SOAH DOCKET NO. 473-19-6677
PUC DOCKET NO. 49831

APPLICATION OF SOUTHWESTERN PUBLIC SERVICE COMPANY FOR AUTHORITY TO CHANGE RATES	**§**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

Revenue Requirement

DIRECT TESTIMONY AND EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF THE
TEXAS INDUSTRIAL ENERGY CONSUMERS

FEBRUARY 10, 2020

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ATTACHMENTS

DIRECT TESTIMONY OF RICHARD A. BAUDINO

I. QUALIFICATIONS AND SUMMARY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates, Inc. ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

Q. WHAT IS YOUR OCCUPATION AND BY WHOM ARE YOU EMPLOYED?

A. I am a consultant with Kennedy and Associates.

Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A. I received my Master of Arts degree with a major in Economics and a minor in Statistics from New Mexico State University in 1982. I also received my Bachelor of Arts Degree with majors in Economics and English from New Mexico State in 1979.

I began my professional career with the New Mexico Public Service Commission Staff in October 1982 and was employed there as a Utility Economist. During my employment with the Staff, my responsibilities included the analysis of a broad range of issues in the ratemaking field. Areas in which I testified included cost of service, rate of return, rate design, revenue requirements, analysis of sale/leasebacks of generating plants, utility finance issues, and generating plant phase-ins.

In October 1989, I joined the utility consulting firm of Kennedy and Associates as a Senior Consultant where my duties and responsibilities covered substantially the same areas as those during my tenure with the New Mexico Public Service Commission

Staff. I became Manager in July 1992 and was named Director of Consulting in January 1995. Currently, I am a consultant with Kennedy and Associates.

Appendix A summarizes my expert testimony experience.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of the Texas Industrial Energy Consumers ("TIEC").

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to address the allowed return on equity, capital structure, and overall rate of return on rate base for the regulated electric operations of Southwestern Public Service Company ("SPS", or the "Company"). I will also respond to the Direct Testimonies of SPS witnesses Ms. Ann Bulkley and Ms. Sarah Soong.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A. My conclusions and recommendations are as follows.

Based on current financial market conditions, I recommend that the Public Utility Commission of Texas ("PUCT" or the "Commission") adopt a 9.20% return on equity for SPS in this proceeding. My recommendation is based primarily on the results of a Discounted Cash Flow ("DCF") model analysis. My DCF analysis incorporates my standard approach to estimating the investor-required return on equity and utilizes the proxy group of 17 companies used by SPS witness Bulkley.

My cost of equity analyses also include Capital Asset Pricing Model ("CAPM") analyses for additional information to inform my recommendation to the Commission. I did not incorporate the results of the CAPM in my recommendation given the

unreasonably low cost of equity results being produced by this model at this time. Nonetheless, the CAPM confirms the fact that the required ROE for regulated electric utilities continues to be low, in line with the low interest rate environment that has prevailed in the economy for the last 10 or so years.

Finally, I also reviewed recent Commission-allowed ROEs presented by Ms. Bulkley and reviewed the results of her risk premium analysis using the recent yield on the 30-Year Treasury bond. This review helped inform my recommended ROE of 9.20% to the Commission.

I also recommend that the Commission reject SPS's requested 54.65% equity ratio. The Company's requested equity ratio is higher than the average common equity ratio of the proxy group and would result in excessive rates to SPS's Texas ratepayers. Instead, I recommend the Commission approve its last approved ratemaking capital structure for the Company of 51%. This equity ratio is still reasonable for SPS and is consistent with the 2018 equity ratios of the companies in the proxy group based on Value Line's data. A 51% equity ratio also falls within the range of equity ratios for the operating utilities in the proxy group as calculated by Ms. Bulkley and presented in her Attachment AEB-RR-13.

In Section IV, I respond to the testimony and ROE recommendation of Ms. Bulkley. I will demonstrate that her recommended ROE of 10.35% overstates the current investor-required return for a low-risk regulated electric utility like SPS. Today's financial environment of low interest rates has been deliberately and methodically supported by Federal Reserve policy actions since 2009. The Fed's

further lowering of short-term interest rates three times in 2019 supports future expectations of lower interest rates through 2020.

II. FUNDAMENTALS OF SETTING THE ALLOWED RETURN ON EQUITY

Q. WHAT ARE THE MAIN GUIDELINES TO WHICH YOU ADHERE IN ESTIMATING THE COST OF EQUITY FOR A FIRM?

A. Generally speaking, the estimated cost of equity should be comparable to the returns of other firms with similar risk structures and should be sufficient for the firm to attract capital. These are the basic standards set out by the United States Supreme Court in Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) and Bluefield W.W. & Improv. Co. v. Public Service Comm'n, 262 U.S. 679 (1922).

From an economist's perspective, the notion of "opportunity cost" plays a vital role in estimating the return on equity. One measures the opportunity cost of an investment equal to what one would have obtained in the next best alternative. For example, let us suppose that an investor decides to purchase the stock of a publicly traded electric utility. That investor made the decision based on the expectation of dividend payments and perhaps some appreciation in the stock's value over time; however, that investor's opportunity cost is measured by what she or he could have invested in as the next best alternative. That alternative could have been another utility stock, a utility bond, a mutual fund, a money market fund, or any other number of investment vehicles.

The key determinant in deciding whether to invest, however, is based on comparative levels of risk. Our hypothetical investor would not invest in a particular electric company stock if it offered a return lower than other investments of similar

risk. The opportunity cost simply would not justify such an investment. Thus, the task for the rate of return analyst is to estimate a return that is equal to the return being offered by other risk-comparable firms.

Q. DOES THE LEVEL OF INTEREST RATES AFFECT THE ALLOWED COST OF EQUITY, OR ROE, FOR REGULATED UTILITIES?

A. Yes. The common stock of regulated utilities is considered to be interest rate sensitive. This means that the cost of equity for regulated utilities tends to rise and fall with changes in interest rates. For example, as interest rates rise, the cost equity will also rise and vice versa when interest rates fall. This relationship is due in large part to the capital intensive nature of the utility industry, which relies heavily on both debt and equity to finance its regulated investments.

Q. DESCRIBE THE INTEREST RATE ENVIRONMENT OVER THE LAST 10 OR SO YEARS.

A. Since 2007 and 2008, the interest rates in the U.S. and the world economy have been consistently low. This trend was precipitated by the 2007 financial crisis and severe recession that followed beginning in December 2007. In response to this economic crisis, the Federal Reserve ("Fed") undertook an unprecedented series of steps to stabilize the economy, ease credit conditions, and lower unemployment and interest rates. These steps are commonly known as Quantitative Easing ("QE") and were implemented in three distinct stages: QE1, QE2, and QE3. The Fed's stated purpose of

QE was "to support the liquidity of financial institutions and foster improved conditions in financial markets."[1]

Q. MR. BAUDINO, BEFORE YOU CONTINUE PLEASE PROVIDE A BRIEF EXPLANATION OF HOW THE FED USES INTEREST RATES TO IMPROVE CONDITIONS IN THE FINANCIAL MARKETS.

A. Generally, the Fed uses monetary policy to implement certain economic goals. The Fed explained its monetary policy as follows:

> Monetary policy in the United States comprises the Federal Reserve's actions and communications to promote maximum employment, stable prices, and moderate long-term interest rates—the three economic goals the Congress has instructed the Federal Reserve to pursue.
>
> The Federal Reserve conducts the nation's monetary policy by managing the level of short-term interest rates and influencing the overall availability and cost of credit in the economy.[2]

One of the Fed's primary tools for conducting monetary policy is setting the federal funds rate. The federal funds rate is the interest rate set by the Fed that banks and credit unions charge each other for overnight loans of reserve balances. Traditionally the federal funds rate directly influences short-term interest rates, such as the Treasury bill rate and interest rates on savings and checking accounts. The federal funds rate has a more indirect effect on long-term interest rates, such as the 30-Year Treasury bond and private and corporate long-term debt. Long-term interest rates are set more by market forces that influence the supply and demand of loanable funds.

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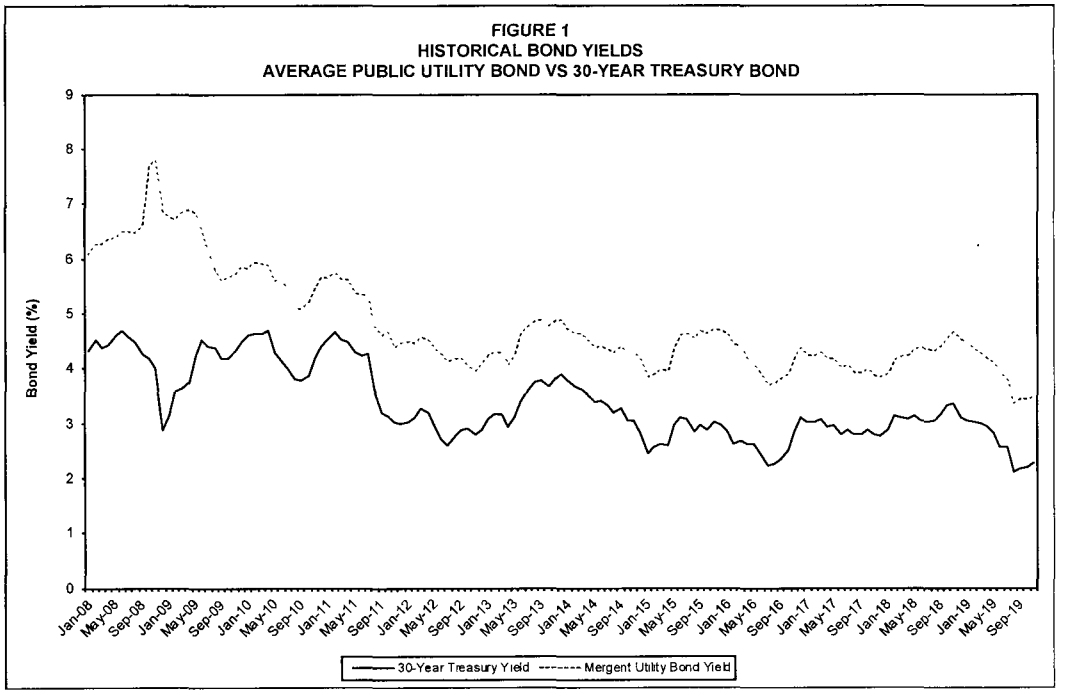
1 (http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm).
2 (https://www.federalreserve.gov/monetarypolicy.htm)

Q. WHAT HAS BEEN THE TREND OF BOND YIELDS SINCE THE FED IMPLEMENTED QUANTITATIVE EASING?

A. Figure 1 below presents a graph that tracks the 30-Year Treasury Bond yield and the Mergent average utility bond yield. The time period covered is January 2008 through December 2019.



The Fed's QE program and federal funds rate cuts were effective in lowering the long-term cost of borrowing in the United States. The 30-Year Treasury Bond yield declined from 5.11% in July 2007 to a low of 2.30% in December 2019. The average utility bond yield also fell substantially, from 6.28% in July 2007 to 3.45% in July December 2019.

Q. PLEASE SUMMARIZE RECENT FED ACTIONS WITH RESPECT TO MONETARY POLICY.

A. In December 2015, the Fed began to raise its target range for the federal funds rate, increasing it to 1/4% to 1/2% from 0% to 1/4%. In the years following, the Fed increased the federal funds rate several more times, with the most recent increase announced on December 19, 2018 resulting in a federal funds rate range of 2.25% - 2.50%.

In 2019, however, the Fed reversed course and lowered the federal funds rate three times, with the rate now standing at 1.5% - 1.75%. In its press release dated January 29, 2020 the Fed stated the following[3]:

> Information received since the Federal Open Market Committee met in December indicates that the labor market remains strong and that economic activity has been rising at a moderate rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although household spending has been rising at a moderate pace, business fixed investment and exports remain weak. On a 12-month basis, overall inflation and inflation for items other than food and energy are running below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed.
>
> Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee decided to maintain the target range for the federal funds rate at 1-1/2 to 1-3/4 percent. The Committee judges that the current stance of monetary policy is appropriate to support sustained expansion of economic activity, strong labor market conditions, and inflation returning to the Committee's symmetric 2 percent objective. The Committee will continue to monitor the implications of incoming information for the economic outlook, including global developments and muted inflation pressures, as it assesses the appropriate path of the target range for the federal funds rate.

[3] https://www.federalreserve.gov/newsevents/pressreleases/monetary20200129a.htm

Q. WHAT ARE THE FED'S MOST RECENT ECONOMIC PROJECTIONS WITH RESPECT TO THE FEDERAL FUNDS RATE AND INFLATION?

A. The Fed provided certain economic projections that accompanied its December 11, 2019 press release showing the following:

- Projected federal funds rate of 1.6% for 2019 and 2020, 1.9% for 2021, and 2.1% for the longer run.
- Inflation running at 1.5% for 2019, 1.9% for 2020, and 2.0% for 2021 and 2022.[4]
- Real GDP growth of 1.9% for the longer run.

Q. WHY IS IT IMPORTANT TO UNDERSTAND THE FED'S ACTIONS SINCE 2008 AND THE EFFECT ON THE CURRENT COST OF CAPITAL IN THE ECONOMY GENERALLY AND FOR REGULATED UTILITIES SPECIFICALLY?

A. The Fed's monetary policy actions since 2008 were deliberately undertaken to lower interest rates and support economic recovery. The U.S. economy is still in a low interest rate environment. This environment has affected the common stocks of regulated utilities, which, as I mentioned earlier, are interest rate sensitive. Lower interest rates support lower required ROEs for regulated utilities.

Q. ARE CURRENT INTEREST RATES INDICATIVE OF INVESTOR EXPECTATIONS REGARDING THE FUTURE DIRECTION OF INTEREST RATES?

A. Yes. Securities markets are efficient and most likely reflect investors' expectations about future interest rates. As Dr. Morin pointed out in *New Regulatory Finance:*

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[4] https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20191211.pdf

> A considerable body of empirical evidence indicates that U.S. capital markets are efficient with respect to a broad set of information, including historical and publicly available information.[5]

Dr. Morin also noted the following:

> There is extensive literature concerning the prediction of interest rates. From this evidence, it appears that the no-change model of interest rates frequently provides the most accurate forecasts of future interest rates while at other times, the experts are more accurate. Naïve extrapolations of current interest rates frequently outperform published forecasts. The literature suggests that on balance, the bond market is very efficient in that it is difficult to consistently forecast interest rates with greater accuracy than a no-change model. The latter model provides similar, and in some cases, superior accuracy than professional forecasts.[6]

It is important to realize that investor expectations of changes in future interest rates, if any, are likely already embodied in current securities prices, which include debt securities and stock prices. Moreover, the current low interest rate environment still favors lower risk regulated utilities.

Q. YOU MENTIONED THAT THE REQUIRED COST OF EQUITY FOR REGULATED UTILITIES TENDS TO FOLLOW THE DIRECTION OF INTEREST RATES. COULD YOU ILLUSTRATE THIS RELATIONSHIP FOR THE COMMISSION?

A. Yes. Table 1 below presents data from Ms. Bulkley's Attachment AEB-RR-8 and presents the average yearly yield on the 30-year Treasury Bond and the yearly average allowed ROE for electric companies from 2000 through the second quarter of 2019. Table 1 shows that as the long-term Treasury Bond yield has fallen since 2000, allowed ROEs for electric utilities followed suit, although the decline in ROEs has been less than that for the 30-year Treasury Bond. The Premium column in Table 1 shows the

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5 Morin, Roger A., *New Regulatory Finance,* Public Utilities Reports, Inc. (2006) at 279.
6 *Ibid.* at 172.

difference between allowed ROE and the 30-Year Treasury yield. In 2007, for example, the premium of allowed ROEs over Treasury yields was 5.44%. The premium has grown significantly since 2007, rising to over 7.0% in 2012 and 2016 and falling to 6.63% through the second quarter of 2019.

Table 1
Allowed ROEs and
30-Year Treasury Yields

Year	Allowed ROE	30-Year T-Bond	Premium
2000	11 60%	5.93%	5.66%
2001	11 14%	5 49%	5.65%
2002	11 07%	5 29%	5.78%
2003	10 89%	4 92%	5 97%
2004	10 82%	5 03%	5 79%
2005	10 53%	4 57%	5 96%
2006	10 36%	4 88%	5 49%
2007	10.27%	4 84%	5 44%
2008	10.36%	4 27%	6 10%
2009	10 51%	4 07%	6 44%
2010	10 29%	4 25%	6 04%
2011	10 20%	3 91%	6 29%
2012	10 02%	2 92%	7 10%
2013	9 82%	3.44%	6 37%
2014	9 74%	3 34%	6 40%
2015	9 55%	2 84%	6.71%
2016	9 60%	2 60%	7.01%
2017	9.67%	2 89%	6 78%
2018	9 57%	3 11%	6 45%
2019	9 57%	2 94%	6 63%

Q. HOW DOES THE INVESTMENT COMMUNITY REGARD THE REGULATED ELECTRIC UTILITY INDUSTRY AS A WHOLE?

A. The Value Line Investment Survey noted the following in its review of the Electric Utility (Central) Industry dated December 13, 2019:

> The Federal Reserve raised interest rates in 2018. When 2019 began, the expectation was that there would be additional tightening this year. Not only has this not happened, the Fed has cut rates three times. This has helped boost the prices of most utility stocks, as lower interest rates make the dividend yields of utility issues relatively more appealing to income-seeking investors. Lower interest rates also reduce borrowing costs for companies. Eventually, interest expense reductions on debt held at the utility level will be passed through to ratepayers, but the companies will benefit from lower rates on debt held at the parent level

or at nonutility subsidiaries. This is a boon to companies making asset acquisitions, such as DTE Energy, which should soon complete the purchase of midstream gas assets in Louisiana.

There are some negative effects of lower interest rates, however. Utilities' allowed ROEs trend in the same direction as interest rates. When a utility files a general rate case, it is harder to obtain a higher allowed ROE (or avoid a cut in the allowed ROE) when interest rates are heading lower. In addition, most utilities have pension liabilities. These liabilities (and pension expense) rise when the rate used to discount them is lower.

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Most stocks covered in the Electric Utility Industry have fared very well in 2019. For the vast majority of these issues, the price has risen more than 10%. For some stocks, including Entergy, the quotation has soared 35%. The aforementioned reduction in interest rates (from a level that was already low) has induced income oriented investors to reach for yield. This is despite the fact that the valuations of electric utility issues are historically high. The group's average dividend yield is just 3.2%, and the price-earnings ratios of most of these stocks is well above that of the market. In fact, some recent quotations are above the 2022-2024 Target Price Range.

My position regarding the current low interest rate environment is consistent with Value Line's recent report on the electric utility industry. Lower interest rates mean lower allowed ROEs, although this is definitely not a negative for utility ratepayers. Further, lower interest rates translate into lower debt costs and a lower cost of capital applied to the utility's rate base. Again, this is a positive trend for ratepayers' cost of electricity.

Q. THE EDISON ELECTRIC INSTITUTE ("EEI") PUBLISHES QUARTERLY REVIEWS OF THE INVESTOR-OWNED ELECTRIC UTILITY INDUSTRY. PLEASE SUMMARIZE EEI'S FINDINGS WITH RESPECT TO CREDIT RATINGS, RISKS, AND VALUATIONS FOR THE ELECTRIC UTILITY INDUSTRY.

A. EEI's recent 3rd Quarter 2019 summary of the Standard and Poor's Utility Credit Ratings showed the following:

- The industry average credit rating was BBB+.
- 58% of the 45 utilities followed by EEI had credit ratings of BBB/BBB+.
- 27% had a credit rating of A-.

EEI's analysis shows that the investor-owned electric utility industry had strong and stable credit metric through the 3rd Quarter of 2019. EEI's *Q3 2019 Financial Update*, page 5, noted the following regarding whether electric utility valuations could rise further from their present levels:

> Wall Street analysts generally view utility stock valuations as high when measured by price/earnings (PE) ratios relative to the S&P 500 and to history. One reason for this is the very low level of interest rates both in the U.S. and overseas. The U.S. 10-year Treasury yield was about 6% in the late 1990s, more than triple today's level, while bond markets in Europe and Japan sport widespread negative yields. *Another reason is the strong fundamentals that underpin prospects for total returns in excess of 8% (5% from earnings growth and 3% from the dividend). Given this outlook, the view seems to be that utilities offer enough value to lift multiples higher still, particularly if global economic growth turns down and interest rates fall to new lows.* (emphasis added)

EEI's publication also noted the following with respect to interest rates:

> A sharp rise in interest rates is widely seen as the biggest macro threat facing utility investors. *Although that has been said for years and interest rates just seem to fall.* Inflation held near 2% throughout 2018 even as the economy roared and hasn't moved this year either. The main risk to the very long-lived economic expansion seems to be weakness rather than red-hot growth.
>
> Analysts note that the impact of rising rates would be on stock prices rather than earnings. Higher rates can translate into higher allowed ROEs and improved pension funding. Many companies have embedded low-cost debt from years of low rates, and interest rates could rise while remaining very low by historical standards. (emphasis added)

I underscore to the Commission EEI's statements regarding (1) prospects for total returns in excess of 8%, and (2) the stability of the current low interest rate environment despite years of predictions of higher interest rates. It also shows that the strong credit ratings for regulated electric companies are fully consistent with lower ROEs and lower cost of debt. In my view, these points support my recommended cost of equity for SPS of 9.20% as being consistent with investor expectations and current market conditions.

Q. WHAT ARE THE CURRENT CREDIT RATINGS FOR SPS?

A. Moody's long term issuer rating for SPS is Baa2, which is in the middle of the Baa credit rating range (Baa1 being the highest, Baa3 being the lowest). S&P's credit rating for SPS is A-, which is the lowest rating within the A rating category (A+ being the highest). Fitch's credit rating for SPS is BBB, which is in the middle of that rating category. Moody's, S&P, and Fitch all assign a stable credit outlook for SPS.

In response to discovery, SPS provided the December 20, 2019 Moody's Credit Opinion on the Company, which was an update to its former credit analysis.[7] The Moody's Credit Opinion cited the following credit strengths for SPS:

- Vertically integrated regulated utility with rate base of around $4.9 billion by year-end 2019.
- Some geographic and regulatory diversity amid mixed views of their credit supportiveness.

[7] See Exhibit SPS-AXM 5-4 (SUPP3).

- Dividend distributions are subject to the state commissions' indirectly imposed restrictions regarding capital structure.
- Participation in Xcel's money pool along with separate credit facility enhance SPS' liquidity profile.

Credit challenges enumerated by Moody's were:

- Moderate exposure to carbon transition risk.
- Pending rate case uncertainty but expectation of overall credit supportive outcomes that allow SPS to record adequate credit metrics.
- Significant exposure to large Commercial and Industrial customers, but their growing electricity demand helps SPS's cash flow.

This Moody's report stated that although SPS operates in Texas with a historical test-year convention, HB1535 allows utilities to include actual and estimated post-test year capital additions up to 30 days before the filing date.[8]

Moody's also noted the following with respect to SPS's capital investment plans and forecast:[9]

> For the 2020-2024 period, SPS' investment plan aggregates around $3.8 billion. This plan includes a $1 billion peak in 2020 (ratio of capex to depreciation of around 4.0 x) as SPS completes the aforementioned wind projects to allow them to qualify for 100% of the federal PTCs savings. However, after 2020, the utility's capital investments are expected to moderate on an absolute (annual investments ranging between $529 and $800 million) and relative basis (maximum ratio of capex over depreciation of around 2.3x). The relative moderation in its total investments will also help the utility manage its end-users' bills.
>
> During the 2020-2024 period, SPS has earmarked around $1.0 billion (25%) of the investments for electric distribution operations while it allotted around $1.5 billion (40%) for electric transmission as SPS

[8] Ibid, page 21 of 28.
[9] Ibid, page 24 of 28.

expands its transmission footprint in order to serve the local oil industry. For example, in November 2017, the NMPRC approved the final phase of a 345-kV transmission line project which is part of the 168 miles Tuco-Yoakum-Hobbs project between the Hale County (Texas) and the Hobbs plant substation (New Mexico). This project (expected completion- Q2 2020) is a part of SPS' overall "Power for the Plains" grid expansion effort in the Texas Panhandle and eastern New Mexico (expected commission 2021).

Q. DID THE COMPANY'S DIRECT TESTIMONY SHOW THAT ITS CAPITAL EXPENDITURE PROGRAM WOULD BE MODERATING AFTER 2019 - 2020?

A. Yes. Ms. Soong's Table SWS-RR-2 on page 16 of her Direct Testimony shows that the Company's capital investment forecast moderates substantially after 2018 and 2019, which had expenditures of $1.021 billion and $1.130 billion, respectively. The forecast shows 2020 - 2023 capital expenditures ranging from $0.46 billion to $0.77 billion annually. I would note that this capital expenditures forecast does not match the forecast presented in the Moody's Credit Opinion I just cited. However, both forecasts indicate substantial moderation in SPS's forecasted capital expenditures after 2019-2020.

Q. DOES SPS'S CREDIT PROFILE BENEFIT FROM THE CURRENTLY EFFECTIVE TRANSMISSION AND DISTRIBUTION RIDERS?

A. Yes, the Transmission Cost Recover Factor ("TCRF") and Distribution Cost Recovery Factor ("DCRF") are definitely credit supportive for the Company and serve to reduce regulatory lag and risk compared to the regulatory approach in New Mexico. Moreover, the Texas legislature passed and the Governor signed into law effective September 1, 2019 Section 36.213 of the Utilities Code entitled Recovery of Generation Investment by Non-ERCOT Utilities. This new law enables non-ERCOT

utilities such as SPS to recover their investment in new power generation facilities through a rider approved by the PUCT. This rider would enable SPS and other electric utilities to begin recovering the costs of a new generating facility when it begins providing service to the utility's customers and without filing a traditional rate case to recover such costs. It is my understanding that a rulemaking is currently taking place that would implement this new law. Nevertheless, this new generation cost rider would essentially eliminate regulatory lag for SPS's new generation once the rule is implemented. In turn, it will also substantially reduce the Company's risk.

Q. DID XCEL ENERGY, THE HOLDING COMPANY FOR SPS, PROVIDE INFORMATION TO ITS INVESTORS THAT IS RELEVANT TO THE COMMISSION'S EVALUATION OF THE ALLOWED RATE OF RETURN FOR SPS?

A. Yes. Please refer to Exhibit RAB-1, which contains excerpts from Xcel Energy's presentation entitled *We're Building the Future, Evercore ISI Conference, January 2020.* Page 2 of Exhibit RAB-1 shows Xcel Energy's presentation of expected total shareholder returns, which range from 8% - 10%. My recommended ROE for SPS falls near the middle of this range.

Q. ON PAGE 32, LINES 13 THROUGH 20 OF HER DIRECT TESTIMONY, MS. SOONG EXPRESSED CONCERN REGARDING THE POTENTIALLY HIGHER COST OF DEBT FOR SPS DUE TO THE COMPANY'S RECENT CREDIT DOWNGRADE FROM MOODY'S. PLEASE ADDRESS MS. SOONG'S TESTIMONY WITH RESPECT TO SPS' CREDIT RATING AND COST OF DEBT.

A. On page 33 of her Direct Testimony, Ms. Soong testified that SPS priced and settled a new 30-Year "green" first mortgage bond in June 2019 of 3.75%. Table 2 presents the

public utility average and Baa bond yields from the Mergent Bond Record for January through July 2019.

Table 2
Public Utilty
Average and Baa Bond Yields

	Average	Baa
January 2019	4 48%	4 91%
February 2019	4.35%	4.76%
March 2019	4 26%	4 65%
Apnl 2019	4 18%	4.55%
May 2019	4 10%	4.47%
June 2019	3.93%	4.31%
July 2019	3.79%	4.13%

Source January 2020 Mergent Bond Record

Table 2 shows that SPS's June 2019 long-term debt issuance of 3.75% was *below* the yields of the average and Baa utility bond yields shown in the Mergent Bond Record. Notably, the Company's 3.75% cost was significantly below the public utility Baa bond yields for the 2019 time period. The data in Table 2 show that with its current credit ratings, SPS has not had any difficulty accessing the debt market at highly favorable rates.

Q. WHAT IS YOUR CONCLUSION WITH RESPECT TO THE OVERALL RISKINESS OF SPS?

A. SPS is roughly equivalent in risk to the average vertically integrated utility company. My assessment considers the following:

- SPS's Moody's credit rating of Baa2.
- SPS's A- credit rating from S&P, which is above the EEI average of BBB+.
- SPS's elevated, though moderating forecasted capital expenditures.
- SPS's low-risk regulated utility business.

- TCRF and DCRF, which function to reduce the Company's regulatory lag.
- Recent favorably priced long-term debt of 3.75%.
- Recent passage of a generation cost recovery rider applicable to non-ERCOT utilities such as SPS.

Q. BEGINNING ON PAGE 62 OF HER DIRECT TESTIMONY, MS. BULKLEY PRESENTED A DISCUSSION OF BUSINESS RISKS THAT SHE CONTENDS SHOULD BE CONSIDERED IN DETERMINING WHERE SPS'S ROE SHOULD FALL WITHIN HER RECOMMENDED RANGE OF RESULTS. PLEASE SUMMARIZE YOUR UNDERSTANDING OF THESE CONSIDERATIONS.

A. Ms. Bulkley presented the risks and other considerations that she believes should be taken into account in setting the allowed cost of equity for SPS. These risks considerations include:

- SPS's capital expenditure program (pages 62-65)
- Regulatory framework (pages 65-72)
- Customer concentration (pages 72-75)
- Management performance (pages 75-77)

Q. PLEASE RESPOND TO MS. BULKLEY'S DISCUSSION OF BUSINESS RISKS AND OTHER CONSIDERATIONS IN SETTING THE ALLOWED ROE FOR SPS IN THIS CASE.

A. Overall, Ms. Bulkley devoted considerable discussion to certain of SPS's risk factors, but did not fully discuss credit strengths mentioned by the credit rating agencies that tend to mitigate these risks. I presented both the credit strengths as well as credit challenges cited in the recent report from Moody's that contained the Company's current Baa2 credit rating. To the extent that the credit rating agencies consider SPS's

capital expenditure program, its regulatory framework (with is rated as Average in Texas), and customer concentration, these risks have already been factored into the Company's credit rating.

Q. SHOULD THE COMMISSION CONSIDER RAISING SPS'S ROE TO REFLECT ANY EFFECTS FROM THE TAX CUT AND JOBS ACT ("TCJA")?

A. No. The TCJA was discussed in the credit reports from Moody's, S&P, and Fitch and is thus fully reflected in the Company's aforementioned credit ratings. No additional consideration need be given for the effect of the TCJA on SPS's allowed ROE.

III. DETERMINATION OF RETURN ON EQUITY

Q. PLEASE DESCRIBE THE METHODS YOU EMPLOYED IN ESTIMATING YOUR RECOMMENDED RETURN ON EQUITY FOR SPS.

A. I employed a Discounted Cash Flow ("DCF") analysis using a proxy group of 17 regulated electric utilities as selected by Ms. Bulkley. In my opinion, they form a reasonable basis for estimating the investor required return on equity for SPS. I also employed Capital Asset Pricing Model ("CAPM") analyses using both historical and forward-looking data. Although I primarily relied on the DCF results for my recommended 9.20% ROE for SPS, the results from the CAPM tend to support the reasonableness of my recommendation.

Q. DESCRIBE THE PROXY GROUP YOU EMPLOYED TO ESTIMATE THE COST OF EQUITY FOR SPS.

A. In this case, I chose to use the same proxy group that Ms. Bulkley used in her ROE analyses. Ms. Bulkley set forth her selection criteria for the proxy group on page 35 of her Direct Testimony. Ms. Bulkley's selection criteria are generally reasonable and

include regulated electric utilities that have investment grade credit ratings from S&P and Moody's. Using the same proxy group as Ms. Bulkley also has the advantage of eliminating a source of disagreement between our respective ROE analyses and furnishes the PUCT with a consistent group of companies to compare and evaluate our ROE results.

Discounted Cash Flow ("DCF") Model

Q. PLEASE DESCRIBE THE BASIC DCF APPROACH.

A. The basic DCF approach is rooted in valuation theory. It is based on the premise that the value of a financial asset is determined by its ability to generate future net cash flows. In the case of a common stock, those future cash flows generally take the form of dividends and appreciation in stock price. The value of the stock to investors is the discounted present value of future cash flows. The general equation then is:

$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \cdots \frac{R}{(1+r)^n}$$

Where: V = *asset value*

R = *yearly cash flows*

r = *discount rate*

This is no different from determining the value of any asset from an economic point of view; however, the commonly employed DCF model makes certain simplifying assumptions. One is that the stream of income from the equity share is assumed to be perpetual; that is, there is no salvage or residual value at the end of some maturity date (as is the case with a bond). Another important assumption is that financial markets are reasonably efficient; that is, they correctly evaluate the cash flows

relative to the appropriate discount rate, thus rendering the stock price efficient relative to other alternatives. Finally, the model I typically employ also assumes a constant growth rate in dividends. The fundamental relationship employed in the DCF method is described by the formula:

$$k = {}^{D_1}/_{P_0} + g$$

Where: D_1 = *the next period dividend*
P_0 = *current stock price*
g = *expected growth rate*
k = *investor-required return*

Embodied in this formula, it is assumed that "k" reflects the investors' expected return. Use of the DCF method to determine an investor-required return is complicated by the need to express investors' expectations relative to dividends, earnings, and book value over an infinite time horizon. Financial theory suggests that stockholders purchase common stock on the assumption that there will be some change in the rate of dividend payments over time. We assume that the rate of growth in dividends is constant over the assumed time horizon, but the model could easily handle varying growth rates if we knew what they were. Finally, the relevant time frame is prospective rather than retrospective.

Q. WHAT WAS YOUR FIRST STEP IN DETERMINING THE DCF RETURN ON EQUITY FOR THE PROXY GROUP?

A. I first determined the current dividend yield, D_1/P_0, from the basic equation. My general practice is to use six months as the most reasonable period over which to

estimate the dividend yield. The six-month period I used covered the months from July to December 2019. I obtained historical prices and dividends from Yahoo! Finance. The annualized dividend divided by the average monthly price represents the average dividend yield for each month in the period.

The resulting average dividend yield for the proxy group is 3.09%. These calculations are shown in Exhibit RAB-2.

Q. HAVING ESTABLISHED THE AVERAGE DIVIDEND YIELD, HOW DID YOU DETERMINE THE INVESTORS' EXPECTED GROWTH RATE FOR THE COMPARISON GROUPS?

A. The investors' expected growth rate, in theory, correctly forecasts the constant rate of growth in dividends. The dividend growth rate is a function of earnings growth and the payout ratio, neither of which is known precisely for the future. We refer to a perpetual growth rate since the DCF model has no cut-off point. We must estimate the investors' expected growth rate because there is no way to know with absolute certainty what investors expect the growth rate to be in the short term, much less in perpetuity.

For my analysis in this proceeding, I used three major sources of analysts' forecasts for growth. These sources are The Value Line Investment Survey, Zacks, and Yahoo! Finance.

Q. PLEASE BRIEFLY DESCRIBE VALUE LINE, ZACKS, AND YAHOO! FINANCE.

A. The Value Line Investment Survey is a widely used and respected source of investor information that covers approximately 1,700 companies in its Standard Edition and several thousand in its Plus Edition. It provides both historical and forecasted

information on a number of important data elements. Value Line neither participates in financial markets as a broker nor works for the utility industry in any capacity of which I am aware.

Zacks gathers opinions from a variety of analysts on earnings growth forecasts for numerous firms including regulated electric utilities. The estimates of the analysts responding are combined to produce consensus average estimates of earnings growth. I obtained Zacks' earnings growth forecasts from its web site.

Like Zacks, Yahoo! Finance also compiles and reports consensus analysts' forecasts of earnings growth. I obtained these forecasts from the Yahoo! Finance web site.

Q. WHY DID YOU RELY ON ANALYSTS' FORECASTS IN YOUR ANALYSIS?

A. Return on equity analysis is a forward-looking process. Five-year or ten-year historical growth rates may not accurately represent investor expectations for future dividend growth. Analysts' forecasts for earnings and dividend growth provide better proxies for the expected growth component in the DCF model than historical growth rates. Analysts' forecasts are also widely available to investors and one can reasonably assume that they influence investor expectations.

Q. PLEASE EXPLAIN HOW YOU USED ANALYSTS' DIVIDEND AND EARNINGS GROWTH FORECASTS IN YOUR CONSTANT GROWTH DCF ANALYSIS.

Q. Columns (1) through (4) of Exhibit RAB-3 shows the forecasted dividend and earnings growth rates from Value Line and the earnings growth forecasts from Zacks and Yahoo! Finance for the companies in the proxy group. It is important to include

dividend growth forecasts in the DCF model since the model calls for forecasted cash flows and Value Line is the only source of which I am aware that forecasts dividend growth.

Q. HOW DID YOU PROCEED TO DETERMINE THE DCF RETURN OF EQUITY FOR THE PROXY GROUP?

A. To estimate the expected dividend yield (D_1), the current dividend yield must be moved forward in time to account for dividend increases over the next twelve months. I estimated the expected dividend yield by multiplying the current dividend yield by one plus one-half the expected growth rate.

Exhibit RAB-3, page 2, presents my standard method of calculating dividend yields, growth rates, and return on equity for the proxy group. The DCF Return on Equity Calculation section shows the application of each of four growth rates I used in my analysis to the current group dividend yield of 3.08% to calculate the expected dividend yield. I then added the expected growth rates to the expected dividend yield. My DCF return on equity was calculated using two different methods. Method 1 uses the Average Growth Rates shown in the upper section of Exhibit RAB-3 and Method 2 utilizes the median growth rates shown in that section.

Q. WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?

A. The results for Method 1 range from 7.69% to 8.36% and the results for Method 2 range from 7.76% to 8.67%. Based on my recent experience, the DCF ROEs using the Yahoo! Finance earning growth forecasts are unusually low. This is due, in part, to implausibly low forecasts for Exelon Corp. and PPL Corp., which are below 1.0%

currently. Therefore, I calculated the group averages in Column (5) excluding Yahoo! Finance for purposes of this case. The ROE using Method 1, then, is 8.28% and for Method 2 is 8.40%.

Q. DID YOU FURTHER ANALYZE THE ROE RESULTS BY COMPANY?

A. Yes. Exhibit RAB-3, page 3 of 3, presents the individual ROEs for each company in the proxy group. The expected growth rates were calculated excluding Yahoo! Finance numbers consistent with the averages on page 2 of the exhibit. The median ROE for the proxy group using this approach is 8.59%.

Capital Asset Pricing Model

Q. BRIEFLY SUMMARIZE THE CAPITAL ASSET PRICING MODEL ("CAPM") APPROACH.

A. The theory underlying the CAPM approach is that investors, through diversified portfolios, may combine assets to minimize the total risk of the portfolio. Diversification allows investors to diversify away all risks specific to a particular company and be left only with market risk that affects all companies. Thus, the CAPM theory identifies two types of risks for a security: company-specific risk and market risk. Company-specific risk includes such events as strikes, management errors, marketing failures, lawsuits, and other events that are unique to a particular firm. Market risk includes inflation, business cycles, war, variations in interest rates, and changes in consumer confidence. Market risk tends to affect all stocks and cannot be diversified away. The idea behind the CAPM is that diversified investors are rewarded with returns based on market risk.

Within the CAPM framework, the expected return on a security is equal to the risk-free rate of return plus a risk premium that is proportional to the security's market, or non-diversifiable, risk. Beta is the factor that reflects the inherent market risk of a security and measures the volatility of a particular security relative to the overall market for securities. For example, a stock with a beta of 1.0 indicates that if the market rises by 15%, that stock will also rise by 15%. This stock moves in tandem with movements in the overall market. Stocks with a beta of 0.5 will only rise or fall 50% as much as the overall market. So with an increase in the market of 15%, this stock will only rise 7.5%. Stocks with betas greater than 1.0 will rise and fall more than the overall market. Thus, beta is the measure of the relative risk of individual securities vis-à-vis the market.

Based on the foregoing discussion, the equation for determining the return for a security in the CAPM framework is:

$$K = Rf + \beta(MRP)$$

Where: K = *Required Return on equity*
Rf = *Risk-free rate*
MRP = *Market risk premium*
β = *Beta*

This equation tells us about the risk/return relationship posited by the CAPM. Investors are risk averse and will only accept higher risk if they expect to receive higher returns. These returns can be determined in relation to a stock's beta and the market risk premium. The general level of risk aversion in the economy determines the market risk premium. If the risk-free rate of return is 3.0% and the required return on the total market is 15%, then the risk premium is 12%. Any stock's required return can be determined by multiplying its beta by the market risk premium. Stocks with betas

greater than 1.0 are considered riskier than the overall market and will have higher required returns. Conversely, stocks with betas less than 1.0 will have required returns lower than the market as a whole.

Q. IN GENERAL, ARE THERE CONCERNS REGARDING THE USE OF THE CAPM IN ESTIMATING THE RETURN ON EQUITY?

A. Yes. There is some controversy surrounding the use of the CAPM and its accuracy regarding expected returns. There is substantial evidence that beta is not the primary factor for determining the risk of a security. For example, Value Line's "Safety Rank" is a measure of total risk, not its calculated beta coefficient. Beta coefficients usually describe only a small amount of total investment risk. Dr. Burton Malkiel, author of *A Random Walk Down Wall Street* noted the following in his best-selling book on investing:

> Second, as Professor Richard Roll of UCLA has argued, we must keep in mind that it is very difficult (indeed probably impossible) to measure beta with any degree of precision. The S&P 500 Index is not "the market." The Total Stock Market contains many thousands of additional stocks in the United States and thousands more in foreign countries. Moreover, the total market includes bonds, real estate, commodities, and assets of all sorts, including one of the most important assets any of us has - the human capital built up by education, work, and life experience. Depending on exactly how you measure "the market" you can obtain very different beta values.[10]

Pratt and Grabowski also stated the following with respect to the CAPM:[11]

> Even though the capital asset pricing model (CAPM) is the most widely used method of estimating the cost of equity capital, the accuracy and predictive power of beta as the sole measure of risk have increasingly come under attack. As a result, alternative measures of risk have been proposed and tested. That is, despite its wide adoption, academics and

[10] *A Random Walk Down Wall Street*, Burton G. Malkiel, page 218, 2019 edition.
[11] *Cost of Capital*, Shannon Pratt and Roger Grabowski, 5th Edition, page 288, published by Wiley.

practitioners alike have questioned the usefulness of CAPM in accurately estimating the cost of equity capital and the use of beta as a reliable measure of risk.

As a practical matter, there is substantial judgment involved in estimating the required market return and market risk premium. In theory, the CAPM requires an estimate of the return on the total market for investments, including stocks, bonds, real estate, etc. It is nearly impossible for the analyst to estimate such a broad-based return. Often in utility cases, a market return is estimated using the S&P 500. However, as Dr. Malkiel pointed out, this is a limited source of information with respect to estimating the investor's required return for all investments. In practice, the total market return estimate faces significant limitations to its estimation and, ultimately, its usefulness in quantifying the investor required ROE.

In the final analysis, a considerable amount of judgment must be employed in determining the market return and expected risk premium elements of the CAPM equation. The analyst's application of judgment can significantly influence the results obtained from the CAPM. My past experience with the CAPM indicates that it is prudent to use a wide variety of data in estimating investor-required returns. Of course, the range of results may also be wide, indicating the difficulty in obtaining a reliable estimate from the CAPM.

Q. HOW DID YOU ESTIMATE THE MARKET RETURN AND MARKET RISK PREMIUM OF THE CAPM?

A. I used two approaches to estimate the market risk premium portion of the CAPM equation. One approach uses the expected return on the market and is forward-looking.

The other approach employs an historical risk premium based on actual stock and bond returns from 1926 through 2018.

Q. PLEASE DESCRIBE YOUR FORWARD-LOOKING APPROACH TO ESTIMATING THE MARKET RISK PREMIUM.

A. The first source I used was the Value Line Investment Analyzer Plus Edition, for January 10, 2020. This edition covers several thousand stocks. The Value Line Investment Analyzer provides a summary statistical report detailing, among other things, forecasted growth rates for earnings and book value for the companies Value Line follows as well as the projected total annual return over the next 3 to 5 years. I present these growth rates and Value Line's projected annual returns on page 2 of Exhibit RAB-4. I included median earnings and book value growth rates. The estimated market returns using Value Line's market data range from 10.61% to 11.61%. The average of these market returns is 11.11%.

Q. WHY DID YOU USE MEDIAN GROWTH RATE ESTIMATES RATHER THAN THE AVERAGE GROWTH RATE ESTIMATES FOR THE VALUE LINE COMPANIES?

A. Using median growth rates is likely a more accurate approach to estimating the central tendency of Value Line's large data set compared to the average growth rates. Average earnings and book value growth rates may be unduly influenced by very high or very low 3 - 5-year growth rates that are unsustainable in the long run. For example, Value Line's Statistical Summary shows both the highest and lowest value for earnings and book value growth forecasts. For earnings growth, Value Line showed the highest earnings growth forecast to be 92.5% and the lowest growth rate to be -13.5%. With

respect to book value, the highest growth rate was 84% and the lowest was a -27.5%. None of these growth rate projections is compatible with long-run growth prospects for the market as a whole. The median growth rate is not influenced by such extremes because it represents the middle value of a very wide range of earnings growth rates.

Q. PLEASE CONTINUE WITH YOUR MARKET RETURN ANALYSIS.

A. I also considered a supplemental check to the Value Line projected market return estimates. Duff and Phelps compiled a study of historical returns on the stock market in its *2019 Valuation Handbook - U.S. Guide to Cost of Capital*, which is now part of its Cost of Capital Navigator subscription service. Some analysts employ this historical data to estimate the market risk premium of stocks over the risk-free rate. The assumption is that a risk premium calculated over a long period of time is reflective of investor expectations going forward. Exhibit RAB-5 presents the calculation of the market returns and market risk premiums using the historical data from Duff and Phelps.

Q. PLEASE EXPLAIN HOW THIS HISTORICAL RISK PREMIUM IS CALCULATED.

A. Exhibit RAB-5 shows the arithmetic average of yearly historical stock market returns over the historical period from 1926 - 2018. The average annual income return for 20-year Treasury bond is subtracted from these historical stock returns to obtain the historical market risk premium of stock returns over long-term Treasury bond income returns. The resulting historical market risk premium is 6.9%.

Q. DID YOU ADD AN ADDITIONAL MEASURE OF THE HISTORICAL RISK PREMIUM IN THIS CASE?

A. Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and Dr. Peng Chen indicating that the historical risk premium of stock returns over long-term government bond returns has been significantly influenced upward by substantial growth in the price/earnings ("P/E") ratio.[12] Duff and Phelps noted that this growth in the P/E ratio for stocks was subtracted out of the historical risk premium to arrive at an adjusted "supply side" historical arithmetic market risk premium is 6.14%, which I have also included in Exhibit RAB-5.

Q. HOW DID YOU DETERMINE THE RISK FREE RATE?

A. I used two different measures for the risk-free rate. The first measure is the average 30-year Treasury Bond yield for the six-month period from July through December 2019. This represents a current measure of the risk-free rate based on actual current Treasury yields, which is 2.27%.

The second measure comes from Duff and Phelps' most recent "normalized" risk-free rate of September 30, 2019.[13] Duff and Phelps developed this normalized risk-free rate using its measure of the "real risk free rate" and expected inflation. The Duff and Phelps normalized risk-free rate is 3.0%.

Q. PLEASE SUMMARIZE YOUR CALCULATED MARKET RISK PREMIUM ESTIMATES WITH THE FORWARD-LOOKING DATA FROM VALUE LINE AND THE HISTORICAL DUFF AND PHELPS EQUITY RISK PREMIUMS.

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12 *2019 Cost of Capital: Annual U.S. Guidance and Examples,* Duff and Phelps Cost of Capital Navigator, Chapter 3, pp. 45 - 47.

13 https://www.duffandphelps.com/insights/publications/valuation/us-normalized-risk-free-effective-september-30-2019.

A. My market risk premiums from Exhibits RAB-4 and RAB-5 are as follows:

- Forward-looking risk premiums 8.11% - 8.84%
- Historical risk premium 6.14% - 6.90%

By way of comparison, Duff and Phelps currently recommends an equity risk premium of 5.5%, which resulted in a base U.S. cost of capital estimate of 8.5%. Based on this comparison, my range of equity risk premium estimates are certainly not conservative or understated.

Q. HOW DID YOU DETERMINE THE VALUE FOR BETA?

A. I obtained the betas for the companies in the proxy group from most recent Value Line reports. The average of the Value Line betas for the proxy group is 0.60.

Q. PLEASE SUMMARIZE THE CAPM RESULTS.

A. For my forward-looking CAPM return on equity estimates, the CAPM results are 7.60% - 7.89%. Using historical risk premiums, the CAPM results range from 5.97% - 7.16%.

Q. DO YOU HAVE ANY COMMENTS REGARDING THE RESULTS OF THE CAPM AT THIS TIME?

A. Yes. The CAPM is currently producing results that are lower than what I would expect to be a reasonable range of equity risk premium estimates. Even if I had used Value Line's highest expected market return of 12.21% from Exhibit RAB-4 and the Duff and Phelps normalized risk-free rate, the CAPM result would have been:

$$CAPM = 3.0\% + .60\ (12.21\% - 3.0\%) = 8.53\%$$

This represents the top of the range for the CAPM. At this point, I cannot recommend that the Commission place substantial weight on the CAPM. Although Ms. Bulkley presented CAPM results that are higher, her analysis is fraught with problems that I will discuss at length later in my testimony.

ROE Conclusions and Recommendations

Q. PLEASE SUMMARIZE THE COST OF EQUITY RESULTS FOR YOUR DCF AND CAPM ANALYSES.

A. Table 3 below summarizes my return on equity results using the DCF and CAPM for the proxy group of companies.

Table 3
SUMMARY OF ROE ESTIMATES

DCF Methodology	
Average Growth Rates	
- High	8 36%
- Low	7 76%
- Average	8.28%
Median Growth Rates:	
- High	8.67%
- Low	7.76%
- Average	8.40%
Single Company DCF Estimates:	
-Top of the range	9.73%
-Median	8.59%
CAPM Methodology	
Forward-lookng Market Return:	
- Current 30-Year Treasury	7.60%
- D&P Normalized Risk-free Rate	7 89%
Historical Risk Premium:	
- Current 30-Year Treasury	5 97% - 6.43%
- D&P Normalized Risk-free Rate	6 70% - 7 16%

Q. DID YOU CONSIDER RECENTLY ALLOWED EQUITY RETURNS FROM REGULATORY COMMISSIONS?

A. Yes. My Table 1 shows that the average commission allowed ROEs and 30-Year Treasury Bond yields for 2016, 2017, 2018, and 2019 were as follows:

- 2016: ROE - 9.55%, 30-Year Treasury - 2.60%
- 2017: ROE - 9.67%, 30-Year Treasury - 2.89%
- 2018: ROE - 9.57%, 30-Year Treasury - 3.11%
- 2019: ROE - 9.57%, 30-Year Treasury - 2.94%

I note that the average 30-year Treasury yields in these years were significantly higher than current long-term Treasury yields. Exhibit RAB-4 shows that the most recent six-month average 30-year Treasury Bond yield is only 2.27%, compared to the average yield in 2019 of 2.94%. With long-term Treasury yields so much lower now, it makes sense that the allowed ROE for regulated electric companies should decline as well.

Q. WHAT IS YOUR RECOMMENDED RETURN ON EQUITY FOR SPS?

A. Based on my DCF analyses in this case, the decline in long-term interest rates in the economy generally, and considering recent commission allowed returns, I recommend that the Commission adopt a 9.20% return on equity for SPS.

Q. PLEASE EXPLAIN HOW YOU ARRIVED AT YOUR RECOMMENDATION.

A. I began with the average DCF ROE results in Table 2 and also considered the range of DCF estimates for each company in the proxy group shown on page 3 of Exhibit RAB-

5. My recommended 9.20% is within the range of the median ROE (8.59%) and the top of the range ROE (9.73%) for the individual companies in the proxy group. In recommending 9.20%, I recognize that recent Commission allowed returns are somewhat higher than my DCF results. However, I do not recommend that the Commission base its allowed ROE on the average allowed ROEs in other states. Such an approach would not be based on the specific evidence and circumstances presented in this case. Nevertheless, my recommendation of 9.20% is reasonably close to recently allowed ROEs and is fully based on the market evidence and analysis I reviewed.

I also considered the comments from the Value Line Investment Survey I quoted in Section II of my Direct Testimony, which stated that valuations for utility stocks are currently at historic highs and that some recent prices are above their forecasted levels for the 2022 - 2024 time period. My recommendation of 9.20% allows for some risk of declines in the stock prices of the companies in the proxy group given the current high valuations and the "reach for yield" by investors mentioned by Value Line.

Finally, 9.20% is a conservative estimate that recognizes the possibility of some slight additional risk for SPS given its current credit rating of Baa2 from Moody's. As I mentioned previously, 9.20% is greater than the median ROE for the individual proxy companies.

Q. DID YOU USE THE COMPANY'S REQUESTED CAPITAL STRUCTURE IN YOUR RECOMMENDED RATE OF RETURN?

A. No. SPS requested that the Commission grant a 54.65% common equity ratio in this proceeding. The Company's most recent litigated outcome of the equity ratio for ratemaking purposes is 51.0%.[14] In its Final Order in Docket No. 43695, the Commission found the following:

> In the PFD, the SOAH ALJs recommended SPS's proposed capital structure be adopted. However, the Commission concludes, based on the totality of the evidence, that SPS's rates should be set to reflect a capital structure consisting of 49% debt and 51% equity. This capital structure falls within the range of those supported by record evidence. It is based in part on SPS's test-year capital structure and in part on recent Commission decisions in litigated base-rate proceedings in which the Commission set rates for vertically-integrated electric utilities reflecting capital structures of approximately 50% debt and 50% equity. The Commission-adopted capital structure of 49% debt and 51% equity also reflects what would be a more prudent balance sheet of a vertically-integrated electric utility during this period of low-cost debt. Consistent with this discussion, the Commission rejects proposed finding of fact 72, 74, 75 and 76 and instead adopts findings of fact 72A, 72B, 74A, 75A, and 76A.

Q. HOW DOES YOUR RECOMMENDED COMMON EQUITY RATIO OF 51% COMPARE WITH THE COMMON EQUITY RATIOS OF THE PROXY GROUP?

A. Table 4 below shows the 2018 common equity ratios for each company in the proxy group as well as the average common equity ratio for the group.

[14] Final Order, PUCT Docket No. 43695.

Table 4
Proxy Group 2018 Common Equity Ratios

ALLETE, Inc.	60.1%
Alliant Energy Corporation	46.7%
Ameren Corp.	48.8%
American Electric Power Co.	46.8%
DTE Energy Company	45.8%
Duke Energy Corp.	46.2%
Exelon Corp.	47.2%
Evergy, Inc	60.0%
Hawaiian Electric	51.7%
IDACORP	56.4%
Northwestern Corporation	47 8%
OGE Energy Corp	58.0%
Otter Tail Corporation	55.3%
Pinnacle West Capital Corp	53.0%
PNM Resources, Inc	38.6%
Portland General Electric Company	53.5%
PPL Corporation	36.7%
Average	50.2%

Source: Value Line Investment Survey

The average common equity ratio for Ms. Bulkley's proxy group is 50.4%. This indicates that SPS is requesting significantly more equity than what is maintained by companies that SPS has deemed to be of comparable risk. My recommended capital structure of 51% equity is more in line with the equity ratios of the companies in the proxy group.

Ms. Bulkley also provided capital structure analysis that confirms the reasonableness of a 51% equity ratio for SPS in this case. On page 81 of her Direct Testimony, Ms. Bulkley calculated that the average equity ratios for the utility operating companies in the proxy group range from 46.51% to 60.29%. A 51% equity ratio for SPS, then, is reasonably within this range. Further, on page 82 of her Direct Testimony Ms. Bulkley testified that the average authorized equity ratio for vertically

integrated electric utilities from 2018 - 2019 was 51.80% and the median was 52%. Once again, these numbers underscore the reasonableness of the PUCT continuing to allow SPS a 51% equity ratio for ratemaking purposes in this proceeding.

Q. WHAT IS YOUR RECOMMENDED WEIGHTED COST OF CAPITAL FOR SPS?

A. My recommended weighted cost of capital is presented in Table 5. I used an equity ratio of 51%, SPS's requested cost of debt of 4.33%, and my recommended ROE of 9.20%. The weighed cost of capital for SPS is 6.81%.

Table 5
TIEC Recommended Weighted Cost of Capital

	Capital Ratio	Component Costs	Weighted Avg Cost
Long Term Debt	49 00%	4 33%	2 12%
Common Equity	51 00%	9 20%	4.69%
Total Capital	100 00%		6 81%

IV. RESPONSE TO SPS DIRECT TESTIMONY

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF MS. BULKLEY?

A. Yes.

Q. PLEASE SUMMARIZE MS. BULKLEY'S TESTIMONY AND APPROACH TO RETURN ON EQUITY.

A. Ms. Bulkley employed four methods to estimate the investor required rate of return for SPS: (1) the constant growth and multi-stage DCF models, (2) the CAPM , (3) the Bond Yield Plus Risk Premium model ("BYRP") and (4) Expected Earnings Analysis.

For her constant growth DCF approach, Ms. Bulkley used Value Line, First Call, and Zacks for the investor expected growth rate and average closing stock prices

over the 30-, 90-, and 180-trading days ending May 31, 2019. Ms. Bulkley also explained that she eliminated constant growth DCF results lower than 7.0%. For the proxy group, Ms. Bulkley's mean growth rate ROE results ranged from 8.74% to 8.91%.[15]

Ms. Bulkley also considered a multi-stage DCF approach, which she described on pages 47 through 49 of her Direct Testimony. Ms. Bulkley employed a long-run expected growth rate in the third stage of her model based on her forecast of GDP growth, which she calculated to be 5.52%. The mean proxy group results from this version of the DCF model ranged from 8.87% to 9.04%.[16]

With respect to the CAPM, Ms. Bulkley utilized three sources for the risk-free rate: (1) a current 30-day average on the 30-Year Treasury Bond of 2.85%, (2) a projected 30-Year Treasury Bond yield through 2020 of 3.06%, and (3) a projected yield of 3.60% for 2021 through 2025. Ms. Bulkley estimated her market risk premium using two measures of the expected return on the S&P 500 Index. The mean results from her CAPM analyses ranged from 9.91% to 10.88%. The individual CAPM results from her analyses ranged from 9.79% to 11.02%.

Ms. Bulkley's approach to the BYRP was based on commission-allowed ROEs from 1980 through May 2019. She also used the same three Treasury Bond yields that she utilized in her CAPM analyses. Ms. Bulkley's formulation of the BYRP approach resulted in a ROE range of 9.55% - 9.99%.[17]

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15 Refer to Ms. Bulkley's Direct Testimony, page 52, Figure 8.
16 Refer to Ms. Bulkley's Direct Testimony, page 52, Figure 8.
17 Refer to Ms. Bulkley's Direct Testimony, pages 59 and 60.

Finally, Ms. Bulkley also considered the Expected Earnings approach, in which she relied on projected return on book equity as reported by Value Line of the period from 2022 - 2024. The result from this approach was 10.25%.[18]

Based on the results of her analyses and judgment, Ms. Bulkley recommended a ROE range for SPS of 9.75% to 10.50%, concluding that the cost of equity is 10.35%.

Q. BEFORE YOU PROCEED TO THE PARTICULARS OF YOUR REVIEW OF MS. BULKLEY'S ROE ANALYSES, WHAT IS YOUR OVERALL CONCLUSION WITH RESPECT TO HER RECOMMENDED ROE RANGE?

A. My conclusion is that although Ms. Bulkley testified about the importance of using multiple methods to estimate the investor required return, she omitted the entirety of her mean constant growth and multi-stage DCF estimates and appears to have relied almost exclusively on her CAPM results in formulating her recommended ROE range to the Commission. Ms. Bulkley's Figure 16 shows that the mean constant growth and multi-stage DCF results range from 8.74% to 9.04%. The mean high multi-stage DCF results ranged from 9.11% - 9.29%. It is only the mean high constant growth DCF results (9.97% - 10.14%) that fall within her recommended range for SPS.

In a similar fashion, two of the three BYRP ROE estimates (9.55% and 9.67%) fall below the bottom of her recommended ROE range of 9.75%. Only the 9.99% BYRP result that employs a forecasted 30-Year Treasury Bond yield of 3.60% falls within her recommended ROE range.

[18] Refer to Ms. Bulkley's Direct Testimony, page 61.

With respect to the high end of Ms. Bulkley's ROE range, it appears that only the CAPM - Bloomberg Beta ROE results using her calculated return on the S&P 500 companies are consistent with her recommended 10.5%.

Based on my review of Ms. Bulkley's ROE results shown on Figure 16, I conclude that Ms. Bulkley relied mainly on the CAPM ROE results for her ROE recommendations in this proceeding.

Q. IS IT APPROPRIATE FOR MS. BULKLEY TO REJECT THE MEAN RESULTS FROM HER DCF ANALYSES?

A. No, definitely not. Both the constant growth and multi-stage DCF models utilize verifiable public information with respect to investor return requirements for regulated electric utilities. Current stock prices are the best indicators we have of investor expectations and analysts' earnings and dividend growth forecasts may reasonably be assumed to influence investors' required ROEs. Discarding this important publicly available information serves to significantly overstate Ms. Bulkley's recommended investor required return for a low-risk regulated utility company such as SPS. The DCF model currently shows that investor required returns are considerably lower for utility stocks given their safety and security relative to the stock market as a whole.

Q. IS USING THE HIGH MEAN RESULTS FROM THE DCF MODELS APPROPRIATE?

A. No. Ms. Bulkley's high mean results simply use the highest ROE for each company in the proxy group, which is driven by the highest expected growth rate. There is no basis for assuming that investors are more likely to expect the highest growth rate from the three sources used by Ms. Bulkley. The average of the three sources is a far more likely

and reasonable assumption. For example, the proxy group high mean using Ms. Bulkley's 180-day average stock price is unduly influenced by excessive ROE estimates for Exelon (13.76%), Otter Tail (11.99%), and Portland General Corp. (11.31%).[19] I would also point out that Ms. Bulkley's DCF approach is asymmetric and biased because it only excludes DCF results that fall below 7.0%. She made no attempt to examine and exclude excessively high DCF estimates from her proxy groups.

Q. PLEASE PROCEED WITH YOUR DISCUSSION OF MS. BULKLEY'S RECOMMENDED ROE RANGE OF 9.75% - 10.5%.

A. Ms. Bulkley's recommended ROE range and recommended ROE of 10.35% for SPS significantly exceeds the average commission allowed returns for the last several years based on Ms. Bulkley's own data. My Table 1 shows that the average allowed ROE has been below 10.0% since 2013. Average commission-allowed ROEs for 2018 and 2019 were 9.57% and were below the 9.75% floor of Ms. Bulkley's recommended ROE range. During those years, the average yield on the 30-Year Treasury Bond was 2.94% - 3.11%. With the long-term Treasury Bond yield down to around 2.3% now, one would logically expect that ROEs would be even lower, not higher as Ms. Bulkley recommends.

Turning to Ms. Bulkley's CAPM results, it is informative to compare these results to recently allowed Commission ROEs in my Table 1. Ms. Bulkley's CAPM results using the Bloomberg Beta range from 10.43% - 11.02%. One would have to go

[19] See Attachment AEB-RR-2, page 3 of 3.

back to 2009 to find an average ROE (10.51%) that approximates the lower end of the Bloomberg Beta CAPM range. In 2009 the average 30-Year Treasury Bond yield was 4.07%, which is over 170 basis points, or 1.70%, higher than the current 2.30% yield. One would have to go even further back to 2002 to find an average allowed ROE of 11.07% to approximate the upper end of Ms. Bulkley's Bloomberg Beta CAPM range. In 2002, the average 30-Year Treasury Bond yield was 5.29%, almost 300 basis points higher than the more current 2.30% yield. My conclusion is that Ms. Bulkley's Bloomberg Beta CAPM results are so excessive and implausible that they should be rejected out of hand by the PUCT.

Q. ON PAGE 51, LINES 2 THROUGH 9 OF HER DIRECT TESTIMONY, MS. BULKLEY EXPRESSED CONCERNS REGARDING THE DCF MODEL AND CURRENT STOCK PRICE VALUATIONS AND PRICE/EARNINGS ("P/E") RATIOS. PLEASE ADDRESS MS. BULKLEY'S CRITICISMS.

A. Ms. Bulkley expressed some concern regarding current utility stock valuations, that they are high, and may not be sustainable. She testified that while she gave weight "to the range of reasonable results established using the DCF methodologies," her recommendation also gives weight to the results of other ROE estimation models.

First, it is important to realize that none of the models Ms. Bulkley and I use to estimate the investor required ROE strictly adhere to their underlying assumptions 100% of the time in the real world. The DCF, CAPM, and risk premium models all operate with certain simplifying assumptions. In Section III of my testimony I pointed out the limitations of the CAPM that must be considered in assessing its effectiveness relative to the DCF model. One of those limitations is estimating the market required rate of return. Estimating the market required rate of return requires considerable

judgment on the part of the analyst, judgment that may result in a wide range of possible returns. In this case, Ms. Bulkley and I used very different estimates of the market rate of return that caused our CAPM results to differ considerably. I will address the serious underlying problems with her CAPM approaches later in my testimony.

I suggest that the Commission recognize that no ROE estimation model strictly adheres to its underlying assumptions all the time.

Q. PLEASE CONTINUE WITH YOUR RESPONSE TO MS. BULKLEY'S CRITICISM OF THE DCF MODEL'S P/E ASSUMPTION.

A. With respect to the assumption of a constant P/E ratio, simply because the utility industry's current P/E ratio may be above the long-term average P/E ratio does not mean that the DCF results based on current data are questionable and should be thrown out completely. As I have stated previously in my testimony, capital markets are efficient and can be assumed to reflect investor preferences in the prices they are willing and able to pay for a regulated utility's common stock. This includes publicly available information to which investors have access, including P/E ratios. The current stock price, then, is reflective of the discounted future cash flows to the investor in the form of dividends as well as the expected price of the stock when it is sold. It does not make sense for a rational investor to expect a capital loss in the future based on the price that investor pays today. What this means is that it is reasonable to assume that current stock prices are reflective of investors' required ROE and that the DCF model can provide valid and valuable information to the Commission in its determination of the allowed ROE for regulated utilities generally and for SPS in this case.

Q. DID MS. BULKLEY GIVE WEIGHT TO THE REASONABLE RANGE OF RESULTS FROM HER DCF MODELS?

A. No. Ms. Bulkley gave no weight whatsoever to her mean DCF ROE results, which are reasonable and similar to my DCF results, although my results are lower due to updated stock prices and earnings growth estimates.

Q. ON PAGES 40 AND 41 OF HER DIRECT TESTIMONY, MS. BULKLEY CITED OPINION NO. 531 AND AN OCTOBER 2018 ORDER FROM THE FEDERAL ENERGY REGULATORY COMMISSION ("FERC") SUPPORTING THE USE OF MULTIPLE METHODS TO ESTIMATE THE COST OF EQUITY. HAS THE FERC ISSUED A MORE RECENT ORDER THAT ADDRESSES THE USE OF MULTIPLE ROE METHODOLOGIES?

A. Yes. FERC recently issued its Opinion No. 569 on November 21, 2019, Docket Nos. EL14-12-003 and EL15-45-000 regarding the methods used to estimate a just and reasonable ROE under the Federal Power Act ("FPA") section 206. In this Opinion, the FERC rejected using the Risk Premium and Expected Earnings approaches to estimating the ROE. FERC stated:

> 1. On November 15, 2018, the Commission issued an Order Directing Briefs in the above-captioned proceedings. The Briefing Order directed the participants in the above captioned proceedings to submit briefs regarding: (1) a proposed framework for determining whether an existing base return on equity (ROE) is unjust and unreasonable under the first prong of Federal Power Act (FPA) section 206; and (2) a revised methodology for determining just and reasonable base ROEs under the second prong of FPA section 206. As discussed below, we will adopt the proposal in the Briefing Order, with certain revisions. *Principally, we will not adopt the use of the expected earnings (Expected Earnings) and risk premium (Risk Premium) models in our ROE analyses under the first and second prongs of section 206, and instead will use only the discounted cash flow (DCF) model and capital-asset pricing model (CAPM) in our ROE analyses under both prongs of section 206.* (emphasis added)

FERC also found the following in its Opinion No. 569:

> 31. We will expand our methodology for determining whether an existing base ROE is unjust and unreasonable under the first prong of section 206, and for determining a new just and reasonable replacement base ROE under the second prong of section 206 when an existing ROE has been shown to be unjust and unreasonable, to rely on multiple financial models. Specifically, we will use the DCF model and CAPM in our ROE methodology, but not the Expected Earnings or Risk Premium models. As discussed further below, we find that expanding our methodology to use the CAPM model in addition to the DCF model will better reflect how investors make their investment decisions. This should result in our ROE analyses producing cost of equity estimates that more accurately reflect what ROE a utility must offer in order to attract capital. As discussed in sections VI and VIII below, we find that, on balance, the Expected Earnings and Risk Premium models would not improve our ROE determinations sufficiently to justify using those models, in light of their flaws and the potential inaccuracies and complexity that they could introduce into our ROE analyses.

Multi-Stage DCF Model and GDP Growth Rate

Q. HOW DID MS. BULKLEY ESTIMATE THE LONG-TERM GROWTH RATE IN GDP FOR THE THIRD STAGE OF HER MULTI-STAGE DCF ANALYSES?

A. Ms. Bulkley explained that she computed growth in real GDP of 3.22% using historical data from 1929 through 2018, then included an inflation component of 2.23% that resulted in her forecasted GDP growth rate of 5.52%.

Q. ARE YOU AWARE OF OTHER SOURCES THAT FORECAST GDP GROWTH? AND IF SO, WHAT ARE THOSE PROJECTIONS?

A. There are several other publicly available sources that indicate much lower forecasted GDP growth than Ms. Bulkley's forecast in her Direct Testimony.

In Section II of my testimony I cited recent economic projections from the Federal Reserve that were released on December 11, 2019. The Fed's forecast of real long-run growth in GDP is 1.9% per year. If we add the Fed's long-run projection of inflation of 2.0%, the result is an expected 3.9% growth in nominal GDP per year.

The Congressional Budget Office ("CBO") published *The 2019 Long-Term Budget Outlook* dated June 2019. The CBO projected yearly long-term growth in real GDP of 1.9% and long-term GDP price inflation of 2.0%.[20] Adding these two numbers together results in a long-term nominal growth rate in GDP of 3.9% per year.

The United States Energy Information Administration ("EIA") also published forecasts of real GDP and inflation in their publication entitled *Annual Energy Outlook 2019*. For the period from 2018 - 2050, the EIA projected yearly growth in real GDP of 1.9% and inflation of 2.30%, resulting in a nominal yearly GDP growth rate of 4.20%.

The three publicly available forecasts from these organizations show much lower expected growth in nominal GDP than Ms. Bulkley's forecasted growth rate of 5.52%. Although Ms. Bulkley did not include her multi-stage DCF results in her recommended ROE range, her results would have been much lower if she had employed an expected GDP growth rate of approximately 4.0% for the third stage of her model. For example, page 1 of Attachment AEB-RR-3 shows Ms. Bulkley's 30-Day Multi-Stage DCF results using the average first stage growth rate and her forecasted GDP growth of 5.52%. I calculate that reducing the forecasted GDP growth rate to 4.0% would lower Ms. Bulkley's mean DCF result from 8.87% to 7.62%.

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[20] Table A-2 of *The 2019 Long-Term Budget Outlook.*

CAPM

Q. BRIEFLY SUMMARIZE THE MAIN ELEMENTS OF MS. BULKLEY'S CAPM APPROACH.

A. On pages 53 and 54 of her Direct Testimony, Ms. Bulkley explained that she used three different 30-Year Treasury Bond yields as proxies for the risk-free rate: the then-current yield of 2.85%, a forecasted yield for 2019 through 2020 of 3.06%, and a forecasted yield for 2021 through 2025 of 3.60%. She explained further on pages 54 and 55 that she obtained beta values for the companies in the proxy group from Bloomberg and Value Line.

Finally, Ms. Bulkley estimated the market return for the companies in the S&P 500 using a DCF model, the results of which ranged from 13.90 to 14.41%.

Figure 10 of her Direct Testimony shows that the CAPM results ranged from 9.79% to 11.02%.

Q. IS IT APPROPRIATE TO USE FORECASTED OR PROJECTED BOND YIELDS IN THE CAPM?

A. No. Current interest rates and bond yields embody all of the relevant market data and expectations of investors, including expectations of changing future interest rates. The forecasted bond yields used by Ms. Bulkley are significantly at odds with the trend of declining long-term bond yields in 2019. Current interest rates provide tangible and verifiable market evidence of investor return requirements today and these are the interest rates and bond yields that should be used in both the CAPM and in the bond yield plus risk premium analyses. To the extent that investors give forecasted interest rates any weight at all, they are already incorporated in current securities prices.

Q. HOW DO MS. BULKLEY'S ESTIMATES OF THE OVERALL MARKET RETURN COMPARE TO YOURS?

A. My estimates of the market required return are as follows:

- Value Line 3-5 Year Total Return: 11.0% - 12.21%
- Value Line Growth Rates: 10.61%
- S&P Average Historical Returns: 11.90%

Ms. Bulkley's forecasted market returns of 13.90% - 14.41% are extraordinarily high compared to historical norms. Further, her calculation of the market return for the S&P 500 using Value Line's 3 -5 year earnings growth estimates greatly exceeds the Value Line 3-5 year total annual return numbers I used from the Value Line Investment Analyzer. Moreover, the number of companies the Value Line Investment Analyzer used to develop the total annual return numbers I used was 1,682, a far greater number of companies than the S&P 500 used by Ms. Bulkley. I recommend that the Commission give Ms. Bulkley's estimated market returns little weight in this proceeding.

Further, if we look historically at the actual capital appreciation for the S&P 500 over the period 1926 through 2018, we see that Ms. Bulkley's expected growth rates for the S&P 500 are significantly overstated, leading directly to an overstatement of her expected market returns. According to the Duff and Phelps *2019 SBBI Yearbook* the total return of the S&P 500 historically has been 11.90%.[21] This total return consists of an income return of 4.0% and a capital appreciation, or growth, component of 7.7%. However, Ms. Bulkley's expected 3 - 5 year growth rate for the S&P 500 is 11.69% -

[21] Duff and Phelps, *2019 SBBI Yearbook,* page 6-17.

12.27%, exceptionally high by historical standards. Note that I did not use historical growth for my own CAPM analyses. However, the actual historical appreciation in the S&P 500 suggests that growth rates used by Ms. Bulkley are highly unlikely to hold in the long run.

Finally, SPS's response to TIEC 2-5 presents the Company's assumed returns on its pension assets. I included the attachment from this response as Exhibit RAB-6. Note that the assumed annual return for U.S. Large Capitalization companies is 7.35% - 8.52%. These assumed returns are substantially lower than the returns forecasted by Ms. Bulkley.

Q. ARE THERE SOURCES OF WHICH YOU ARE AWARE THAT SUGGEST MS. BULKLEY'S MARKET RISK PREMIUM RANGE OF 10.30% - 11.56% IS UNREASONABLY HIGH?

A. Yes. In the authoritative corporate finance textbook by Brealey, Myers, and Allen the authors stated:

> Brealey, Myers, and Allen have no official position on the issue, but we believe that a range of 5 to 8 percent is reasonable for the risk premium in the United States.[22]

As I cited earlier in my Direct Testimony, Duff and Phelps currently recommends a market risk premium of 5.5% and an overall U. S. cost of equity of 8.5%. These sources underscore how much Ms. Bulkley's recommended market risk premiums inflated her CAPM ROE estimates.

Risk Premium

[22] Richard A. Brealey, Stewart C. Myers, and Paul Allen, *Principles of Corporate Finance*, page 154; McGraw-Hill/Irwin, 8th Edition, 2006.

Q. PLEASE SUMMARIZE MS. BULKLEY'S RISK PREMIUM APPROACH.

A. Ms. Bulkley developed an historical risk premium using Commission-allowed returns for regulated electric utility companies and 30-year Treasury Bond yields from 1980 through May 2019. She used regression analysis to estimate the value of the inverse relationship between interest rates and risk premiums during that period. Applying the regression coefficients to the average risk premium and using the current and projected 30-year Treasury yields I discussed earlier, Ms. Bulkley's risk premium ROE estimate range is 9.55% – 9.99%.[23]

Q. PLEASE RESPOND TO MS. BULKLEY'S RISK PREMIUM ANALYSIS.

A. The bond yield plus risk premium approach is imprecise and can only provide very general guidance on the current authorized ROE for a regulated electric utility. Risk premiums can change substantially over time based on investor preferences and market conditions. These changes will not be incorporated into an historical risk premium analysis of the type Ms. Bulkley uses. As such, this approach is a "blunt instrument," if you will, for estimating the ROE in regulated proceedings. In my view, a properly formulated DCF model using current stock prices and growth forecasts is far more reliable and accurate than the bond yield plus risk premium approach, which relies on a historical risk premium analysis over a certain period of time.

On page 60, lines 9 through 14 of her Direct Testimony Ms. Bulkley testified that the results of her BYRP analysis "support selection of an authorized ROE in the upper range of the DCF results." However, given the range of Ms. Bulkley's BYRP

[23] Bulkley Direct Testimony, page 60.

ROE estimates and the fact that she is recommending a 10.35% ROE for SPS, it would appear that the BYRP results would argue for a lower ROE than her recommendation.

Q. WHAT WOULD THE RISK PREMIUM RESULT BE USING A CURRENT 30-YEAR TREASURY YIELD OF 2.30% IN MS. BULKLEY'S BYRP MODEL?

A. As I demonstrated earlier in my testimony, the yield on the 30-Year Treasury Bond has declined substantially since Ms. Bulkley filed her Direct Testimony in this proceeding. Applying Ms. Bulkley's BYRP model with the December 2019 30-Year Treasury Bond yield would yield the following result:

*BYRP ROE = 2.30% + (7.8665549% + (-0.409467844 * 2.30%) = 9.22%*

Using the current yield on the 30-Year Treasury bond produces a BYRP ROE result that supports my 9.20% ROE recommendation for SPS. It does not support Ms. Bulkley's recommendation of 10.35%.

Expected Earnings

Q. BEGINNING ON PAGE 60 OF HER DIRECT TESTIMONY, MS. BULKLEY PRESENTED HER EXPECTED EARNINGS ANALYSIS. PLEASE RESPOND TO MR. BULKLEY'S ANALYSIS.

A. Ms. Bulkley relied on Value Line's projected returns on book value equity for the period 2022-2024 for her expected earnings ROE estimate for the proxy group, the mean result of which is 10.25%.[24]

The major flaw in the expected earnings approach is that it measures accounting returns on book value, not investor required returns in the marketplace. A market-based ROE estimation method like the DCF model uses stock market data and

[24] Bulkley Direct Testimony, page 61.

earnings growth forecasts to determine a forward-looking ROE estimate that incorporates true opportunity cost measured against the returns available to the investor in alternative investments such as other stocks, bonds, real estate, and so forth. Further, changes in economic variables such as interest rates will affect the required returns of utility stock investments and other investments as well. Such changes will be incorporated into the DCF and CAPM models, which use current market data. These changes will not be reflected in book returns on common equity.

Turning to Ms. Bulkley's expected earnings approach, she provided absolutely no support for the assumption that Value Line's projected accounting returns on book value in the 2022 – 2024 projected time period have any influence whatsoever on required returns in today's financial marketplace or that they provide a useful benchmark in estimating current required returns. I recommend the Commission reject Ms. Bulkley's expected earnings approach and instead use market-based ROE estimation models to set SPS's allowed ROE in this proceeding.

Flotation Costs

Q. BEGINNING ON PAGE 77 OF HER DIRECT TESTIMONY, MS. BULKLEY PRESENTED HER POSITION REGARDING THE NEED TO RECOGNIZE THE EFFECT OF FLOTATION COSTS IN THE COST OF EQUITY. PLEASE ADDRESS MS. BULKLEY'S POSITION ON FLOTATION COSTS.

A. A flotation cost adjustment attempts to recognize and collect the costs of issuing common stock. Such costs typically include legal, accounting, and printing costs as well as broker fees and discounts. In my opinion, it is likely that flotation costs are already accounted for in current stock prices and that adding an adjustment for flotation costs amounts to double counting. A DCF model using current stock prices should

already account for investor expectations regarding the collection of flotation costs. Multiplying the dividend yield by a 4% flotation cost adjustment, for example, essentially assumes that the current stock price is wrong and that it must be adjusted downward to increase the dividend yield and the resulting cost of equity. This is not an appropriate assumption regarding investor expectations. Current stock prices most likely already account for flotation costs, to the extent that such costs are even accounted for by investors.

Management Performance

Q. ON PAGE 76, LINE 18 THROUGH PAGE 77, LINE 2 MS. BULKLEY EXPLAINED HER POSITION REGARDING THE RECOGNITION OF MANAGEMENT PERFORMANCE IN SETTING SPS'S ALLOWED ROE. SHOULD THE PUCT GRANT SPS A HIGHER ROE DUE TO MANAGEMENT PERFORMANCE?

A. No. Texas ratepayers are entitled to excellent performance by utility management as part of its responsibility to provide service at just and reasonable rates. Management should prudently manage expenses and investments so that rates to customers are set as low as possible consistent with safe and reliable service. I strongly recommend against the Commission allowing an adder to SPS's ROE in this case for management performance.

Q DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

AFFIDAVIT

STATE OF GEORGIA)

COUNTY OF FULTON)

RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.

Richard A. Baudino

Sworn to and subscribed before me on this
10th day of February 2020.

Notary Public

JESSICA K INMAN
NOTARY PUBLIC
CHEROKEE COUNTY, GEORGIA
MY COMMISSION EXPIRES JULY 31, 2023

RESUME OF RICHARD A. BAUDINO

EDUCATION

New Mexico State University, M.A.
Major in Economics
Minor in Statistics

New Mexico State University, B.A.
Economics
English

Thirty-seven years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

REGULATORY TESTIMONY

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies
Electric, Gas, and Water Utility Cost Allocation and Rate Design
Revenue Requirements
Gas and Electric industry restructuring and competition
Fuel cost auditing
Ratemaking Treatment of Generating Plant Sale/Leasebacks

RESUME OF RICHARD A. BAUDINO

EXPERIENCE

1989 to Present: **Kennedy and Associates: Director of Consulting, Consultant** - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to 1989: **New Mexico Public Service Commission Staff: Utility Economist** - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

CLIENTS SERVED

Regulatory Commissions

Louisiana Public Service Commission
Georgia Public Service Commission
New Mexico Public Service Commission

Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System
Air Products and Chemicals, Inc.
Arkansas Electric Energy Consumers
Arkansas Gas Consumers
AK Steel
Armco Steel Company, L.P.
Aqua Large Users Group
Assn. of Business Advocating Tariff Equity
Atmos Cities Steering Committee
Canadian Federation of Independent Businesses
CF&I Steel, L.P.
Cities of Midland, McAllen, and Colorado City
Cities Served by Texas-New Mexico Power Co.
Cities Served by AEP Texas
City of New York
Climax Molybdenum Company
Connecticut Industrial Energy Consumers
Crescent City Power Users Group
Cripple Creek & Victor Gold Mining Co.
General Electric Company
Holcim (U.S.) Inc.
IBM Corporation
Industrial Energy Consumers
Kentucky Industrial Utility Consumers
Kentucky Office of the Attorney General
Lexington-Fayette Urban County Government
Large Electric Consumers Organization
Newport Steel
North Carolina Attorney General's Office
Northwest Arkansas Gas Consumers
Maryland Energy Group
Occidental Chemical
PSI Industrial Group
Large Power Intervenors (Minnesota)
Tyson Foods
West Virginia Energy Users Group
The Commercial Group
Wisconsin Industrial Energy Group
South Florida Hospital and Health Care Assn.
PP&L Industrial Customer Alliance
Philadelphia Area Industrial Energy Users Gp.
Philadelphia Large Users Group
West Penn Power Intervenors
Duquesne Industrial Intervenors
Met-Ed Industrial Users Gp.
Penelec Industrial Customer Alliance
Penn Power Users Group
Columbia Industrial Intervenors
U.S. Steel & Univ. of Pittsburg Medical Ctr.
Multiple Intervenors
Maine Office of Public Advocate
Missouri Office of Public Counsel
University of Massachusetts - Amherst
WCF Hospital Utility Alliance
West Travis County Public Utility Agency
Steering Committee of Cities Served by Oncor
Utah Office of Consumer Services
Healthcare Council of the National Capital Area
Vermont Department of Public Service
Texas Industrial Energy Consumers

Expert Testimony Appearances
of
Richard A. Baudino
As of February 2020

Date	Case	Jurisdict.	Party	Utility	Subject
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jornada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electnc Co.	Revenue requirements, rate design, rate of return.

Expert Testimony Appearances
of
Richard A. Baudino
As of February 2020

Date	Case	Jurisdict.	Party	Utility	Subject
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

Expert Testimony Appearances
of
Richard A. Baudino
As of February 2020

Date	Case	Jurisdict.	Party	Utility	Subject
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/ GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

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Date	Case	Jurisdict.	Party	Utility	Subject
8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343-000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042 -000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.,Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

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Date	Case	Jurisdict.	Party	Utility	Subject
1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	*Pennsylvania* American Water Large Users Group	*Pennsylvania*-American Water Co.	*Rate of return, cost of* service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States,Inc.	Cost of debt.

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10/99	R-00994782	PA	Peoples Industrial Intervenors	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenors	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

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11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and HealthCare Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

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03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T	WV	West Virginia Energy Users Group	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

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07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

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Date	Case	Jurisdict.	Party	Utility	Subject
03/10	09-1352-E-42T	WV	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR-09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009-2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010-2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010-2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010-2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010-2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010-2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699-E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010-2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011-2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate

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Date	Case	Jurisdict.	Party	Utility	Subject
08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co,	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

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08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

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2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint, security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

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05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co	Return on equity, cost of short-term debt
12/17	2017-00321	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
1/18	2017-00349	KY	Office of the Attorney General	Atmos Energy	Return on equity, cost of debt, weighted cost of capital
5/18	Fiscal Years 2019-2021 Rates	PA	Philadelphia Large Users Group	Philadelphia Water Department	Cost and revenue allocation
8/18	18-0974-TF	VT	Vt. Dept. of Public Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
8/18	48401	TX	Cities Served by Texas-New Mexico Power Company	Texas-New Mexico Power Co.	Return on equity, capital structure
8/18	18-05-16	CT	Connecticut Industrial Energy Consumers	Connecticut Natural Gas Co.	Cost and revenue allocation
9/18	9484	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design
9/18	2017-370-E	SC	South Carolina Office of Regulatory Staff	South Carolina Electric & Gas, Dominion Resources, SCANA	Return on equity, service quality standards, credit quality conditions
10/18	18-1115-G-390P	WV	West Va. Energy Users Group	Mountaineer Gas Company	Customer protections for Infrastructure Replacement and Expansion Program
12/18	R-2018-3003558, R-2018-3003561	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation
02/19	UD-18-07	CCNO	Crescent City Power Users' Gp.	Entergy New Orleans, LLC	Return on equity, Reliability Incentive Mechanism, other proposed riders
03/19	2018-00358	KY	Office of the Attorney General	Kentucky American Water Co.	Return on equity, Qualified Infrastructure Program rider
05/19	19-E-0065 19-G-0066	NY	City of New York	Consolidated Edison Co.	Cost and revenue allocation, rate design, tariff issues, fast-charging station incentives

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05/2019	19-0513-TF	VT	Vt. Dept. of Public Service	Vermont Gas Systems	Return on equity, capital structure
06/2019	5-TG-100	WI	Wisconsin Industrial Energy Group	WEPCO, Wisconsin Gas, Wisconsin PS	Transportation and balancing issues
07/2019	49494	TX	Cities Served by AEP Texas	AEP Texas, Inc.	Return on equity, capital structure
08/2019	19-G-0309 19-G-0310	NY	City of New York	Brooklyn Union Gas Co.., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, tariff issues and modifications
08/2019	19-0316-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Company	Cost and revenue allocation
8/2019	5-UR-109	WI	Wisconsin Industrial Energy Gp	Wisconsin Electric Power Co., Wisconsin Gas, LLC	Cost Allocation, Class cost of service study
8/2019	6690-UR-126	WI	Wisconsin Industrial Energy Gp.	Wisconsin Public Service Corp.	Cost Allocation, Class cost of service study
9/2019	9610	MD	Maryland Energy Group	Baltimore Gas and Electric Co.	Cost and revenue allocation, rate design
12/2019	2019-00271	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
2/2020	49831	TX	Texas Industrial Energy Consumers	Southwestern Public Service Co.	Return on equity, capital structure, rate of return


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Attractive Investment Thesis

PREMIUM
UTILITY ASSETS

TRANSPARENT
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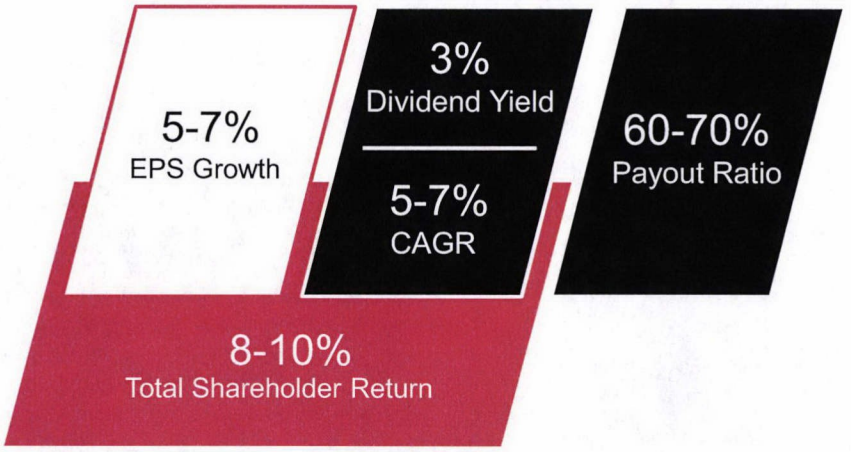
ESG PROFILE

STRONG
FINANCIAL PROFILE



SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
ALLETE, Inc.	High Price ($)	88.580	88.380	88.600	87.830	86.910	82.160
	Low Price ($)	82.380	83.280	83.590	85.130	78.880	78.250
	Avg. Price ($)	85.480	85.830	86.095	86.480	82.895	80.205
	Dividend ($)	0.588	0.588	0.588	0.588	0.588	0.588
	Mo. Avg. Div.	2.75%	2.74%	2.73%	2.72%	2.83%	2.93%
	6 mos. Avg.	2.78%					
Alliant Energy Corp.	High Price ($)	50.960	53.000	54.590	54.430	53.670	55.400
	Low Price ($)	48.480	48.770	50.360	51.580	50.930	52.240
	Avg. Price ($)	49.720	50.885	52.475	53.005	52.300	53.820
	Dividend ($)	0.355	0.355	0.355	0.355	0.355	0.355
	Mo. Avg. Div.	2.86%	2.79%	2.71%	2.68%	2.72%	2.64%
	6 mos. Avg.	2.73%					
Ameren Corp.	High Price ($)	77.280	77.520	80.850	80.050	77.920	77.040
	Low Price ($)	74.230	73.670	73.310	75.260	73.340	73.510
	Avg. Price ($)	75.755	75.595	77.080	77.655	75.630	75.275
	Dividend ($)	0.475	0.475	0.475	0.475	0.475	0.495
	Mo. Avg. Div.	2.51%	2.51%	2.46%	2.45%	2.51%	2.63%
	6 mos. Avg.	2.51%					
American Electric Power Co.	High Price ($)	91.820	91.500	94.890	96.220	94.980	95.770
	Low Price ($)	87.080	87.040	90.080	91.350	88.170	90.210
	Avg. Price ($)	89.450	89.270	92.485	93.785	91.575	92.990
	Dividend ($)	0.670	0.670	0.670	0.670	0.700	0.700
	Mo. Avg. Div.	3.00%	3.00%	2.90%	2.86%	3.06%	3.01%
	6 mos. Avg.	2.97%					
DTE Energy Co.	High Price ($)	132.090	131.730	134.370	133.390	127.930	130.700
	Low Price ($)	126.180	124.930	127.160	123.410	120.080	123.130
	Avg. Price ($)	129.135	128.330	130.765	128.400	124.005	126.915
	Dividend ($)	0.945	0.945	0.945	0.945	0.945	1.013
	Mo. Avg. Div.	2.93%	2.95%	2.89%	2.94%	3.05%	3.19%
	6 mos. Avg.	2.99%					
Duke Energy Corp.	High Price ($)	90.600	93.350	96.800	97.370	94.550	91.500
	Low Price ($)	86.170	86.310	92.330	93.330	86.360	87.150
	Avg. Price ($)	88.385	89.830	94.565	95.350	90.455	89.325
	Dividend ($)	0.928	0.945	0.945	0.945	0.945	0.945
	Mo. Avg. Div.	4.20%	4.21%	4.00%	3.96%	4.18%	4.23%
	6 mos. Avg.	4.13%					

SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Exelon Corp.	High Price ($)	49.800	47.470	49.320	48.580	45.920	45.730
	Low Price ($)	44.900	43.690	46.640	43.420	43.810	43.570
	Avg. Price ($)	47.350	45.580	47.980	46.000	44.865	44.650
	Dividend ($)	0.363	0.363	0.363	0.363	0.363	0.363
	Mo. Avg. Div.	3.07%	3.19%	3.03%	3.16%	3.24%	3.25%
	6 mos. Avg.	3.15%					
Evergy, Inc.	High Price ($)	62.120	66.000	67.810	66.540	65.630	65.150
	Low Price ($)	59.640	59.600	63.350	62.040	62.330	61.970
	Avg. Price ($)	60.880	62.800	65.580	64.290	63.980	63.560
	Dividend ($)	0.475	0.475	0.475	0.475	0.505	0.505
	Mo. Avg. Div.	3.12%	3.03%	2.90%	2.96%	3.16%	3.18%
	6 mos. Avg.	3.06%					
Hawaiian Electric Ind.	High Price ($)	45.190	45.140	45.960	45.780	45.400	47.640
	Low Price ($)	42.890	42.720	43.240	43.970	42.950	43.330
	Avg. Price ($)	44.040	43.930	44.600	44.875	44.175	45.485
	Dividend ($)	0.320	0.320	0.320	0.320	0.320	0.320
	Mo. Avg. Div.	2.91%	2.91%	2.87%	2.85%	2.90%	2.81%
	6 mos. Avg.	2.88%					
iDACORP	High Price ($)	105.250	110.570	114.010	113.250	108.770	108.300
	Low Price ($)	98.880	101.240	106.080	106.580	102.040	103.720
	Avg. Price ($)	102.065	105.905	110.045	109.915	105.405	106.010
	Dividend ($)	0.630	0.630	0.630	0.630	0.670	0.670
	Mo. Avg. Div.	2.47%	2.38%	2.29%	2.29%	2.54%	2.53%
	6 mos. Avg.	2.42%					
Northwestern Corp.	High Price ($)	73.810	72.660	76.720	76.180	73.340	73.080
	Low Price ($)	69.500	67.360	71.630	70.950	68.030	69.350
	Avg. Price ($)	71.655	70.010	74.175	73.565	70.685	71.215
	Dividend ($)	0.575	0.575	0.575	0.575	0.575	0.575
	Mo. Avg. Div.	3.21%	3.29%	3.10%	3.13%	3.25%	3.23%
	6 mos. Avg.	3.20%					
OGE Energy Corp.	High Price ($)	43.920	43.530	45.770	45.490	43.770	44.550
	Low Price ($)	42.110	41.390	42.410	42.130	41.790	41.830
	Avg. Price ($)	43.015	42.460	44.090	43.810	42.780	43.190
	Dividend ($)	0.365	0.365	0.365	0.388	0.388	0.388
	Mo. Avg. Div.	3.39%	3.44%	3.31%	3.54%	3.62%	3.59%
	6 mos. Avg.	3.48%					

SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Otter Tail Corp.	High Price ($)	54.510	54.260	55.100	56.690	57.740	53.160
	Low Price ($)	51.480	48.090	50.340	52.560	48.170	48.590
	Avg. Price ($)	52.995	51.175	52.720	54.625	52.955	50.875
	Dividend ($)	0.350	0.350	0.350	0.350	0.350	0.350
	Mo. Avg. Div.	2.64%	2.74%	2.66%	2.56%	2.64%	2.75%
	6 mos. Avg.	2.67%					
Pinnacle West Capital Corp.	High Price ($)	96.450	95.790	98.580	97.520	93.880	90.680
	Low Price ($)	90.530	90.480	91.180	92.060	84.260	84.880
	Avg. Price ($)	93.490	93.135	94.880	94.790	89.070	87.780
	Dividend ($)	0.738	0.738	0.738	0.738	0.783	0.783
	Mo. Avg. Div.	3.16%	3.17%	3.11%	3.11%	3.51%	3.57%
	6 mos. Avg.	3.27%					
PNM Resources, Inc.	High Price ($)	51.440	51.470	52.950	52.980	52.280	51.980
	Low Price ($)	48.890	47.590	48.710	50.330	47.230	47.850
	Avg. Price ($)	50.165	49.530	50.830	51.655	49.755	49.915
	Dividend ($)	0.290	0.290	0.290	0.290	0.290	0.290
	Mo. Avg. Div.	2.31%	2.34%	2.28%	2.25%	2.33%	2.32%
	6 mos. Avg.	2.31%					
Portland General Electric Co.	High Price ($)	55.950	57.270	58.430	57.520	57.920	57.090
	Low Price ($)	53.380	53.470	54.780	55.410	54.240	54.360
	Avg. Price ($)	54.665	55.370	56.605	56.465	56.080	55.725
	Dividend ($)	0.385	0.385	0.385	0.385	0.385	0.385
	Mo. Avg. Div.	2.82%	2.78%	2.72%	2.73%	2.75%	2.76%
	6 mos. Avg.	2.76%					
PPL Corporation	High Price ($)	31.250	29.990	31.900	33.510	34.400	36.280
	Low Price ($)	29.430	28.550	29.200	30.100	33.030	33.410
	Avg. Price ($)	30.340	29.270	30.550	31.805	33.715	34.845
	Dividend ($)	0.413	0.413	0.413	0.413	0.413	0.413
	Mo. Avg. Div.	5.44%	5.64%	5.41%	5.19%	4.90%	4.74%
	6 mos. Avg.	5.22%					
Monthly Avg. Dividend Yield		3.10%	3.12%	3.02%	3.02%	3.13%	3.14%
6-month Avg. Dividend Yield		3.09%					

Source: Yahoo! Finance

SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
DCF Growth Rate Analysis

Company	(1) Value Line DPS	(2) Value Line EPS	(3) Zacks	(4) Yahoo! Finance
ALLETE, Inc.	5.00%	5.00%	7.20%	7.00%
Alliant Energy Corporation	5.50%	6.50%	5.49%	5.40%
Ameren Corp.	4.50%	6.50%	6.24%	4.60%
American Electric Power Co.	5.50%	4.00%	5.65%	6.05%
DTE Energy Company	7.00%	4.50%	6.00%	4.83%
Duke Energy Corp.	2.50%	6.00%	4.84%	4.45%
Exelon Corp.	5.50%	9.00%	4.19%	0.46%
Evergy, Inc.	NMF	NMF	6.57%	6.50%
Hawaiian Electric	3.00%	2.50%	4.22%	3.40%
IDACORP	7.00%	3.50%	2.50%	2.50%
Northwestern Corporation	4.50%	3.00%	3.53%	3.23%
OGE Energy Corp.	6.50%	6.50%	4.26%	3.50%
Otter Tail Corporation	4.00%	5.00%	7.00%	9.00%
Pinnacle West Capital Corp.	6.00%	5.00%	4.71%	4.41%
PNM Resources, Inc.	7.00%	7.00%	5.73%	6.35%
Portland General Electric Company	6.50%	4.50%	4.91%	4.80%
PPL Corp.	2.00%	1.50%	N/A	0.50%
Average	5.13%	5.00%	5.19%	4.53%
Median	5.50%	5.00%	5.20%	4.60%

Sources: **Value Line Investment Survey, October 25, November 15, and December 13, 2019**
Yahoo! Finance and Zacks growth rates retrieved January 14, 2020
NMF = No meaningful figure, N/A = Not available

SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
DCF RETURN ON EQUITY

	(1) Value Line Dividend Gr.	(2) Value Line Earnings Gr.	(3) Zack's Earning Gr.	(4) Yahoo! Earning Gr.	(5) Average Excl. Yahoo!
Method 1:					
Dividend Yield	3.09%	3.09%	3.09%	3.09%	3.09%
Average Growth Rate	5.13%	5.00%	5.19%	4.53%	5.11%
Expected Div. Yield	3.17%	3.17%	3.17%	3.16%	3.17%
DCF Return on Equity	***8.30%***	***8.17%***	***8.36%***	***7.69%***	***8.28%***
Method 2:					
Dividend Yield	3.09%	3.09%	3.09%	3.09%	3.09%
Median Growth Rate	5.50%	5.00%	5.20%	4.60%	5.23%
Expected Div. Yield	3.17%	3.17%	3.17%	3.16%	3.17%
DCF Return on Equity	***8.67%***	***8.17%***	***8.37%***	***7.76%***	***8.40%***

SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
PROXY GROUP COMPANY DCF ROE

	Dividend Yield	Expected Div. Yield	Average Growth Excl. Yahoo!	DCF ROE
Evergy, Inc.	3.06%	3.16%	6.57%	9.73%
Exelon Corp.	3.15%	3.25%	6.23%	9.48%
OGE Energy Corp.	3.48%	3.58%	5.75%	9.34%
PNM Resources, Inc.	2.31%	2.38%	6.58%	8.96%
DTE Energy Company	2.99%	3.08%	5.83%	8.91%
Duke Energy Corp.	4.13%	4.22%	4.45%	8.67%
Alliant Energy Corporation	2.73%	2.81%	5.83%	8.64%
ALLETE, Inc.	2.78%	2.86%	5.73%	8.60%
Pinnacle West Capital Corp.	3.27%	3.36%	5.24%	8.59%
Ameren Corp.	2.51%	2.58%	5.75%	8.33%
Portland General Electric Company	2.76%	2.83%	5.30%	8.14%
American Electric Power Co.	2.97%	3.05%	5.05%	8.10%
Otter Tail Corporation	2.67%	2.74%	5.33%	8.07%
PPL Corp.	5.22%	5.27%	1.75%	7.02%
Northwestern Corporation	3.20%	3.26%	3.68%	6.94%
IDACORP	2.42%	2.47%	4.33%	6.80%
Hawaiian Electric	2.88%	2.92%	3.24%	6.16%
Median				8.59%

SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
Capital Asset Pricing Model Analysis

30-Year Treasury Bond, Value Line Beta

Line No.		Value Line
1	Market Required Return Estimate	11.11%
2	Risk-free Rate of Return, 30-Year Treasury Bond	
3	Average of Last Six Months	2.27%
4	Risk Premium	
5	(Line 1 minus Line 3)	8.84%
6	Comparison Group Beta	0.60
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	5.33%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	7.60%

Duff and Phelps Normalized Risk-free Rate

1	Market Required Return Estimate	11.11%
2	Duff and Phelps Normalized Risk-free Rate	3.00%
3	Risk Premium	
4	(Line 1 minus Line 2)	8.11%
5	Proxy Group Beta	0.60
6	Proxy Group Beta * Risk Premium	
7	(Line 4 * Line 5)	4.89%
8	CAPM Return on Equity	
9	(Line 2 plus Line 7)	7.89%

SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
Capital Asset Pricing Model Analysis

Supporting Data for CAPM Analyses

30 Year Treasury Bond Data

	Avg. Yield
July-19	2.57%
August-19	2.12%
September-19	2.16%
October-19	2.19%
November-19	2.28%
December-19	2.30%
6 month average	2.27%

Source: www.federalreserve.gov

Value Line Market Return Data:

Forecasted Data:	
Value Line Median Growth Rates:	
Earnings	11.00%
Book Value	8.00%
Average	9.50%
Average Dividend Yield	1.06%
Estimated Market Return	10.61%
Value Line Projected 3-5 Yr.	
Median Annual Total Return	11.00%
Average Annual Total Return	12.21%
Average	11.61%
Average of Projected Mkt. Returns	11.11%

Source: Value Line Investment Survey for Windows, Jan. 10, 2020

Comparison Group Betas:	Value Line
ALLETE, Inc.	0.65
Alliant Energy Corporation	0.60
Ameren Corp.	0.55
American Electric Power Co.	0.55
DTE Energy Company	0.55
Duke Energy Corp.	0.50
Evergy, Inc.	NMF
Exelon Corp.	0.65
Hawaiian Electric	0.55
IDACORP	0.55
Northwestern Corporation	0.60
OGE Energy Corp.	0.75
Otter Tail Corporation	0.70
Pinnacle West Capital Corp.	0.55
PNM Resources, Inc.	0.60
Portland General Electric Company	0.60
PPL Corp.	0.70
Average	0.60

Source: Value Line Investment Survey
NMF = No meaningful figure

SOUTHWESTERN PUBLIC SERVICE PROXY GROUP
Capital Asset Pricing Model Analysis
Historic Market Premium

	Arithmetic Mean	Adjusted Arithmetic Mean
CAPM with Current 30-Year Treasury Yield		
Long-Term Annual Return on Stocks	11.90%	
Long-Term Annual Income Return on Long-Term Treas. Bonds	5.00%	
Historical Market Risk Premium	6.90%	6.14%
Proxy Group Beta, Value Line	0.60	0.60
Beta * Market Premium	4.16%	3.70%
Current 30-Year Treasury Bond Yield	2.27%	2.27%
CAPM Cost of Equity, Value Line Beta	**6.43%**	**5.97%**
CAPM with D&P Normalized Risk-Free Rate		
Historical Market Risk Premium	6.90%	6.14%
Proxy Group Beta, Value Line	0.60	0.60
Beta * Market Premium	4.16%	3.70%
D&P Normalized Risk-Free Rate	3.00%	3.00%
CAPM Cost of Equity, Normalized Risk-Free Rate	**7.16%**	**6.70%**

Source: Duff and Phelps Cost of Capital Navigator
2019 Cost of Capital: Annual U.S. Guidance and Examples, Chapter 2, Exhibit 2.3, Chapter 3, pages 45-47

QUESTION NO. TIEC 2-5:

Referring to the Direct Testimony of Richard R. Schrubbe:

Please provide the expected return on assets used in calculating SPS's requested qualified pension costs, broken down by the expected return for each asset class (e.g., equities, fixed income).

RESPONSE:

Please refer to Exhibit SPS-TIEC 2-5 for a breakdown of the expected return on assets used in calculating SPS's requested qualified pension costs.

Preparer: Levi Glines
Sponsor: Richard R. Schrubbe

Xcel Energy Inc.

2019 Expected Return on Assets (EROA) Analysis[1]

Asset Class	Willis Towers Watson October 2018 Return Estimator: 10-Yr Arithmetic Returns[2]	10-Yr Geometric Returns[3]	Target Asset Allocations (Provided by Xcel Energy): XEPP	PSCO	SPS	NCE	MPT	VEBA (Includes EIS Allocation)
Cash and Derivatives	3.00%	2 99%	2.00%	2.00%	2.00%	2.00%	2.00%	4.10%
US Equity - All	8.64%	7.37%	0.00%	0.00%	0.00%	0.00%	0.00%	9.00%
US Equity - Large Cap	8.52%	7.35%	15.50%	14.50%	14.50%	15.50%	15.09%	2.20%
US Equity - Small Cap	8.76%	6 95%	3.00%	3.00%	3.00%	3.00%	3.00%	1.10%
Non-US Equity - EAFE	8.84%	7 23%	9.00%	8.50%	8.50%	9.00%	8.79%	5.20%
Non-US Equity - EM	11.58%	7 94%	9.00%	8.50%	8.50%	9.00%	8.79%	0.00%
Fixed Income - Barclays Aggregate	3.56%	3.40%	0.00%	0.00%	0.00%	0.00%	0.00%	52.80%
Fixed Income - High Yield	5.18%	4 57%	18.00%	16.00%	16.00%	18.00%	17.18%	11.60%
Fixed Income - EM Debt[4]	5.18%	4 57%	0.00%	0.00%	0.00%	0.00%	0.00%	5.50%
Alternatives - Hedge Fund of Funds	6.19%	5 70%	3.50%	3.50%	3.50%	3.50%	3.50%	8.50%
Alternatives - Private Equity	13.35%	8 66%	5.00%	4.50%	4.50%	5.00%	4.79%	0.00%
Alternatives - Real Estate	6.76%	6 08%	7.00%	6.50%	6.50%	7.00%	6.79%	0.00%
LDFI	3.57%	2.74%	18.00%	22.00%	22.00%	18.00%	19.65%	0.00%
Treasury Strips	2.86%	0 11%	10.00%	11.00%	11.00%	10.00%	10.41%	0.00%
Total			100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			XEPP	PSCO	SPS	NCE	MPT	VEBA
Expected Geometric Portfolio Returns (before administrative expenses)								
Willis Towers Watson - 10-year - passive			6.13%	5.93%	5.93%	6.13%	6.05%	4.76%
Willis Towers Watson - 20-year - passive			6.76%	6.58%	6.58%	6.76%	6.68%	5.21%
Goldman Sachs - 10-year - active (net of investment management fees)			6.50%	6.40%	6.40%	6.50%	6 46%	4.50%
Expected 2019 Administrative Expenses[5]			-0.38%	-0.58%	-0.26%	-0.63%	-0.44%	-0.08%
2019 EROA Assumption Selected by Xcel Energy[6]			**7.10%**	**6.50%**	**6.75%**	**6.90%**	**6.87%**	**5.30%**
2018 EROA Assumption			7.10%	6.50%	6.75%	6.90%	6.87%	5.80%

[1] All returns are net of investment expenses

[2] Reflects average of all single-year returns within the first 10 years of the simulation Returns assume passive management and do not include alpha

[3] Reflects average of all annualized compound returns for the first 10 years of the simulation Returns assume passive management and do not include alpha

[4] Emerging market debt modeled as Fixed Income - High Yield

[5] ASC 715 expected return assumption is net of administrative expenses as these are paid from plan assets. Expected administrative expenses equal annualized amounts paid through September 2018 plus expected changes in PBGC premiums VEBA assumption is a high-level estimate.

[6] See Xcel Energy assumption memo for more information on the assumption selection process and additional information considered