Exhibit No.___(JSG-1)

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.

BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

EL15-___

PREPARED DIRECT TESTIMONY OF

J. STEPHEN GASKE

Q1. Please state your name, position and business address.

A1. My name is J. Stephen Gaske and I am a Senior Vice President of Concentric Energy Advisors, Inc., 1130 Connecticut Avenue NW, Suite 850, Washington, DC 20036.

Q2. Would you please describe your educational and professional background?

A2. I hold a B.A. degree from the University of Virginia and an M.B.A. degree with a major in finance and investments from George Washington University. I also earned a Ph.D. degree from Indiana University where my major field of study was public utilities and my supporting fields were finance and economics.

From 1977 to 1980, I worked for H. Zinder & Associates ("HZA") as a research assistant and later as supervisor of regulatory research. Subsequently, I spent a year assisting in the preparation of cost of capital studies for presentation in regulatory proceedings.

From 1982 to 1986, I undertook graduate studies in economics and finance at Indiana University where I also taught courses in public utilities, transportation, and physical distribution. During this time, I also was employed as an independent

consultant on a number of projects involving public utility regulation, rate design, and cost of capital. From 1983 to 1986, I was coordinator for the Edison Electric Institute Electric Rate Fundamentals course. In 1986, I accepted an appointment as assistant professor at Trinity University in San Antonio, Texas, where I taught courses in financial management, investments, corporate finance, and corporate financial theory.

In 1988, I returned to HZA and was President of the company from 2000 to 2008. In May 2008, HZA merged with Concentric Energy Advisors, Inc. ("Concentric") and I became a Senior Vice President of Concentric.

Q3. Have you presented expert testimony in other proceedings?

A3. Yes. I have filed testimony on the cost of capital and capital structure issues for electric and natural gas distribution and oil and natural gas pipeline operations before 11 state and provincial regulatory bodies, including the South Dakota Public Utilities Commission. I also have testified or filed testimony or affidavits before various federal regulators, including the Federal Energy Regulatory Commission on more than thirty occasions, the National Energy Board of Canada, and the Comisión Reguladora de Energía of México. Topics covered in these submissions have included rate of return, capital structure, cost allocation, rate design, revenue requirements, and market power. In addition, I have testified or submitted testimony on issues such as cost allocation, rate design, pricing and generating plant economics before the U.S. Postal Rate Commission, regulators in four Canadian provinces, and seven U.S. state public utility commissions. During the course of my consulting career, I have conducted many studies on issues related to regulated

industries and have served as an advisor to numerous clients on economic, competitive, and financial matters. I also have spoken and lectured before many professional groups including the American Gas Association and the Edison Electric Institute Rate Fundamentals courses. Finally, I am a member of the American Economic Association, the Financial Management Association, and the American Finance Association.

I. INTRODUCTION

A. Scope and Overview

Q4. What is the scope of your testimony in this proceeding?

A4. I have been asked by Montana-Dakota Utilities Co. ("Montana-Dakota" or the "Company") to estimate the cost of common equity capital for the Company's electric utility operations in the state of South Dakota. In this testimony, I calculate the cost of common equity capital for Montana-Dakota's South Dakota electric utility operations based on a Discounted Cash Flow ("DCF") analysis of a group of proxy companies that have risks similar to those of Montana-Dakota's South Dakota electric utility operations. The results of this DCF study are supported by various benchmark criteria that I have used to test the reasonableness of the DCF study results.

Q5. What rate of return is Montana-Dakota requesting in this proceeding?

A5. Based on its test period capital structure, Montana-Dakota is requesting the following rate of return:

Table 1: Requested Rate of Return – South Dakota Electric Utility Operations[1]

Source	Amount	Percent	Cost	Overall Rate of Return
Long-Term Debt	$505,460	41.14%	5.95%	2.45%
Short-Term Debt	$99,624	8.11%	1.63%	0.13%
Preferred Stock	$15,259	1.24%	4.58%	0.06%
Common Equity	$608,435	49.52%	10.00%	4.95%
TOTAL	**$1,228,778**	**100.00%**		**7.59%**

As my testimony discusses, an overall allowed rate of return of 7.59 percent, with a 10.00 percent return on common equity, represents the cost of capital for Montana-Dakota at this time.

B. Company Background

Q6. Please describe Montana-Dakota's operations and those of its parent company, MDU Resources Group, Inc.

A6. Montana-Dakota is a wholly-owned division of MDU Resources Group, Inc. ("MDU Resources") that is engaged in the generation, transmission, and distribution of electricity, and the distribution of natural gas in the states of Montana, North Dakota, South Dakota, and Wyoming. MDU Resources also owns Cascade Natural Gas Co., which distributes natural gas in the states of Oregon and Washington; Intermountain Gas Company, which distributes natural gas in the state

[1] Projected average capital structure and rate of return for 2015.

of Idaho; and Great Plains Natural Gas Co., which distributes natural gas in western Minnesota and southeastern North Dakota. Through other divisions and subsidiaries, MDU Resources is engaged in utility infrastructure construction, natural gas and oil exploration and production, oil refining, natural gas gathering and transmission, and produces and markets aggregates and other construction materials.

In 2014, the utility companies within MDU Resources provided electric utility service to over 138,000 residential, commercial, industrial, and municipal customers in 177 communities and adjacent rural areas across four states.[2] In addition, Montana-Dakota provided natural gas distribution service to over 892,000 residential, commercial, and industrial customers in 334 communities across eight states.[3] Electric assets comprised 13.2 percent[4] of MDU Resources' total assets in 2014, and electric revenues comprised 6.0 percent[5] of total operating revenues. South Dakota accounted for 5.0 percent of the retail electric utility operating revenues, while North Dakota (64.0 percent), Montana (21.0 percent), and Wyoming (10.0 percent) accounted for the other 95.0 percent of retail electric utility operating revenues.[6]

Montana-Dakota serves its electric utility customers across three states through an interconnected electric system consisting of ten electric generating facilities and three small portable diesel generators which have an aggregate nameplate capacity

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2 MDU Resources Group, Inc., Form 10-K for the fiscal year ended December 31, 2014, at 7.
3 *Ibid.*, at 11.
4 *Ibid.*, at 86.
5 *Ibid.*, at29.
6 *Ibid.*, at 7.

of 578 megawatts. Table 2 below presents details for Montana-Dakota's ten electric generating stations.

Table 2: Montana-Dakota's Electric Generating Stations[7]

Generating Station	State	Fuel	Nameplate Capacity (kW)	2014 Net Generation (kWh)
Big Stone[8]	SD	Coal	94,111	576,957
Cedar Hills	ND	Wind	19,500	59,420
Coyote[9]	ND	Coal	103,647	682,333
Diamond Willow	MT	Wind	30,000	96,534
Diesel Units	ND	Oil	5,475	40
Glen Ullin	ND	Waste Heat	7,500	31,441
Glendive	MT	Natural Gas	75,522	1,911
Heskett	ND	Coal	86,000	547,268
Heskett	ND	Gas	89,038	28,057
Lewis & Clark	MT	Coal	44,000	290,193
Miles City	MT	Natural Gas	23,150	365
			577,943	**2,314,519**

Approximately 92 percent of the energy generated by Montana-Dakota's facilities came from coal-fired power plants in 2014. When purchased power is included in the supply portfolio, approximately 79 percent of Montana-Dakota's net generation needs were satisfied by its own facilities and contracted facilities.[10] On December 22, 2014, the Company filed an application for advance determination of prudence and certificate of public convenience and necessity with the North Dakota Public Service Commission for the Thunder Spirit Wind Project. This project will provide energy, capacity, and renewable energy credits to MDU electric customers in North

7 *Ibid.*, at 9.
8 Reflects Montana-Dakota's partial ownership interest.
9 Reflects Montana-Dakota's partial ownership interest.
10 MDU has one purchase power agreement for 120 MW for the period June 1, 2014 to May 31, 2015.

Dakota, Montana and South Dakota. The projected cost is approximately $220 million. In addition, The Lewis & Clark Reciprocating Internal Combustion Engine project is estimated for completion for the fall 2015 at an approximate cost of $43 million.

In addition to new generation additions, the Company must also invest in environmental controls to comply with federal and state environmental rules. The Lewis and Clark Station must comply with the Environmental Protection Agency's ("EPA") Mercury and Air Toxics Standards ("MATS") and the Big Stone Plant ("Big Stone") must comply with the South Dakota Implementation Plan ("SIP") that was developed to comply with the EPA Regional Haze Rule. Each of these projects requires significant capital. Without the environmental upgrades at Big Stone, the plant would be forced to close.

Q7. Would you please describe Montana-Dakota's South Dakota electric utility service territory?

A7. Montana-Dakota provides electric utility service to approximately 8,595 customers[11] in 32 communities in South Dakota.[12] Although Montana-Dakota's South Dakota electric utility operations tend to be concentrated in cities and towns, a large portion of the local economies are based on agriculture. The economy of western and north-central South Dakota is primarily based on agriculture and some tourism. From an economic perspective, the mostly rural nature of western and

[11] As of May 31, 2015.

[12] Montana-Dakota Utilities Co., State of South Dakota Electric Rate Schedule, PUCSD, Section 2, 3rd Revised Sheet No. 1.

north-central South Dakota poses accessibility challenges, resulting in less access to markets and high transportation costs to larger markets. In addition, rural county residents lack access to the same variety of goods and services available in more heavily populated areas of the country.

As discussed above and in the Direct Testimony of Montana-Dakota witnesses Mr. Jay Skabo, Mr. Darcy J. Neigum and Mr. Alan L. Welte, significant investment will continue to be required in coming years to support customer growth and to replace aging plant so that the Company can continue to provide safe, reliable and efficient electric utility service to its South Dakota customers. Montana-Dakota will require an adequate return in order to attract capital for these projects.

II. FINANCIAL MARKET STUDIES

A. Criteria for a Fair Rate of Return

Q8. Please describe the criteria which should be applied in determining a fair rate of return for a regulated company.

A8. The United States Supreme Court has provided general guidance regarding the level of allowed rate of return that will meet constitutional requirements. In *Bluefield*

Water Works & Improvement Company v. Public Service Commission of West Virginia (262 U.S. 679, 693 (1923)), the Court indicated that:

> The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.

The Court has further elaborated on this requirement in its decision in *Federal Power Commission v. Hope Natural Gas Company (320 U.S. 591, 603 (1944))*. There the Court described the relevant criteria as follows:

> From the investor or company point of view, it is important that there be enough revenue not only for operating expenses, but also for the capital costs of the business. These include service on the debt and dividends on the stock.... By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

Thus, the standards established by the Court in Hope and Bluefield consist of three requirements. These are that the allowed rate of return should be:

1. commensurate with returns on enterprises with corresponding risks;
2. sufficient to maintain the financial integrity of the regulated company; and
3. adequate to allow the company to attract capital on reasonable terms.

These legal criteria will be satisfied best by employing the economic concept of the "cost of capital" or "opportunity cost" in establishing the allowed rate of return on common equity. For every investment alternative, investors consider the risks attached to the investment and attempt to evaluate whether the return they expect to earn is adequate for the risks undertaken. Investors also consider whether there might be other investment opportunities that would provide a better return relative to the risk involved. This weighing of alternatives and the highly competitive nature of capital markets causes the prices of stocks and bonds to adjust in such a way that investors can expect to earn a return that is just adequate for the risks involved. Thus, for any given level of risk, there is a return that investors expect in order to induce them to voluntarily undertake that risk and not invest their money elsewhere. That return is referred to as the "opportunity cost" of capital or "investor required" return.

Q9. How should a fair rate of return be evaluated from the standpoint of consumers and the public?

A9. The same standards should apply. When an unregulated entity faces competition, the pressure of that competition and consumer choices will combine to determine the fair rate of return. However, when regulation is appropriate, consumers and the public have a long-term interest in seeing that the regulated company has an opportunity to earn returns that are not so high as to be excessive, but that also are sufficient to encourage continued replacement and maintenance, as well as needed expansions, extensions, and new services. Thus, both the consumer and the public

interest depend on establishing a return that will readily attract capital without being excessive.

Q10. How are the costs of preferred stock and long-term debt determined?

A10. For purposes of setting regulated rates, the current embedded costs of preferred stock and long-term debt are used in order to ensure that the company receives a return that is sufficient to pay the fixed dividend and interest obligations that are attached to these sources of capital.

Q11. How is the cost of common equity determined?

A11. The practice in setting a fair rate of return on common equity is to use the current market cost of common equity in order to ensure that the return is adequate to attract capital and is commensurate with returns available on other investments with similar levels of risk. However, determining the market cost of common equity is a relatively complicated task that requires analysis of many factors and some degree of judgment by an analyst. The current market cost of capital for securities that pay a fixed level of interest or dividends is relatively easy to determine. For example, the current market cost of debt for publicly-traded bonds can be calculated as the yield-to-maturity, adjusted for flotation costs, based on the current market price at which the bonds are selling. In contrast, because common stockholders receive only the residual earnings of the company, there are no fixed contractual payments which can be observed. This uncertainty associated with the dividends that eventually will be paid greatly complicates the task of estimating the cost of common equity capital. For purposes of this testimony, I have relied on several analytical approaches for estimating the cost of common equity. My primary

approach relies on three DCF analyses. In addition, I have conducted a risk premium analysis and a market DCF analysis of the S&P 500 as benchmarks to assess the reasonableness of the DCF results. Each of these approaches is described later in this testimony.

B. Interest Rates and the Economy

Q12. What are the general economic factors that affect the cost of capital?

A12. Companies attempting to attract common equity must compete with a variety of alternative investments. Prevailing interest rates and other measures of economic trends influence investors' perceptions of the economic outlook and its implications on both short- and long-term capital markets. Page 1 of Schedule 1 of Exhibit No.___(JSG-2) shows various general economic statistics. Real growth in the Gross Domestic Product ("GDP") has averaged 2.7 percent annually during the past 30 years, 2.5 percent for the past 20 years, and 1.6 percent for the past 10 years. After increasing at an annual rate of 2.2 percent in the fourth quarter of 2014, the Bureau of Economic Analysis announced that in the first quarter of 2015 real GDP declined at an annual rate of 0.7 percent.[13] According to Blue Chip Economic Indicators, the consensus forecast for expected growth in real GDP is 2.5 percent in 2015[14] and 2.8 percent in 2016.[15] Likewise, the U.S. unemployment rate has improved in recent months to 5.4 percent as of April 2015,[16] but the labor force participation rate for civilians 16 years and over remained at 62.8 percent as of

[13] U.S. Department of Commerce, Bureau of Economic Analysis, News Release, May 29, 2015.
[14] Blue Chip Economic Indicators, Vol. 40, No. 5, May 10, 2015, at 2.
[15] *Ibid.*, at 3.
[16] U.S. Department of Labor, Bureau of Labor Statistics, News Release, May 8, 2015.

April 2015, the lowest rate since the late 1970s.[17] Improvements in the U.S. unemployment rate are partly attributed to the reduced U.S. labor force and are not fully explained by job growth. In light of these weak economic conditions, the Federal Reserve has maintained its federal funds rate of 0.00 percent to 0.25 percent for overnight loans to banks in order to provide continued liquidity to the U.S. financial markets.[18]

As pages 2 and 3 of Schedule 1 of Exhibit No.___(JSG-2) show, interest rates on longer-term public utility bonds have decreased by approximately 50 basis points over the past three years. From July 2014 through April 2015, the average yield on A-rated public utility bonds was 3.94 percent and the average yield on Baa-rated public utility bonds was 4.61 percent. Credit spreads, which measure the incremental cost of corporate debt relative to U.S. Treasury bonds, have increased in recent months after declining during the past three years with the average spread of A-rated utility bonds over 30-year U.S. Treasury bonds at 1.05 percent for the period from July 2014 through April 2015. Similarly, the average spread of Baa-rated utility bonds over 30-year U.S. Treasury bonds was 1.71 percent over the same ten month period.

Investors also are influenced by both the historical and projected level of inflation. As also shown on Page 1 of Schedule 1 of Exhibit No.___ (JSG-2), during the past decade, the Consumer Price Index has increased at an average annual rate of 2.3

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17 U.S. Department of Labor, Bureau of Labor Statistics, civilian labor force participation rate, 16 years and over, seasonally adjusted.

18 Statement of the Federal Open Market Committee, April 29, 2015.

percent and the GDP Implicit Price Deflator, a measure of price changes for all goods produced in the United States, has increased at an average rate of 2.0 percent. According to Blue Chip Economic Indicators, the Consumer Price Index is forecasted to increase by 0.2 percent[19] and 2.2 percent[20] for 2015 and 2016, respectively. Over the intermediate and longer-term, however, investors can expect higher inflation rates as the Federal Reserve's accommodative monetary policy, which began in 2008, places upward pressure on consumer and producer prices once economic growth returns to historical levels. According to Blue Chip Financial Forecasts, the projected yield on 30-year U.S. Treasury bonds from 2016 to 2020 is 4.9 percent and from 2021 to 2025 it is 5.1 percent.[21] These interest rates are significantly higher than the current yield on the 30-year U.S. Treasury bond, suggesting that investors expect a substantial increase in inflationary pressure over the intermediate and long-term periods.

Q13. How are current economic conditions reflected in the equity markets?

A13. Although corporate bond yields are lower than pre-crisis levels, primarily due to Federal Reserve monetary policy, credit spreads for intermediate quality corporate bonds remain somewhat higher than pre-crisis levels as investors remain risk averse and inflation fears increase. The equity markets generally have recovered from the large stock market decline in 2008 and 2009. However, the premium required in the cost of common equity generally is higher than it was before the significant risks of equity investment were emphasized during the recent market downturn. In

[19] Blue Chip Economic Indicators, Vol. 40, No.5, May 10, 2015, at 2.
[20] *Ibid.*, at 3.
[21] Blue Chip Financial Forecasts, Vol. 33, No. 6, December 1, 2014, at 14.

addition, the Federal Reserve's massive purchases of federal debt have created artificially low interest rates that do not reflect the risks and returns required in the equity market.

C. Discounted Cash Flow ("DCF") Method

Q14. Please describe the DCF method of estimating the cost of common equity capital.

A14. The DCF method reflects the assumption that the market price of a share of common stock represents the discounted present value of the stream of all future dividends that investors expect the firm to pay. The DCF method suggests that investors in common stocks expect to realize returns from two sources: a current dividend yield plus expected growth in the value of their shares as a result of future dividend increases. Estimating the cost of capital with the DCF method, therefore, is a matter of calculating the current dividend yield and estimating the long-term future growth rate in dividends that investors reasonably expect from a company.

The dividend yield portion of the DCF method utilizes readily-available information regarding stock prices and dividends. The market price of a firm's stock reflects investors' assessments of risks and potential earnings as well as their assessments of alternative opportunities in the competitive financial markets. By using the market price to calculate the dividend yield, the DCF method implicitly recognizes investors' market assessments and alternatives. However, the other component of the DCF formula, investors' expectations regarding the future long-

run growth rate of dividends, is not readily apparent from stock market data and must be estimated using informed judgment.

Q15. What is the appropriate DCF formula to use in this proceeding?

A15. There can be many different versions of the basic DCF formula, depending on the assumptions that are most reasonable regarding the timing of future dividend payments. In my opinion, it is most appropriate to use a model that is based on the assumptions that dividends are paid quarterly and that the next annual dividend increase is a half year away. One version of this quarterly model assumes that the next dividend payment will be received in three months, or one quarter. This model multiplies the dividend yield by $(1 + 0.75g)$. Another version assumes that the next dividend payment will be received today. This model multiplies the dividend yield by $(1 + 0.5g)$. Since, on average, the next dividend payment is a half quarter away, the average of the results of these two models is a reasonable approximation of the average timing of dividends and dividend increases that investors can expect from companies that pay dividends quarterly. The average of these two quarterly dividend models is:

$$K = \frac{D_0(1 + 0.625g)}{P} + g$$

Where:
- K = the cost of capital, or total return that investors expect to receive;
- P = the current market price of the stock;
- D_0 = the current annual dividend rate; and
- g = the future annual growth rate that investors expect.

In my opinion, this is the DCF model that is most appropriate for estimating the cost of common equity capital for companies that pay dividends quarterly, such as those used in my analysis.

D. Flotation Cost Adjustment

Q16. Does the investor return requirement that is estimated by a DCF analysis need to be adjusted for flotation costs in order to estimate the cost of capital?

A16. Yes. There are significant costs associated with issuing new common equity capital, and these costs must be considered in determining the cost of capital. Schedule 2 of Exhibit No.___(JSG-2) shows a representative sample of flotation costs incurred with 51 new common stock issues by electric utilities from January 2005 through November 2014. Flotation costs associated with these new issues averaged 3.37 percent.

This indicates that in order to be able to issue new common stock on reasonable terms, without diluting the value of the existing stockholders' investment, Montana-Dakota must have an expected return that places a value on its equity that is approximately 3.5 percent above book value. The cost of common equity capital is therefore the investor return requirement multiplied by 1.035.

One purpose of a flotation cost adjustment is to compensate common equity investors for past flotation costs by recognizing that their real investment in the company exceeds the equity portion of the rate base by the amount of past flotation costs. For example, the proxy companies generally have incurred flotation costs in the past and, thus, the cost of capital invested in these companies is the investor

return requirement plus an adjustment for flotation costs. A more important purpose of a flotation cost adjustment is to establish a return that is sufficient to enable a company to attract capital on reasonable terms. This fundamental requirement of a fair rate of return is analogous to the well-understood basic principle that a firm, or an individual, should maintain a good credit rating even when they do not expect to be borrowing money in the near future. Regardless of whether a company can confidently predict its need to issue new common stock several years in advance, it should be in a position to do so on reasonable terms at all times without dilution of the book value of the existing investors' common equity. This requires that the flotation cost adjustment be applied to the entire common equity investment and not just a portion of it.

E. DCF Study of Electric Utility Companies

Q17. Would you please describe the overall approach used in your DCF analysis of Montana-Dakota's cost of common equity for its South Dakota electric utility operations?

A17. Because Montana-Dakota's South Dakota electric utility operations must compete for capital with many other potential projects and investments, it is essential that it have an allowed return that matches returns potentially available from other similarly risky investments. The DCF method provides a good measure of the returns required by investors in the financial markets. However, the DCF method requires a market price of common stock to compute the dividend yield component. Since Montana-Dakota is a division of MDU Resources and does not have publicly-traded common stock, a direct, market-based DCF analysis of Montana-Dakota's

South Dakota electric utility operations as a stand-alone company is not possible. As an alternative, I have used a group of electric utilities that have publicly-traded common stock as a proxy group for purposes of estimating the cost of common equity for Montana-Dakota's South Dakota electric utility operations.

Q18. How did you select a group of electric utility proxy companies?

A18. I started with the 46 companies that Value Line classifies as Electric Utilities to ensure that the company is considered to be primarily engaged in the electric utility business and that retention growth rate projections are available. From that group, I eliminated any companies that did not have investment-grade credit ratings from either Standard & Poor's ("S&P") or Moody's Investors Service ("Moody's") because such companies are not sufficiently comparable in terms of business and financial risk to Montana-Dakota. In order to ensure that the company is primarily engaged in the electric utility business, I eliminated any company that did not derive at least 80 percent of its operating income from regulated electric utility operations in 2014, or that did not have at least 80 percent of its total assets devoted to the provision of electric utility service in 2014. Lastly, in order to ensure that the proxy companies have risks that are most similar to those of Montana-Dakota I included only companies that own a large share of their own generation and that also have significant exposure to the risks of coal-fired generation. For example, Montana-Dakota generated approximately 72 percent of its energy needs in 2014 and 92 percent of its generation was from coal-fired power plants. In selecting proxy companies for my analysis I excluded any company that did not produce at least 50.0 percent of its energy requirements from company-owned generation in 2014

and that did not use coal for at least 50.0 percent of its energy production in 2014. As shown on page 1 of Schedule 3 of Exhibit No.___(JSG-2), 12 companies met these criteria for inclusion in the proxy group.

Q19. How did you calculate the dividend yields for the companies in your proxy group?

A19. These calculations are shown on pages 1 through 4 of Schedule 4 of Exhibit No.___(JSG-2). For the price component of the calculation, I used the average of the high and low stock prices for each month during the six-month period from November 2014 through April 2015. The average monthly dividend yields were calculated for each company by dividing the prevailing annualized dividend for the period by the average of the stock prices for each month. These dividend yields were then multiplied by the quarterly DCF model factor $(1 + 0.625g)$ to arrive at the projected dividend yield component of the DCF model.

Q20. Please describe the method you used to estimate the future growth rate that investors expect from this group of companies.

A20. I developed three different DCF analyses of the proxy companies based on three different growth rate estimation methods. There are many methods that reasonably can be employed in formulating a growth rate estimate, but an analyst must attempt to ensure that the end result is an estimate that fairly reflects the forward-looking growth rate that investors expect.

In the first approach, I calculated retention growth (also known as "sustainable growth") forecasts from Value Line forecasts of dividends, earnings, and returns

on equity to derive the DCF rate of return estimate. As a second approach, I conducted a Basic DCF analysis that relied on analysts' earnings forecasts for the growth rate component of the model. My third approach used a combination of the Value Line retention growth forecasts and analysts' earnings growth projections to produce a Blended Growth Rate Analysis.

F. Retention Growth Analysis

Q21. What approach did you use in calculating the long-term growth rate in your Retention Growth DCF analysis?

A21. In the Retention Growth DCF analysis, the long-term growth rate component is based on the calculation of retention growth rates using Value Line forecasts for each company. This Retention Growth DCF analysis better reflects investors' inflation expectations and the real requirements for long-term investments in plant under current market conditions.

Q22. Please describe the Retention Growth rate component of your analysis.

A22. I have relied upon Value Line projections of the retention growth rates that the proxy companies are expected to begin maintaining three to five years in the future. Although companies may experience extended periods of growth for other reasons, in the long-run, growth in earnings and dividends per share depends in part on the amount of earnings that is being retained and reinvested in a company. Thus, the primary determinants of growth for the proxy companies will be (i) their ability to find and develop profitable opportunities; (ii) their ability to generate profits that can be reinvested in order to sustain growth; and, (iii) their willingness and

inclination to reinvest available profits. Expected future retention rates provide a general measure of these determinants of expected growth, particularly items (ii) and (iii).

Q23. How can a company's earnings retention rate affect its future growth?

A23. Retention of earnings causes an increase in the book value per share and, other factors being equal, increases the amount of earnings that is generated per share of common stock. The retention growth rate can be estimated by multiplying the expected retention rate (b) by the rate of return on common equity (r) that a company is expected to earn in the future. For example, a company that is expected to earn a return of 12 percent and retain 75 percent of its earnings might be expected to have a growth rate of 9 percent, computed as follows:

$$0.75 \times 12\% = 9\%$$

On the other hand, another company that is also expected to earn 12 percent but only retains 25 percent of its earnings might be expected to have a growth rate of 3.0 percent, computed as follows:

$$0.25 \times 12\% = 3\%$$

Thus, the rate of growth in a firm's book value per share is primarily determined by the level of earnings and the proportion of earnings retained in the company.

Q24. How did you calculate the expected future retention rates of the proxy companies?

A24. For most companies, Value Line publishes forecasts of data that can be used to estimate the retention rates that its analysts expect individual companies to have three to five years in the future. Since these retention rates are projected to occur several years in the future, they should be indicative of a normal expectation for a primary underlying determinant of growth that would be sustainable indefinitely beyond the period covered by analysts' forecasts. While companies may have either accelerating or decelerating growth rates for extended periods of time, the retention growth rates expected to be in effect three to five years in the future generally represent a minimum "cruising speed" that companies can be expected to maintain indefinitely. The derivation of Value Line's retention growth rate forecasts for each of the proxy companies is shown on page 5 of Schedule 4 of Exhibit No.___(JSG-2). The projected earnings per share and projected dividends per share can be used to calculate the percentage of earnings per share that is being retained and reinvested in the company. This earnings retention rate is multiplied by the projected return on common equity to arrive at the projected retention growth rate. The average retention growth rate for the proxy companies is 3.97 percent.

Q25. How did you calculate the cost of capital using the Retention Growth DCF analysis?

A25. These calculations are shown on page 7 of Schedule 4 of Exhibit No.___(JSG-2). Again, the annual dividend yield is multiplied by the quarterly dividend adjustment factor ($1 + 0.625g$) and this product is added to the growth rate estimate to arrive

at the investor-required return. Then, the investor return requirement is multiplied by the flotation cost adjustment factor, 1.035, to arrive at the Retention Growth DCF estimate of the cost of common equity capital for the proxy companies. The Retention Growth DCF analysis indicates a cost of common equity for the proxy companies in a range from 6.65 percent to 10.08 percent. In this analysis, the median for the group is 7.97 percent and the third quartile is 8.21 percent.

G. Basic DCF Analysis

Q26. How did you estimate the expected future growth rate in your Basic DCF analysis?

A26. In my Basic DCF analysis, I have estimated expected future growth based on long-term earnings per share growth rate forecasts of investment analysts, which are an important source of information regarding investors' growth rate expectations. This Basic DCF analysis assumes that the analysts' earnings growth forecasts incorporate all information required to estimate a long-term expected growth rate for a company. Zacks is a service that collects earnings growth estimates by professional investment analysts and publishes a summary of the consensus forecasts. In addition, Yahoo Finance also publishes earnings growth estimates from investment analysts. I have used the average of Zacks and Yahoo's consensus forecasts as the primary source for analysts' forecasts in my calculations. As shown on page 6 of Schedule 4 of Exhibit No.___(JSG-2), the average of the analysts' long-term earnings growth rate estimates for the electric utility proxy companies is 4.82 percent.

Q27. How did you calculate the cost of capital using the Basic DCF analysis?

A27. These calculations are shown on page 8 of Schedule 4 of Exhibit No.___(JSG-2). Again, the annual dividend yield is multiplied by the quarterly dividend adjustment factor ($1 + 0.625g$) and this product is added to the growth rate estimate to arrive at the investor-required return. Then, the investor return requirement is multiplied by the flotation cost adjustment factor, 1.035, to arrive at the Basic DCF estimate of the cost of common equity capital for the proxy companies. The Basic DCF analysis indicates a cost of common equity for the proxy companies in a range from 7.13 percent to 13.27 percent. In this analysis, the median for the group is 9.40 percent and the third quartile is 10.65 percent.

H. Blended Growth Rate Analysis

Q28. How did you use your Blended Growth Rate Analysis to estimate investors' long-term growth rate expectations for the proxy companies?

A28. The Blended Growth Rate approach combines: (i) Value Line retention growth forecasts; and (ii) estimates of long-term earnings growth for each company that are published by various investment analysts.

Q29. How did you utilize the analysts' projected earnings growth rates and the projected earnings retention growth rates in estimating expected growth for the proxy companies in the Blended Growth Rate Analysis?

A29. As shown on page 6 of Schedule 4 of Exhibit No.___(JSG-2), I calculated a weighted average of the analysts' projected earnings growth rates and the projected retention growth rates to derive long-term growth rate estimates for each of the

proxy companies. In these calculations, I gave a one-half weighting to the analysts' earnings growth rate projections and one-half weighting to the projected retention growth rates. The average of the blended growth rates for the proxy companies is 4.82 percent and the median is 4.68 percent.

Q30. How did you utilize these Blended Growth Rate estimates in estimating the return on common equity capital that investors require from the proxy companies?

A30. These calculations are shown on page 9 of Schedule 4 of Exhibit No.___(JSG-2). Again, the annual dividend yield for each company is multiplied by the quarterly dividend adjustment factor ($1 + 0.625g$), and this product is added to the growth rate estimate to arrive at the investor-required return. Finally, the investor return requirement is multiplied by the flotation cost adjustment factor, 1.035, to arrive at the cost of common equity capital for the proxy companies. This Blended Growth Rate Analysis indicates that the cost of common equity capital for the electric utility proxy companies is in a range between 6.96 percent and 10.70 percent. In this analysis, the median for the group is 8.53 percent and the third quartile is 9.92 percent.

I. Risk Premium Analysis

Q31. Have you conducted additional analyses in determining the cost of equity capital for Montana-Dakota?

A31. Yes. The risk premium approach provides a general guideline for determining the level of returns that investors expect from an investment in common stocks.

Investments in the common stocks of companies carry considerably greater risk than investments in bonds of those companies since common stockholders receive only the residual income that is left after the bondholders have been paid. In addition, in the event of bankruptcy or liquidation of the company, the stockholders' claims on the assets of a company are subordinate to the claims of bondholders. This priority standing provides bondholders with greater assurances that they will receive the return on investment that they expect and that they will receive a return of their investment when the bonds mature. Accompanying the greater risk associated with common stocks is a requirement by investors that they can expect to earn, on average, a return that is greater than the return they could earn by investing in less risky bonds. Thus, the risk premium approach estimates the return investors require from common stocks by utilizing current market information that is readily available in bond yields and adding to those yields a premium for the added risk of investing in common stocks.

Investors' expectations for the future are influenced to a large extent by their knowledge of past experience. Ibbotson Associates annually publishes extensive data regarding the returns that have been earned on stocks, bonds and U.S. Treasury bills since 1926. Historically, the annual return on large company common stocks has exceeded the return on long-term corporate bonds by a premium of 570 basis points (5.7 percent) per year from 1926-2014.[22] When this premium is added to the average yield on Moody's corporate bonds for the period from November 2014

[22] Ibbotson SBBI 2015 Classic Yearbook, at 91. Calculation: (12.1 percent – 6.4 percent = 5.7 percent)

through April 2015 of 4.02 percent[23], the result is an investor return requirement for large company stocks of approximately 9.72 percent. However, investors in smaller companies expect higher returns over the long-term, due to the additional business and financial risks that smaller companies face. According to Ibbotson Associates, companies in the same size range as Montana-Dakota's South Dakota electric distribution operations have had a premium of 1,420 basis points (14.2 percent) over the average return on long-term corporate bonds.[24] When added to the recent average corporate bond yield, this size-related premium suggests an expected return of 18.12 percent. This analysis indicates that the rate of return that I am proposing in this proceeding would be low relative to the historic risk premiums earned by similarly-sized unregulated companies.

J. Market DCF Analysis

Q32. What other analysis did you conduct in determining the cost of equity capital for Montana-Dakota?

A32. For an additional benchmark of the reasonableness of my DCF results, I calculated the current required return for the companies contained in the S&P 500. Using data provided by the Bloomberg Professional service, I performed a market capitalization-weighted DCF calculation on the S&P 500 companies based on the current dividend yields and long-term growth rate estimates as of April 30, 2015.

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[23] Exhibit No.___(JSG-2), Schedule 1, at 3.

[24] Ibbotson SBBI 2015 Classic Yearbook, at 91 and 109. Ibbotson Associates defines size ranges based on market capitalization. I calculated the implied market capitalization for Montana-Dakota's South Dakota electric distribution operations based on the Company's projected average rate base for 2015 ($22.3 million) and the projected average equity ratio for 2015 (49.52 percent). This places Montana-Dakota's South Dakota electric distribution operations in Ibbotson Associates' tenth decile. Calculation: 20.6 percent – 6.4 percent = 14.2 percent.

These calculations are shown in Schedule 5 of Exhibit No.___(JSG-2). The current secondary market required ROE for the S&P 500 is 12.39 percent. This analysis indicates that the rate of return that I am proposing in this proceeding is low relative to the return required by investors who invest in the S&P 500.

K. Relative Risk Analysis

Q33. Have you compared the risks faced by Montana-Dakota's South Dakota electric utility operations with the risks faced by the proxy group of companies?

A33. Yes. There are four broad categories of risk that concern investors. These include:

1. Business Risk;
2. Regulatory Risk;
3. Financial Risk; and,
4. Market Risk.

Q34. Please describe the business risks inherent in the electric utility industry.

A34. Business risk refers to the ability of the firm to generate revenues that exceed its cost of operations. Business risk exists because forecasts of both demand and costs are inherently uncertain. Markets change and the level of demand for the firm's output may be sufficient to cover its costs at one time and later become insufficient. Sunk investments in long-lived electric utility assets, for which cost recovery occurs over a period of thirty years or more, are subject to enormous uncertainties and risks that demand, costs, supply, and competition may change in ways that adversely affect the value of the investment.

Q35. Is it appropriate to evaluate the risks of Montana-Dakota's South Dakota electric utility operations on a stand-alone basis for ratemaking purposes?

A35. Yes. The stand-alone principle is widely-recognized in public utility regulation. This is the principle that regulated rates and the allowed rate of return should be set at a level that reflects the risks and investment characteristics of the regulated entity alone, as if it has no affiliates. If a parent company has greater risks, or lesser risks, than the regulated company, that fact should not affect the allowed rate of return. Similarly, the risks and financial positions of the parent, affiliates, subsidiaries or other jurisdictions of the regulated company should not be considered in setting rates for a regulated company. Many regulators have adopted the stand-alone principle in part to insulate ratepayers from the higher risks associated with possibly higher risk activities of the non-jurisdictional operations of a holding company.

In this case, the equity capital used to finance MDU's regulated electric utility operations in South Dakota is obtained from the parent company, MDU Resources Group. However, these operations must compete for equity capital with other divisions and jurisdictions within the MDU organization, and therefore must offer a return that is comparable to and competitive with the return available to utilities with levels of risk that are commensurate with the risk of the South Dakota electric operations on a stand-alone basis. For these reasons, Montana-Dakota's South Dakota electric operation should be evaluated as a stand-alone entity.

Q36. What are some of the business risks faced by Montana-Dakota's South Dakota electric utility operations?

A36. The Company's electric utility operations in South Dakota face many of the same business risks that are associated with other electric utilities. However, as shown on page 1 of Schedule 3 of Exhibit No.___(JSG-2), Montana-Dakota's South Dakota electric utility operations are considerably smaller than the operations of any of the proxy companies and a small fraction of the size of the typical proxy company. For example, Montana-Dakota's South Dakota electric utility total assets are equal to only 0.65 percent of the assets of the median proxy company. Similarly, Montana-Dakota's South Dakota electric utility operating revenues and operating income are only 0.55 percent and 0.35 percent of the level for the median proxy company, respectively. Thus, depending upon the measure of size, the typical proxy company is somewhere between 28 and 920 times the size of Montana-Dakota's South Dakota electric utility operations. The Company's smaller size has significant implications for business risks. As noted earlier, Ibbotson Associates has documented the significantly higher returns that have been associated with small companies. Considering only its smaller size, Montana-Dakota's South Dakota electric utility operations might require a return that is more than 100 basis points higher than the return required for the typical proxy company.

In addition, Montana-Dakota's generation portfolio is heavily reliant on coal. In 2014, 92 percent of its generation was fueled by coal. Montana-Dakota has the highest proportion of coal-fired generation of my entire proxy group of electric distribution companies. Utilities with generation that is heavily weighted toward

one fuel source face greater risks that adverse circumstances will arise that render much of their generating capacity uneconomic. Montana-Dakota's customers have benefited greatly from the company's use of low-cost coal, but there is an element of risk associated with this undiversified generating mix. In June, 2014 the Environmental Protection Agency proposed the Clean Power Plan, which is a plan to cut emissions from existing power plants. Complying with this regulation poses additional business risk as sizable future capital expenditures may be required. This burden could weigh heavily on companies like Montana-Dakota that own a significant amount of coal-fired generation assets.

In addition, as natural gas prices remain at historically low levels, coal-fired generation faces an increased risk of becoming uneconomic. In fact, most new generation constructed in recent years has been fueled with natural gas as a result of low natural gas prices and new generating technologies, or windpower due to various subsidies and mandates for renewable generating technologies.

Q37. What are the regulatory risks faced by Montana-Dakota's South Dakota electric utility operations?

A37. Regulatory risk is closely related to business risk and might be considered just another aspect of business risk. To the extent that the market demand for an electric utility's services is sufficiently strong that the company could conceivably recover all of its costs, regulators may nevertheless set the rates at a level that will not allow for full cost recovery. In effect, the binding constraint on electric utilities is often posed by regulation rather than by the working of market forces. One purpose of regulation is to provide a substitute for competition where markets are not workably

competitive. As such, regulation often attempts to replicate the type of cost discipline and risks that might typically be found in highly competitive industries.

Moreover, there is the perceived risk that regulators may set allowed returns so low as to effectively undermine investor confidence and jeopardize the ability of electric utilities to finance their operations. Thus, in some instances, regulation may substitute for competition and in other instances it may limit the potential returns available to successful competitors. In either case, regulatory risk is an important consideration for investors and has a significant effect on the cost of capital for all firms in the electric utility industry.

The regulatory environment can significantly affect both the access to, and cost of capital in several ways. As noted by Moody's, "the predictability and supportiveness of the regulatory framework in which it [a regulated utility] operates is a key credit consideration and the one that differentiates the industry from most other corporate sectors."[25] Moody's further noted that:

[25] Moody's Investors Service, *Regulated Electric and Gas Utilities*, December 23, 2013, at 9.

> Utility rates are set in a political/regulatory process rather than a competitive or free-market process; thus, the Regulatory Framework is a key determinant of the success of utility. The Regulatory Framework has many components: the governing body and the utility legislation or decrees it enacts, the manner in which regulators are appointed or elected, the rules and procedures promulgated by those regulators, the judiciary that interprets the laws and rules and that arbitrates disagreements, and the manner in which the utility manages the political and regulatory process. In many cases, utilities have experienced credit stress or default primarily or at least secondarily because of a break-down or obstacle in the Regulatory Framework – for instance, laws that prohibited regulators from including investments in uncompleted power plants or plants not deemed "used and useful" in rates, or a disagreement about rate-making that could not be resolved until after the utility had defaulted on its debts.[26]

Regulatory Research Associates assigns a rating of Average / 3 to the South Dakota Public Utilities Commission. This rating suggests slightly above average regulatory risk for Montana-Dakota's South Dakota electric utility operations.

Q38. Would you please describe Montana-Dakota's relative financial risks?

A38. Financial risk exists to the extent that a company incurs fixed obligations in financing its operations. These fixed obligations increase the level of income which must be generated before common stockholders receive any return and serve to magnify the effects of business and regulatory risks. Fixed financial obligations also increase the probability of bankruptcy by reducing the company's financial flexibility and ability to respond to adverse circumstances. One possible indicator of investors' perceptions of relative financial risk in this case might be obtained from credit ratings. Because Montana-Dakota, as a division of MDU Resources, does not have its own bonds outstanding, it is difficult to make direct comparisons

[26] *Ibid.*

between the ratings of Montana-Dakota and the proxy group. However, page 2 of Schedule 3 of Exhibit No.___(JSG-2) shows the credit ratings assigned by S&P and Moody's to each of the companies in the comparison group and MDU Resources.

The median S&P credit rating for companies in the proxy group is BBB+. By comparison, MDU Resources' senior unsecured debt also carries an S&P rating of BBB+. This suggests that the perceived business and financial risk of MDU Resources' bonds is equal to that of the typical company in the comparison group.

The capital structure data on Schedule 6 of Exhibit No.___(JSG-2) show that Montana-Dakota's filed common equity ratio of 49.52 percent is slightly greater than, but close to, the 47.08 percent median for the proxy companies as of March 31, 2015. This approximately average common equity ratio, suggests average financial risk for Montana-Dakota's South Dakota electric utility operations.

Q39. Would you please describe Montana-Dakota's market risks?

A39. Market risk is associated with the changing value of all investments because of business cycles, inflation, and fluctuations in the general cost of capital throughout the economy. Different companies are subject to different degrees of market risk largely as a result of differences in their business and financial risks. Overall, the market risk of Montana-Dakota's South Dakota electric utility business is comparable to that of the companies in the electric utility comparison group.

Q40. How do the overall risks of the proxy companies compare with the risks faced by Montana-Dakota's South Dakota electric utility operations?

A40. Montana-Dakota's South Dakota electric utility operations face overall risks that are near the top of the range relative to those of the proxy companies. Although it has financial risks that are average relative to the proxy companies, Montana-Dakota's South Dakota electric utility operations have business risks that are well above average due to its exceptionally small size and its greater reliance on coal-fired generation than all of the proxy companies. These considerations lead me to conclude that investors appraise the overall risks of Montana-Dakota's South Dakota electric utility operations to be above average relative to those of the proxy companies. Consequently, Montana-Dakota's South Dakota electric utility business requires an allowed rate of return that is in the upper portion of the range for the companies in the proxy group indicated by my DCF analyses.

III. SUMMARY AND CONCLUSIONS

Q41. Please summarize the results of your cost of capital study.

A41. I conducted three DCF analyses on a group of electric utilities that have a range of risks that is roughly comparable to those of Montana-Dakota's South Dakota electric utility operations. These results are summarized as follows:

Table 3: Summary of DCF Results

	Retention Growth DCF Analysis	Basic DCF Analysis	Blended Growth Rate DCF Analysis
High	10.08%	13.27%	10.70%
3rd Quartile	8.21%	10.65%	9.92%
Median	**7.98%**	**9.40%**	**8.53%**
1st Quartile	7.44%	8.34%	8.13%
Low	6.65%	7.12%	6.94%

In addition, I conducted two risk premium analyses and a market DCF analysis of the S&P 500 to test the reasonableness of my DCF analyses. Those results are summarized as follows:

Table 4: Benchmark Risk Premium and Market DCF Analyses

	Return
Risk Premium (Long-Term Corporate Bonds)	
vs. Large Company Stocks	9.7%
vs. Small Company Stocks	18.2%
Market DCF (S&P 500)	12.4%

In developing my recommendation, I have given greater weight to analysts' earnings growth forecasts and the Basic DCF analysis. Because projected retention growth is sustainable indefinitely and is directly related to the growth rate expectations for an individual company, it is a good indicator of the minimum growth rate that a company can maintain in the very long-run. However, companies can achieve growth through means in addition to retained earnings. Consequently, analysts' forecasts provide the best measure of expected growth for the foreseeable future.

My risk premium and market DCF analyses suggest that the DCF results generally are low relative to current market benchmarks. In particular, all of the DCF return estimates are considerably below the 18.2 percent risk premium return benchmark for companies in Montana-Dakota's relative size range. Similarly, the DCF estimates for the electric utility proxy companies are well below the 12.4 percent market DCF estimate for the S&P 500 companies.

Q42. What rate of return on common equity do you recommend for Montana-Dakota's South Dakota electric utility operations in this proceeding?

A42. My analyses indicate that an appropriate rate of return on common equity for Montana-Dakota's South Dakota electric utility operations at this time is 10.00 percent, which is above the median, but below the third quartile of the range for my Basic DCF analysis. It is also below the top of the range for each of the DCF analyses. This recommended return reflects my assessment that the overall risks of Montana-Dakota's South Dakota electric utility operations are above average relative to those of the proxy companies. Although the Company has average financial risks relative to the proxy companies, it has business risks that are well above average. In addition to its exceptionally small size relative to the proxy companies, Montana-Dakota's South Dakota electric utility operations are more heavily reliant on coal-fired generation than all but one of the proxy companies and the economics of coal-fired generation is threatened by proposed environmental regulations and other federal initiatives. Thus, my recommended return is appropriately positioned to reflect the current risks faced by Montana-Dakota's

South Dakota electric utility operations relative to the risks faced by the proxy companies.

Q43. Does this conclude your Prepared Direct Testimony?

A43. Yes.