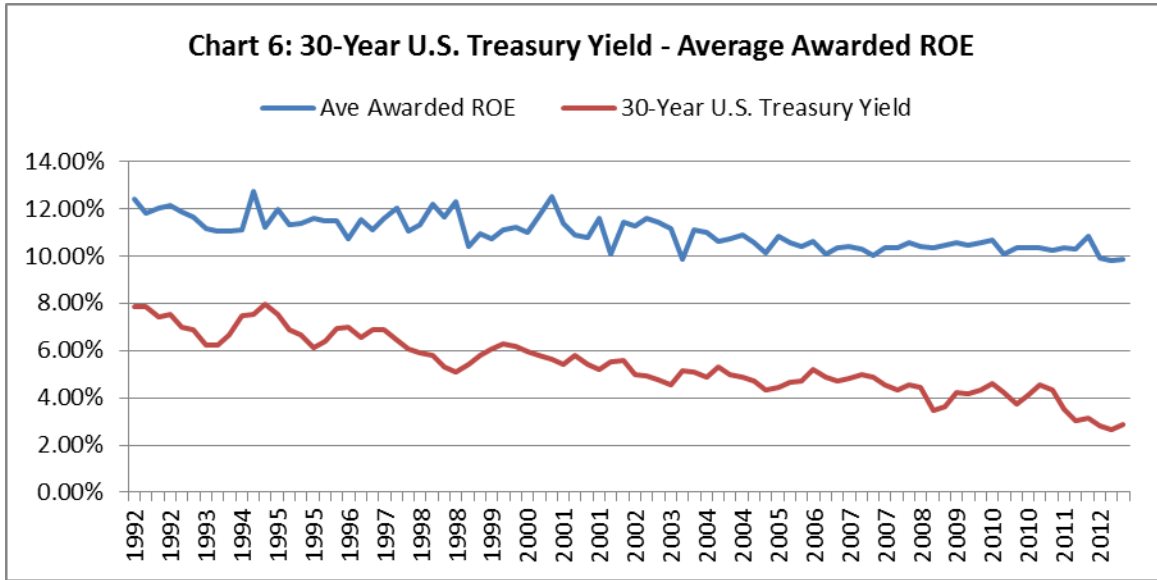
12 Chart 5



13 Sources: Yahoo Finance, Edison Electric Institute "2012 Financial Highlights"  
14  
15

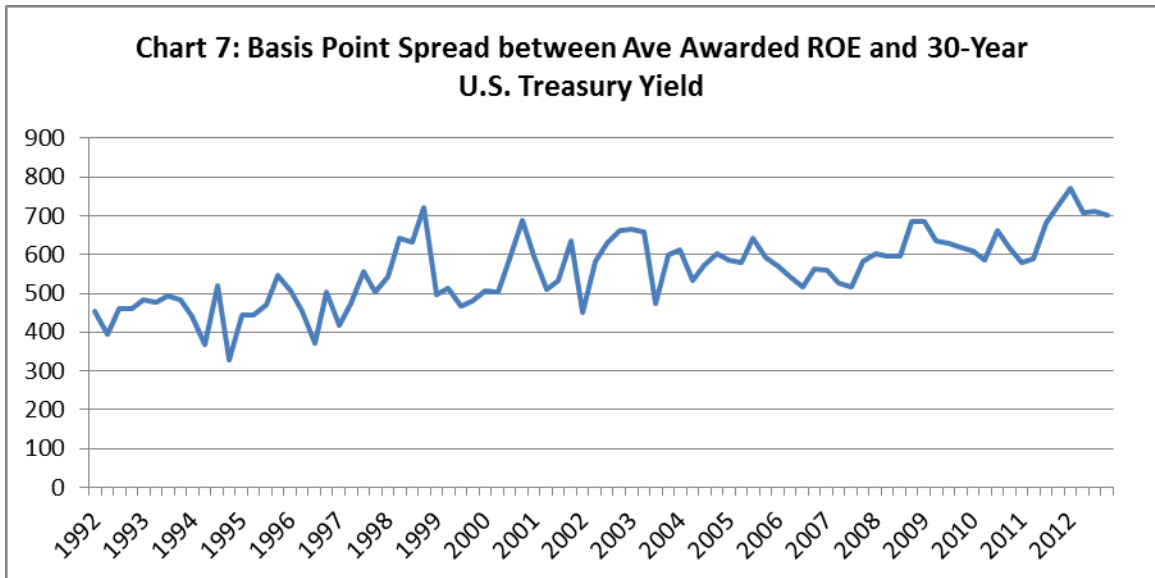
<sup>8</sup> Value Line Investment Survey, Part 1: Summary & Index (6/28/2013)

1 The rising utility stock prices have generally exceeded the rise in returns on book equity,  
2 with the result that the returns from utility stocks that investors actually realize have  
3 declined. To some extent, regulators have recognized that investor expectations of return  
4 have fallen and have reflected that fact in their equity return awards. The following chart  
5 compares the trend in equity return allowances to electric utilities by state commissions  
6 with the 30-year Treasury bond yield:



7 Source: Exhibit\_\_\_(AEB-1) Schedule 8  
8

9 The above graph demonstrates that allowed returns have followed long-term Treasury  
10 bond yields over the years, but that there was a noticeable departure in 2012. This fact is  
11 more dramatically illustrated in the following chart showing the point spread:



Source: Exhibit \_\_\_ (AEB-1) Schedule 8

While numerous utility commissions did authorize cost of equity returns below 10 percent in 2012, the reason why allowed returns have not, on average, dropped below this number is two-fold. First, there is a persistent disbelief that interest rates could stay as low as they have for as long as they have. Second, allowed returns may be too dependent upon what other regulators are doing rather than what the financial evidence justifies. The end result is that on average, allowed returns have been artificially kept higher than necessary.<sup>9</sup>

The price of utility service impacts not only the cost of living for consumers; it also impacts the cost of doing business for commercial entities. Eliminating the 10 percent glass floor on the cost of equity would provide an overall boost to the economy and would best balance the interests of investors and customers.

**II. NSP'S CAPITAL STRUCTURE**

**Q. WHAT ARE THE COMPONENTS OF NSP'S COST OF CAPITAL?**

A. Three elements make up NSP's cost of capital: capital structure, the cost of debt, and the cost of equity.

1 **Q. WHAT IS MEANT BY “CAPITAL STRUCTURE?”**

2 A. Capital structure refers to the mix of the various forms of investor-supplied capital: long-  
3 term debt, short-term debt, preferred stock and common equity.

4 **Q. WHAT IS THE RELEVANCE OF CAPITAL STRUCTURE TO THE OVERALL**  
5 **RATE OF RETURN?**

6 A Capital structure is highly relevant to the overall rate of return because the rate of return  
7 required by investors is evaluated, in part, based on the respective forms of capital by  
8 which a company is financed. The cost of the respective forms of capital varies  
9 considerably. In general, debt capital is much less costly than equity capital, not only  
10 because it requires a lower return, but also because it is tax-deductible. Equity capital is  
11 more costly because it bears more risk. Since the return to equity – dividends and  
12 retained earnings – is not tax deductible, equity capital also affects ratemaking by  
13 requiring a gross-up for income taxes.

14 Standing alone, these considerations would suggest that debt capital is always preferable  
15 to equity, but debt has limits. As the proportion of debt increases, the financial risk that  
16 the Company might not be able to honor its debt instruments increases. At some point,  
17 that risk overwhelms the benefit of lower debt costs, and the capital structure becomes  
18 too “leveraged,” that is, it has too much debt for the earnings to sustain. In theory, there  
19 is an ideal mix of debt and equity that minimizes the composite cost of capital. Finding  
20 that ideal is a major challenge to most companies, and particularly to companies in  
21 capital-intensive industries such as electric utilities.

22  
23 **Q. WHAT IS NSP’S CAPITAL STRUCTURE?**

24 A. NSP’s capital structure is shown in Columns A and B of Schedule 1 of Exhibit CWK-1. I  
25 have taken the amount of long-term debt and equity from NSP’s March 31, 2013 SEC  
26 form 10-Q. Short-term debt varies from month to month, so it is not appropriate to take a

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<sup>9</sup> This departure of rate awards from their historical pattern of following long-term interest rates is reflected in the regression coefficient found in Ms. Bulkley’s Schedule (AEB)-8.

1 snapshot of a single date. On schedule 2 of Exhibit CWK-1, I show the month-end  
2 balances of short-term debt for the 24 months from April 2011 through March 31, 2013.  
3 I have taken the average of those monthly balances as the short-term debt component of  
4 the capital structure. As the exhibit shows, the capital structure as of March 31, 2013  
5 consisted of 45.24 percent long-term debt, 1.33 percent short-term debt and 53.42 percent  
6 common equity.

### 7 **III. COST OF DEBT**

#### 8 **Q. WHAT IS THE COST OF NSP'S LONG-TERM DEBT?**

9 A. I have accepted NSP's calculation of 5.14 percent as its cost of long-term debt. That  
10 percentage is found on Schedule 10 of Ms. Bulkley's exhibit. The cost of short-term  
11 debt is the simple average of the interest rates charged during the first three months of  
12 2013.

### 14 **IV. COST OF EQUITY**

#### 15 **Q. WHAT HAVE YOU FOUND TO BE NSP'S COST OF EQUITY?**

16 A. I recommend a rate of return on NSP's equity capital of 9.0 percent.

#### 17 **1. STANDARDS FOR FINDING EQUITY CAPITAL COST**

#### 19 **Q. WHAT IS THE BASIS FOR FINDING A RATE OF RETURN TO NSP'S 20 COMMON EQUITY SHAREHOLDERS?**

21 A. In its Hope Natural Gas decision, the United States Supreme Court established the  
22 following standards for the return on equity that must be allowed a regulated public utility  
23 to provide for a "reasonable return":

24 ...the return to the equity owner should be commensurate with the  
25 returns on investments in other enterprises having corresponding  
26 risks. That return, moreover, should be sufficient to assure

1 confidence in the financial integrity of the enterprise, so as to  
2 maintain its credit and to attract capital.<sup>10</sup>

3 It can be seen from this excerpt that there are essentially three standards for determining  
4 an appropriate return on equity from the standpoint of the equity owners of a regulated  
5 utility. The first is the "comparable earnings" standard, i.e., that the earnings must be  
6 "commensurate with the returns on investments in other enterprises having corresponding  
7 risks." The second is that earnings must be sufficient to assure "confidence in the  
8 financial integrity of the enterprise," and the third is that they must allow the utility to  
9 attract capital.

10 **Q. HOW CAN THE COMPARABLE EARNINGS STANDARD BE APPLIED IN**  
11 **ESTIMATING THE RATE OF RETURN ON EQUITY CAPITAL?**

12 A. There is a certain circularity to the comparable earnings standard because the competitive  
13 nature of the capital markets virtually ensures that the returns to all enterprises having  
14 corresponding risks are comparable with each other. Investors establish the price of each  
15 traded stock based on that stock's present and prospective earnings in comparison with the  
16 present and prospective earnings of all other stocks and other investments available to  
17 them. If the earnings of a firm are depressed, then investors will pay only a low price for  
18 that firm's stock. As a result, the return on the market value of that stock will be  
19 comparable to the return on the market value of the stock of other companies that are  
20 highly profitable but which, as a consequence of their profitability, have been bid up to a  
21 very high price. Thus, if "return" is defined as the earnings of an equity investment  
22 relative to its current market price, then the comparable earnings test becomes a nullity.  
23 All returns are comparable with all other returns.

24 In public utility regulation, the conventional procedure for resolving this circularity is to  
25 identify the required equity return based on the market value of a utility's stock. That  
26 return is combined with the cost of debt, and the blended return to total capital is then  
27 applied to a rate base reflective of the book value of the utility's investment. The book  
28 value is the accountant's quantification of the depreciated original cost of the utility's

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<sup>10</sup> *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603, 64 S.Ct. 281, 88 L.Ed. 333 (1944).

1 assets adjusted for ratepayer contributions such as deposits and deferred taxes. Under this  
2 procedure, the market price of a stock is used only to determine the return that investors  
3 expect from that stock. That expectation is then applied to the book value of the utility's  
4 investment to identify the level of earnings that regulation will allow the utility's common  
5 shareholders to recover.

6 **Q. HOW CAN THE FINANCIAL INTEGRITY AND CAPITAL ATTRACTION**  
7 **STANDARDS BE APPLIED IN ESTIMATING THE RATE OF RETURN ON**  
8 **EQUITY CAPITAL?**

9  
10 A. If a utility can earn a return on its investment comparable to that required by enterprises of  
11 comparable risk, then it should have no difficulty in attracting capital and maintaining  
12 credit. Investors would have no reason to shun such a utility in favor of other investment  
13 opportunities. Thus, if the comparable earnings test is met, then the financial integrity and  
14 capital attraction standards are met as well.

15 **Q. HOW DO YOU DEFINE “ENTERPRISES OF CORRESPONDING RISK” AS**  
16 **REQUIRED BY HOPE NATURAL GAS?**

17 A. Enterprises of corresponding risk are investor owned companies that are engaged in the  
18 same activities as NSP and, most importantly, are regulated like NSP. These would be  
19 other regulated electric utilities.

20 **Q. WHAT ELECTRIC COMPANIES HAVE YOU SELECTED AS COMPARABLE**  
21 **TO NSP’S ELECTRIC OPERATIONS?**

22 A. Schedule 1 of Exhibit CWK-2 lists all 49 companies that are classified as electric utilities  
23 in Value Line’s Standard Edition survey of companies. As noted in the footnote, I have  
24 eliminated ITC Holdings because it is exclusively a transmission company. In order to  
25 limit my comparison group to heavily regulated electric utilities with risks comparable to  
26 that of NSP, I have established four screening criteria. First, each comparison company  
27 must derive at least 75 percent of its revenue from electric utility service. Second, each  
28 company must derive no more than 25 percent of its revenue from non-regulated  
29 activities. Third, each company must have an S&P bond rating within two grades, plus or

1 minus, of the A- rating assigned to NSP. Fourth, I have eliminated all utilities that  
2 provide only electric transmission and distribution service, retaining only fully integrated  
3 companies like NSP that have production, transmission and distribution functions.

4 Schedule 1 of Exhibit CWK-2 shows the proportion of the revenue of each company  
5 derived from regulated electric utility, gas utility and non-regulated businesses, and it  
6 shows their current S&P ratings. The application of my four criteria eliminates 33 of the  
7 49 Value Line companies. The basis for each of these eliminations is noted in **boldface**  
8 on Schedule 2. The remaining 16 companies, which I regard as comparable to NSP, are  
9 listed on Schedule 2 of Exhibit CWK-2.

10 **Q. HOW CAN YOU DETERMINE THE REQUIRED RATE OF RETURN ON THE**  
11 **EQUITY INVESTMENT OF YOUR COMPARABLE ELECTRIC UTILITIES?**

12 A. There is no direct, observable way to determine the rate of return required by equity  
13 investors in any company or group of companies. The best that can be hoped for are  
14 indications from market data and analysts' predictions. The principal methodology for  
15 obtaining these indications is the Discounted Cash Flow procedure, and I develop three  
16 applications of this approach. Much less reliable procedures are the Capital Asset Pricing  
17 Model and the record of recent rate of return awards.

18 **2. DISCOUNTED CASH FLOW PROCEDURE**

19 **Q. PLEASE DESCRIBE THE DISCOUNTED CASH FLOW PROCEDURE.**

20 A. The basic premise of the Discounted Cash Flow ("DCF") procedure is that the market  
21 values each stock at the discounted present value of all expected future flows of cash to  
22 the investor. The discount rate that equates those future cash flows with the market value  
23 of the stock is the investor's required rate of return.

24 The DCF approach is usually represented by the following formula:

$$25 \quad k = \frac{d}{p} + g$$

26 where

27  $k$  = required rate of return

- 1 d = dividend in the immediate period
- 2 p = market price
- 3 g = expected growth rate in dividends

4 While the DCF method is usually presented in mathematical notation format (as above), it  
5 can also be described in narrative fashion. The formula says that the return that any  
6 investor expects from the purchase of a stock consists of two components. The first is the  
7 immediate cash flow in the form of a dividend. The second is the prospect for future  
8 growth in dividends. The sum of the rates of these two flows, present and future, equals  
9 the return that investors require. Investors adjust the price they are willing to pay for the  
10 stock until the sum of the dividend yield and the annual rate of expected future growth in  
11 dividends equals the rate of return they expect from other investments of comparable risk.  
12 The DCF test thus determines what the investing community requires from the Company  
13 in terms of present and future dividends relative to the current market price.

14 **Q. DON'T MOST INVESTORS REGARD CAPITAL APPRECIATION AS A**  
15 **PORTION OF THEIR EXPECTED RETURN?**

16 A. Yes. The expectation of capital appreciation is captured in the “g” or growth portion of  
17 the DCF formula. If dividends grow, then it follows that the market price of the stock will  
18 grow as well. It is this growth that most equity investors seek, at least in part, in  
19 purchasing shares in a traded company.

20 **Q. HOW IS THE FIRST TERM “d/p” DEVELOPED FOR PURPOSES OF THE DCF**  
21 **PROCEDURE?**

22 A. The “d” is the dividend in the next period, that is, the next year. There is a somewhat  
23 mechanical procedure for predicting this value which applies a factor of .5 to the “g” or  
24 growth factor, on the assumption that dividends will increase in lock step with earnings  
25 growth. Alternatively, there are analysts’ predictions of next year’s dividends that  
26 presumably reflect a fairly close scrutiny of the companies’ cash flow requirements and  
27 their stated desire (or lack thereof) to increase dividends to their stockholders. Because  
28 the latter procedure takes into account company-specific considerations, I believe it is  
29 more appropriate. For the “next period,” I have assumed that the investment horizon at  
30 this point is the second half of 2013 and the first half of 2014. I have used the average of

1 Value Line's forecasts of 2013 and 2014 dividends. Those values are shown in columns  
2 A, B and C of Schedule 2 of Exhibit CWK-2 for the electric comparison group.

3 The "p" or price denominator of the dividend yield fraction requires the exercise of some  
4 judgment. Given the volatility of the stock market, it is inappropriate to use any one day's  
5 price, but it is also necessary to reflect the market's current perception of each stock's  
6 value. For purposes of this analysis, I have used the average of closing prices for the most  
7 recent 60 calendar days prior to June 25, 2013 as reported by Yahoo finance. Those  
8 averages are shown in column D of Schedule 2 of Exhibit CWK-2.

9 **Q. WHAT IS THE AVERAGE DIVIDEND YIELD OF YOUR COMPARISON**  
10 **GROUP?**

11 A. Column E of Schedule 2 of Exhibit CWK-2 reveals that the average dividend yield of the  
12 16 electric comparison group companies is 3.82 percent. The median yield is 3.81  
13 percent.

14 **Q. HOW DO CALCULATE THE "g" GROWTH COMPONENT OF THE DCF**  
15 **FORMULATION?**

16 A. The calculation of the "g" component of the DCF formulation is the most difficult aspect  
17 of the model. According to the DCF theory, the relevant measure of "g" should be the  
18 growth in dividends. Dividends, however, are largely a function of management  
19 discretion, and in the near term they do not necessarily reflect the underlying driver of  
20 earnings. In the long run, any rate of dividend growth that differs significantly from  
21 earnings growth is unlikely to be sustainable. For this reason, it is generally accepted that  
22 the growth rate of earnings per share ("EPS") is the most reliable indicator of the "g"  
23 factor.

24 I have used three alternative approaches to calculating the growth factor in the DCF  
25 model. The first is the constant growth approach, which assumes a single growth rate in  
26 EPS indefinitely into the future. The second is the variable growth approach in which I  
27 have assumed different growth rates in three time periods into the future. The third is the  
28 sustainable growth model that calculates the rate at which the book value of a fully  
29 regulated company can grow.

1 **Q. PLEASE DESCRIBE YOUR CONSTANT GROWTH MODEL.**

2 A. As noted earlier, EPS growth is the ultimate constraint on dividend growth, so the  
3 constant growth model employs predictions of EPS growth, usually in the four to six year  
4 time horizon. Investment analysts routinely attempt to forecast the future earnings of  
5 traded companies. Value Line provides such forecasts based on the research of its own  
6 and other organizations' analysts. Another commonly cited source is Zacks.com. Zacks  
7 does not conduct independent research but surveys investment analysts for their  
8 predictions of future earnings growth. Thomson Financial, a division of Reuters, also  
9 conducts surveys of analysts, and those results are reported in Yahoo Finance. I have  
10 used the forecasts from these three sources for my development of the classic DCF  
11 return.

12 **Q. WHAT IS THE AVERAGE LONG-TERM GROWTH RATE FOR YOUR**  
13 **COMPARISON GROUP?**

14 A. The long-term earnings growth forecasts for each comparison company are presented in  
15 columns F, G and H of Schedule 2 of Exhibit CWK-2. Column I shows the average of  
16 these forecasts for each company. The mean forecast rate of earnings growth for the  
17 electric comparison group is 4.80 percent and the median is 5.00 percent.

18 **Q. WHAT ARE THE EQUITY RETURN INDICATIONS FROM YOUR**  
19 **APPLICATION OF THE CONSTANT GROWTH DCF PROCEDURE?**

20 A. Column J on Schedule 2 of Exhibit CWK-2 presents the results of my constant growth  
21 DCF analysis for the comparison group. The results require adjustment, however, because  
22 some are too low. I have established the criterion that any indication that is less than 200  
23 basis points above the current yield on Moody's Baa bonds is unreasonably low. The  
24 genesis of this lower bound threshold is FERC's standard that it will reject any DCF  
25 indication that is less than 100 basis points (1%) above the current yield on low-grade  
26 corporate bonds.<sup>11</sup> With current Baa corporate bonds yielding only 5.23 percent,<sup>12</sup> this  
27 standard would allow DCF indications as low as 6.23 percent to be included. This seems

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<sup>11</sup> *Pioneer Transmission, LLC*, 126 FERC ¶ 61,281, at P 94 (2009); *order denying reh'g*, 130 FERC ¶ 61,044 (2010).

1 an unreasonably low threshold, so I have doubled the FERC standard to 200 basis points.  
2 Since the current yield on these bonds is 5.23 percent, this criterion results in the  
3 elimination of three electric company indications lower than 7.23 percent. The adjusted  
4 return indications are averaged at the bottom of Column K on Schedule 2 of Exhibit  
5 CWK-2. The mean indication is 9.18 percent and the median 9.05 percent.

6 **Q. WHAT IS YOUR ASSESSMENT OF THE QUALITY OF THE CONSTANT**  
7 **GROWTH DCF RETURN INDICATIONS?**

8 A. I agree with the FCC<sup>13</sup>, the FERC<sup>14</sup> and other commissions that this formulation of the  
9 DCF model is a reliable basis for estimating returns to equity. This is because this DCF  
10 model uses market data for the dividend yield portion of the formula, and it relies on the  
11 informed judgment of market analysts for its projection of future growth. The greatest  
12 value should be placed on this constant growth DCF approach.

13 This DCF formulation, however, cannot be considered as providing a hard and fast  
14 statement of investors' requirements for an equity return. Other approaches should be  
15 applied to offer guidance as to whether the classic DCF results provide appropriate  
16 estimates of the rate of return to equity.

17 **Q. PLEASE DESCRIBE YOUR 3-STEP DCF MODEL.**

18 A. An arguable weakness in the constant growth DCF formulation is that it assumes that the  
19 rates of earnings growth predicted by investment analysts will continue indefinitely. That  
20 is not the prediction of the analysts. They are quite explicit that their forecasts are only to  
21 a time horizon of about five years. Beyond that, the companies' earnings growth rates  
22 are unknown and unknowable.

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<sup>12</sup> <http://www.federalreserve.gov/releases/h15/20130624/>

<sup>13</sup> *Authorized Rates of Return for the Interstate Services of AT&T Communications and Exchange Telephone Carriers, Memorandum Opinion and Order on Reconsideration*, CC Docket No. 84-800, Phase II, 104 FCC 2d 1404, at 1407 (1986); *Resubscribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers, Order*, CC Docket No. 89-624, 5 FCC 2d 7507, 7512 (1990); *Notice Initiating a Prescription Proceeding and Notice of Proposed Rulemaking*, CC Docket No. 98-166, October 5, 1998.

<sup>14</sup> *See, e.g., Southern California NSP Company*, 56 FERC ¶ 61,117 (1991) (Opinion No. 362-A); *Connecticut Light & Power Co.*, 43 FERC ¶ 61,508(1988); *Jersey Central Power & Light Co.*, 77 FERC ¶61,001 (1996).

1 It is not realistic to expect that a growth in earnings that departs significantly from the  
2 overall growth of the economy can last indefinitely. Sooner or later, any company's  
3 earnings growth must be constrained by the performance of the economy in which it  
4 operates.

5 Accordingly, I have altered the growth assumption to consider three time periods, the  
6 near term being the next five years, the intermediate term being the subsequent five or ten  
7 years, and the long term being the more distant future beyond 10 or 15 years. For the  
8 near term, I have used Value Line's forecast of dividend growth in the four to six year  
9 time frame. For the intermediate period, I have used an average of the analysts' EPS  
10 growth forecast, developed in the constant growth model and estimates of long-term  
11 nominal rate of growth in Gross Domestic Product ("GDP"). The final, long-term growth  
12 is the predictions of nominal GDP growth during the remaining decades of the 21<sup>st</sup>  
13 century.

14 This procedure acknowledges that disparities between the short-term rate of growth for  
15 any group of companies and the growth in the overall economy cannot last forever.  
16 Ultimately, earnings growth will trend toward the rate of increase in the total market.

17 **Q. WHAT FORECAST RATE OF GDP GROWTH DO YOU PROPOSE TO USE IN**  
18 **IMPLEMENTING THE FERC 2-STEP GROWTH PROCEDURE?**

19 A. The Congressional Budget Office ("CBO") produces forecasts of most of the major  
20 economic indicators. CBO's current forecast for the years 2019 through 2023 calls for an  
21 annual rate of increase of 4.3% in nominal GDP.<sup>15</sup> The Social Security Administration  
22 ("SSA") performs an even longer-range forecast of GDP growth. Its forecast average  
23 rate of real GDP growth from 2018 to 2048 is about 2.18 percent, and its forecast of the  
24 GDP price deflator is 2.40, which comes to a growth rate in nominal GDP of 4.58  
25 percent.<sup>16</sup> I have used the average of the CBO and the SSA forecasts, 4.44 percent.

26 **Q. WHAT IS THE DCF RETURN INDICATION USING THE FERC TWO-STEP**  
27 **GROWTH FORMULATION FOR THE ELECTRIC COMPARISON GROUP?**

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<sup>15</sup><http://www.cbo.gov/sites/default/files/cbofiles/attachments/43907-BudgetOutlook.pdf>, Table 2.1

<sup>16</sup> Compute from Table IV D1 of the 2008 Annual Report of the SSI Program.

1 A. The calculation of the DCF return using the three-step growth factor is presented in  
2 Schedule 3 of Exhibit CWK-2. I calculate a rate of return indication for the electric  
3 comparison group of 8.43 percent.

4 **Q. WHAT VALUE DO YOU PLACE ON THIS RESULT?**

5 A. It may be overly simplistic to assume that the electric utilities' earnings growth will  
6 ultimately revert to the growth rate of the overall economy. Historically, the electric and  
7 gas utility industries have grown faster than many other sectors of the economy, and there  
8 is no reason to believe they will not continue to do so beyond the four to six year horizon  
9 of the analysts' forecasts. For this reason, I place somewhat less reliance on this  
10 formulation than on the results of the constant growth DCF approach.

11 **Q. PLEASE DESCRIBE THE SUSTAINABLE GROWTH MODEL.**

12 A. The sustainable growth model examines each company's ability to generate increases in  
13 the book value of its stock. While book value and market value rarely match, they do  
14 have a relationship, particularly for a company that is subject to rate-base/rate-of-return  
15 regulation. As I have discussed earlier, regulation sets the company's allowed earnings  
16 based on book value. As long as that is the case, earnings and dividend growth will  
17 indirectly be driven by book value growth.

18 There are two ways by which the book value per share of a regulated company can  
19 increase. One is through retained earnings, that is, the portion of earnings that is not  
20 declared out as dividends. The other is to sell new shares of stock at prices that exceed  
21 book value. The premium on the new shares then increases the book value of the existing  
22 shares.

23 These terms can be expressed by the following formula:

24 
$$g = (r*b) + (s*v)$$

25 where:

26 r = the fraction of earnings retained by the company, i.e. the retention ratio

27 b = the return on the book value of common equity

28 s = the increase in common shares outstanding that have been sold at market value

29 v = the per-share premium or discount on the shares sold

1 **Q. HOW DO YOU PROPOSE TO ESTIMATE THE VALUES REQUIRED FOR**  
2 **THIS DCF CALCULATION?**

3 A. For this calculation, I propose to rely on Value Line, which is the only source that  
4 provides five-year forecasts of all the relevant variables. Those forecast variables are  
5 shown on the two pages of Schedule 4 of Exhibit CWK-2. The first three columns on  
6 page 1 of this schedule develop the earnings retention percentage for each company using  
7 the dividends and earnings per share forecasts for the 2016-2018 period. The earnings  
8 retention ratio is defined as one less the dividend payout ratio, that is, the ratio of  
9 dividend per share to earnings per share.

10 Column D on page 1 of Schedule 4 presents Value Line's forecast of the book value per  
11 share of each company during the 2016-2018 period, and column E calculates the return  
12 on that book value by dividing the EPS figures in column A by the book values in  
13 column D. When the earnings retention ratios are multiplied by the book value returns,  
14 the result is an expression of the accretion in book value per share that results from  
15 retained earnings.

16 Page 2 of Schedule 4 develops the  $s*v$  factor, again using Value Line's forecasts.  
17 Columns A through C on that page develop the current market-to-book value. Columns  
18 D and E show the number of shares outstanding in 2013 and forecast for the 2016-2018  
19 period. Column F shows the annual rate of increase. The  $s*v$  factor in column G is the  
20 excess of market value over book value times the percentage growth in outstanding  
21 shares.

22 On page 1 of Schedule 4, the  $s*v$  factor, shown in column G, is added to the retained  
23 earnings factor to yield an expression of the sustainable rate of book value growth. These  
24 values are used as the "g" factor in the DCF formula.

25 **Q. WHAT IS THE DCF RETURN INDICATION USING THE BOOK VALUE**  
26 **GROWTH FORMULATION FOR THE PEER GROUP OF ELECTRIC**  
27 **UTILITIES?**

28 A. The mean DCF indications from the sustainable growth model are presented in column J  
29 of page 1 of Schedule 4 of Exhibit CWK-2. Again, it is necessary to eliminate three

1 outliers that are below the 7.23 percent threshold that I have established as the limit of  
2 reasonableness. The adjusted mean return indication for the electric utilities is 8.19  
3 percent and the median is 7.97 percent.

4 **Q. WHAT VALUE DO YOU PLACE ON THIS RESULT?**

5 A. There are several assumptions underlying this formulation of the DCF calculation that are  
6 subject to challenge. The first is that there is a one-for-one correspondence among the  
7 growth rates for dividends, earnings and book value per share. Empirically, this  
8 correspondence is not observed. We can accept that earnings growth drives dividend  
9 growth in the long run, but the further assumption that book value growth determines  
10 earnings growth is more questionable.

11 Second, this procedure assumes a fully regulated operation, where the entirety of each  
12 utility's earnings is determined by applying a rate of return to a rate base reflective of the  
13 full book value of the company. As a practical matter, most of the firms in the utility  
14 comparison groups have some unregulated activities, the earnings of which are not tied to  
15 book value.

16 Third, the book value growth model assumes that investors make the same  $b*r + s*v$   
17 calculation that I have made. That is because the DCF formulation relies on the  
18 assumption that investors set the price of a stock in part based on their perceptions of  
19 future earnings growth. The book value growth approach is valid only to the extent that  
20 investors employ it in formulating their expectations of future earnings growth. Yet, I  
21 have never seen any reference to this calculation in the analysts' reports on public  
22 utilities.

23 Fourth, there is a problem of circularity. One of the inputs to the book value growth  
24 methodology is the return on book value. Yet, the whole purpose of this exercise is to  
25 find the return on book value.

26 Finally, there is the structural weakness that the entire calculation is based on one source:  
27 Value Line.

1 For the foregoing reasons, I believe that the book value growth formulation of the DCF  
2 model provides useful information, but I must discount its value as a definitive measure  
3 of required equity return.

4 **3. THE CAPITAL ASSET PRICING MODEL**

5 **Q. PLEASE DESCRIBE THE CAPITAL ASSET PRICING MODEL.**

6 A. The Capital Asset Pricing Model (“CAPM”) employs a measure called “beta,” which  
7 tests the covariance of the stock at issue with that of the overall market to assess the  
8 relative risk of any stock against the market. As conventionally used by rate-of-return  
9 analysts, the beta is assumed to measure the cost of the company’s equity on a continuum  
10 between the average required return of the overall equity market and a risk-free return.

11 The CAPM formula is as follows:

12 
$$k = R_f + \beta(R_m - R_f)$$

13 where

14 k = the prospective market cost of common equity for a specific investment

15  $R_f$  = the “risk-free” rate of return

16  $\beta$  = the company-specific beta

17  $R_m$  = the overall stock market return on stocks for the prospective period

18 **Q. WHAT IS YOUR ASSESSMENT OF THE CAPM?**

19 A. I believe that CAPM has value in assessing the relative risk of different stocks and  
20 portfolios of stocks. It can therefore be useful in checking the results of other, more  
21 reliable methods of measuring equity return, such as the DCF procedure. However,  
22 because of the dubious underlying assumption of this approach and because of its  
23 extensive requirement for judgment in selecting each of the inputs, I question its value in  
24 directly estimating a return to equity.

25 **Q. WHAT IS THE DUBIOUS ASSUMPTION OF THE CAPM APPROACH?**

26 A. The CAPM assumes that the relative risk of any company is entirely measured by the  
27 beta, that is, the covariance of the stock’s price fluctuations with those of the market. It  
28 postulates that because investors can avoid all company-specific risks through  
29 diversification, the only risk they face is that created by fluctuations in the overall market.

1 According to this theory, the extensive and exhaustive efforts of market analysts to  
2 evaluate the prospects of each of the companies traded in the stock markets are a waste of  
3 time. Any discussion of NSP's relative business or financial risk is totally beside the  
4 point. The only risk that investors in NSP (or any other company) face is the extent to  
5 which the Company's stock price varies with overall market indices.

6 This assumption is patently absurd. Obviously, investors do take into consideration  
7 company-specific factors, even if they can diversify by holding a portfolio of stocks.  
8 That is why Value Line, Thomson, Bloomberg, Zacks and every major brokerage house  
9 spend extensive resources analyzing the performance of every major company traded on  
10 the exchanges.

11 **Q. WHAT ARE THE JUDGMENTS THAT MUST BE MADE IN APPLYING THE**  
12 **CAPM?**

13 A. The analyst must make judgments in his selection of the three inputs to the CAPM, that  
14 is, the beta, the risk-free rate, and the total market return.

15 **Q. WHAT JUDGMENT IS REQUIRED FOR THE FIRST INPUT,  $\beta$ , OR BETA?**

16 A. As noted, beta measures the degree of covariance of the stock with that of the market  
17 overall. But neither the fluctuations of the stock nor those of the market are constant or  
18 even consistent with each other over any extended period of time. As a result, there are  
19 as many estimates of beta for a given company as there are analysts making the  
20 measurement.

21 **Q. WHAT JUDGMENT IS REQUIRED IN SELECTING THE INPUT  $R_f$ , THE RISK-**  
22 **FREE RATE OF RETURN?**

23 A. There is general consensus that yields to U.S. government securities are risk-free in the  
24 sense that they are free from the risk of default. The difficulty is that there are quite a  
25 number of U.S. government securities of differing maturities that have very different  
26 yields. Most utility-sponsored rate-of-return witnesses assert that because stocks exist in  
27 perpetuity, the yield of long-term government bonds is the appropriate risk-free rate.

1 There are two difficulties with this rationale. The first is that stocks are not held in  
2 perpetuity. To the contrary, the New York Stock Exchange has a turnover rate of about  
3 100 percent annually, suggesting that the average share of stock is held only about a year.  
4 The second difficulty is that long-term bonds are not free from risk. To the contrary, they  
5 carry a substantial risk that inflation will erode their eventual value at maturity. Stocks  
6 do not bear this inflation risk because generally the stock market rises when inflation  
7 rises.

8 **Q. WHAT JUDGMENT IS REQUIRED IN SELECTING THE INPUT  $R_m$ , THE**  
9 **RETURN TO THE OVERALL MARKET?**

10 A. The complexities and uncertainties associated with measuring the return to equity of an  
11 individual company are not reduced when the object of the analysis is expanded to the  
12 entire market for equities. Generally, CAPM analysts use one of two procedures.  
13 Sometimes, they perform simplistic DCF studies of a wide variety of stocks, which raises  
14 the question of whether this method adds any information beyond the straightforward  
15 DCF studies of comparable companies. Alternatively, they use the historical return to  
16 market equities, which assumes, totally unrealistically, that the investors in the equity  
17 markets during the period under study actually realized the return that they were  
18 expecting. This approach tells nothing about future expectations from the market.

19 **Q. HAVE YOU APPLIED THE CAPM TO YOUR COMPARISON GROUP OF**  
20 **ELECTRIC UTILITIES?**

21 A. Yes. My application of the CAPM is found in Schedule 6 of Exhibits CWK-2.

22 **Q. WHAT RISK-FREE RATE HAVE YOU USED IN YOUR CAPM APPLICATION?**

23 A. To be conservative, I have accepted the conventional practice of using the current yield  
24 on 30-year Treasury bonds. The Federal Reserve reports that the current yield on these  
25 bonds is 3.43 percent.<sup>17</sup>

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<sup>17</sup>[Federalreserve.gov/releases/h15](http://Federalreserve.gov/releases/h15)

1 **Q. WHAT MARKET RISK PREMIUM HAVE YOU USED?**

2 I have used two approaches, both of which are conventionally employed by rate of return  
3 analysts. The first is to use historical market returns over a very long period of time. I  
4 have employed the market return calculated by Morningstar for the period 1929-2010, as  
5 found in its 2011 Classic Yearbook, Stocks, Bond, Bills and Inflation, 1926-2010. That  
6 return has been 11.88 percent. The second is to use a simplified DCF calculation using  
7 Value Line's forecast of dividend yields and stock appreciation. Value Line forecasts that  
8 next year's average dividend yield will be 2.1 percent. It predicts that stocks will  
9 appreciate by 45 percent in the next three to five years. Using the four-year midpoint of  
10 this forecast, this translates into a 9.73 percent annual rate of growth. The consequent  
11 market return is 11.83 percent. The average of these two market return estimates is 11.86  
12 percent. The market risk premium is 8.43 percent.

13 **Q. WHAT BETAS DID YOU USE?**

14 A. I used the average beta developed on Schedule 5 of my Exhibits CWK-2. The average of  
15 the Value Line betas for the 16 electric comparison companies is .67.

16 **Q. WHAT CAPM RATE OF RETURN INDICATIONS HAVE YOU FOUND?**

17 A. The CAPM return indications are developed on Schedule 6 of Exhibits CWK-2. The  
18 indication for the electric comparison group is 9.04 percent.

19 **Q. WHAT VALUE DO YOU PLACE ON THESE RESULTS?**

20 A. As I have noted, the CAPM calculation rests on a highly dubious underlying assumption  
21 and on the considerable judgment required in the selection of critical inputs. The results  
22 that I have shown in Schedule 6 can be changed by the use of slightly different inputs for  
23 the overall market return, the beta factor or the risk-free return.

24 For the foregoing reasons, I give very little weight to the CAPM indication.

1 **4. RECENT EQUITY RETURN AWARDS**

2 **Q. WHAT IS THE AVERAGE OF RATE OF RETURN AWARD IN RECENT**  
3 **ELECTRIC RATE CASES?**

4 A. In response to a data request, NSP has supplied a list of equity return awards during  
5 recent years. Schedule 7 lists the awards made since April 1, 2012. The average of these  
6 awards is 10.02 percent.

7 **Q. WHAT VALUE DO YOU PLACE ON THIS INDICATION?**  
8

9 A I am concerned with any analysis that uses the return awards of regulatory commissions  
10 as surrogates for the required return on equity. The problem is the issue of circularity.  
11 To base any return allowance on the decisions of other commissions makes the regulatory  
12 process self-generating. The finding of an equity return justifies the finding of another  
13 equity return. If this process were continued, then the equity returns would soon lose  
14 contact with any objective and independent data. For these reasons, I place a lower value  
15 on these indications than on DCF formulations that are derived independently of the  
16 regulatory process.

17 Moreover, it is overly simplistic to compare rate of return awards among utilities and  
18 commissions. Many rate case decisions contain conditions and caveats that make the  
19 awards more or less generous than the simple percentage values would suggest. For  
20 these reasons, I place a very low value on this indication.

21 **5. FLOTATION COSTS**

22 **Q. WHAT ARE FLOTATION COSTS?**  
23

24 A. Flotation costs are costs associated with issuing, or “floating” new stock. They include  
25 commissions to the underwriter, legal and consulting fees, and administrative costs.  
26 They are conventionally measured as the difference between the gross proceeds from a  
27 stock sale and the net proceeds that the issuing company receives.  
28

1 **Q. WHAT HAVE BEEN NSP'S FLOTATION COSTS?**

2

3 A NSP itself incurs no flotation costs, as it does not sell its stock to the public. NSP's  
4 parent, Xcel Energy has incurred flotation cost in connection with three stock issues. The  
5 top lines of Schedule 8 of Exhibit CWK-2 reproduce the response to a Staff data request  
6 that sought to identify all stock issues in the last 10 years and the associated flotation  
7 costs. It reveals that Xcel Energy incurred flotation costs of approximately \$70.5 million  
8 over the 10-year period.

9

10 **Q. IS XCEL ENERGY ENTITLED TO RECOVER THESE FLOTATION COSTS?**

11

12 A. Yes. Flotation costs should be recovered either as an explicit expense item in the revenue  
13 requirement or as an adder to the rate of return.

14

15 **Q. ASSUMING THAT FLOTATION COSTS ARE RECOVERED AS AN ADDER TO**  
16 **THE RATE OF RETURN, WHAT SHOULD BE THE AMOUNT OF THAT**  
17 **ADDER?**

18

19 A. I recommend recovery of flotation costs over a 10-year period. Assuming a ten-year  
20 recovery, the annual amount to be recovered should be \$70,521,427 divided by 10, or  
21 \$7,052,143. Value Line reports that Xcel has 497 million shares outstanding, and it  
22 estimates the 2013 book value of each of these shares at \$19.20. The book value of Xcel  
23 Energy's common equity was \$9,542.4 million. The annual recovery of flotation costs  
24 comes to 0.07 percent of Xcel Energy's equity capital. This calculation suggests that an  
25 adder of seven basis points to the rate of return would permit Xcel to recover its stock  
26 flotation costs over a ten-year period. These calculations are shown at the bottom of  
27 Schedule 8 of Exhibit CWK-2.

28 **6. EQUITY RETURN OF NSP**

29 **Q. HOW WILL YOU IDENTIFY NSP'S RETURN ON EQUITY?**

1 A. I have applied five tests to derive indications of the required equity return of the electric  
2 utility comparison group. I have provided an assessment of the value of each of these  
3 tests. I place most reliance in the constant growth DCF approach. I place somewhat less  
4 reliance on the 3-step DCF and even less reliance on the sustainable book value growth  
5 model. I have a very low opinion of the CAPM. Finally, I believe it is undesirable to  
6 rely too heavily on recent equity return awards.

7 In Schedule 9 of Exhibit CWK-2, I have presented the results of each of these tests. They  
8 are shown in column A. In column B, I assign weightings to these tests consistent with  
9 the foregoing analysis of their relative values in indicating a rate of return. Column C  
10 shows the result of multiplying the result of each of the five tests by its weighting.  
11 Column D presents the composite, weighted return. For the electric comparison group  
12 the weighted indication is 8.85 percent. When I add the seven basis points for Xcel  
13 Energy's flotation costs, the indication becomes 8.93 percent.

14 **Q. WHAT IS YOUR FINAL RECOMMENDATION AS TO THE EQUITY RETURN**  
15 **THAT SHOULD BE AUTHORIZED TO NSP?**

16 A. In light of the fact that interest rates have been inching up during the last few weeks, I  
17 believe it appropriate to allow some leeway about the indication that results from my  
18 analysis. I therefore recommend that the return on NSP's equity investment be set at **9.0**  
19 **percent.**

20 **V. TESTIMONY OF ANN E. BULKLEY**

21 **Q. NSP WITNESS ANN E. BULKLEY RECOMMENDS A RETURN ON EQUITY**  
22 **OF 10.6 PERCENT. WHAT ACCOUNTS FOR THE VERY LARGE**  
23 **DIFFERENCE BETWEEN HER RECOMMENDATION AND YOURS?**

24 A. The following factors account for the difference between my 9.0 percent recommendation  
25 and her 10.6 percent proposal:

26 • The selection of comparison companies,

- 1 • The calculation of the dividend yield,
- 2 • The forecast in the three-stage DCF formulation,
- 3 • The flotation cost calculation,
- 4 • The selection of the risk-free rate in the CAPM, and
- 5 • Ms Bulkley’s use of a bond yield plus risk premium model,
- 6 • My use of the sustainable growth model, and
- 7 • The weighting of the various ROE tests.

8 **Q. HOW DOES YOUR SELECTION OF COMPARISON COMPANIES DIFFER**  
9 **FROM THAT OF MS. BULKLEY?**

10 A. While there are number of small differences between my selection criteria and those of  
11 Ms. Bulkley, the principal difference is I used revenue as the test of the intensity of utility  
12 orientation, while Ms. Bulkley uses income. I use revenues because they reflect the  
13 overall intensity of a company’s activity in regulated operations versus non-regulated  
14 operations. On the other hand, screening by proportion of regulated income—or net  
15 receipts—as Ms. Bulkley has done, compares companies by the relative profitability of  
16 the regulated versus unregulated operations. Ms. Bulkley’s income criterion allows  
17 companies to be included as “comparable” to NSP when they have large but relatively  
18 unprofitable non-utility operations.

19 A good example is the Otter Tail Corporation. In 2012, Otter Tail had revenues of \$859  
20 million, of which only \$351 million, or about 40 percent, related to electric operations,  
21 and not all of those were regulated. The remaining revenues were derived from  
22 manufacturing, construction and plastics. Yet because Otter Tail’s electric operations  
23 were profitable, generating \$44 million in income, and the remaining operations were  
24 unprofitable, incurring a net loss of \$3 million,<sup>18</sup> Ms. Bulkley concluded that the

---

<sup>18</sup> Otter Tail Corporation, 2012 Annual Report 10-K to the SEC, page 82.

1 company is comparable to NSP. Clearly, Otter Tail, a conglomerate, is not remotely  
2 comparable to NSP, a fully regulated utility. More importantly, it is much riskier than  
3 NSP, with the result that its DCF indications are as high as 29.87 percent.<sup>19</sup>

4 **Q. HOW DOES YOUR CALCULATION OF DIVIDEND YIELD DIFFER FROM**  
5 **THAT OF MS. BULKLEY?**

6 A. Ms. Bulkley uses stock price averages over three periods, 30 days, 90 days and 180 days,  
7 while I use averages only over 60 days. As can be seen from comparing pages 1, 2, and  
8 3 of her Schedule 3, there is relatively little difference in the results using these three  
9 time periods. What matters more is her assumption that next year's dividend will be this  
10 year's dividend times one-half the analysts' estimates of long-term growth. I, on the  
11 other hand, used Value Line's forecast of next year's dividend. In some cases, this  
12 difference in methodology may not matter, but in others it does.

13 For example, Value Line forecasts that Empire District Electric will not increase its  
14 dividend next year. That is because as of 2010, Empire District had not increased its  
15 annual dividend of \$1.28 in at least 13 years. In 2011, it skipped two quarterly dividends  
16 and then in 2012, it issued a \$1.00 dividend. In light of this history, Value Line predicts  
17 that the Empire District will not increase its dividend. Ms. Bulkley, on the other hand,  
18 believes that the dividend will increase by 4.05 percent.<sup>20</sup>

19 **Q. HOW DOES YOUR THREE-STAGE DCF FORMULATION DIFFER FROM**  
20 **THAT OF MS. BULKLEY?**

21 A. My three-stage DCF formulation differs from Ms. Bulkley's in two respects. First, I used  
22 Value Line's five-year dividend growth, rather than its earnings per share growth for the  
23 first, near-term growth rate. Second, I used long-term forecasts of nominal GDP growth  
24 from the Social Security Administration ("SSA") and the Congressional Budget Office  
25 ("CBO") in lieu of Ms. Bulkley's use of the 1929-2011 historical average real GDP

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<sup>19</sup> Exhibit (AEB-1), Schedule 3

<sup>20</sup> One half the 8.1 percent in column 8 in Schedule 3 of Ms. Bulkley's exhibit.

1 growth combined with forecasts of future inflation from Blue Chip and the Energy  
2 Information Administration.

3 The DCF model is based on dividend growth, and so it is appropriate to use a forecast of  
4 dividend growth at least in the near term. As for long-term growth, I chose to rely on the  
5 SSA and CBO, both of which have very sophisticated models for predicting long-term  
6 economic trends. They forecast that real GDP will not grow as fast as it has over the past  
7 82 years.

8 **Q. HOW DOES YOUR FLOTATION COST ADJUSTMENT DIFFER FROM THAT**  
9 **OF MS. BULKLEY?**

10 A. I have quantified the flotation costs that Xcel Energy has incurred since it was formed in  
11 2003 and have proposed to amortize those costs over ten years by means of a seven basis  
12 point (0.07%) adder to the allowed ROE. Ms. Bulkley has calculated the average  
13 percent of flotation costs relative to the amount of stock sold for all stock issuances  
14 of Xcel Energy and NSP back to 1949. She has applied this percentage to the  
15 dividend yields of her proxy companies and has derived a differential of 25 basis points  
16 (0.25%) between the adjusted and unadjusted DCF results. She inflates all of her DCF  
17 results by this 25 basis point adder.

18 Ms. Bulkley's approach implicitly assumes that flotation costs are incurred each year,  
19 every year into perpetuity. That is not the case. Flotation costs are incurred once, and  
20 they should be recovered only once. Ms. Bulkley's 25 basis point adder translates into an  
21 annual recovery of \$2.39 million if applied to all of Xcel's equity capital. In one year,  
22 Xcel would recover about a third of all the flotation costs it has incurred since its  
23 creation. Over several years, Ms. Bulkley's allowance would result in a gross over-  
24 recovery of flotation costs.

25 **Q. HOW DOES YOUR SELECTION OF THE RISK-FREE RATE IN THE CAPM**  
26 **DIFFER FROM THAT OF MS. BULKLEY?**

27 A. We both have used the yield on 30-year Treasury bonds as our CAPM risk-free rate. I  
28 used the current yield, but Ms. Bulkley has supplemented the current yield with forecasts

1 of yields through 2014 and for the period 2014 through 2018. A 2014 forecast is  
2 arguably reliable, but a forecast out to 2018 is intrinsically speculative. More to the  
3 point, we are not attempting to measure the ROE requirements in 2018, or even 2014.  
4 We are concerned with investors' requirements now and in the next year. This  
5 consideration is particularly relevant, now that NSP has made a habit of applying for rate  
6 increases annually. We will likely be analyzing NSP equity capital cost again in 2014.

7 **Q. WHY HAVE YOU NOT APPLIED A BOND YIELD RISK PREMIUM**  
8 **ANALYSIS, AS MS. BULKLEY HAS DONE?**

9 A. Risk premium analysis proceeds from the proposition that because payments to bond  
10 holders precede dividends to stockholders, bonds are inherently less risky than stocks and  
11 their required return is correspondingly less. Risk premium models attempt to measure  
12 the spread between the required returns to debt and to equity investments.

13 There is no generally accepted procedure for conducting risk premium analyses. I have  
14 participated in dozens of rate of return proceedings, and I have hardly ever seen the same  
15 risk premium analysis twice. Quite often they are omitted altogether. That is because of  
16 the inherent circularity of the approach: it requires knowledge of the required return to  
17 stocks in order to estimate the required return to stocks.

18 In her Schedule 8, Ms. Bulkley offers a risk premium analysis that is based on the  
19 relationship between 30-year Treasury bond yields and the equity returns awarded to  
20 electric utilities by regulatory agencies. She has performed a regression of return awards  
21 against bond yields which shows that, as the yields decline, the spread between them and  
22 equity returns awarded increases. She has applied the results of this regression to current  
23 and projected utility bond yields to derive equity return indications of 10.00 to 10.86  
24 percent depending on the Treasury rate used.<sup>21</sup>

25 As mentioned, the objection to most risk premium analyses is that they require a  
26 knowledge of the return to equity in order to derive a return to equity. Ms. Bulkley's  
27 analysis is no exception. Her regression purports to predict the rate of return award that

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<sup>21</sup> Exhibit\_\_\_(AEG-1) Schedule 8

1 would accompany the current yield on 30-year Treasury bonds. A much more  
2 straightforward approach is simply to identify what rate of return awards that are  
3 currently being made by regulatory commission -- exactly what I have done on Schedule  
4 7. That Ms. Bulkley's regression yields a result (10.00 percent) that very closely matches  
5 the average I have found (10.02 percent) is a tribute to the accuracy of her study. But it  
6 adds nothing to our knowledge of equity returns beyond what I have already presented.  
7 For this reason, I have not included Ms. Bulkley's result in my buildup of equity return  
8 indications.

9 I should acknowledge that Ms. Bulkley does not adopt the 10.00 percent indication for  
10 the current Treasury bond yield. Rather, she finds a return indication of 10.33 percent by  
11 averaging forecasts of bond yields out to 2017. Her use of forecast interest rates is  
12 inappropriate. Once more, we are not attempting to find the equity return required in  
13 2017, or any year before that other than 2013. The object of this exercise is to find the  
14 current required return, not the return required in some future year.

15 **Q. WHY HAVE YOU USED THE SUSTAINABLE GROWTH DCF APPROACH?**

16 A. The sustainable growth  $(b*r)+(s*v)$  formulation is one of the standard DCF tests. While I  
17 have admitted its practical and implementation weaknesses, its conceptual foundation is  
18 unassailable. The growth of the dividend of the stock of a utility that is subject to rate  
19 base/rate of return regulation is necessarily constrained by the growth in the book value  
20 per share. The only way that book value can grow is through retained earnings and the  
21 sale of stock at greater than book value. That is the principle behind the sustainable  
22 growth formulation.

23 **Q. HOW DO YOU AND MS. BULKLEY DIFFER WITH RESPECT TO THE**  
24 **WEIGHTING OF THE RESPECTIVE ROE TEST RESULTS?**

25 A Ms. Bulkley effectively gives equal weight to each of her four tests. I, on the other hand,  
26 have weighted my five tests according to their conceptual and computational validity. As  
27 shown in Schedule 9 of my Exhibit CWK-2, I have put the greatest weight on the  
28 constant growth DCF formulation, slightly less on the three-stage DCF application, less

1 still on the sustainable growth approach. I have diluted the impact of the CAPM in  
2 recognition of its much conceptual and implementational weakness. And I have  
3 discounted the indications of recent ROE awards so as to limit possible circularity within  
4 the regulatory system. I believe that my weighting gives a better perspective on the  
5 various ROE tests than does a blind averaging of their results.

6 **Q. DOES THIS COMPLETE YOUR PREPARED DIRECT TESTIMONY?**

7 **A.** Yes. It does.