

Exhibit No.: _____

DIRECT TESTIMONY
OF
CHARLES W. KING

Submitted on Behalf of
The Staff of the Public Service Commission of the
State of North Dakota

NORTHERN STATES POWER COMPANY d/b/a XCEL ENERGY
Case No. PU-06-525

May 1, 2007

Witness: Charles W. King
Type of Exhibit: Direct Testimony
Sponsoring Party: PSC Staff
Case No.: PU-06-525
Date Testimony Prepared: May 1, 2007

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**DIRECT TESTIMONY OF
CHARLES W. KING**

INTRODUCTION

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

A. My name is Charles W. King. I am President of the economic consulting firm of Snavelly King Majoros O'Connor & Lee, Inc. ("Snavelly King"). My business address is 1111 14th Street, N.W., Suite 300, Washington, D.C. 20005.

Q. PLEASE DESCRIBE SNAVELLY KING.

A. Snavelly King, formerly Snavelly, King & Associates, Inc., was founded by the late Carl M. Snavelly and myself 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 12 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 37-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.

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

3
4 A. Yes. Attachment B is a tabulation of my appearances as an expert witness before state
5 and federal regulatory agencies.

6
7 **Q. FOR WHOM ARE YOU APPEARING IN THIS PROCEEDING?**

8
9 A. I am appearing on behalf of the Staff of the Public Service Commission of North Dakota.

10
11 **Q. WHAT IS THE OBJECTIVE OF YOUR TESTIMONY?**

12
13 A. My testimony addresses the application for increased gas distribution rates that has been
14 filed by the Northern States Power Company d/b/a Xcel Energy. To avoid confusion
15 with its parent company, Xcel Energy Inc., I will refer to the applicant as “NSP” or “the
16 Company,” and I will refer to the parent company as “Xcel Energy.”

17
18 This testimony has two objectives. The first is to recommend the appropriate rate of
19 return on NSP’s gas distribution rate base. The second is offer recommendations with
20 respect to any cost allocation issues that arise in this case.

21
22 **SUMMARY**

23
24 **Q. WHAT HAVE YOU CONCLUDED WITH RESPECT TO NSP’S COST OF**
25 **CAPITAL?**

26
27 A. Based on the analyses presented in this testimony, I find that the appropriate after-tax
28 return to the NSP’s gas utility rate base is **8.08 percent**. This recommendation reflects

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1 the application of a **9.56 percent** return on NSP's equity capital applied to the December
2 31, 2006 capital structure of NSP's parent, Xcel Energy.

3
4 **Q. DO YOU HAVE A SCHEDULE THAT DISPLAYS THE DEVELOPMENT OF**
5 **THIS RECOMMENDED RATE OF RETURN?**

6
7 A. Yes. Schedule 1 of Exhibit____(CWK-1) presents the calculation of my recommended
8 rate of return. Columns B and C show Xcel Energy's capital structure as of December
9 31, 2006 as presented in its SEC form 10-K. Column C shows the Company's forecast
10 2007 cost rates for the debt and preferred stock components of the capital structure, plus
11 the 9.56 percent cost of equity capital that I develop in this testimony. The bottom line of
12 Column C shows the 8.08 percent overall post-tax return to capital for NSP's gas rate
13 base.

14
15 **Q. WHAT ARE YOUR RECOMMENDATIONS WITH RESPECT TO COST**
16 **ALLOCATION?**

17
18 A. I recommend that the Commission reject NSP's unilateral change in the procedure by
19 which it allocates the common costs of gas and electric service. Reversal of that change
20 reduces the Company's gas-related expenses by \$363,182.

21
22 **RATE OF RETURN**

23
24 **Q. HOW WILL YOU STRUCTURE YOUR ANALYSIS OF NSP'S RATE OF**
25 **RETURN?**

26
27 A. I will first address the appropriate capital structure to be used in calculating NSP's rate of
28 return. I will then consider the cost of its debt and the preferred stock that should be

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1 incorporated into that capital structure. I will next address the most complex and difficult
2 issue, which is identifying the cost of NSP's equity capital, and will consider the
3 appropriate recovery of stock flotation costs. I will then discuss the testimony of NSP's
4 rate-of-return witness, Karl McDermott, and the ways his analysis differs from mine.
5 Finally, I will combine the components of capital and their respective cost rates to derive
6 the appropriate rate of return to be applied to NSP's rate base,
7

8 **CAPITAL STRUCTURE**

9 10 **Q. WHAT IS MEANT BY "CAPITAL STRUCTURE?"**

11
12 A. Capital structure refers to the mix of the various forms of investor-supplied capital: long-
13 term debt, short-term debt, preferred stock and common equity.
14

15 **Q. WHAT IS THE RELEVANCE OF CAPITAL STRUCTURE TO THE OVERALL** 16 **RATE OF RETURN?**

17
18 A Capital structure is highly relevant to the overall rate of return because the cost of the
19 respective forms of capital varies considerably. In general, debt capital is much less
20 costly than equity capital, not only because it requires a lower return, but because it is
21 tax-deductible. Equity capital is more costly because it bears more risk. Since the return
22 to equity – dividends and retained earnings – are not tax deductible, equity capital also
23 affects ratemaking by requiring a gross-up for income taxes.
24

25 Standing alone, these considerations would suggest that debt capital is always preferable
26 to equity, but debt has limits. As the proportion of debt increases, the financial risk that
27 the Company might not be able to honor its debt obligations increases. At some point,
28 that risk overwhelms the benefit of lower debt costs, and the capital structure becomes

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1 too “leveraged,” that is, it has too much debt for the earnings to sustain. In theory, there
2 is an ideal mix of debt and equity that minimizes the composite cost of capital. Finding
3 that ideal is a major challenge to most companies, and particularly to companies in
4 capital-intensive industries such as gas utilities.

5
6 **Q. WHAT IS NSP’S CAPITAL STRUCTURE?**

7
8 A. Column A of Schedule 2 of the exhibit to this testimony presents the budgeted 2007
9 capital structure of NSP as presented on Schedule 8, page 5, of the exhibit to the
10 testimony of NSP witness Jeffrey Robinson.

11
12 **Q. IS THIS THE APPROPRIATE CAPITAL STRUCTURE TO USE IN**
13 **CALCULATING THE COST OF NSP’S CAPITAL DEVOTED TO UTILITY**
14 **SERVICE?**

15
16 A. No. This capital structure reflects the implicit assumption that the equity component
17 represents funds that were either raised on the stock market or were reinvested by the
18 Company’s existing shareholders. That assumption is incorrect in at least two specific
19 cases.

20
21 The first case concerns the preferred stock that shows up on Xcel Energy’s balance sheet
22 but not on NSP’s. That preferred stock was sold by the former Northern States Power
23 Company prior to the merger that formed Xcel Energy. That preferred stock, however,
24 was not transferred to the new NSP, which is an operating company formed at the time of
25 the merger. Rather, it remained outstanding in the name of Xcel Energy Inc., the parent
26 company, because Xcel Energy is the successor to the old NSP, which had been an
27 operating company. Since this stock funded the facilities and equipment now in NSP’s
28 rate base, it should be attributed to NSP.

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1
2 The second case where NSP's "equity" funding is not in fact equity concerns a debt issue
3 by NSP's parent, Xcel Energy, in December 2000. That issue, in the amount of \$600
4 million, was used partly to raise funds that were subsequently infused into NSP as equity
5 capital. The prospectus indicates that this infusion amounted to \$200 million.

6
7 **Q. CAN YOU ADJUST FOR THESE NON-EQUITY COMPONENTS OF NSP'S**
8 **EQUITY?**

9
10 A. Yes. Column B Schedule 2 of my exhibit adjusts for the fact that \$104,980,000 of NSP's
11 common equity is in fact preferred stock that had been sold prior to the merger that
12 formed the present Xcel Energy. Column C of that schedule adjusts for the \$200 million
13 that was raised through a parent debt issue and then infused into NSP as equity capital.
14 Columns D and E show the adjusted capital structure. The equity proportion is 45.68
15 percent, which compares with the Company's claimed equity proportion of 51.95 percent.

16
17 **Q. IS THERE AN ALTERNATIVE CAPITAL STRUCTURE THAT COULD BE**
18 **USED TO COMPUTE NSP'S RETURN ON RATE BASE?**

19
20 A. Yes. The alternative is to use the capital structure of NSP's parent company, Xcel
21 Energy. That capital structure is presented in the bottom register in Schedule 2 of my
22 exhibit. The data in that register were taken from Xcel Energy's year-end 2006 Form 10-
23 K filed with the Securities and Exchange Commission ("SEC").

24
25 **Q. CAN YOU CITE ANY REGULATORY PRECEDENT FOR THESE "DOUBLE**
26 **LEVERAGE" ADJUSTMENTS?**

27

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1 A. Yes. There is extensive precedent for double leverage adjustments in telephone company
2 regulation. Most telephone operating companies have debt in their own name. Their
3 parent companies, such as AT&T (prior to 1984), General Telephone, Continental
4 Telephone, United Telephone, also issued debt in their name. The parent company debt
5 provided funds that were then invested as “equity” capital into the operating companies.
6 The FCC¹ and most state commissions² recognized that these “equity” infusions were not
7 equity at all, but debt capital taken out by the parent company. Accordingly, they made
8 double leverage adjustments very similar to the adjustment I am proposing for NSP.

9
10 In a recent case involving the Nevada Power Company, the Nevada P.S.C. approved a
11 double-leverage adjustment under conditions almost identical to Xcel Energy’s \$200
12 million debt-to-equity infusion just discussed. Sierra Pacific, Nevada Power’s parent
13 company, had sold bonds and had used the proceeds to infuse \$100 million into the
14 subsidiary as equity. The Nevada Commission found that the equity was in fact debt
15 funding, and approved the attribution of the \$100 million as debt in Nevada Power’s
16 capital structure.³

17
18 **Q. WHAT ARE THE MERITS OF USING NSP’S ADJUSTED CAPITAL**
19 **STRUCTURE RELATIVE TO THAT OF XCEL ENERGY?**

20
21 A. The advantage of using NSP’s capital structure is that it reflects the specific capital
22 investment that has been used to purchase the plant and equipment that NSP uses to

¹ 86 F.C.C.2d 221 (1981), aff’d *United States v. FCC*, 707 F.2d 610 (D.C. Cir 1983).

² See, for example, Alabama Sup.Ct, *Continental Teleph. Co. of the South-Alabama v. Alabama PSC*, 427 So.2d 981 (1982); rehearing denied Feb. 11, 1983; New Mexico Sup.Ct., *General Telephone Co. of the Southwest v. New Mexico State Corp. Commission* (1982) 98 NM 749, 652 P2d 1200; Texas Ct.App. *General Telephone Co. of the Southwest v. Texas Public Utility Commission* (1982) 928 SW2d 832, rehearing denied March 3, 1982; Arkansas PSC, *Re. General Telephone Co. of the Southwest*, Docket No. 85-127-U, Order No. 10, March 11, 1986; Connecticut DPUC *Re Southern New England Telephone Co.* 71 PUR4th 446 (1895).

³ Nevada P.S.C. Docket Nos. 03-10001 and 03-10002, Order dated March 24, 2004, page 5.

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1 provide gas and electric service in Minnesota and North Dakota. Against that
2 consideration are the following points in favor of using Xcel Energy's capital structure:

- 3
- 4 ▪ The two double-leverage adjustments may not be reflect the entirety of funds raised
5 through Xcel Energy's bond issues and infused as equity into NSP, the subsidiary. If
6 there are further such infusions, then NSP's equity proportion is overstated.
 - 7
 - 8 ▪ The capital structure recommended by NSP does not reflect actual, known and certain
9 numbers. Rather, it is NSP's budgeted 2007 capital structure that, for a variety of
10 reasons, may not develop in actuality.
 - 11
 - 12 ▪ Xcel Energy's consolidated capital structure represents the mix of debt and equity
13 that is ultimately presented to the investing public, and specifically equity investors.
14 No investor can buy NSP stock, so that NSP's debt/equity mix is largely irrelevant in
15 the stock market.
 - 16
 - 17 ▪ The principal reason for using the subsidiary's capital structure in lieu of the parent's
18 is that the parent often engages in unrelated and unregulated activities, resulting in a
19 parent risk structure that differs from the subsidiary. That reason does not apply to
20 Xcel Energy. Over 99 percent of its revenues are derived from regulated gas and
21 electric utility activities.
 - 22
 - 23 ▪ The use of double-leverage adjustments is controversial. Use of the parent's capital
24 structure avoids that controversy.
 - 25

26 **Q. WHAT CAPITAL STRUCTURE DO YOU RECOMMEND?**

27

28 A. For the reasons just noted, I recommend use of Xcel Energy's capital structure in
29 developing the return to be applied to NSP's rate base.

30

31 **Q. HOW CAN YOU DETERMINE WHETHER XCEL ENERGY'S CAPITAL**
32 **STRUCTURE IS REASONABLE?**

33

34 A. The appropriate capital structure is a mix of debt and equity that would be employed by
35 prudent management in a company devoted exclusively regulated utility service.

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1 **Q. HAVE YOU PERFORMED ANY ANALYSES TO CONFIRM THAT XCEL**
2 **ENERGY'S CAPITAL STRUCTURE IS CONSISTENT WITH THAT OF WELL-**
3 **MANAGED UTILITIES?**

4
5 A. Yes. I have compared Xcel Energy's capital structure to the capital structures of a
6 comparison group of gas utility companies.

7
8 **Q. HOW DID YOU SELECT YOUR COMPARISON GROUP OF GAS UTILITIES?**

9
10 A. I began with the list of 18 gas distribution companies listed by Value Line in its
11 investment survey of 1,700 companies of all industries. To this list I added Xcel Energy
12 and three other companies that have substantial gas distribution operations: SCANA
13 Corp., Sempra Energy and Vectren Corp. I then discarded four companies, People's
14 Energy, which has merged with another company, and Cascade Natural Gas, Energen
15 Corp., and Keyspan Corp., all of which are currently engaged in mergers.

16
17 I then examined the proportion of revenue of each of the remaining 18 companies that is
18 non-regulated relative to that which is subject to regulation. That examination is
19 summarized on Schedule 3 of my exhibit. The schedule shows that Xcel Energy derives
20 virtually all of its revenue from regulated services, both electric and gas. I then
21 established a threshold of 50 percent regulated utility revenue as a basis for inclusion in
22 the comparison group to be used in this analysis. This threshold eliminated three
23 companies, Energen, New Jersey Resources, and UGI. The remaining 14 companies
24 constitute a group that I believe can be considered reasonably comparable to Xcel
25 Energy.

26
27 **Q. WHY DID YOU ESTABLISH A CRITERION OF 50 PERCENT REGULATED**
28 **REVENUE IN SELECTING YOUR COMPARISON GROUP?**

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1
2 A. It is necessary to confine the comparison groups to heavily regulated companies because
3 only such regulated companies set their prices in the same manner as Xcel Energy. The
4 prices of unregulated companies are established by the market, or more specifically by
5 the prices that competitors charge. By contrast, the prices charged by regulated utilities
6 are determined by regulation. Those regulated prices are based on the cost of service,
7 which includes operating expenses and an allowed return on net invested capital. That
8 net invested capital is measured by book value, that is, the original cost of the assets used
9 to provide utility service. No other category of business uses this price-setting
10 mechanism.

11
12 It is this orientation to book investment value that sets regulated utilities apart from all
13 other companies. For competitive companies, the book value of assets (plant, working
14 capital) or liabilities (debt and equity) has little relevance. For regulated utilities, book
15 value has great relevance for the simple reason that regulation makes it so. The prices
16 that regulated utilities can charge are constrained by the record of past investments on the
17 companies' books. Only such regulated companies can be compared to NSP, a totally
18 regulated enterprise. That is why I have limited my comparison groups to companies that
19 are subject to rate base/rate-of-return regulation.

20
21 **Q. RETURNING TO THE ISSUE OF CAPITAL STRUCTURE, HAVE YOU**
22 **COMPARED THE CAPITAL STRUCTURE OF XCEL ENERGY WITH THE**
23 **CAPITAL STRUCTURES OF COMPARABLE UTILITY COMPANIES?**

24
25 A. Yes. The capital structures of gas comparison companies are presented on Schedule 4
26 of my exhibit. That schedule reveals that the gas comparison group has an average equity
27 percentage of 50.1 percent, while Xcel Energy's equity percentage is 45.8 percent. This

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1 percentage does not match that presented in Schedule 2 because I have not included
2 short-term debt in Schedule 4.
3

4 **Q. WHAT DO YOU CONCLUDE FROM THIS COMPARISON OF CAPITAL**
5 **STRUCTURES?**
6

7 A. Xcel Energy's equity ratio is about four percentage points lower than that of the overall
8 comparison group, suggesting a slightly greater level of financial risk. This financial
9 risk, however, is offset by what is probably a lower business risk owing to the fact that
10 Xcel Energy has virtually no unregulated activities, while many of the comparison
11 companies have substantial unregulated operations.
12

13 Based on this comparison, I believe that Xcel Energy's capital structure is similar to the
14 average capital structures of the comparison group companies, adjusted for differences in
15 business risk.
16

17 **COST OF DEBT AND PREFERRED STOCK**
18

19 **Q. WHAT COSTS HAVE YOU ASSIGNED TO THE DEBT AND PREFERRED**
20 **STOCK COMPONENTS OF NSP'S CAPITAL STRUCTURE?**
21

22 A. I have adopted the forecast 2007 debt cost rates shown in Schedule 8 of
23 Exhibit____(JCR-1), attached to the Direct Testimony of NSP witness Jeffrey C.
24 Robinson. NSP has provided me with the cost of the Xcel Energy's preferred stock.
25
26
27

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1 **STANDARDS FOR FINDING EQUITY CAPITAL COST**

2
3 **Q. WHAT IS THE BASIS FOR FINDING A RATE OF RETURN TO NSP'S**
4 **COMMON EQUITY SHAREHOLDERS?**

5
6 A. In its *Hope Natural Gas* decision, the United States Supreme Court established the
7 following standards for the return to equity that must be allowed a regulated public utility:

8 ..the return to the equity owner should be commensurate with the
9 returns on investments in other enterprises having corresponding
10 risks. That return, moreover, should be sufficient to assure
11 confidence in the financial integrity of the enterprise, so as to
12 maintain its credit and to attract capital.⁴

13
14 It can be seen from this excerpt that there are essentially three standards for determining
15 an appropriate return to equity. The first is the "comparable earnings" standard, i.e., that
16 the earnings must be "commensurate with the returns on investments in other enterprises
17 having corresponding risks." The second is that earnings must be sufficient to assure
18 "confidence in the financial integrity of the enterprise," and the third is that they must
19 allow the utility to attract capital.

20
21 **Q. HOW CAN THE COMPARABLE EARNINGS STANDARD BE APPLIED IN**
22 **ESTIMATING THE RATE OF RETURN TO EQUITY CAPITAL?**

23
24 A. There is a certain circularity to the comparable earnings standard because the competitive
25 nature of the capital markets virtually ensures that the returns to all enterprises having
26 corresponding risks are comparable with each other. Investors establish the price of each
27 traded stock based on that stock's present and prospective earnings in comparison with the
28 present and prospective earnings of all other stocks and other investments available to

⁴ Id. at 603

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1 them. If the earnings of a firm are depressed or highly uncertain, then investors will pay
2 only a low price for that firm's stock. As a result, the return on the market value of that
3 stock will be comparable to the return on the market value of the stock of other companies
4 that are highly profitable but which, as a consequence of their profitability, have been bid
5 up to a very high price. Thus, if "return" is defined as the earnings of an equity investment
6 relative to its current market price, then the comparable earnings test becomes a cipher.
7 All returns are comparable with all other returns.

8
9 In public utility regulation the conventional procedure for resolving this circularity is to
10 identify the required equity return based on the market value of a utility's stock. That
11 return is combined with the cost of debt and preferred stock, using either the actual or a
12 hypothetical minimum-cost capital structure. The blended return to total capital is then
13 applied to a rate base reflective of the book value of the utility's investment. The book
14 value is the accountant's quantification of the original cost of the utility's assets adjusted
15 for ratepayer contributions such as deposits and deferred taxes. Under this procedure, the
16 market price of a stock is used only to determine the return that investors expect from that
17 stock. That expectation is then applied to the book value of the utility's investment to
18 identify the level of earnings that regulation will allow the utility's common shareholders
19 to recover. As noted earlier, this procedure is peculiar to regulated public utilities.

20
21 **Q. HOW CAN THE FINANCIAL INTEGRITY AND CAPITAL ATTRACTION**
22 **STANDARDS BE APPLIED IN ESTIMATING THE RATE OF RETURN TO**
23 **EQUITY CAPITAL?**

24
25 **A.** If a utility can earn a return on its investment comparable to that required by enterprises of
26 comparable risk, then it should have no difficulty in maintaining financial integrity or
27 attracting capital. Investors would have no reason to shun such a utility in favor of other
28 investment opportunities. Thus, if the comparable earnings test is met, then the financial
29 integrity and capital attraction standards are met as well.

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

A. I shall use the list of 15 comparison gas companies in Schedule 4 of my exhibit. All of these companies derive at least 50 percent of their revenue from regulated utility service.

Q. HOW WILL YOU IDENTIFY THE MARKET-DETERMINED RATE OF RETURN TO THE EQUITY CAPITAL OF THESE COMPARISON GROUP COMPANIES?

A. In developing the equity returns for the comparison groups, I shall first apply the Discounted Cash Flow ("DCF") procedure. I consider the DCF procedure to be the most credible test of a market return. I shall present two versions of this test. The first, which I describe as the “classic” DCF, employs the forecasts of investment analysts in estimating the growth component of the DCF formula. The other DCF procedure identifies growth in book value that can be sustained based on forecast rates of earnings retention and future stock sales. I will then apply the Capital Asset Pricing Model (“CAPM”) as a check on the DCF returns. Finally, I will examine the rate of return awards that regulatory commissions have granted to gas distribution companies during the last two years.

DISCOUNTED CASH FLOW PROCEDURE

Q. PLEASE DESCRIBE THE DISCOUNTED CASH FLOW PROCEDURE.

A. The basic premise of the Discounted Cash Flow (“ DCF”) procedure is that the market price of each stock is equal to the discounted present value of all expected future flows of cash to the investor. The discount rate that equates those future cash flows with the market value of the stock is the investor’s required rate of return.

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1
2 The DCF approach is usually represented by the following formula:
3

$$4 \quad k = \frac{d}{p} + g$$

5
6 where k = required rate of return
7 d = dividend in the immediate period
8 p = market price
9 g = expected growth rate in dividends

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

21
22 **Q. DON'T MOST INVESTORS REGARD CAPITAL APPRECIATION AS A**
23 **PORTION OF THEIR EXPECTED RETURN?**

24
25 A. Yes. The expectation of capital appreciation is captured in the "g" or growth portion of
26 the DCF formula. If dividends grow, then it follows that the market price of the stock will
27 grow as well. It is this growth that most equity investors seek, at least in part, in
28 purchasing shares in a traded company.

29
30 **Q. HOW DO YOU IDENTIFY THE FIRST TERM, "d/p," FOR PURPOSES OF THE**
31 **APPLYING DCF PROCEDURE?**

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1 A. The “d” is the dividend in the next period, that is, the next year. There is a somewhat
2 mechanical procedure for predicting this value which applies a factor of .5 to the “g” or
3 growth factor, on the assumption that dividends will increase in lock step with earnings
4 growth. Alternatively, there are analysts’ predictions of next year’s dividends that
5 presumably reflect a fairly close scrutiny of the companies’ cash flow requirements and
6 their stated desire (or lack thereof) to increase dividends to their stockholders. Because
7 the latter procedure takes into account company-specific considerations, I believe it is
8 more appropriate. For this purpose, I have used *Value Line*’s forecast of dividends. For
9 the “next period,” I have assumed that the investment horizon at this point is the last three
10 quarters of 2007 and the first quarter of 2008, and so I have weighted *Value Line*’s
11 forecasts of 2007 and 2008 dividends on a .75/.25 basis.

12
13 The “p” or price denominator of the dividend yield fraction requires the exercise of some
14 judgment. Given the volatility of the stock market, it is inappropriate to use any one
15 day’s price, but it is also necessary to reflect the market’s current perception of each
16 stock’s value. For purposes of this analysis, I have used the average of prices for the
17 most recent 60 calendar days preceding April 12, 2007 as reported by Yahoo finance.

18
19 Columns A through E of Schedule 5 of my exhibit develop the dividend yields of each of
20 the gas comparison group companies. The schedule shows that the average dividend
21 yield of the comparison group is 3.53 percent.

22
23 **Q. IS THERE A CONVENTIONAL PROCEDURE FOR CALCULATING THE “g”**
24 **GROWTH COMPONENT OF THE DCF FORMULATION?**

25
26 A. Yes. There is a conventional procedure for calculating equity return under the DCF
27 formula that is often referred to as the “classic” DCF calculation. The Federal
28 Communications Commission (“FCC”) adopted this method in 1986 and concluded that

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1 it should be given the greatest weight in determining the rate of return to equity.⁵ The
2 Surface Transportation Board⁶ routinely uses this method each year to determine the
3 revenue adequacy of each of the nation's Class I railroads.⁷

4
5 According to the DCF theory, the relevant measure of "g" should be the growth in
6 dividends. Dividends, however, are largely a function of management discretion, and in
7 the near term they do not necessarily reflect the underlying driver of earnings. In the long
8 run, however, any rate of dividend growth that differs significantly from earnings growth
9 is unlikely to be sustainable. For this reason, it is generally accepted that the growth rate
10 of earnings per share ("EPS") is the most reliable indicator of the "g" factor.

11
12 The classic DCF calculation employs predictions of EPS growth, usually in the three to
13 five year time horizon. Investment analysts routinely attempt to forecast the future
14 earnings of traded companies. *Value Line* provides such forecasts based on the research of
15 its own and other organizations' analysts. Another commonly cited source is the
16 Institutional Brokers Estimation System, or I/B/E/S, now part of Thomson Financial's
17 research program. I/B/E/S does not conduct independent research but surveys investment
18 analysts for their predictions of future earnings growth. I have used the forecasts from
19 these two sources for my development of the classic DCF return.

20
21 The long-term earnings growth forecasts for each comparison company are presented in
22 columns F and G of Schedule 5 of my exhibit. Column H shows the average of these
23 forecasts for each company. Schedule 5 shows that the average forecast rate of earnings
24 growth for the gas comparison group is 4.79 percent.

⁵ *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 Rcd 7507, 7512 (1990); *Notice Initiating a Prescription Proceeding and Notice of Proposed Rulemaking*, CC Docket No. 98-166, October 5, 1998.

⁶ Successor agency to the Interstate Commerce Commission.

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Q. WHAT IS THE EQUITY RETURN INDICATION FROM YOUR APPLICATION OF THE CLASSIC DCF PROCEDURE?

A. The final column of Schedule 5 presents the result of my classic DCF analysis of the comparison group. The schedule reveals that when the average forecast growth rate for the gas group of 4.79 percent is added to average dividend yield of 3.53 percent, the result is a DCF equity return indication of 8.32 percent. For Xcel Energy, the indicated return requirement is 9.7 percent.

Q. WHAT VALUE TO YOU PLACE ON THESE RESULTS?

A. Normally, I rely heavily on the classic DCF formulation in assessing the equity return that should be allowed to a utility. In this case, however, I find that the return indications are below the range of reasonableness. The indicated return of 8.32 percent is almost as low as Moody's reported average yield on below investment grade bonds, which was 8.11 percent in 2006. As I will discuss later, it is also over 100 basis points below the lowest return to equity that has been granted to a gas distribution company in the last two years.

The failing of this application is in the growth rates forecast by Value Line and the investment analysts surveyed by I/B/E/S. I suspect that these forecasts reflect near-term effects, specifically the sharp run-up in natural gas prices that has occurred during the last year and a half. This run-up has resulted in price-elastic contractions in the use of gas by both residential and commercial customers and in a shift away from gas-fired generation by electric power suppliers. Investors apparently are taking a longer and more optimistic

⁷ Comments of the Association of American Railroads and Its Member Railroads, Surface Transportation Board Ex Parte No. 558 (Sub-No.9), *Railroad Cost of Capital – 2005*, pp. 2-3.

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1 view of the potential of the gas industry. Otherwise, they would not accept market prices
2 that generate only a 3.5 percent dividend yield. While I cannot estimate the extent of the
3 understatement, I believe this particular application of the DCF approach yields an equity
4 return indication that is too low.

5
6 I attach somewhat more credibility to the return indication for Xcel Energy because that
7 company is known primarily as an electric utility. The impact of the gas price run-up
8 would not be nearly as significant as for a company that primarily provides gas
9 distribution service.

10
11 **Q. IS THERE ANOTHER DCF FORMULATION BESIDE THE “CLASSIC” FORM**
12 **THAT CAN PROVIDE USEFUL INDICATIONS OF THE REQUIRED**
13 **RETURN ON EQUITY?**

14
15 A. Yes. As an alternative to using analysts’ forecasts for the “g” or growth component in
16 the DCF formula, it is possible to examine each company’s ability to generate increases
17 in the book value of its stock. While book value and market value rarely match,⁸ they do
18 have a relationship, particularly for a company that is subject to rate-base/rate-of-return
19 regulation. As I have discussed earlier, regulation sets the company’s allowed earnings
20 based on book value. As long as that is the case, market value will in large measure be
21 driven by book value.

22
23 There are two ways by which the book value per share of a regulated company can
24 increase. One is through retained earnings, that is, the portion of earnings that is not
25 declared out as dividends. The other is to sell new shares of stock at prices that exceed

⁸ If the Company is earning its required rate of return, the market value of its stock should exceed the book value. That is because investors do not require that the full rate of return be earned in the current period, only that the prospects for future earnings correspond to their growth expectations. For this reason, the market value of all of the comparison company stocks exceeds the book value of those stocks.

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1 book value. The premium on the new shares then increases the book value of the existing
2 shares.

3
4 These terms can be expressed by the following formula:

5
$$g = (r*b) + (s*v)$$

6 where:

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

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

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

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

11
12 **Q. HOW DO YOU PROPOSE TO ESTIMATE THE VALUES REQUIRED FOR**
13 **THIS DCF CALCULATION?**

14
15 A. For this calculation, I propose to rely on Value Line, which is the only source that
16 provides five-year forecasts of all the relevant variables. Those forecast variables are
17 shown on Schedule 6 of my exhibit. The first three columns on page 1 of this schedule
18 develop the earnings retention percentage for each company using the dividends and
19 earnings per share forecasts for the 2009-2011 period. The earnings retention ratio is
20 defined as one less the dividend payout ratio, that is, the ratio of dividend per share to
21 earnings per share.

22
23 Column D presents Value Line's forecast of the book value per share of each company
24 during the 2009-2011 period, and column E calculates the return on that book value by
25 dividing the EPS figures in column A by the book values in column D. When the
26 earnings retention ratios are multiplied by the book value returns, the result is an
27 expression of the accretion in book value per share that result from retained earnings.
28

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1 Page 2 of Schedule 6 develops the s^*v factor, again using Value Line's forecasts.
2 Columns A through C develop the current market-to-book value. Columns D and E show
3 the forecast growth in the number of shares outstanding. The s^*v factor is the excess of
4 market value over book value times the percentage growth in outstanding shares. In one
5 case (Piedmont Natural Gas) the number of shares actually declines. I assume that this is
6 a case of the Company buying back its own shares. If so, the accretion effect on existing
7 shares is the same as if it had sold more stock at prices greater than book value.

8
9 On page 1 of Schedule 6, the s^*v factor, shown in column G is added to the retained
10 earnings factor to yield an expression of the sustainable rate of book value growth. These
11 values are used as the "g" factor in the DCF formula.

12
13 **Q. WHAT IS THE DCF RETURN INDICATION USING THE BOOK VALUE**
14 **GROWTH FORMULATION FOR THE PEER GROUP OF GAS DISTRIBUTION**
15 **UTILITIES?**

16
17 A. The sustainable growth rate for the comparison group of gas distribution utilities is 6.4
18 percent. When this value is added to the group's dividend yield of 3.5 percent, the
19 indicated DCF return is 9.9 percent. The result for Xcel Energy is 8.2 percent.

20
21 **Q. WHAT VALUE DO YOU PLACE ON THIS RESULT?**

22
23 A. There are several assumptions underlying this formulation of the DCF calculation that are
24 subject to challenge. The first is that there is a one-for-one correspondence among the
25 growth rates for dividends, earnings and book value per share. Empirically, this
26 correspondence is not observed. We can accept that earnings growth drives dividend
27 growth in the long run, but the further assumption that book value growth determines
28 earnings growth is more questionable.

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1
2 First, this procedure assumes a fully regulated operation, where the entirety of each
3 utility's earnings is determined by applying a rate of return to a rate base reflective of the
4 full book value of the company. As a practical matter, most of the firms in the gas
5 distribution peer group have unregulated activities whose earnings are not tied to book
6 value.

7
8 Second, the book value growth model assumes that investors make the same $b*r + s*v$
9 calculation that I have made. That is because the DCF formulation relies on the
10 assumption that investors set the price of a stock based on their perceptions of future
11 earnings growth. The book value growth approach is valid only to the extent that
12 investors employ it in formulating their expectations of future earnings growth. Yet, I
13 have never seen any reference to this calculation in the analysts' reports on public
14 utilities.

15
16 Finally, there is the structural weakness that the entire calculation is based on one source:
17 Value Line. The weakness of this one source is found in a comparison of the results
18 shown in Schedule 6 with the estimates of book value growth presented in the Value Line
19 reports. For example, my calculation of potential book value growth for Atmos Energy
20 suggests that the sustainable growth rate is 7.0 percent, and that is based entirely on
21 Value Line inputs. Yet Value Line independently predicts that Atmos Energy's book
22 value will grow at a rate of only 4.0 percent annually.

23
24 For the foregoing reasons, I believe that the book value growth formulation of the DCF
25 model provides useful information, but it is hardly a definitive measure of required equity
26 return.

27
28

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1 **THE CAPITAL ASSET PRICING MODEL**

2

3 **Q. PLEASE DESCRIBE THE CAPITAL ASSET PRICING MODEL?**

4

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

10

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 β = the company-specific beta

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

18

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

20

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

26

27 **Q. WHAT JUDGMENT IS REQUIRED FOR THE FIRST INPUT, β , OR BETA?**

28

29 A. As noted, beta measures the degree of covariance of the stock with that of the market
30 overall. But neither the fluctuations of the stock nor those of the market are constant, or

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1 even consistent with each other over any extended period of time. Additionally, there are
2 two varieties of beta, adjusted and unadjusted. The unadjusted, or “raw” beta is a straight
3 statistical comparison of the variation of the stock against variation of the market. In the
4 case of stocks that fluctuate inversely with the market, this beta formulation yields the
5 totally counter-intuitive result of negative betas, implying that the stock is less risky than
6 a Treasury bond. The adjusted betas apply factors derived from an article titled “On the
7 Assessment of Risk” by Marshall E. Blume published in the March 1971 *Journal of*
8 *Finance*. In that article, Dr. Blume found that there is a tendency of the betas of
9 portfolios of stocks to trend toward the beta of the market, that is, toward 1.0. Since that
10 time, it has been the practice of some analysts of beta to “adjust” the betas so that they
11 avoid the counter-intuitive result of minus values.

12
13 As a result, there are as many estimates of beta for a given company as there are analysts
14 making the measurement.

15
16 **Q. WHAT BETA VALUES WILL YOU USE IN YOUR CAPM APPLICATION?**

17
18 A. Schedule 7 in my exhibit presents the betas for the gas company comparison group as
19 derived by Value Line and by Thomson Financial, the publishers of I/B/E/S. Both of
20 these sources purport to be reliable and respected, and both adjust their betas to avoid
21 negative values, albeit in different fashions. As can be seen from the exhibit, there is
22 little or no consistency among the beta values for the respective companies. Indeed, there
23 is no instance where the betas from these two sources match. The average of these betas
24 is .89.

25
26 **Q. WHAT JUDGMENT IS REQUIRED IN SELECTING THE INPUT R_f , THE RISK-**
27 **FREE RATE OF RETURN?**

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1 A. There is general consensus that yields to U.S. government securities are risk-free in the
2 sense that they are free from the risk of default. The difficulty is that there are quite a
3 number of U.S. government securities of differing maturities that have very different
4 yields. Most utility-sponsored rate-of-return witnesses assert that because stocks exist in
5 perpetuity, the yield of long-term government bonds is the appropriate risk-free rate. The
6 rationale is that because stocks are held in perpetuity, the corresponding risk-free rate
7 should be that of very long-term government bonds.

8
9 There are two difficulties with this rationale. The first is that stocks are not held in
10 perpetuity. To the contrary, the New York Stock Exchange has a turnover rate of about
11 100 percent annually, suggesting that the average share of stock is held only about a year.
12 The second difficulty is that long-term bonds are not free from risk. To the contrary, they
13 carry a substantial risk that inflation will erode their eventual value at maturity. Stocks
14 do not bear this inflation risk because generally the stock market rises when inflation
15 rises.

16
17 **Q. WHAT RISK-FREE RATE WILL YOU USE IN YOUR CAPM APPLICATION?**

18
19 A. To be conservative, I will accept the conventional practice of using the current yield on
20 30-year Treasury bonds. For the week ending April 16, 2007, that yield was 4.92
21 percent.

22
23 **Q. WHAT JUDGMENT IS REQUIRED IN SELECTING THE INPUT R_m , THE**
24 **RETURN TO THE OVERAL MARKET?**

25
26 A. The complexities and uncertainties associated with measuring the return to equity of an
27 individual company are not reduced when the object of the analysis is expanded to the
28 entire market for equities. Generally, CAPM analysts use one of two procedures. Either

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1 they perform simplistic DCFs for a wide variety of stocks, or they use the historical
2 return to market equities, which assumes, totally unrealistically, that the investors in the
3 equity markets during the period under study actually realized the return that they were
4 expecting. This approach tells us nothing about future expectations from the market.
5

6 **Q. WHAT MARKET RATE OF RETURN WILL YOU USE?**
7

8 A. At the top of Schedule 8, I estimate the overall market return. I apply a DCF approach
9 using *Value Line's* forecasts of the median dividend yield for the coming year and the
10 potential for appreciation for 1700 stocks. The dividend yield is 1.7 percent, and *Value*
11 *Line* estimates that the potential for market appreciation is 40 percent in the coming 3 to 5
12 years. Using the mid-point of 4 years, this forecast translates into a growth factor of 8.8
13 percent per year. The sum of the dividend yield of 1.7 percent and a growth rate of 8.8
14 percent produces an overall market return of 10.48 percent.
15

16 **Q. WHAT CAPM RATE OF RETURN INDICATION HAVE YOU FOUND?**
17

18 A. Schedule 8 in my exhibit presents my application of the CAPM approach. Subtracting
19 the 4.92 percent Treasury bond yield from the estimated market return of 10.46 percent
20 yields a market risk premium of 5.56 percent. When a beta of .89 is applied to this
21 premium, the risk premium for the gas comparison group is 4.94 percent. When this
22 value is added back to the risk-free rate, the indicated return is 9.86 percent.
23

24 In the bottom lines of Schedule 8, I apply Xcel Energy's company specific beta of .76.
25 This factor yields a CAPM rate of return to Xcel Energy of 9.61 percent.
26

27 **Q. WHAT VALUE DO YOU PLACE ON THESE RESULTS?**
28

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1 A. As I have noted, the principal difficulty with the CAPM calculation is the judgment it
2 required in the selection of critical inputs. The results that I have shown in Schedule 8
3 can be changed by the use of slightly different inputs for the overall market return, the
4 beta factor or the risk-free return. However, in light of the inadequacies of the DCF
5 results, discussed earlier, I am taking the CAPM results into account in this study.
6

7 **RATE OF RETURN AWARDS**
8

9 **Q. ARE THERE ANY OTHER INDICATIONS OF RETURN ON EQUITY THAT**
10 **YOU MIGHT USE IN ASSESSING THE RETURN REQUIREMENT FOR NSP'S**
11 **EQUITY CAPITAL?**
12

13 A. Yes. It is useful to examine the return allowances that other commissions have granted
14 gas distribution utilities during the last two years. Although I do not recommend that the
15 North Dakota commission base its return allowance on the decisions of other
16 commissions, I believe that the range of these decisions can have value in establishing a
17 range of reasonableness. In this regard, I should note that the Missouri Public Service
18 Commission has adopted the practice of setting such a range at 100 basis points around
19 the average return award during the past year.⁹
20

21 **Q. WHAT INFORMATION CAN YOU PROVIDE CONCERNING RECENT RATE**
22 **OF RETURN AWARDS?**
23

24 A. Schedule 9 of my exhibit presents information from a survey undertaken by Regulatory
25 Research Associates of all gas distribution equity return awards made by state
26 commissions during 2005 and 2006. The schedule shows the highest, lowest and average
27 award during each quarter of those two years. The highest award granted during this

⁹ Missouri P.S.C. Case No. ER-2006-0314, Final Order, December 4, 2006.

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1 two-year period was 11.5 percent, and the lowest was 9.45 percent. The average award
2 over the two-year period was 10.45 percent. Were the North Dakota commission to
3 adopt the range of reasonableness used by the Missouri commission, that range would be
4 between 11.45 percent and 9.45 percent, which is almost exactly the range of returns
5 actually awarded during the two-year period.
6

7 **EQUITY RETURN CONCLUSION**
8

9 **Q. WHAT IS YOUR CONCLUSION AS TO THE RETURN TO EQUITY CAPITAL**
10 **FOR THE GAS COMPARISON GROUP?**
11

12 A. The rate-of-return indications developed thus far are as follows:
13

	Comparison Group	Xcel Energy
Classic DCF	8.3%	9.7%
Sustained Growth DCF	9.9%	8.2%
CAPM	9.9%	9.2%
Average	9.4%	9.0%

14
15 The averages of these rates of return are unacceptably low, as measured by a range of
16 reasonableness established by the rate-of-return awards granted to gas distribution
17 companies over the last two years. For this reason, I recommend a rate of return on
18 equity near to the bottom of that range: 9.5 percent.
19

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1 **Q. DOES THIS EQUITY RETURN IMPLY THAT NSP'S GAS DISTRIBUTION**
2 **SERVICE IS AMONG THE LEAST RISKY GAS DISTRIBUTION OPERATIONS**
3 **IN THE COUNTRY?**

4
5 A. No. This equity return reflects analyses of the equity return requirements of both NSP
6 and a group of comparable companies. It therefore incorporates the investor perceptions
7 of the gas distribution industry, not just NSP. If anything, the implication is that the cost
8 of equity capital for gas distribution companies has recently declined to a very low level.

9
10 **Q. IS THERE REASON TO BELIEVE THAT NSP'S GAS DISTRIBUTION**
11 **ACTIVITY IS LESS RISKY THAN THAT OF OTHER COMPANIES ENGAGED**
12 **IN GAS DISTRIBUTION?**

13
14 A. Yes. NSP has a very low-risk gas rate structure. All of the residential and about a third
15 of the firm commercial and industrial distribution (non-gas) revenue is recovered by
16 means of flat monthly customer charges. This form of revenue recovery protects NSP
17 from most weather-related risk and from risk associated with customer conservation.
18 Most gas distribution companies do not enjoy this form of risk minimization.

19
20 **FLOTATION COSTS**

21
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
27 **Q. WHAT HAVE BEEN NSP'S FLOTATION COSTS?**

28

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1 A NSP itself incurs no flotation costs, as it does not sell its stock to the public. Xcel
2 Energy, however, has incurred flotation costs, as listed in Schedule 11 in Exhibit (KAM-
3 1) attached to the testimony of NSP's rate-of-return witness, Karl McDermott.

4
5 In Schedule 10 of my exhibit, I list the flotation costs incurred during the past ten years,
6 as reported by Dr. McDermott. They total to \$32,620,000.

7
8 **Q. IS NSP ENTITLED TO RECOVER THESE FLOTATION COSTS?**

9
10 A. Yes. Flotation costs should be recovered either as an explicit expense item in the revenue
11 requirement or as an adder to the rate of return.

12
13 **Q. ASSUMING THAT FLOTATION COSTS ARE RECOVERED AS AN ADDER TO**
14 **THE RATE OF RETURN, WHAT SHOULD BE THE AMOUNT OF THAT**
15 **ADDER?**

16
17 A. Schedule 10 in my exhibit calculates that adder. Assuming that the most recent 10-year
18 costs should be recovered ratably over 10 years, their annual recovery should be
19 \$3,262,000. When this value is divided by Xcel Energy's common equity as of
20 December 31, 2006, the percentage relationship is 0.06 percent. This calculation
21 suggests that an adder of six basis points to the rate of return on equity would permit PHI
22 to recover its stock flotation costs.

23
24
25
26 **RECOMMENDED EQUITY RETURN**

27
28 **Q. WHAT RATE OF RETURN ON EQUITY DO YOU RECOMMEND FOR NSP?**

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1
2 A. I have found that the appropriate net rate of return on equity for NSP is 9.5 percent.
3 When six basis points are added for flotation costs, the final return recommendation is
4 **9.56 percent.**

5
6 **TESTIMONY OF KARL M. McDERMOTT**

7
8 **Q. WHAT RATE OF RETURN ON EQUITY DOES NSP'S WITNESS, KARL M.**
9 **McDERMOTT, RECOMMEND?**

10
11 A. Dr. McDermott recommends a rate of return on equity of 11.32 percent.

12
13 **Q. HOW DOES DR. McDERMOTT ARRIVE AT THIS RATE OF RETURN?**

14
15 A. Dr. McDermott uses a comparison group of four gas distribution companies, Piedmont
16 Natural Gas, Northwest Natural Gas, Nicor, and Southwest Gas, plus one more company,
17 Cascade Natural Gas. For his DCF analysis, he calculates the average dividend yield for
18 the four companies as 3.65 percent. He computes a growth factor of 6.47 percent, which
19 is the average of Value Line's growth forecasts and the sustainable book value growth
20 factors. These two components yield a DCF return of 10.13 percent, to which Dr.
21 McDermott adds 20 basis points to account for selling and issuance costs. He concludes
22 that the DCF cost of NSP's equity is 10.33 percent. When Cascade Natural Gas is
23 included, the DCF return is 10.99 percent.

24
25 Dr. McDermott then applies the CAPM procedure using a 4.73 percent risk-free Treasury
26 bond yield, a 13.15 percent market return, and a Value Line beta of .90. He finds that the
27 CAPM return indication is 12.31 percent for the four companies and 12.23 percent for the
28 four companies plus Cascade.

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Dr. McDermott's final recommendation of 11.32 percent is the mid-point between the 10.33 percent DCF indication and the 12.31 percent CAPM result for the four companies.

Q. HOW DOES YOUR CALCULATION OF NSP'S EQUITY RETURN DIFFER FROM THAT OF DR. McDERMOTT?

A. My calculation of NSP's equity return differs from that of Dr. McDermott in the following respects:

- I use 15 companies in my comparison group, as compared to Dr. McDermott's four.
- I use the annual model of the dividend yield, while Dr. McDermott uses a quarterly model.
- The dates of our stock prices and the span of time of those prices differ.
- I use both Value Line and I/B/E/S growth forecasts as the DCF growth factor, while Dr. McDermott uses only Value Line.
- For the CAPM analysis, I use Value Line's 1700 company estimates to compute the total market return, while Dr. McDermott presents a total return based on Standard & Poor's 500 stocks.
- I use an average of Value Line and Thomson betas, while Dr. McDermott uses only Value Line.
- I test my return against the returns granted by state commission during the past two years, while Dr. McDermott does not.
- Dr. McDermott adds 20 basis points for stock flotation costs, while I add only six basis points.

Q. IS DR. McDERMOTT'S SELECTION OF COMPARABLE COMPANIES APPROPRIATE?

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1 A. No. Four companies are too few to provide a reasonable estimate of equity return,
2 particularly when the DCF results for the four companies range from 8.62 to 12.12
3 percent. With this range of indications and only four observations, the average has little
4 value.

5
6 **Q. IS DR. McDERMOTT'S QUARTERLY COMPOUNDING MODEL**
7 **APPROPRIATE?**

8
9 A. Dr. McDermott is correct that the compounding of quarterly dividends is part of the
10 return that investors expect. That compounding, however, occurs outside of the dividend
11 issuing company. Investors receive their dividends and then reinvest (or spend) them
12 independently of the company that issued the dividends. That company does not have to
13 provide the compounded earnings.

14
15 **Q. DO THE DIFFERENCES IN THE DATES AND TIME SPAN OF THE STOCK**
16 **PRICES SIGNIFICANTLY AFFECT THE RESULTS?**

17
18 A. No. The fact that Dr. McDermott used the 30-day prices preceding November 15, 2006
19 and that I used the 60-day prices preceding April 12, 2007 should have a negligible effect
20 on the results.

21
22 **Q. IS IT PREFERABLE TO USE TWO SOURCES FOR THE GROWTH**
23 **FORECAST COMPONENT OF THE CLASS DCF PROCEDURE?**

24
25 A. Yes. My use of both Value Line and the I/B/E/S forecasts provides a broader basis for
26 this component of the DCF model.

27

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PSC Staff
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1 **Q. IS IT PREFERABLE TO USE VALUE LINE'S TOTAL MARKET FACTORS**
2 **RELATIVE TO S&P 500 DCF FACTORS IN ESTIMATING THE REQUIRED**
3 **RETURN TO THE TOTAL MARKET FOR THE CAPM ANALYSIS?**

4
5 A. I believe it is because the Value Line survey covers 1700 stocks in all exchanges, while
6 S&P 500 covers only 500 stocks in the New York Stock Exchange. However, the issue is
7 debatable, and that is one of my complaints with the CAPM approach – it lends itself too
8 much to the judgment of the analysts as regards inputs.

9
10 **Q. IS IT PREFERABLE TO USE BOTH THOMSON AND VALUE LINE BETAS,**
11 **RATHER THAN JUST THE VALUE LINE BETAS?**

12
13 A. I believe it is, since both betas are adjusted, albeit in different ways. In making its
14 adjustment, Value Line simply de-weights the raw beta by one-third. Thomson's
15 adjustment appears somewhat more sophisticated:

$$\text{Adjusted } \beta = 0.35 + 0.685\beta$$

16
17
18 **Q. DR. McDERMOTT ADJUSTS HIS COMPARABLE GROUP RATES OF EQUITY**
19 **RETURN BY 20 BASIS POINTS TO ACCOUNT FOR FLOTATION COSTS. DO**
20 **YOU AGREE?**

21
22 A. No. Applied to Xcel Energy's equity capital of \$5,816.8 million, Dr. McDermott's
23 adjustment would translate into an annual recovery of \$11.6 million. This allowance
24 would recover all of Xcel Energy's flotation costs for the last ten years in just three years.
25 Dr. McDermott's allowance would result in an over-recovery of flotation costs.

26

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1 **Q. WHAT IS THE EFFECT OF TESTING YOUR RESPECTIVE EQUITY RETURN**
2 **RECOMMENDATIONS AGAINST THE RETURNS GRANTED BY**
3 **REGULATORY COMMISSIONS?**

4
5 A. As note earlier, I discarded the results of most of my tests on the grounds that they
6 yielded returns below any return allowances granted to gas distribution companies during
7 the last two years. Had Dr. McDermott made the same comparison, he would have
8 observed that his recommended 11.32 percent is higher than any commission award in
9 2006 and higher than all but two awards in 2005.

10

11 **RETURN TO TOTAL CAPITAL**

12

13 **Q. WHAT AFTER-TAX RETURN TO OVERALL CAPITAL DO YOU**
14 **RECOMMEND FOR NSP'S GAS RATE BASE?**

15

16 A. As shown on Schedule 1 of my exhibit, the application of a gas service equity return of
17 9.56 percent into my recommended capital structure yields an after-tax return to NSP's
18 gas rate base of **8.08 percent**.

19

20

21 **COST ALLOCATION**

22

23 **Q. WHAT COST ALLOCATION ISSUES WILL YOU ADDRESS?**

24

25 A. I will address the Company's unilateral change in the method of allocating common
26 customer-related costs between gas and electric service. Common customer-related costs
27 are meter reading, customer accounting, customer information and customer sales
28 expenses.

29

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1 **Q. WHAT CHANGE HAS THE COMPANY MADE IN ITS ALLOCATION OF**
2 **COMMON COSTS BETWEEN GAS AND ELECTRIC SERVICE?**

3
4 A. Previously, when a customer took both gas and electric service from NSP, he/she was
5 treated as a single customer. Under NSP's new procedure, these customers are treated as
6 two customers.

7
8 **Q. WHAT IS THE EFFECT OF THIS CHANGE IN NSP'S ALLOCATION?**

9
10 A. The effect of this change is to increase the portion of NSP's customer-related costs from
11 18.56 percent to 23.93 percent. This change results in an increase in gas service expenses
12 of \$363,182 in 2007.¹⁰

13
14 **Q. HAS NSP RECEIVED COMMISSION APPROVAL FOR THIS CHANGE?**

15
16 A. No.

17
18 **Q. WHAT JUSTIFICATION HAS NSP OFFERED FOR THIS CHANGE?**

19
20 A. The Company has offered no justification for this change. It reports that it has performed
21 no cost studies to demonstrate that the customer-related costs for gas and electric
22 customers are twice the customer-related costs for gas-only or electric-only customers.

23
24 **Q. DOES THE CHANGE APPEAR TO BE JUSTIFIED?**

25
26 A. No. The presumption of treating a gas and electric customer as two customers is that
27 there is no synergy between the two services. If there is no synergy, then NSP is not

¹⁰ Response to NDPSC Information Requests Nos. 1-26 and 2-27.

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1 operating very efficiently. Specifically, if NSP requires two meter readers, one for gas
2 and another for electricity, then it is missing an opportunity to save meter-reading costs.
3 Similarly, if NSP renders two separate gas and electric bills, it is needlessly incurring
4 extra bill preparation, mailing and collection costs.
5

6 **Q. WHAT IS YOUR RECOMMENDATION?**
7

8 A. I recommend that this change in allocation be rejected.
9

10 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**
11

12 A. Yes. It does.
13