

Exhibit No.:  
Issue: Depreciation Study  
Witness: John J. Spanos  
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Sponsoring Party: Kansas City Power & Light Company  
Case No.: ER-2010-\_\_\_\_  
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**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO.: ER-2010-\_\_\_\_**

**DIRECT TESTIMONY**

**OF**

**JOHN J. SPANOS**

**ON BEHALF OF**

**KANSAS CITY POWER & LIGHT COMPANY**

**Kansas City, Missouri  
June 2010**

**DIRECT TESTIMONY**

**OF**

**JOHN J. SPANOS**

**Case No. ER-2010-\_\_\_\_\_**

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 Kansas City Power & Light Company ("KCP&L" or the  
5 "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 as Vice President of the Valuation and Rate  
13 Division, which provides depreciation consulting services to utility companies in the  
14 United States and Canada. I am responsible for conducting depreciation, valuation  
15 and original cost studies, determining service life and salvage estimates, conducting  
16 field reviews, presenting recommended depreciation rates to clients, and supporting  
17 such rates before state and federal regulatory agencies. I have been associated with  
18 the firm since college graduation in 1986.

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

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

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

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

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

10 A. Yes. A synopsis of my depreciation experience is set forth in Appendix A.

11 **Q. Have you received any additional education relating to utility plant  
12 depreciation?**

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

19 **Q. Have you previously testified on public utility ratemaking matters?**

20 A. Yes. I have submitted testimony to the Pennsylvania Public Utility Commission; the  
21 Commonwealth of Kentucky Public Service Commission; the Public Utilities  
22 Commission of Ohio; the Nevada Public Utility Commission; the Public Utilities  
23 Board of New Jersey; the Missouri Public Service Commission; the Massachusetts  
24 Department of Telecommunications and Energy; the Alberta Energy & Utility Board;

1 the Idaho Public Utility Commission; the Louisiana Public Service Commission; the  
2 State Corporation Commission of Kansas; the Oklahoma Corporate Commission; the  
3 Public Service Commission of South Carolina; Railroad Commission of Texas – Gas  
4 Services Division; the New York Public Service Commission; Illinois Commerce  
5 Commission; the Indiana Utility Regulatory Commission; the California Public  
6 Utilities Commission; the Federal Energy Regulatory Commission (“FERC”); the  
7 Arkansas Public Service Commission; the Public Utility Commission of Texas;  
8 District of Columbia, Delaware Public Service Commission, Maryland Public Service  
9 Commission; Washington Utilities and Transportation Commission; the Tennessee  
10 Regulatory Commission; the Regulatory Commission of Alaska; and the North  
11 Carolina Utilities Commission.

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

13 A. I am sponsoring Schedule JJS2010-1 stating the results of my depreciation study for  
14 KCP&L's electric plant as of December 31, 2008 (the “2008 Depreciation Study” or  
15 “Depreciation Study”).

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

17 A. My testimony will explain the methods and procedures of the Depreciation Study and  
18 set forth the annual depreciation rates as of December 31, 2008. Schedule JJS2010-1  
19 contains the report which sets forth detailed methods, procedures and results of the  
20 Depreciation Study as of December 31, 2008. This report will be explained in Part II  
21 of my testimony.

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

2       A.    The principal conclusions of the study are depreciation accrual rates by account for  
3           KCP&L. Overall, the proposed depreciation rates are determined based on the  
4           remaining life method and the utilization of the life span procedure.

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

6       A.    My report is presented in three parts. Part I, Introduction, presents the scope and  
7           basis for the Depreciation Study. Part II, Methods Used in the Estimation of  
8           Depreciation, includes descriptions of the basis of the study, the estimation of  
9           survivor curves and net salvage and the calculation of annual and accrued  
10          depreciation. Part III, Results of Study, presents a description of the results, summary  
11          of the depreciation calculations, graphs and tables that relate to the service life and  
12          net salvage analyses, and the detailed depreciation calculations.

13                 The table on pages III-4 through III-8 of the report presents the estimated  
14                 survivor curve, the net salvage percent, the original cost as of December 31, 2008, the  
15                 book reserve and the calculated annual depreciation accrual and rate for each account  
16                 or subaccount. The section beginning on page III-9 of the report presents the results  
17                 of the retirement rate analyses prepared as the historical bases for the service life  
18                 estimates. The section beginning on page III-149 of Schedule JJS2010-1 presents the  
19                 results of the salvage analysis. The section beginning on page III-215 of Schedule  
20                 JJS2010-1 presents the depreciation calculations related to surviving original cost as  
21                 of December 31, 2008.



1 identified as having similar characteristics. In the second phase, I calculated the  
2 composite remaining lives and annual depreciation accrual rates based on the service  
3 life and net salvage estimates determined in the first phase.

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

6 A. The service life and net salvage study consisted of compiling historic data from  
7 records related to KCPL's plant; analyzing these data to obtain historic trends of  
8 survivor and net salvage characteristics; obtaining supplementary information from  
9 management, and operating personnel concerning practices and plans as they relate to  
10 plant operations; and interpreting the above data and the estimates used by other  
11 electric utilities to form judgments of average service life and net salvage  
12 characteristics.

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

15 A. I analyzed the Company's accounting entries that record plant transactions during the  
16 89-year period 1920 through 2008. The transactions included additions, retirements,  
17 transfers and the related balances. The Company records also included surviving  
18 dollar value by year installed for each plant account as of December 31, 2008.

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

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

1       **Q.    Would you explain how you used the retirement rate method to analyze**  
2       **KCP&L's service life data?**

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

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

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

20              Iowa-type curves are used to smooth and extrapolate original survivor curves  
21      determined by the retirement rate method. The Iowa curves and truncated Iowa  
22      curves were used in this study to describe the forecasted rates of retirement based on  
23      the observed rates of retirement and the outlook for future retirements. As I will



1 explain, the use of truncated curves is appropriate to reflect retirements of plant  
2 components that may not be fully depreciated at the time a plant is retired.

3 The estimated survivor curve designations for each depreciable property  
4 group indicate the average service life, the family within the Iowa system to which  
5 the property group belongs, and the relative height of the mode. For example, the  
6 Iowa 55-R2 indicates an average service life of fifty-five years; a right-moded, or R,  
7 type curve (the mode occurs after average life for right-moded curves); and a  
8 moderate height, 2, for the mode (possible modes for R type curves range from 1 to  
9 5).

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

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

16 The interim survivor curves describe the rate of retirement related to the  
17 replacement of elements of the facility, such as, for a building, the retirements of  
18 plumbing, heating, doors, windows, roofs, etc., that occur during the life of the  
19 facility. The probable retirement date provides the rate of final retirement for each  
20 year of installation for the facility by truncating the interim survivor curve for each  
21 installation year at its attained age at the date of probable retirement. The use of  
22 interim survivor curves truncated at the date of probable retirement provides a  
23 consistent method for estimating the lives of the several years of installation for a

1 particular facility inasmuch as a single concurrent retirement for all years of  
2 installation will occur when it is retired.

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

4 A. Yes, we have used the life span technique in performing depreciation studies  
5 presented to and accepted by many public utility commissions across the United  
6 States and Canada.

7 **Q. What are the bases for the probable retirement years that you have estimated  
8 for each facility?**

9 A. The bases for the probable retirement years are life spans for each facility that are  
10 based on judgment and incorporate consideration of the age, use, size, nature of  
11 construction, management outlook and typical life spans experienced and used by  
12 other electric utilities for similar facilities. Most of the life spans result in probable  
13 retirement years that are many years in the future. As a result, the retirements of  
14 these facilities are not yet subject to specific management plans. Such plans would be  
15 premature. At the appropriate time, detailed studies of the economics of  
16 rehabilitation and continued use or retirement of the structure will be performed and  
17 the results incorporated in the estimation of the facility's life span.

18 **Q. Did you physically observe KCP&L's plants and equipment as part of your  
19 depreciation study?**

20 A. Yes. I made a field review of KCP&L's property on August 17-19, 2009 to observe  
21 representative portions of plant. Field reviews are conducted to become familiar with  
22 Company operations and obtain an understanding of the function of the plant and  
23 information with respect to the reasons for past retirements and the expected future  
24 causes of retirements. This knowledge, as well as information from other discussions

1 with management, was incorporated in the interpretation and extrapolation of the  
2 statistical analyses.

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

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

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

11 A. Net salvage is a component of the service value of capital assets that is recovered  
12 through depreciation rates. The service value of an asset is its original cost less its net  
13 salvage. Net salvage is the salvage value received for the asset upon retirement less  
14 the cost to retire the asset. When the cost to retire exceeds the salvage value, the  
15 result is negative net salvage.

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

22 For example, the full recovery of the service value of a \$1000 electric pole  
23 will include not only the \$1000 of original cost, but also, on average, \$450 to remove  
24 the pole at the end of its life and \$50 in salvage value. In this example, the net

1 salvage component is negative \$400 (\$50 - \$450), and the net salvage percent is  
2 negative 40%  $((\$50 - \$450)/\$1000)$ .

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

4 A. I estimated the net salvage percentages based on judgment that, for most accounts,  
5 incorporated analyses of the historical data for the period 1976 through 2008 and  
6 considered estimates for other electric companies. In the historical analyses, the net  
7 salvage, cost of removal and gross salvage amounts were expressed as percents of the  
8 original cost retired. These percents were calculated on annual and three-year  
9 moving average bases for the 1976 to 2008 period.

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

13 A. After I estimated the service life and net salvage characteristics for each depreciable  
14 property group, I calculated the annual depreciation accrual rates for each group  
15 based on the straight line remaining life method, using remaining lives weighted  
16 consistent with the average service life procedure. The annual depreciation accrual  
17 rates were developed as of December 31, 2008.

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

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

1       **Q.    Please describe the average service life procedure for calculating remaining life**  
2       **accrual rates.**

3       A.    The average service life procedure defines the group for which the remaining life  
4       annual accrual is determined. Under this procedure, the annual accrual rate is  
5       determined for the entire group or account based on its average remaining life and  
6       this rate is applied to the surviving balance of the group's cost. The average  
7       remaining life of the group is calculated by first dividing the future book accruals  
8       (original cost less allocated book reserve less future net salvage) by the average  
9       remaining life for each vintage. The average remaining life for each vintage is  
10      derived from the area under the survivor curve between the attained age of the vintage  
11      and the maximum age. Then, the sum of the future book accruals is divided by the  
12      sum of the annual accruals to determine the average remaining life of the entire group  
13      for use in calculating the annual depreciation accrual rate.

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

16      A.    I will use Account 367.00, Underground Conductors and Devices, as an example  
17      because it is one of the largest depreciable groups and represents approximately seven  
18      percent of depreciable plant.

19                The retirement rate method was used to analyze the survivor characteristics of  
20      this property group. Aged plant accounting data were compiled from 1927 through  
21      2008 and analyzed for periods that best represent the overall service life of this  
22      property. The life tables for the 1927-2008 and 1989-2008 experience bands are  
23      presented on pages III-107 through III-110 of Schedule JJS2010-1. The life table  
24      displays the retirement and surviving ratios of the aged plant data exposed to

1 retirement by age interval. For example, page III-107 shows \$1,249,341 retired  
2 during age interval 0.5-1.5 with \$374,525,652 exposed to retirement at the beginning  
3 of the interval. Consequently, the retirement ratio is 0.0033  
4 ( $\$1,249,341/\$374,525,652$ ) and the surviving ratio is 0.9967 ( $1-0.0033$ ). The percent  
5 surviving at age 0.5 of .9967 percent is multiplied by the survivor ratio of 99.78 to  
6 derive the percent surviving at age 1.5 of 99.45 percent. This process continues for  
7 the remaining age intervals for which plant was exposed to retirement during the  
8 period 1927-2008. The resultant life table, along with the 1989-2008 life table, or  
9 original survivor curves, are plotted along with the estimated smooth survivor curve,  
10 the 50-R1.5 on page III-106.

11 The net salvage percent is presented on pages III-197 and III-198 of Schedule  
12 JJS2010-1. The percentage is based on the result of annual gross salvage minus the  
13 cost to remove plant assets as compared to the original cost of plant retired during the  
14 period 1976 through 2008. The 33-year period experienced positive \$3,576,439  
15 ( $\$13,622,027 - \$10,045,588$ ) in net salvage for \$32,403,688 plant retired. The result  
16 is positive net salvage of 11 percent ( $\$3,576,439/\$32,403,688$ ); however, the most  
17 recent five-year period and the rolling three-year averages trend toward negative two  
18 and negative five percent, respectively. Therefore, based on the statistics and  
19 industry averages, negative five percent was recommended.

20 My calculation of the annual depreciation related to original cost of Account  
21 367.00, Underground Conductors and Devices, at December 31, 2008, is presented on  
22 pages III-311 and III-312 Schedule JJS2010-1. The calculation is based on the  
23 50-R1.5 survivor curve, five percent negative net salvage, the attained age, and the  
24 allocated book reserve. The tabulation sets forth the installation year, the original

1 cost, calculated accrued depreciation, allocated book reserve, future accruals,  
2 remaining life and annual accrual. These totals are brought forward to the table on  
3 page III-7.

4 **Q. Have you made any adjustments to the accumulated depreciation amounts prior**  
5 **to developing your depreciation accrual rates?**

6 A. Yes, I have. The reserve adjustments relate to the following: 1) proper amortization  
7 rates for general plant accounts, and 2) the allocation of the additional amortization.

8 **Q. Please describe amortization accounting.**

9 A. Amortization accounting is used for accounts with a large number of units, but small  
10 asset values. In amortization accounting, units of property are capitalized in the same  
11 manner as they are in depreciation accounting. However, depreciation accounting is  
12 difficult for these assets because periodic inventories are required to properly reflect  
13 plant in service. Consequently, retirements are recorded when a vintage is fully  
14 amortized rather than as the units are removed from service. That is, there is no  
15 dispersion of retirement. All units are retired when the age of the vintage reaches the  
16 amortization period. Each plant account or group of assets is assigned a fixed period  
17 which represents an anticipated life during which the asset will render service. For  
18 example, in amortization accounting, assets that have a 20-year amortization period  
19 will be fully recovered after 20 years of service and taken off the Company books, but  
20 not necessarily removed from service. In contrast, assets that are taken out of service  
21 before 20 years remain on the books until the amortization period for that vintage has  
22 expired.

1       **Q.    Amortization accounting is being implemented for which plant accounts?**

2       A.    Amortization accounting is only appropriate for certain General Plant accounts.  
3           These accounts are 391.0, 391.01, 391.02, 393.0, 394.0, 395.0, 397.0, and 398.0,  
4           which represents slightly more than two percent of depreciable plant.

5       **Q.    Has amortization accounting been accepted by regulatory commissions?**

6       A.    Yes, it has. In my experience, amortization accounting has been accepted since the  
7           early 1990s by almost every regulatory commission, including in Missouri. The  
8           utilization of amortization accounting is established to reduce the effort of keeping  
9           track of many small valued assets as well as the future expectations of more constant  
10          levels of depreciation.

11      **Q.    Please explain the reserve adjustment for general plant.**

12      A.    The utilization of the general plant amortization methodology is designed to smooth  
13          depreciation expense consistent with capital investment. In order to establish  
14          constant rates that are consistent with amortization accounting and the remaining life  
15          methodology, the accumulated reserve must be set equal to the theoretical reserve.  
16          This is based on the age and amount of the surviving plant in service. However, it is  
17          not appropriate to adjust a reserve amount without making proper offsetting amounts  
18          to insure only full recovery, no more, no less. Therefore, we have segregated the  
19          reserve into two components. The first component is established to produce an  
20          amortization rate which will match the amortization period. The positive or negative  
21          excess from the accumulated reserve amount is recovered over a 10-year amortization  
22          period separately from the plant in service.



1 **Q. How does this adjustment improve recovery practices?**

2 A. Without this adjustment, general plant amortization accruals could fluctuate  
3 drastically based on past recovery patterns. This segregation will establish a constant  
4 rate in the future for these accounts and any past under- or over-recovered assets will  
5 be recovered equally over the next 10 years.

6 **Q. Can you discuss the reserve allocation for Additional Amortization?**

7 A. The Additional Amortization relates to the accumulation of depreciation of future  
8 plant in service. This allocation was based on facilities and assets in service or soon  
9 to be placed in service and on distribution of accumulated depreciation to these assets.  
10 The reserve allocation was established through the review of plant balances as of  
11 December 2008. A total of \$168.9 million Additional Amortization has been  
12 allocated to all the depreciable plant accounts.

13 **Q. Did you establish rates for the assets to be placed into service as of April 2009 for**  
14 **Iatan Unit 1?**

15 A. No. The rates to be used for these assets should be those established in the  
16 Depreciation Study since assets for these locations have already existed as of  
17 December 31, 2008.

18 **Q. Are there any other depreciation rates that need to be addressed?**

19 A. Yes, there are. In the very near future the Iatan Unit 2 will be completed and placed  
20 into service. These assets should have a depreciation rate in place when they come  
21 on-line. Therefore, I have performed a calculation to establish rates for Accounts 311  
22 through 316. These rates are set forth on page III-8 of the Depreciation Study. The  
23 rates are based on the same interim survivor curve and net salvage percent as the

1 other facilities in these accounts. The specific results by account and the parameters  
2 used are set forth in Schedule JJS2010-2.

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

4 A. Yes, it does.



## APPENDIX A

## **JOHN SPANOS**

### **DEPRECIATION EXPERIENCE**

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 assisted in the preparation of 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 assisted in the preparation of depreciation studies for the following organizations in the electric industry: Chugach Electric Association, The Cincinnati Gas & 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 assisted in the preparation of 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 assisted in the preparation of depreciation studies for the following gas 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 assisted in the preparation of depreciation studies for the following water 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 my present position as Vice President of Gannett Fleming Valuation and Rate Consultants, Inc., now the Valuation and Rate Division of Gannett Fleming, Inc. I am responsible for conducting 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; SCANA, Inc.; Idaho Power Company; El Paso Electric Company; 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.; 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; Artesian Water Company, Potomac Electric Power Company, 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; Duke Energy Carolinas; 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. and B. C. Gas Utility, Ltd. 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.