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Issue: Depreciation Study  
Witness: John J. Spanos  
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Sponsoring Party: KCP&L Greater Missouri Operations Company  
Case No.: ER-2016-0156  
Date Testimony Prepared: February 23, 2016

**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO.: ER-2016-0156**

**DIRECT TESTIMONY**

**OF**

**JOHN J. SPANOS**

**ON BEHALF OF**

**KCP&L GREATER MISSOURI OPERATIONS COMPANY**

**Kansas City, Missouri  
February 2016**

**DIRECT TESTIMONY**

**OF**

**JOHN J. SPANOS**

**Case No. ER-2016-0156**

1 **Q. Please state your name and business address.**

2 A. John J. Spanos, 207 Senate Avenue, Camp Hill, Pennsylvania, 17011.

3 **Q. On whose behalf are you testifying?**

4 A. I am testifying on behalf of KCP&L Greater Missouri Operations Company (“GMO”  
5 or the “Company”).

6 **Q. Please state your educational background and describe your professional**  
7 **training and experience.**

8 A. I have Bachelor of Science degrees in Industrial Management and Mathematics from  
9 Carnegie-Mellon University and a Master of Business Administration from York  
10 College of Pennsylvania.

11 **Q. By whom and in what capacity have you been employed?**

12 A. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC (Gannett  
13 Fleming) as Senior Vice President, which provides depreciation consulting services to  
14 utility companies in the United States and Canada. I am responsible for conducting  
15 depreciation, valuation and original cost studies, determining service life and salvage  
16 estimates, conducting field reviews, presenting recommended depreciation rates to  
17 clients, and supporting such rates before state and federal regulatory agencies. I have  
18 been associated with the firm since college graduation in 1986.

1       **Q.    Do you belong to any professional societies?**

2       A.    Yes. I am a past President and member of the Society of Depreciation Professionals.  
3           I am also a member of the American Gas Association/Edison Electric Institute  
4           Industry Accounting Committee.

5       **Q.    Do you hold any special certification as a depreciation expert?**

6       A.    Yes. The Society of Depreciation Professionals has established national standards for  
7           depreciation professionals. The Society administers an examination to become  
8           certified in this field. I passed the certification exam in September 1997, and was  
9           recertified in August 2003, February 2008 and January 2013.

10      **Q.    Can you outline your experience in the field of depreciation?**

11      A.    Yes. I have 29 years of depreciation experience which includes giving expert  
12           testimony in over 200 cases before 40 regulatory commissions, including this  
13           Commission. Please refer to Appendix A for my qualifications.

14      **Q.    Have you received any additional education relating to utility plant  
15           depreciation?**

16      A.    Yes. I have completed the following courses conducted by Depreciation Programs,  
17           Inc.: “Techniques of Life Analysis,” “Techniques of Salvage and Depreciation  
18           Analysis,” “Forecasting Life and Salvage,” “Modeling and Life Analysis Using  
19           Simulation” and “Managing a Depreciation Study.” I have also completed the  
20           “Introduction to Public Utility Accounting” program conducted by the American Gas  
21           Association.

1 **Q. What is the purpose of your testimony?**

2 A. I am sponsoring Schedule JJS-1 stating the results of my depreciation study for  
3 GMO's electric plant as of December 31, 2014 (the "2014 Depreciation Study" or  
4 "Depreciation Study").

5 **Q. Would you please summarize your testimony?**

6 A. My testimony will explain the methods and procedures of the Depreciation Study and  
7 set forth the annual depreciation rates as of December 31, 2014. Schedule JJS-1  
8 contains the report which sets forth detailed methods, procedures and results of the  
9 Depreciation Study as of December 31, 2014. This report will be explained in Part II  
10 of my testimony.

11 **Q. What are the principal conclusions of your study and the bases for them?**

12 A. The principal conclusions of the study are depreciation accrual rates by account for  
13 GMO. Overall, the proposed depreciation rates are determined based on the  
14 remaining life method and the utilization of the life span procedure.

15 **Q. Please describe the contents of your report.**

16 A. My report is presented in nine parts. Part I, Introduction, presents the scope and basis  
17 for the depreciation study. Part II, Estimation of Survivor Curves, includes  
18 descriptions of the methodology of estimating survivor curves. Parts III and IV set  
19 forth the analysis for determining life and net salvage estimation. Part V, Calculation  
20 of Annual and Accrued Depreciation includes the concepts of depreciation and  
21 amortization using the remaining life. Part VI, Results of Study, presents a  
22 description of the results and a summary of the depreciation calculations. Parts VII,  
23 VIII and IX include graphs and tables that relate to the service life and net salvage  
24 analyses and the detailed depreciation calculations.

1           The table on pages VI-4 through VI-11 of the report presents the estimated  
2 survivor curve, the net salvage percent, the original cost as of December 31, 2014, the  
3 book reserve and the calculated annual depreciation accrual and rate for each account  
4 or subaccount. The section beginning on page VII-3 of the report presents the results  
5 of the retirement rate analyses prepared as the historical bases for the service life  
6 estimates. The section beginning on page VIII-2 of Schedule JJS-1 presents the  
7 results of the salvage analysis. The section beginning on page IX-3 of Schedule JJS-1  
8 presents the depreciation calculations related to surviving original cost as of  
9 December 31, 2014.

## 10                           **II.       METHODS USED IN DEPRECIATION STUDY**

11       **Q.     Please define the concept of depreciation.**

12       A.     Depreciation refers to the loss in service value not restored by current maintenance,  
13 incurred in connection with the consumption or prospective retirement of utility plant  
14 in the course of service from causes that can be reasonably anticipated or  
15 contemplated, against which the Company is not protected by insurance. Among the  
16 causes to be given consideration are wear and tear, decay, action of the elements,  
17 inadequacy, obsolescence, changes in the art, changes in demand and the  
18 requirements of public authorities.

19       **Q.     In preparing the depreciation study, did you follow generally accepted practices**  
20 **in the field of depreciation and valuation?**

21       A.     Yes.

22       **Q.     Please identify the depreciation method that you used.**

23       A.     I used the straight line remaining life method of depreciation, with the average service  
24 life procedure. This method reflects a change from how rates were adopted for GMO

1 the last time depreciation was reviewed. This method of depreciation aims to  
2 distribute the unrecovered cost of fixed capital assets over the estimated remaining  
3 useful life of each unit or group of assets in a systematic and rational manner.

4 **Q. What are your recommended annual depreciation accrual rates for GMO?**

5 A. My recommended annual depreciation accrual rates as of December 31, 2014 are set  
6 forth on pages VI-4 through VI-11 of Schedule JJS-1.

7 **Q. How did you determine the recommended annual depreciation accrual rates?**

8 A. I did this in two phases. In the first phase, I estimated the service life and net salvage  
9 characteristics for each depreciable group, that is, each plant account or subaccount  
10 identified as having similar characteristics. In the second phase, I calculated the  
11 composite remaining lives and annual depreciation accrual rates based on the service  
12 life and net salvage estimates determined in the first phase.

13 **Q. Please describe the first phase of the depreciation study, in which you estimated  
14 the service life and net salvage characteristics for each depreciable group.**

15 A. The service life and net salvage study consisted of compiling historic data from  
16 records related to GMO's plant; analyzing this data to obtain historic trends of  
17 survivor and net salvage characteristics; obtaining supplementary information from  
18 management and operating personnel concerning practices and plans as they relate to  
19 plant operations; and interpreting the above data and the estimates used by other  
20 electric utilities to form judgments of average service life and net salvage  
21 characteristics.

1       **Q.    What historic data did you analyze for the purpose of estimating service life**  
2       **characteristics?**

3       A.    I analyzed the Company's accounting entries that record plant transactions during the  
4       55-year period 1960 through 2014. The transactions included additions, retirements,  
5       transfers and the related balances. The Company records also included surviving  
6       dollar value by year installed for each plant account as of December 31, 2014.

7       **Q.    What method did you use to analyze this service life data?**

8       A.    I used the retirement rate method for all accounts. This is the most appropriate  
9       method when aged retirement data are available, because this method determines the  
10      average rates of retirement actually experienced by the Company during the period  
11      covered by the study.

12      **Q.    Would you explain how you used the retirement rate method to analyze GMO's**  
13      **service life data?**

14      A.    I applied the retirement rate method to each different group of property in the study.  
15      For each property group, I used the retirement rate method to form a life table which,  
16      when plotted, shows an original survivor curve for that property group. Each original  
17      survivor curve represents the average survivor pattern experienced by the several  
18      vintage groups during the experience band studied. The survivor patterns do not  
19      necessarily describe the life characteristics of the property group; therefore,  
20      interpretation of the original survivor curves is required in order to use them as valid  
21      considerations in estimating service life. The Iowa-type survivor curves were used to  
22      perform these interpretations.

1       **Q.    What is an “Iowa-type survivor curve” and how did you use such curves to**  
2       **estimate the service life characteristics for each property group?**

3       A.    Iowa-type curves are a widely used group of generalized survivor curves that contain  
4       the range of survivor characteristics usually experienced by utilities and other  
5       industrial companies. The Iowa curves were developed at the Iowa State College  
6       Engineering Experiment Station through an extensive process of observing and  
7       classifying the ages at which various types of property used by utilities and other  
8       industrial companies had been retired.

9                Iowa-type curves are used to smooth and extrapolate original survivor curves  
10       determined by the retirement rate method. The Iowa curves and truncated Iowa  
11       curves were used in this study to describe the forecasted rates of retirement based on  
12       the observed rates of retirement and the outlook for future retirements. As I will  
13       explain, the use of truncated curves is appropriate to reflect retirements of plant  
14       components that may not be fully depreciated at the time a plant is retired.

15               The estimated survivor curve designations for each depreciable property  
16       group indicate the average service life, the family within the Iowa system to which  
17       the property group belongs, and the relative height of the mode. For example, the  
18       Iowa 54-R2 indicates an average service life of fifty-four years; a right-moded, or R,  
19       type curve (the mode occurs after average life for right-moded curves); and a  
20       moderate height, 2, for the mode (possible modes for R type curves range from 1 to  
21       5).



1       **Q.    What approach did you use to estimate the lives of significant facilities’**  
2       **structures such as production plants and service centers?**

3       A.    I used the life span technique to estimate the lives of significant facilities for which  
4       concurrent retirement of the entire facility is anticipated.  In this technique, the  
5       survivor characteristics of such facilities are described by the use of interim survivor  
6       curves and estimated probable retirement dates.

7                The interim survivor curves describe the rate of retirement related to the  
8       replacement of elements of the facility, such as, for a building, the retirements of  
9       plumbing, heating, doors, windows, roofs, etc., that occur during the life of the  
10       facility.  The probable retirement date provides the rate of final retirement for each  
11       year of installation for the facility by truncating the interim survivor curve for each  
12       installation year at its attained age at the date of probable retirement.  The use of  
13       interim survivor curves truncated at the date of probable retirement provides a  
14       consistent method for estimating the lives of the several years of installation for a  
15       particular facility inasmuch as a single concurrent retirement for all years of  
16       installation will occur when it is retired.

17       **Q.    Has Gannett Fleming used this approach in other proceedings?**

18       A.    Yes, we have used the life span technique in performing depreciation studies  
19       presented to and accepted by many public utility commissions across the United  
20       States and Canada, including Missouri.

21       **Q.    What is the basis for the probable retirement year that you have estimated for**  
22       **each facility?**

23       A.    The basis for the probable retirement years are life spans for each facility that are  
24       based on judgment and incorporate consideration of the age, use, size, nature of

1 construction, management outlook and typical life spans experienced and used by  
2 other electric utilities for similar facilities. Most of the life spans result in probable  
3 retirement years that are many years in the future. As a result, the retirements of  
4 these facilities are not yet subject to specific management plans. Such plans would be  
5 premature. At the appropriate time, detailed studies of the economics of  
6 rehabilitation and continued use or retirement of the structure will be performed and  
7 the results incorporated in the estimation of the facility's life span.

8 **Q. Did you physically observe GMO's plants and equipment as part of your**  
9 **depreciation study?**

10 A. Yes. Most recently, I made field reviews of GMO's property on October 14, 2014  
11 and September 30, 2015 to observe representative portions of plant. Field reviews are  
12 conducted to become familiar with Company operations and obtain an understanding  
13 of the function of the plant and information with respect to the reasons for past  
14 retirements and the expected future causes of retirements. This knowledge, as well as  
15 information from other discussions with management, was incorporated in the  
16 interpretation and extrapolation of the statistical analyses.

17 **Q. How did your experience in development of other depreciation studies affect**  
18 **your work in this case?**

19 A. Because I customarily conduct field reviews for my depreciation studies, I have had  
20 the opportunity to visit scores of similar plants and meet with operations personnel at  
21 other companies. The knowledge accumulated from those visits and meetings  
22 provide me useful information that I can draw on to confirm or challenge my  
23 numerical analyses concerning plant condition and remaining life estimates.

1       **Q.    Would you please explain the concept of “net salvage”?**

2       A.    Net salvage is a component of the service value of capital assets that is recovered  
3       through depreciation rates. The service value of an asset is its original cost less its net  
4       salvage. Net salvage is the salvage value received for the asset upon retirement less  
5       the cost to retire the asset. When the cost to retire exceeds the salvage value, the  
6       result is negative net salvage.

7                Inasmuch as depreciation expense is the loss in service value of an asset  
8       during a defined period, *e.g.*, one year, it must include a ratable portion of both the  
9       original cost and the net salvage. That is, the net salvage related to an asset should be  
10      incorporated in the cost of service during the same period as its original cost so that  
11      customers receiving service from the asset pay rates that include a portion of both  
12      elements of the asset’s service value, the original cost and the net salvage value.

13              For example, the full recovery of the service value of a \$1000 electric line  
14      transformer will include not only the \$1000 of original cost, but also, on average,  
15      \$250 to remove the transformer at the end of its life and \$50 in salvage value. In this  
16      example, the net salvage component is negative \$200 ( $\$50 - \$250$ ), and the net  
17      salvage percent is negative 20% ( $(\$50 - \$250)/\$1000$ ).

18      **Q.    Please describe how you estimated net salvage percentages.**

19      A.    I estimated the net salvage percentages based on judgment that, for most accounts,  
20      incorporated analyses of the historical data for the period 1980 through 2014 and  
21      considered estimates for other electric companies. In the historical analyses, the net  
22      salvage, cost of removal and gross salvage amounts were expressed as percents of the  
23      original cost retired. These percents were calculated on annual and three-year  
24      moving average bases for the 1980 to 2014 period.

1       **Q.    Were the net salvage percentages for generating facilities based on the same**  
2       **analyses?**

3       A.    Yes, for interim analyses. The net salvage percentages for generating facilities were  
4       based on two components, the interim net salvage percentage and the final net salvage  
5       percentage. The interim net salvage percentage is determined based on the historical  
6       indications from the period 1980-2014 for steam and 1995-2014 for other production.  
7       The cost of removal and gross salvage amounts are based as a percentage of the  
8       associated plant retired. The final net salvage or dismantlement component was  
9       determined based on the assets anticipated to be retired at the concurrent date of final  
10      retirement. The dismantlement costs (referenced as retirement costs in the Sega  
11      report) were determined by a Sega, Inc. study for steam, other production and wind  
12      only. The amounts are set forth in Chris Roger's testimony, Schedule CRR-2.

13      **Q.    Have you included a dismantlement component into the overall recovery of**  
14      **generating facilities?**

15      A.    Yes. A dismantlement component has been included to the net salvage percentage for  
16      steam and other production facilities.

17      **Q.    Can you explain how the dismantlement component is included in the**  
18      **depreciation study?**

19      A.    Yes. The dismantlement component is part of the overall net salvage for each  
20      location within the production assets. Based on the Sega, Inc. report, studies for other  
21      utilities and the cost estimates of GMO, it was determined that the dismantlement or  
22      decommissioning costs for steam and other production facilities is best calculated by  
23      dividing the dismantlement cost by the surviving plant at final retirement. These  
24      amounts at a location basis are added to the interim net salvage percentage of the

1 assets anticipated to be retired on an interim basis to produce the weighted net salvage  
2 percentage for each location. The detailed calculation for each location is set forth on  
3 pages VIII-2 through VIII-7 of Schedule JJS-1.

4 **Q. Please describe the second phase of the process that you used in the depreciation**  
5 **study in which you calculated composite remaining lives and annual**  
6 **depreciation accrual rates.**

7 A. After I estimated the service life and net salvage characteristics for each depreciable  
8 property group, I calculated the annual depreciation accrual rates for each group  
9 based on the straight line remaining life method, using remaining lives weighted  
10 consistent with the average service life procedure. The annual depreciation accrual  
11 rates were developed as of December 31, 2014.

12 **Q. Please describe the straight line remaining life method of depreciation.**

13 A. The straight line remaining life method of depreciation allocates the original cost of  
14 the property, less accumulated depreciation, less future net salvage, in equal amounts  
15 to each year of remaining service life.

16 **Q. Please describe the average service life procedure for calculating remaining life**  
17 **accrual rates.**

18 A. The average service life procedure defines the group for which the remaining life  
19 annual accrual is determined. Under this procedure, the annual accrual rate is  
20 determined for the entire group or account based on its average remaining life and  
21 this rate is applied to the surviving balance of the group's cost. The average  
22 remaining life of the group is calculated by first dividing the future book accruals  
23 (original cost less allocated book reserve less future net salvage) by the average  
24 remaining life for each vintage. The average remaining life for each vintage is

1 derived from the area under the survivor curve between the attained age of the vintage  
2 and the maximum age. Then, the sum of the future book accruals is divided by the  
3 sum of the annual accruals to determine the average remaining life of the entire group  
4 for use in calculating the annual depreciation accrual rate.

5 **Q. Please use an example to illustrate the development of the annual depreciation**  
6 **accrual rate for a particular group of property in your depreciation studies.**

7 A. I will use Account 368.00, Line Transformers, as an example because it is one of the  
8 largest depreciable groups and represents approximately seven percent of depreciable  
9 plant.

10 The retirement rate method was used to analyze the survivor characteristics of  
11 this property group. Aged plant accounting data were compiled from 1960 through  
12 2014 and analyzed for periods that best represent the overall service life of this  
13 property. The life tables for the 1960-2014 and 1979-2014 experience bands are  
14 presented on pages VII-151 through VII-156 of Schedule JJS-1. The life table  
15 displays the retirement and surviving ratios of the aged plant data exposed to  
16 retirement by age interval. For example, page VII-151 shows \$1,349,396 retired  
17 during age interval 0.5-1.5 with \$236,890,134 exposed to retirement at the beginning  
18 of the interval. Consequently, the retirement ratio is 0.0057  
19 ( $\$1,349,396/\$236,890,134$ ) and the surviving ratio is 0.9943 ( $1-0.0057$ ). The percent  
20 surviving at age 0.5 of .9956 percent is multiplied by the survivor ratio of 99.43 to  
21 derive the percent surviving at age 1.5 of 98.99 percent. This process continues for  
22 the remaining age intervals for which plant was exposed to retirement during the  
23 period 1960-2014. The resultant life table, along with the 1979-2014 life table, or

1 original survivor curves, are plotted along with the estimated smooth survivor curve,  
2 the 42-R2 on page VII-150.

3 The net salvage percent is presented on pages VIII-49 and VIII-50 of  
4 Schedule JJS-1. The percentage is based on the result of annual gross salvage minus  
5 the cost to remove plant assets as compared to the original cost of plant retired during  
6 the period 1980 through 2014. The 35-year period experienced negative \$3,895,071  
7 (\$3,495,400 – \$7,390,471) in net salvage for \$26,464,084 plant retired. The result is  
8 negative net salvage of 15 percent ( $\$3,895,071/\$26,464,084$ ); however, the most  
9 recent five-year period and the rolling three-year averages trend toward negative 28  
10 and negative 26 percent, respectively. Therefore, based on the statistics and industry  
11 averages, negative 20 percent was recommended.

12 My calculation of the annual depreciation related to original cost of Account  
13 368.00, Line Transformers, as of December 31, 2014, is presented on pages IX-136  
14 and IX-137 Schedule JJS-1. The calculation is based on the 42-R2 survivor curve,  
15 twenty percent negative net salvage, the attained age, and the allocated book reserve.  
16 The tabulation sets forth the installation year, the original cost, calculated accrued  
17 depreciation, allocated book reserve, future accruals, remaining life and annual  
18 accrual. These totals are brought forward to the table on page VI-9.

19 **Q. Please describe amortization accounting.**

20 A. Amortization accounting is used for accounts with a large number of units, but small  
21 asset values. In amortization accounting, units of property are capitalized in the same  
22 manner as they are in depreciation accounting. However, depreciation accounting is  
23 difficult for these assets because periodic inventories are required to properly reflect  
24 plant in service. Consequently, retirements are recorded when a vintage is fully

1 amortized rather than as the units are removed from service. That is, there is no  
2 dispersion of retirement. All units are retired when the age of the vintage reaches the  
3 amortization period. Each plant account or group of assets is assigned a fixed period  
4 which represents an anticipated life during which the asset will render service. For  
5 example, in amortization accounting, assets that have a 25-year amortization period  
6 will be fully recovered after 25 years of service and taken off the company books, but  
7 not necessarily removed from service. In contrast, assets that are taken out of service  
8 before 25 years remain on the books until the amortization period for that vintage has  
9 expired.

10 Amortization accounting continues to be utilized for certain General Plant  
11 accounts. These accounts are 391.01, 391.02, 391.04, 393.00, 394.00, 395.00,  
12 397.00, and 398.00, which represents slightly more than two percent of depreciable  
13 plant.

14 **Q. Can you discuss the recovery treatment for Accounts 370, Meters and 370.01,**  
15 **Meters – Load Research Meters?**

16 A. Yes. The Company plans to retire a large portion of the standard and load research  
17 meters by year-end 2016, and replace them with new Advanced Metering  
18 Infrastructure (AMI) technology. The AMI meter assets will be classified in a  
19 separate subaccount than other meter related assets and depreciated based on an  
20 average service life of 20 years, S2.5 survivor curve, 0 percent net salvage and  
21 resulting 5.13 depreciation rate. As of December 31, 2014, there are \$11,959,973 of  
22 standard meters and \$2,025,171 of load research meters which will be recovered over  
23 a 10-year period. The standard meters have \$6,104,215 to be recovered and the load  
24 research meters are fully depreciated. A 10-year recovery period for the remaining



1 \$6,104,215 of standard meters produces a 5.21 percent rate. The standard meters that  
2 are not subject to the replacement program will be depreciated at a 1.74 percent rate.

3 **Q. Were there any other rates developed for future assets?**

4 A. Yes. The existing assets in Account 370.01, Meters - Load Research Meters;  
5 Account 392.0, Transportation Equipment – Autos; and Account 392.04,  
6 Transportation Equipment - Trailers, have been fully depreciated based on the life  
7 and salvage parameters. Therefore, the depreciation rates for these assets are zero. In  
8 the event the assets are replaced, the new assets in these accounts should be  
9 depreciated at a rate of 5.13, 11.33 and 4.59 percent, respectively. These rates are  
10 based on the life estimate of 20-S2.5 and net salvage percent of zero for Account  
11 370.01; 8-S2.5 and 15 percent for Account 392.00; and 19-S0 and 15 percent for  
12 Account 392.04. There are also plans to add new solar generation assets by year-end  
13 2016. These assets will be based on interim survivor curves for each account, 5  
14 percent negative net salvage and a 20-year life span for all assets at the location.  
15 These rates are presented on page VI-11 of Schedule JJS-1.

16 **Q. Did you also conduct depreciation studies for each individual jurisdiction of**  
17 **GMO?**

18 A. Yes. An individual study for MPS Jurisdiction, SJL&P Jurisdiction and ECORP were  
19 conducted and attached to this testimony as Schedule JJS-2, Schedule JJS-3 and  
20 Schedule JJS-4, respectively.

21 **Q. Does this conclude your testimony?**

22 A. Yes, it does.

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of KCP&L Greater Missouri Operations     )  
Company's Request for Authority to Implement            )  
A General Rate Increase for Electric Service            )     Case No. ER-2016-0156

**AFFIDAVIT OF JOHN J. SPANOS**

COMMONWEALTH OF PENNSYLVANIA     )  
  ) ss  
COUNTY OF CUMBERLAND             )

John J. Spanos, being first duly sworn on his oath, states:

1.     My name is John J. Spanos. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC as a Senior Vice President. I have been retained to serve as an expert witness to provide testimony on behalf of KCP&L Greater Missouri Operations Company.

2.     Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of KCP&L Greater Missouri Operations Company consisting of sixteen (16) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3.     I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

  
\_\_\_\_\_  
John J. Spanos

Subscribed and sworn before me this 12th day of February, 2016.

  
\_\_\_\_\_  
Notary Public

My commission expires: February 20, 2019

**COMMONWEALTH OF PENNSYLVANIA**  
**NOTARIAL SEAL**  
Cheryl Ann Rutter, Notary Public  
East Pennsboro Twp., Cumberland County  
My Commission Expires Feb. 20, 2019  
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

## APPENDIX A

**JOHN SPANOS**

**DEPRECIATION EXPERIENCE**

**Q. Please outline your experience in the field of depreciation.**

A. In June, 1986, I was employed by Gannett Fleming Valuation and Rate Consultants, Inc. as a Depreciation Analyst. During the period from June, 1986 through December, 1995, I helped prepare numerous depreciation and original cost studies for utility companies in various industries. I helped perform depreciation studies for the following telephone companies: United Telephone of Pennsylvania, United Telephone of New Jersey, and Anchorage Telephone Utility. I helped perform depreciation studies for the following companies in the railroad industry: Union Pacific Railroad, Burlington Northern Railroad, and Wisconsin Central Transportation Corporation.

I helped perform depreciation studies for the following organizations in the electric utility industry: Chugach Electric Association, The Cincinnati Gas and Electric Company (CG&E), The Union Light, Heat and Power Company (ULH&P), Northwest Territories Power Corporation, and the City of Calgary - Electric System.

I helped perform depreciation studies for the following pipeline companies: TransCanada Pipelines Limited, Trans Mountain Pipe Line Company Ltd., Interprovincial Pipe Line Inc., Nova Gas Transmission Limited and Lakehead Pipeline Company.

I helped perform depreciation studies for the following gas utility companies: Columbia Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples Natural Gas

Company, T. W. Phillips Gas & Oil Company, CG&E, ULH&P, Lawrenceburg Gas Company and Penn Fuel Gas, Inc.

I helped perform depreciation studies for the following water utility companies: Indiana-American Water Company, Consumers Pennsylvania Water Company and The York Water Company; and depreciation and original cost studies for Philadelphia Suburban Water Company and Pennsylvania-American Water Company.

In each of the above studies, I assembled and analyzed historical and simulated data, performed field reviews, developed preliminary estimates of service life and net salvage, calculated annual depreciation, and prepared reports for submission to state public utility commissions or federal regulatory agencies. I performed these studies under the general direction of William M. Stout, P.E.

In January, 1996, I was assigned to the position of Supervisor of Depreciation Studies. In July, 1999, I was promoted to the position of Manager, Depreciation and Valuation Studies. In December, 2000, I was promoted to the position as Vice-President of Gannett Fleming Valuation and Rate Consultants, Inc. and in April 2012, I was promoted to my present position as Senior Vice President of the Valuation and Rate Division of Gannett Fleming Inc. (now doing business as Gannett Fleming Valuation and Rate Consultants, LLC). In my current position I am responsible for conducting all depreciation, valuation and original cost studies, including the preparation of final exhibits and responses to data requests for submission to the appropriate regulatory bodies.

Since January 1996, I have conducted depreciation studies similar to those previously listed including assignments for Pennsylvania-American Water Company;

Aqua Pennsylvania; Kentucky-American Water Company; Virginia-American Water Company; Indiana-American Water Company; Hampton Water Works Company; Omaha Public Power District; Enbridge Pipe Line Company; Inc.; Columbia Gas of Virginia, Inc.; Virginia Natural Gas Company National Fuel Gas Distribution Corporation - New York and Pennsylvania Divisions; The City of Bethlehem - Bureau of Water; The City of Coatesville Authority; The City of Lancaster - Bureau of Water; Peoples Energy Corporation; The York Water Company; Public Service Company of Colorado; Enbridge Pipelines; Enbridge Gas Distribution, Inc.; Reliant Energy-HLP; Massachusetts-American Water Company; St. Louis County Water Company; Missouri-American Water Company; Chugach Electric Association; Alliant Energy; Oklahoma Gas & Electric Company; Nevada Power Company; Dominion Virginia Power; NUI-Virginia Gas Companies; Pacific Gas & Electric Company; PSI Energy; NUI - Elizabethtown Gas Company; Cinergy Corporation – CG&E; Cinergy Corporation – ULH&P; Columbia Gas of Kentucky; South Carolina Electric & Gas Company; Idaho Power Company; El Paso Electric Company; Aqua North Carolina; Aqua Ohio; Aqua Texas, Inc.; Ameren Missouri; Central Hudson Gas & Electric; Centennial Pipeline Company; CenterPoint Energy-Arkansas; CenterPoint Energy – Oklahoma; CenterPoint Energy – Entex; CenterPoint Energy - Louisiana; NSTAR – Boston Edison Company; Westar Energy, Inc.; United Water Pennsylvania; PPL Electric Utilities; PPL Gas Utilities; Wisconsin Power & Light Company; TransAlaska Pipeline; Avista Corporation; Northwest Natural Gas; Allegheny Energy Supply, Inc.; Public Service Company of North Carolina; South Jersey Gas Company; Duquesne Light Company; MidAmerican Energy Company; Laclede Gas; Duke Energy Company; E.ON U.S. Services Inc.; Elkton Gas Services;

Anchorage Water and Wastewater Utility; Kansas City Power and Light; Duke Energy North Carolina; Duke Energy South Carolina; Monongahela Power Company; Potomac Edison Company; Duke Energy Ohio Gas; Duke Energy Kentucky; Duke Energy Indiana; Northern Indiana Public Service Company; Tennessee-American Water Company; Columbia Gas of Maryland; Bonneville Power Administration; NSTAR Electric and Gas Company; EPCOR Distribution, Inc.; B. C. Gas Utility, Ltd; Entergy Arkansas; Entergy Texas; Entergy Mississippi; Entergy Louisiana; Entergy Gulf States Louisiana; the Borough of Hanover; Louisville Gas and Electric Company; Kentucky Utilities Company; Madison Gas and Electric; Central Maine Power; PEPCO; PacifiCorp; Minnesota Energy Resource Group; Jersey Central Power & Light Company; Cheyenne Light, Fuel and Power Company; United Water Arkansas; Central Vermont Public Service Corporation; Green Mountain Power; Portland General Electric Company; Atlantic City Electric; Nicor Gas Company; Black Hills Power; Black Hills Colorado Gas; Black Hills Kansas Gas; Black Hills Service Company; Black Hills Utility Holdings; Public Service Company of Oklahoma; City of Dubois; Peoples Gas Light and Coke Company; North Shore Gas Company; Connecticut Light and Power; New York State Electric and Gas Corporation; Rochester Gas and Electric Corporation and Greater Missouri Operations. My additional duties include determining final life and salvage estimates, conducting field reviews, presenting recommended depreciation rates to management for its consideration and supporting such rates before regulatory bodies.

**Q. Have you submitted testimony to any state utility commission on the subject of utility plant depreciation?**

A. Yes. I have submitted testimony to the Pennsylvania Public Utility Commission; the Commonwealth of Kentucky Public Service Commission; the Public Utilities Commission of Ohio; the Nevada Public Utility Commission; the Public Utilities Board of New Jersey; the Missouri Public Service Commission; the Massachusetts Department of Telecommunications and Energy; the Alberta Energy & Utility Board; the Idaho Public Utility Commission; the Louisiana Public Service Commission; the State Corporation Commission of Kansas; the Oklahoma Corporate Commission; the Public Service Commission of South Carolina; Railroad Commission of Texas – Gas Services Division; the New York Public Service Commission; Illinois Commerce Commission; the Indiana Utility Regulatory Commission; the California Public Utilities Commission; the Federal Energy Regulatory Commission (“FERC”); the Arkansas Public Service Commission; the Public Utility Commission of Texas; Maryland Public Service Commission; Washington Utilities and Transportation Commission; The Tennessee Regulatory Commission; the Regulatory Commission of Alaska; Minnesota Public Utility Commission; Utah Public Service Commission; District of Columbia Public Service Commission; the Mississippi Public Service Commission; Delaware Public Service Commission; Virginia State Corporation Commission; Colorado Public Utility Commission; Oregon Public Utility Commission; South Dakota Public Utilities Commission; Wisconsin Public Service Commission; Wyoming Public Service Commission; Maine Public Utility Commission; Iowa Utility Board; Connecticut Public



Utilities Regulatory Authority; New Mexico Public Regulation Commission and the North Carolina Utilities Commission.

**Q. Have you had any additional education relating to utility plant depreciation?**

A. Yes. I have completed the following courses conducted by Depreciation Programs, Inc.: “Techniques of Life Analysis,” “Techniques of Salvage and Depreciation Analysis,” “Forecasting Life and Salvage,” “Modeling and Life Analysis Using Simulation,” and “Managing a Depreciation Study.” I have also completed the “Introduction to Public Utility Accounting” program conducted by the American Gas Association.

**Q. Does this conclude your qualification statement?**

A. Yes.

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
01.	1998	PA PUC	R-00984375	City of Bethlehem – Bureau of Water	Original Cost and Depreciation
02.	1998	PA PUC	R-00984567	City of Lancaster	Original Cost and Depreciation
03.	1999	PA PUC	R-00994605	The York Water Company	Depreciation
04.	2000	D.T.&E.	DTE 00-105	Massachusetts-American Water Company	Depreciation
05.	2001	PA PUC	R-00016114	City of Lancaster	Original Cost and Depreciation
06.	2001	PA PUC	R-00017236	The York Water Company	Depreciation
07.	2001	PA PUC	R-00016339	Pennsylvania-American Water Company	Depreciation
08.	2001	OH PUC	01-1228-GA-AIR	Cinergy Corp – Cincinnati Gas & Elect Co.	Depreciation
09.	2001	KY PSC	2001-092	Cinergy Corp – Union Light, Heat & Power Co.	Depreciation
10.	2002	PA PUC	R-00016750	Philadelphia Suburban Water Company	Depreciation
11.	2002	KY PSC	2002-00145	Columbia Gas of Kentucky	Depreciation
12.	2002	NJ BPU	GF02040245	NUI Corporation/Elizabethtown Gas Co.	Depreciation
13.	2002	ID PUC	IPC-E-03-7	Idaho Power Company	Depreciation
14.	2003	PA PUC	R-0027975	The York Water Company	Depreciation
15.	2003	IN URC	R-0027975	Cinergy Corp – PSI Energy, Inc.	Depreciation
16.	2003	PA PUC	R-00038304	Pennsylvania-American Water Co.	Depreciation
17.	2003	MO PSC	WR-2003-0500	Missouri-American Water Co.	Depreciation
18.	2003	FERC	ER-03-1274-000	NSTAR-Boston Edison Company	Depreciation
19.	2003	NJ BPU	BPU 03080683	South Jersey Gas Company	Depreciation
20.	2003	NV PUC	03-10001	Nevada Power Company	Depreciation
21.	2003	LA PSC	U-27676	CenterPoint Energy – Arkla	Depreciation
22.	2003	PA PUC	R-00038805	Pennsylvania Suburban Water Company	Depreciation
23.	2004	AB En/Util Bd	1306821	EPCOR Distribution, Inc.	Depreciation
24.	2004	PA PUC	R-00038168	National Fuel Gas Distribution Corp (PA)	Depreciation
25.	2004	PA PUC	R-00049255	PPL Electric Utilities	Depreciation
26.	2004	PA PUC	R-00049165	The York Water Company	Depreciation
27.	2004	OK Corp Cm	PUC 200400187	CenterPoint Energy – Arkla	Depreciation
28.	2004	OH PUC	04-680-EI-AIR	Cinergy Corp. – Cincinnati Gas and Electric Company	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
29.	2004	RR Com of TX	GUD#	CenterPoint Energy – Entex Gas Services Div.	Depreciation
30.	2004	NY PUC	04-G-1047	National Fuel Gas Distribution Gas (NY)	Depreciation
31.	2004	AR PSC	04-121-U	CenterPoint Energy – Arkla	Depreciation
32.	2005	IL CC	05-	North Shore Gas Company	Depreciation
33.	2005	IL CC	05-	Peoples Gas Light and Coke Company	Depreciation
34.	2005	KY PSC	2005-00042	Union Light Heat & Power	Depreciation
35.	2005	IL CC	05-0308	MidAmerican Energy Company	Depreciation
36.	2005	MO PSC	GF-2005	Laclede Gas Company	Depreciation
37.	2005	KS CC	05-WSEE-981-RTS	Westar Energy	Depreciation
38.	2005	RR Com of TX	GUD #	CenterPoint Energy – Entex Gas Services Div.	Depreciation
39.	2005	FERC		Cinergy Corporation	Accounting
40.	2005	OK CC	PUD 200500151	Oklahoma Gas and Electric Co.	Depreciation
41.	2005	MA Dept Tele- com & Ergy	DTE 05-85	NSTAR	Depreciation
42.	2005	NY PUC	05-E-934/05-G-0935	Central Hudson Gas & Electric Co.	Depreciation
43.	2005	AK Reg Com	U-04-102	Chugach Electric Association	Depreciation
44.	2005	CA PUC	A05-12-002	Pacific Gas & Electric	Depreciation
45.	2006	PA PUC	R-00051030	Aqua Pennsylvania, Inc.	Depreciation
46.	2006	PA PUC	R-00051178	T.W. Phillips Gas and Oil Co.	Depreciation
47.	2006	NC Util Cm.		Pub. Service Co. of North Carolina	Depreciation
48.	2006	PA PUC	R-00051167	City of Lancaster	Depreciation
49.	2006	PA PUC	R00061346	Duquesne Light Company	Depreciation
50.	2006	PA PUC	R-00061322	The York Water Company	Depreciation
51.	2006	PA PUC	R-00051298	PPL GAS Utilities	Depreciation
52.	2006	PUC of TX	32093	CenterPoint Energy – Houston Electric	Depreciation
53.	2006	KY PSC	2006-00172	Duke Energy Kentucky	Depreciation
54.	2006	SC PSC		SCANA	
55.	2006	AK Reg Com	U-06-6	Municipal Light and Power	Depreciation
56.	2006	DE PSC	06-284	Delmarva Power and Light	Depreciation
57.	2006	IN URC	IURC43081	Indiana American Water Company	Depreciation
58.	2006	AK Reg Com	U-06-134	Chugach Electric Association	Depreciation
59.	2006	MO PSC	WR-2007-0216	Missouri American Water Company	Depreciation
60.	2006	FERC	ISO82, ETC. AL	TransAlaska Pipeline	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
61.	2006	PA PUC	R-00061493	National Fuel Gas Distribution Corp. (PA)	Depreciation
62.	2007	NC Util Com.	E-7 SUB 828	Duke Energy Carolinas, LLC	Depreciation
63.	2007	OH PSC	08-709-EL-AIR	Duke Energy Ohio Gas	Depreciation
64.	2007	PA PUC	R-00072155	PPL Electric Utilities Corporation	Depreciation
65.	2007	KY PSC	2007-00143	Kentucky American Water Company	Depreciation
66.	2007	PA PUC	R-00072229	Pennsylvania American Water Company	Depreciation
67.	2007	KY PSC	2007-0008	NiSource – Columbia Gas of Kentucky	Depreciation
68.	2007	NY PSC	07-G-0141	National Fuel Gas Distribution Corp (NY)	Depreciation
69.	2008	AK PSC	U-08-004	Anchorage Water & Wastewater Utility	Depreciation
70.	2008	TN Reg Auth	08-00039	Tennessee-American Water Company	Depreciation
71.	2008	DE PSC	08-96	Artesian Water Company	Depreciation
72.	2008	PA PUC	R-2008-2023067	The York Water Company	Depreciation
73.	2008	KS CC	08-WSEE1-RTS	Westar Energy	Depreciation
74.	2008	IN URC	43526	Northern Indiana Public Service Co.	Depreciation
75.	2008	IN URC	43501	Duke Energy Indiana	Depreciation
76.	2008	MD PSC	9159	NiSource – Columbia Gas of Maryland	Depreciation
77.	2008	KY PSC	2008-000251	Kentucky Utilities	Depreciation
78.	2008	KY PSC	2008-000252	Louisville Gas & Electric	Depreciation
79.	2008	PA PUC	2008-20322689	Pennsylvania American Water Co.-Wastewater	Depreciation
80.	2008	NY PSC	08-E887/08-00888	Central Hudson	Depreciation
81.	2008	WV TC	VE-080416/VG-8080417	Avista Corporation	Depreciation
82.	2008	IL CC	ICC-09-166	Peoples Gas, Light and Coke Co.	Depreciation
83.	2009	IL CC	ICC-09-167	North Shore Gas Company	Depreciation
84.	2009	DC PSC	1076	Potomac Electric Power Company	Depreciation
85.	2009	KY PSC	2009-00141	NiSource – Columbia Gas of Kentucky	Depreciation
86.	2009	FERC	ER08-1056-002	Entergy Services	Depreciation
87.	2009	PA PUC	R-2009-2097323	Pennsylvania American Water Co.	Depreciation
88.	2009	NC Util Cm	E-7, Sub 090	Duke Energy Carolinas, LLC	Depreciation
89.	2009	KY PSC	2009-00202	Duke Energy Kentucky	Depreciation
90.	2009	VA St. CC	PUE-2009-00059	Aqua Virginia, Inc.	Depreciation
91.	2009	PA PUC	2009-2132019	Aqua Pennsylvania, Inc.	Depreciation
92.	2009	MS PSC	09-	Entergy Mississippi	Depreciation
93.	2009	AK PSC	09-08-U	Entergy Arkansas	Depreciation

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94.	2009	TX PUC	37744	Entergy Texas	Depreciation
95.	2009	TX PUC	37690	El Paso Electric Company	Depreciation
96.	2009	PA PUC	R-2009-2106908	The Borough of Hanover	Depreciation
97.	2009	KS CC	10-KCPE-415-RTS	Kansas City Power & Light	Depreciation
98.	2009	PA PUC	R-2009-	United Water Pennsylvania	Depreciation
99.	2009	OH PUC		Aqua Ohio Water Company	Depreciation
100.	2009	WI PSC	3270-DU-103	Madison Gas & Electric Co.	Depreciation
101.	2009	MO PSC	WR-2010	Missouri American Water Co.	Depreciation
102.	2009	AK Reg Cm	U-09-097	Chugach Electric Association	Depreciation
103.	2010	IN URC	43969	Northern Indiana Public Service Co.	Depreciation
104.	2010	WI PSC	6690-DU-104	Wisconsin Public Service Corp.	Depreciation
105.	2010	PA PUC	R-2010-2161694	PPL Electric Utilities Corp.	Depreciation
106.	2010	KY PSC	2010-00036	Kentucky American Water Company	Depreciation
107.	2010	PA PUC	R-2009-2149262	Columbia Gas of Pennsylvania	Depreciation
108.	2010	MO PSC	GR-2010-0171	Laclede Gas Company	Depreciation
109.	2010	SC PSC	2009-489-E	South Carolina Electric & Gas Co.	Depreciation
110.	2010	NJ BD OF PU	ER09080664	Atlantic City Electric	Depreciation
111.	2010	VA St. CC	PUE-2010-00001	Virginia American Water Company	Depreciation
112.	2010	PA PUC	R-2010-2157140	The York Water Company	Depreciation
113.	2010	MO PSC	ER-2010-0356	Greater Missouri Operations Co.	Depreciation
114.	2010	MO PSC	ER-2010-0355	Kansas City Power and Light	Depreciation
115.	2010	PA PUC	R-2010-2167797	T.W. Phillips Gas and Oil Co.	Depreciation
116.	2010	PSC SC	2009-489-E	SCANA – Electric	Depreciation
117.	2010	PA PUC	R-2010-22010702	Peoples Natural Gas, LLC	Depreciation
118.	2010	AK PSC	10-067-U	Oklahoma Gas and Electric Co.	Depreciation
119.	2010	IN URC		Northern Indiana Public Serv. Co. - NIFL	Depreciation
120.	2010	IN URC		Northern Indiana Public Serv. Co. - Kokomo	Depreciation
121.	2010	PA PUC	R-2010-2166212	Pennsylvania American Water Co - WW	Depreciation
122.	2010	NC Util Cn.	W-218,SUB310	Aqua North Carolina, Inc.	Depreciation
123.	2011	OH PUC	11-4161-WS-AIR	Ohio American Water Company	Depreciation
124.	2011	MS PSC	EC-123-0082-00	Entergy Mississippi	Depreciation
125.	2011	CO PUC	11AL-387E	Black Hills Colorado	Depreciation
126.	2011	PA PUC	R-2010-2215623	Columbia Gas of Pennsylvania	Depreciation
127.	2011	PA PUC	R-2010-2179103	Lancaster, City of – Bureau of Water	Depreciation

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128.	2011	IN URC	43114 IGCC 4S	Duke Energy Indiana	Depreciation
129.	2011	FERC	IS11-146-000	Enbridge Pipelines (Southern Lights)	Depreciation
130.	2011	IL CC	11-0217	MidAmerican Energy Corporation	Depreciation
131.	2011	OK CC	201100087	Oklahoma Gas & Electric Co.	Depreciation
132.	2011	PA PUC	2011-2232243	Pennsylvania American Water Company	Depreciation
133.	2011	FERC	2011-2232243	Carolina Gas Transmission	Depreciation
134.	2012	WA UTC	UE-120436/JG-120437	Avista Corporation	Depreciation
135.	2012	AK Reg Cm	U-12-009	Chugach Electric Association	Depreciation
136.	2012	MA PUC	DPU 12-25	Columbia Gas of Massachusetts	Depreciation
137.	2012	TX PUC	40094	El Paso Electric Company	Depreciation
138.	2012	ID PUC	IPC-E-12	Idaho Power Company	Depreciation
139.	2012	PA PUC	R-2012-2290597	PPL Electric Utilities	Depreciation
140.	2012	PA PUC	R-2012-2311725	Hanover, Borough of – Bureau of Water	Depreciation
141.	2012	KY PSC	2012-00222	Louisville Gas and Electric Company	Depreciation
142.	2012	KY PSC	2012-00221	Kentucky Utilities Company	Depreciation
143.	2012	PA PUC	R-2012-2285985	Peoples Natural Gas Company	Depreciation
144.	2012	DC PSC	Case 1087	Potomac Electric Power Company	Depreciation
145.	2012	OH PSC	12-1682-EL-AIR	Duke Energy Ohio (Electric)	Depreciation
146.	2012	OH PSC	12-1685-GA-AIR	Duke Energy Ohio (Gas)	Depreciation
147.	2012	PA PUC	R-2012-2310366	Lancaster, City of – Sewer Fund	Depreciation
148.	2012	PA PUC	R-2012-2321748	Columbia Gas of Pennsylvania	Depreciation
149.	2012	FERC	ER-12-2681-000	ITC Holdings	Depreciation
150.	2012	MO PSC	ER-2012-0174	Kansas City Power and Light	Depreciation
151.	2012	MO PSC	ER-2012-0175	KCPL Greater Missouri Operations Co.	Depreciation
152.	2012	MO PSC	GO-2012-0363	Laclede Gas Company	Depreciation
153.	2012	MN PUC	G007,001/D-12-533	Integrays – MN Energy Resource Group	Depreciation
153.	2012	TX PUC		Aqua Texas	Depreciation
155.	2012	PA PUC	2012-2336379	York Water Company	Depreciation
156.	2013	NJ BPU	ER12121071	PHI Service Co.– Atlantic City Electric	Depreciation
157.	2013	KY PSC	2013-00167	Columbia Gas of Kentucky	Depreciation
158.	2013	VA St CC	2013-00020	Virginia Electric and Power Co.	Depreciation
159.	2013	IA Util Bd	2013-0004	MidAmerican Energy Corporation	Depreciation
160.	2013	PA PUC	2013-2355276	Pennsylvania American Water Co.	Depreciation
161.	2013	NY PSC	13-E-0030, 13-G-0031,	Consolidated Edison of New York	Depreciation

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			13-S-0032		
162.	2013	PA PUC	2013-2355886	Peoples TWP LLC	Depreciation
163.	2013	TN Reg Auth	12-0504	Tennessee American Water	Depreciation
164.	2013	ME PUC	2013-168	Central Maine Power Company	Depreciation
165.	2013	DC PSC	Case 1103	PHI Service Co. – PEPCO	Depreciation
166.	2013	WY PSC	2003-ER-13	Cheyenne Light, Fuel and Power Co.	Depreciation
167.	2013	FERC	ER13- -0000	Kentucky Utilities	Depreciation
168.	2013	FERC	ER13- -0000	MidAmerican Energy Company	Depreciation
169.	2013	FERC	ER13- -0000	PPL Utilities	Depreciation
170.	2013	PA PUC	R-2013-2372129	Duquesne Light Company	Depreciation
171.	2013	NJ BPU	ER12111052	Jersey Central Power and Light Co.	Depreciation
172.	2013	PA PUC	R-2013-2390244	Bethlehem, City of – Bureau of Water	Depreciation
173.	2013	OK CC	UM 1679	Oklahoma, Public Service Company of	Depreciation
174.	2013	IL CC	13-0500	Nicor Gas Company	Depreciation
175.	2013	WY PSC	20000-427-EA-13	PacifiCorp	Depreciation
176.	2013	UT PSC	13-035-02	PacifiCorp	Depreciation
177.	2013	OR PUC	UM 1647	PacifiCorp	Depreciation
178.	2013	PA PUC	2013-2350509	Dubois, City of	Depreciation
179.	2014	IL CC	14-0224	North Shore Gas Company	Depreciation
180.	2014	FERC	ER14-	Duquesne Light Company	Depreciation
181.	2014	SD PUC	EL14-026	Black Hills Power Company	Depreciation
182.	2014	WY PSC	20002-91-ER-14	Black Hills Power Company	Depreciation
183.	2014	PA PUC	2014-2428304	Hanover, Borough of – Municipal Water Works	Depreciation
184.	2014	PA PUC	2014-2406274	Columbia Gas of Pennsylvania	Depreciation
185.	2014	IL CC	14-0225	Peoples Gas Light and Coke Company	Depreciation
186.	2014	MO PSC	ER-2014-0258	Ameren Missouri	Depreciation
187.	2014	KS CC	14-BHCG-502-RTS	Black Hills Service Company	Depreciation
188.	2014	KS CC	14-BHCG-502-RTS	Black Hills Utility Holdings	Depreciation
189.	2014	KS CC	14-BHCG-502-RTS	Black Hills Kansas Gas	Depreciation
190.	2014	PA PUC	2014-2418872	Lancaster, City of – Bureau of Water	Depreciation
191.	2014	WV PSC	14-0701-E-D	First Energy – MonPower/PotomacEdison	Depreciation
192.	2014	VA St CC	PUC-2014-00045	Aqua Virginia	Depreciation
193.	2014	VA St CC	PUE-2013	Virginia American	Depreciation
194.	2014	OK CC	PUD201400229	Oklahoma Gas and Electric	Depreciation

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195.	2014	OR PUC	UM1679	Portland General Electric	Depreciation
196.	2014	IN URC	Cause No. 44576	Indianapolis Power & Light	Depreciation
197.	2014	MA DPU	DPU. 14-150	NSTAR Gas	Depreciation
198.	2014	CT PURA	14-05-06	Connecticut Light and Power	Depreciation
199.	2014	MO PSC	ER-2014-0370	Kansas City Power & Light	Depreciation
200.	2014	KY PSC	2014-00371	Kentucky Utilities Company	Depreciation
201.	2014	KY PSC	2014-00372	Louisville Gas and Electric Company	Depreciation
202.	2015	PA PUC	R-2015-2462723	United Water Pennsylvania Inc.	Depreciation
203.	2015	PA PUC	R-2015-2468056	Columbia Gas of Pennsylvania	Depreciation
204.	2015	NY PSC	15-E-0283/15-G-0284	New York State Electric and Gas Corporation	Depreciation
205.	2015	NY PSC	15-E-0285/15-G-0286	Rochester Gas and Electric Corporation	Depreciation
206.	2015	MO PSC	WR-2015-0301/SR-2015-0302	Missouri American Water Company	Depreciation
207.	2015	OK CC	PUD 201500208	Oklahoma, Public Service Company of	Depreciation
208.	2015	WV PSC	15-0676-W-42T	West Virginia American Water Company	Depreciation
209.	2015	PA PUC	2015-2469275	PPL Electric Utilities	Depreciation
210.	2015	IN URC	Cause No. 44688	Northern Indiana Public Service Company	Depreciation
211.	2015	OH PSC	14-1929-EL-RDR	First Energy-Ohio Edison/Cleveland Electric/ Toledo Edison	Depreciation
212.	2015	NM PRC	15-00127-UT	El Paso Electric	Depreciation
213.	2015	TX PUC	PUC-44941; SOAH 473-15-5257	El Paso Electric	Depreciation
214.	2015	WI PSC	3370-DU-104	Madison Gas and Electric Company	Depreciation
215.	2015	OK CC	PUD 201500273	Oklahoma Gas and Electric	Depreciation