Exhibit No.
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Witness: Thomas J. Sullivan
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Sponsoring Party: Empire District Electric
Case No. ER-2016-0023
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Before the Public Service Commission of the State of Missouri

Direct Testimony

of

Thomas J. Sullivan

October 2015

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THOMAS J. SULLIVAN
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Thomas J. Sullivan, 15898 Millville Road, Richmond, Missouri, 64085.

Q. BY WHOM ARE YOU EMPLOYED?

A. I am President and owner of Navillus Utility Consulting LLC.

Q. HOW LONG HAVE YOU BEEN WITH NAVILLUS UTILITY CONSULTING?

A. I started the company in June 2011.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I received a Bachelor of Science Degree in Civil Engineering Summa Cum Laude from the University of Missouri - Rolla in 1980 and a Master of Business Administration Degree in Business Administration from the University of Missouri - Kansas City in 1985.

Q. ARE YOU A REGISTERED PROFESSIONAL ENGINEER?

A. Yes, I am a Registered Professional Engineer in the State of Missouri.

Q. TO WHAT PROFESSIONAL ORGANIZATIONS DO YOU BELONG?

A. I am a member of the American Society of Civil Engineers and the American Public Gas Association.

Q. WHAT IS YOUR PROFESSIONAL EXPERIENCE?

A. Prior to forming Navillus Utility Consulting LLC, I worked for Black & Veatch Corporation. I worked for Black & Veatch for over 31 years as an engineer, project engineer, project manager, vice president, and director. I have been responsible for the preparation and presentation of numerous studies for gas, electric, water, and wastewater utilities. My clients served include investor-owned utilities, publicly-owned utilities, and their customers. The professional studies that I have prepared involve valuation and depreciation, cost of service, cost allocation, rate design, cost of capital, supply analysis, load forecasting, economic and financial feasibility, cost recovery mechanisms, and other engineering and economic matters.

Q. HAVE YOU PREVIOUSLY APPEARED AS AN EXPERT WITNESS?

A. Yes, I have. In Schedule TJS-1, I list cases where I have filed expert witness testimony and appeared as an expert witness. As noted on that schedule, I have appeared before the Missouri Public Service Commission ("Commission") as an expert witness on depreciation rates for Missouri Gas Energy in Case Nos. GR-2001-292, GR-2004-0209, GR-2006-0422, and GR-2009-0355; The Empire District Gas Company in Case No. GR-2009-0434; and, The Empire District Electric Company in Case Nos. ER-2011-0004 and ER-2012-0345. I also served as an expert witness for Aquila, Inc. on class cost of service, rate design, and weather normalization in Case No. GR-2004-0072.

Q. FOR WHOM ARE YOU TESTIFYING IN THIS MATTER?

A. I am testifying on behalf of The Empire District Electric Company ("Empire" or "Company").

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. I am sponsoring Empire's proposed depreciation rates. The Company asked me to review the existing depreciation rates and, where appropriate, recommend changes to those rates such that the rates will, as accurately as possible, match the useful life of the property and the Company's experience with net salvage. A complete depreciation study was performed for Empire's plant in service at December 31, 2014.

In addition, I sponsor the Company's proposed amortization of the depreciation reserve deficiency associated with the retirement of Riverton coal-fired generating facilities (Units 7 and 8) and Riverton combustion turbine Unit 9.

Q. DO YOU SPONSOR ANY SCHEDULES WITH YOUR TESTIMONY?

A. Yes. I sponsor the following schedules:

Schedule TJS-1 - Expert Witness Testimony of Thomas J. Sullivan; and,

Schedule TJS-2 - Report on Depreciation Accrual Rates – Electric utility property through December 31, 2014 (the "Depreciation Study").

Q. WHAT ARE YOUR RECOMMENDATIONS REGARDING THE COMPANY'S DEPRECIATION ACCRUAL RATES?

A. In my report, Schedule TJS-2, I recommended that Empire implement the depreciation expense rates shown in Column E of Table 5-1 for Empire's production plant and Column O of Table 6-1 for Empire's mass property accounts. The recommended depreciation rates for Empire's production facilities

are based on the remaining life formula, and the depreciation rates for all other facilities (mass property accounts) are based on the whole life formula. I am also recommending that Empire amortize the undepreciated portion of its investment in the recently retired Riverton steam Units 7 and 8 and Riverton combustion turbine Unit 9 and the cost of decommissioning Riverton Units 7, 8, and 9 over a five-year period.

Q. WHAT IS THE IMPACT OF THE DEPRECIATION RATES YOU ARE RECOMMENDING FOR EMPIRE?

A. As seen in Table 7-1 contained in the Depreciation Study (Schedule TJS-2), the depreciation rates I am recommending for this case result in a decrease in annual depreciation expense of $913,943, based on plant in service at June 30, 2015. The change in depreciation expense is primarily driven by three factors: 1) an increase due to a change from the whole life to remaining life formula for Empire's production plants; 2) changes (increases and decreases) in the lifespans of Empire's generating facilities; and, 3) a decrease in mass property depreciation expense due to longer average service lives and decreased negative net salvage requirements (primarily for distribution related accounts).

My recommended five-year amortization of the undepreciated portion of Empire's investment in Riverton Units 7 and 8 and the decommissioning costs associated with the Riverton Units 7 and 8 are equal to $2,135,793 annually, and the undepreciated portion of Empire's investment in Riverton Unit 9 and its associated decommissioning costs are equal to $162,898 annually.

Combining the decrease in depreciation expense associated with changes in depreciation rates of $913,943, with my recommended amortization of Riverton Units 7, 8 and 9 costs of $2,298,681, results in an overall increase in total depreciation and amortization of $1,384,748.

Q. PLEASE OUTLINE THE REMAINDER OF YOUR DIRECT TESTIMONY.

A. I will first discuss my recommendations regarding the treatment of costs for Riverton Units 7, 8, and 9. I will then discuss my recommended depreciation rates for Empire's remaining production facilities. I will briefly describe the changes made to the estimated lifespans of Empire's generating facilities as denoted in the Depreciation Study (Schedule TJS-2). Lastly, I will discuss my recommended depreciation rates for Empire's mass property accounts.

RIVERTON UNITS 7, 8, AND 9

Q. PLEASE PROVIDE SOME BACKGROUND ON THE RIVERTON UNITS 7 AND 8 COAL-FIRED STEAM GENERATING UNITS.

A. In my direct testimony in Empire's 2012 rate case (Case No. ER-2012-0345), I recommended that the Company amortize the expected depreciation reserve deficiency for the Riverton steam units over the facilities' expected 4-year remaining life. I also recommended that the whole life depreciation rate for these facilities be increased from 1.62 percent to 3.20 percent. The increase in the depreciation rate was adopted in that case, but the amortization of the reserve deficiency was not.

As a result, the remaining plant to be depreciated at March 31, 2012, of approximately $17.6 million, decreased to $6.8 million at the time the units were

retired from service. This balance is no longer being depreciated by Empire, because the units were retired in June 2015. In addition, Empire has received estimates that it will cost $3.9 million to decommission the units. Therefore, there is a total cost of $10.7 million left to be recovered from the Riverton Units 7 and 8, as shown in Schedule TJS-2, Table 5-5.

Q. WHAT DO YOU RECOMMEND REGARDING THE UNRECOVERED COST ASSOCIATED WITH RIVERTON UNITS 7 AND 8?

A. I am recommending that these costs be amortized over a five-year period beginning with the effective date of new rates resulting from this case. The $10.7 million remaining cost, when amortized over 5 years, results in an annual amortization of $2,135,793.

Q. WHAT DO YOU RECOMMEND REGARDING THE UNRECOVERED COST ASSOCIATED WITH RIVERTON UNIT 9?

A. Like Riverton Units 7 and 8, Riverton Unit 9 was retired in June 2015. At the time of its retirement, Unit 9 had $758,397 in undepreciated investment. In addition, the same decommissioning study cited above for Riverton 7 and 8 includes approximately $56,000 in net decommissioning costs for Riverton 9. I am recommending that these costs also be amortized over a five-year period beginning with the effective date of new rates resulting from this case. The $814,490 remaining cost, amortized over 5 years, results in an annual amortization of $162,898.

Q. WHY ARE YOU RECOMMENDING A 5-YEAR RECOVERY REGARDING THE RIVERTON UNITS 7, 8, AND 9 UNDEPRECIATED INVESTMENT?

A. It is always preferable to recover costs from the ratepayers who are receiving the benefits of the facilities. Deferring costs beyond the retirement of the assets can result in an inter-generational subsidy. In other words, current and future ratepayers will pay costs that should have been borne by past rate payers. However, Empire is entitled to full recovery of these assets, and the 5-year amortization is a reasonable time frame to recover the investment and yet mitigate the potential inter-generational subsidy.

Q. CAN THE POTENTIAL FOR INTER-GENERATIONAL SUBSIDY BE MITIGATED IN THE FUTURE?

A. Yes. The use of the remaining life formula for unit assets (such as power plants) should be used instead of the current practice of using the whole life formula. The remaining life formula and the ability to adjust depreciation rates periodically will provide a more reasonable and straightforward basis to recover the cost of these assets over their useful life.

Q. PLEASE COMPARE CALCULATIONS USING THE REMAINING LIFE AND WHOLE LIFE FORMULAE.

A. Both calculations use the same retirement dates. However, the principal difference is that the whole life formula depreciates the book cost over the whole life of the asset, whereas the remaining life formula depreciates the book cost, less the accumulated depreciation, over the remaining life of the assets. The following is an example:

Book Cost of the Asset	-	$1,000,000
Original In-Service Date	-	1975

Current Accumulated Depreciation (2015) - $ 750,000

Expected Retirement Data 2025

Depreciation Rate – Whole Life Formula

1,000,000/(2025-1975)/1,000,000 = 2.0 percent per year

Depreciation Rate – Remaining Life Formula

(1,000,000-750,000)/(2025-2015)/1,000,000 = 2.5 percent per year

In the above example, there is a problem with the whole life calculation that is similar to the issue regarding the Riverton steam units. If the 2 percent whole life rate is used for the 10 year remaining life of the asset, $200,000 in additional depreciation will accumulate, for a total accumulated depreciation at the time the asset is retired of $950,000, which is $50,000 short of the total investment. The whole life rate can be adjusted to recognize this reserve deficiency; this is what I recommended in Case No. ER-2012-0345. In the above example, the estimated reserve deficiency (using the whole life formula) would be amortized over the remaining life of the asset, and the depreciation rate would be adjusted to reflect this amortization. The calculation would be as follows:

Reserve Deficiency - $ 50,000

Remaining Life (years) - 10

Amortization of Deficiency (per year) - $ 5,000

Whole Life Rate Adjustment

5,000/1,000,000 = 0.5 percent per year

Adjusted Whole Life Rate

2.0 + 0.5 = 2.5 percent per year

In other words, it is possible to adjust the whole life rate to correct for the reserve deficiency. The resulting adjusted rate would be the same as the remaining life rate. However, in my view, it is more straightforward to simply use the remaining life formula on unit assets rather than using the whole life formula and adjusting its deficiencies.

EMPIRE'S PRODUCTION FACILITIES

Q. PLEASE HIGHLIGHT THE DEPRECIATION RATES YOU ARE RECOMMENDING FOR EMPIRE'S PRODUCTION FACILITIES.

A. The depreciation rates I am recommending for Empire's production facilities are summarized in Table 5-1 of Schedule TJS-2. These rates are developed using the life span and unit property approaches underlying Empire's existing rates. The production units are identified in Column B of Table 5-1, and the lives of those units are shown in Tables 5-2 through 5-4. The Riverton steam Units 7 and 8; combustion turbine Unit 9, combustion turbines Units 10 and 11; and combined cycle Unit 12, are treated as separate unit properties. Also, Iatan Units 1 and 2 are treated as separate unit properties. Plant investment and accumulated depreciation associated with Riverton Units 7, 8, and 9 are not shown in Table 5-1, since these units have been retired; the investments shown in Table 5-1 (Lines 7 through 12) are related to common facilities that are continuing to be used and forecast to retire in 2018.

As shown in Table 5-1, as well as in Table 7-1 in less detail, the depreciation rates I am recommending for Empire's production facilities result in an increase in depreciation expense of $2.9 million per year.

Q. PLEASE EXPLAIN WHY THE REMAINING LIFE FORMULA IS PREFERABLE FOR UNIT ASSETS SUCH AS POWER PLANTS.

A. The remaining life formula for unit property accounts provides a much better opportunity to recover the investment in the facility over the asset's useful life and avoids the situation of deferring cost recovery beyond the life of the unit asset, thus resulting in inter-generational subsidy. The basic premise of the whole life method is that one straight-line depreciation rate is used over the entire life of the asset. If the life characteristics of an asset change over the life of that asset, or if additions are made to an asset that have a lifespan less than the whole life of the plant, depreciation rates based on the whole life method tend to have a bias towards under collecting depreciation expense, especially for unit type properties such as power plants. If this bias is not corrected, the end result is a failure to properly recover the cost of the unit asset over its useful life.

While the whole life formula can be adjusted for reserve deficiencies (or excesses) to essentially mirror the remaining life formula, it is much more straightforward to use the remaining life formula. For new facilities, the remaining life and whole life formulae produce essentially the same answer, as shown in Table 5-1 for the Iatan and Plum Point units. The issues with using whole life rates over the entire life of an asset begin to manifest themselves as units age and the life of the plant is changed (usually due to life extending

investments) and as investments are made to the plant throughout its life that have service lives less than the entire life of the facility.

Finally, in Missouri, depreciation rates are reviewed at least every five years and in many cases less (depending upon the frequency of rate case filings), so any depreciation rates that are used for unit properties using the remaining life formula can be adjusted and fine-tuned numerous times over the asset's life span in order to achieve the goal of matching the recovery of the cost to the useful life of the asset.

Q. PLEASE DESCRIBE THE CHANGES TO THE POWER PLANT LIFESPANS UTILIZED IN THE DEPRECIATION STUDY (SCHEDULE TJS-2).

A. The retirement dates and resulting lifespan for Asbury 1 has been increase by 5 years, from a 60 year lifespan (in the 2010 Depreciation Study) to a 65 year lifespan. The proposed change to the lifespan for Asbury 1 was recommended in my testimony in Case No. ER-2012-0345; however, the lifespan underlying the current depreciation rates for Asbury is 60 years. The retirement date and resulting lifespan for Iatan 2 has been increased by 10 years, from a 50 year lifespan (in the 2010 Depreciation Study) to a 60 year lifespan. The 60 year lifespan is consistent with the lifespan being used by Kansas City Power & Light Company, the majority owner of the plant.

For the combustion turbine units Energy Center 1 and 2, Riverton 10 and 11, and State Line 1, the retirement dates and lifespans have been reduced by 5 years, from 50 years to 45 years. For the FT-8 combustion turbine units Energy

Center 3 and 4, the retirement dates and lifespans have been reduced by 10 years, from 50 years to 40 years.

MASS PROPERTY ACCOUNTS

Q. PLEASE HIGHLIGHT THE DEPRECIATION RATES YOU ARE RECOMMENDING FOR EMPIRE'S MASS PROPERTY ACCOUNTS.

A. The depreciation rates I am recommending for Empire's mass property accounts are summarized in Table 6-1 of Schedule TJS-2. These rates are developed using the whole life formula underlying Empire's existing rates. The mass property accounts include all transmission, distribution, and general plant facilities and equipment.

As shown in Table 6-1, as well as in Table 7-1 in less detail, the depreciation rates I am recommending for Empire's mass property accounts result in a decrease in depreciation expense of $3.8 million per year.

Q. PLEASE EXPLAIN WHY YOU ARE RECOMMENDING THE WHOLE LIFE FORMULA FOR EMPIRE'S MASS PROPERTY ACCOUNTS.

A. The primary reason is that this is the methodology historically used in Missouri and it is the basis for Empire's existing depreciation rates. In addition, there are several key distinctions between the mass property accounts and the unit property accounts. Generally speaking, mass assets do not have a unique or distinct identity. In other words, one transformer, meter, or piece of conductor (of given capacities) is not much different from another and, when a unit is retired, it is usually replaced with a very similar unit with similar life characteristics. Further, the service provided by the mass asset group has an indefinite life span,

even though individual units have a finite life. If a meter at a home breaks or wears out, it is replaced with another meter that provides essentially the same function and the service continues. This is the key distinction between a mass property unit like a meter or transformer and a unit property like a power plant.

Q. HOW ARE MASS ASSETS DIFFERENT FROM A POWER PLANT?

A. A power plant has a finite life and, as the end of that life approaches, the specific date of retirement becomes more certain. Once that power plant is retired, it is not immediately replaced with a similar unit. Power plants are large facilities that take years to plan and construct. When Empire retired the 38 megawatt Riverton 7 coal-fired steam unit, it did not replace it with another 38 megawatt coal-fired steam unit.

Q. PLEASE RECAP YOUR RECOMMENDATIONS REGARDING DEPRECIATION RATES.

A. I am recommending the following:

1. Adopt the remaining life rates shown in Column E of Table 5-1 in Schedule TJS-2 for Empire's production facilities;
2. Adopt the whole life rates shown in Column O of Table 6-1 in Schedule TJS-2 for Empire's mass property accounts; and,
3. Adopt the amortization of the undepreciated plant investment and decommissioning costs associated with the Riverton steam units (Units 7 and 8) and Riverton combustion turbine Unit 9 shown in Table 5-5 of Schedule TJS-2 over a five-year period beginning with the conclusion of this rate case.

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Expert Witness Testimony of Thomas J. Sullivan

- *Peoples Natural Gas Company of South Carolina, South Carolina Public Service Commission Docket No. 88-52-G (1988).* Natural gas utility revenue requirements and rate design.
- *Peoples Natural Gas (UtiliCorp United, Inc.), Iowa Utilities Board Docket No. RPU-92-6 (1992).* Natural gas utility class cost of service study and peak day demand requirements.
- *Peoples Natural Gas (UtiliCorp United, Inc.), Kansas Corporation Commission Docket No. 193,787-U (1996).* Natural gas utility class cost of service study, rate design, and peak day demand requirements.
- *Southern Union Gas Company, Railroad Commission of Texas Gas Utilities Docket No. 8878 (1998).* Natural gas utility depreciation rates.
- *Southern Union Gas Company, City of El Paso (1999).* Natural Gas utility depreciation rates.
- *UtiliCorp United, Inc., Kansas Corporation Commission Docket No. 00-UTCG-336-RTS (1999).* Natural gas utility weather normalization, class cost of service, and rate design.
- *Philadelphia Gas Works, Pennsylvania Public Utility Commission Docket No. R-00006042 (2001).* Natural gas utility revenue requirements.
- *Missouri Gas Energy, Missouri Public Service Commission Docket No. GR-2001-292 (2001).* Natural gas utility depreciation rates.
- *Aquila Networks, Iowa Utilities Board Docket No. RPU-02-5 (2002).* Natural gas utility class cost of service study, rate design, and weather normalization adjustment.
- *Aquila Networks, Michigan Gas Utilities, Michigan Public Service Commission Case No. U-13470 (2002).* Natural gas utility class cost of service study, rate design, and weather normalization adjustment.
- *Aquila Networks, Nebraska Public Service Commission Docket No. NG-0001, NG0002, NG0003 (2003).* Natural gas utility weather normalization adjustment.
- *Aquila Networks, Missouri Public Service Commission Docket No. GR-2003 (2003).* Natural gas utility class cost of service study, rate design, annualization adjustment, and weather normalization adjustment.
- *North Carolina Natural Gas, North Carolina Utilities Commission Docket No. G-21-Sub 442 (2003).* Filed intervener testimony on behalf of the municipal customers regarding natural gas cost of service and rates related to intrastate transmission service.
- *Texas Gas Service Company, Division of ONEOK, Railroad Commission of Texas Gas Utilities Docket No. 9465 (2004).* Natural gas utility depreciation rates.

- *Missouri Gas Energy, Missouri Public Service Commission Docket No. GR-2004-0209 (2004).* Natural gas utility depreciation rates.

- *Aquila Networks, Kansas Corporation Commission Docket No. 05-AQLG-367-RTS (2004).* Natural gas utility class cost of service study, rate design, and weather normalization adjustment.

- *Aquila Networks, Iowa Utilities Board Docket No. RPU-05-02 (2005).* Natural gas utility class cost of service study, rate design, grain drying adjustment and weather normalization adjustment.

- *PJM Interconnection, LLC, Federal Energy Regulatory Commission Docket No. ER05-1181 (2005).* Operating cash reserve requirements.

- *Kinder Morgan, Inc., LLC, Wyoming Public Service Commission Docket No. 30022-GR-6-73 (2006).* Natural gas utility weather normalization adjustment, development of load factors, billing cycle adjustment, determination of test year billing units and revenue, and depreciation rates.

- *Missouri Gas Energy, Missouri Public Service Commission Docket No. GR-2006-0422 (2006).* Natural gas utility depreciation rates.

- *Kinder Morgan, Inc., Nebraska Public Service Commission Docket No. NG-0036 (2006).* Natural gas utility weather normalization adjustment, test year billing determinants and revenues under existing rates, customer and usage trends and rate design.

- *Aquila Networks, Kansas Corporation Commission Docket No. 07-AQLG-431-RTS (2006).* Natural gas utility class cost of service study, rate design, irrigation adjustment, and weather normalization adjustment.

- *Aquila Networks, Nebraska Public Service Commission Docket No. NG-0041 (2006).* Natural gas utility jurisdictional and class cost of service study, rate design, and revenue synchronization adjustment.

- *Zia Natural Gas Company, New Mexico Public Regulation Commission Case No. 08-00036-UT (2008).* Natural gas utility billing determinants and revenues, weather normalization adjustment, customer growth adjustment, peak day analysis, revenue requirement, class cost of service study, and rate design.

- *SourceGas Distribution, LLC, The Public Utilities Commission of the State of Colorado Docket No. 08S-0108G (2008).* Natural gas utility weather normalization adjustment, irrigation adjustment, group load factor analysis, therm billing, test year billing determinants and revenues, and trends in customer usage.

- *Black Hills/Iowa Gas Utility Company, LLC (fka Aquila Networks), Iowa Utilities Board Docket No. RPU-08-3 (2008)* Natural gas utility weather normalization adjustment, grain

drying adjustment, revenue synchronization adjustment, class cost of service study, and rate design.

- *Black Hills/Colorado Gas Utility Company, LLC (fka Aquila Networks), The Public Utilities Commission of the State of Colorado Docket No. 08S-430G (2008)* Natural gas utility weather normalization, revenue synchronization adjustment, customer reclassification, thermal billing, test year billing determinants, revenues under existing and proposed rates, class cost of service study, and rate design.

- *Wyoming Gas Company, Wyoming Public Service Commission Docket No 30009-48-GR-8 (2008)* Natural gas utility weather normalization adjustment, test year billing determinants, revenues under existing and proposed rates, rate of return, revenue requirement, class cost of service study, and rate design.

- *Missouri Gas Energy, Missouri Public Service Commission Docket No. GR-2009-0355 (2009).* Natural gas utility depreciation rates.

- *Empire District Gas Company, Missouri Public Service Commission Docket No. GR-2009-0434* (2009). Natural gas utility depreciation rates.

- *SourceGas Distribution, LLC, Nebraska Public Service Commission Docket No. NG-0060 (2009).* Natural gas utility customer and usage trends and adjustments; weather normalization adjustment, customer change adjustment, use per customer adjustment, and inflation adjustment riders; and competitive factors.

- *Black Hills/Nebraska Gas Utility Company, LLC (fka Aquila Networks), Nebraska Public Service Commission Docket No. NG-0061 (2009).* Natural gas utility jurisdictional and class cost of service study, rate design, and revenue synchronization adjustment.

- *SourceGas Distribution, LLC, Wyoming Public Service Commission Docket No. 30022-148-GR -10 (2010).* Natural gas utility customer and usage trends; use per customer adjustment, inflation adjustment, and uncollectible accounts riders.

- *Black Hills/Nebraska Gas Utility Company, LLC (f.n.a. Aquila Networks) Iowa Utilities Board Docket No. RPU-2010-0002 (2010).* Natural gas utility jurisdictional class cost of service study, rate design, weather normalization adjustment, grain dryer adjustment, annualization adjustment, ethanol plant adjustment, and synchronization adjustment.

- *The Empire District Electric Company, Missouri Public Service Commission Docket No ER 2011-0004 (2010).* Electric utility depreciation rates.

- *The Empire District Electric Company, Corporation Commission of Oklahoma Cause No. PUD 201100082 (2011).* Electric utility depreciation rates.

- *SourceGas Distribution, LLC, Nebraska Public Service Commission Docket No. NG-0067-RTS (2011).* Natural gas utility jurisdictional and class cost of service study, rate design, customer and usage trends, number of customer change adjustment, use per customer adjustment, and competitive factors.

- *Interstate Power and Light Company, Iowa Utilities Board Docket No. RPU-2012- 0002 (2012).* Natural gas utility class cost of service study and weather normalization adjustment.

- *The Empire District Electric Company, Missouri Public Service Commission Docket No. ER-2012-0345 (2012).* Electric utility depreciation rates.

- *Rocky Mountain Natural Gas Company LLC, Public Utilities Commission of the State of Colorado Docket No. 13AL-0067G (2013).* Intrastate natural gas pipeline cost of service study and rate design.

- *Rocky Mountain Natural Gas Company LLC, Public Utilities Commission of the State of Colorado Docket No. 13AL-067G (2013).* Safety and System Integrity Rider (SSIR).

- *SourceGas Distribution LLC, Public Utilities Commission of the State of Colorado Docket No. 13AL-143G (2013).* Tariff provisions to incorporate Docket No. 13AL-0067G unbundling and tariff changes.

- *Black Hills/Kansas Gas Utility Company, LLC, Kansas Corporation Commission Docket No. 14-BHCG-RTS (2014).* Natural gas utility class cost of service study, rate design, weather normalization adjustment, irrigation adjustment, annualization adjustment, synchronization adjustment, and bypass revenue rider

- *Wyoming Gas Company, Wyoming Public Service Commission Docket No 30009-57-GI-14 (2015)* Testified at hearing to consider Wyoming Gas Company's motion for relief from filing a general rate case.

AFFIDAVIT OF THOMAS J. SULLIVAN

STATE OF MISSOURI)
) ss
COUNTY OF RAY)

On the 6th day of October 2015, before me appeared Thomas J. Sullivan, to me personally known, who, being by me first duly sworn, states that he is President of Navillus Utility Consulting LLC and acknowledged that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

Thomas J. Sullivan

Subscribed and sworn to before me this 6th day of October, 2015

Notary Public

My commission expires: 3/14/16

JAN M. WANSING
Notary Public - Notary Seal
State of Missouri
Commissioned for Ray County
My Commission Expires: March 14, 2016
Commission Number: 12379779