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Issue: Depreciation
Witness: John J. Spanos
Sponsoring Party: Union Electric Company
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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2014-0258

DIRECT TESTIMONY OF

JOHN J. SPANOS

ON BEHALF OF

UNION ELECTRIC COMPANY d/b/a
AMEREN MISSOURI

Camp Hill, Pennsylvania

July, 2014

TABLE OF CONTENTS

PAGE

1
2

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is John J. Spanos. My business address is 207 Senate Avenue, Camp Hill, Pennsylvania.

Q. ARE YOU ASSOCIATED WITH ANY FIRM?

A. Yes. I am associated with the firm of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming").

Q. HOW LONG HAVE YOU BEEN ASSOCIATED WITH GANNETT FLEMING?

A. I have been associated with the firm since college graduation in June, 1986.

Q. WHAT IS YOUR POSITION WITH THE FIRM?

A. I am a Senior Vice President.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri" or "Company").

Q. PLEASE STATE YOUR QUALIFICATIONS.

A. I have 28 years of depreciation experience which includes giving expert testimony in over 170 cases before 39 regulatory commissions, including this Commission. Please refer to Schedule JJS-1 for my qualifications.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I sponsor the depreciation study performed for Ameren Missouri attached hereto as Schedule JJS-2 ("Depreciation Study"). The Depreciation Study sets forth the calculated annual depreciation accrual rates by account as of December 31, 2013.

The proposed rates appropriately reflect the rates at which Ameren Missouri's assets should be depreciated over their useful lives and are based on the most commonly used methods and procedures for determining depreciation rates.

Q. CAN YOU SUMMARIZE THE IMPACT ON DEPRECIATION RATES BASED ON THE DEPRECIATION STUDY?

A. Yes. The table below sets forth a comparison of the current depreciation rates and resultant expense to the proposed depreciation rates and expense by function as of December 31, 2013.

	Current		Proposed	
Function	Rates	Proforma Expense	Rates	Expense
Steam	2.95	$111,335,305	3.71	$140,249,366
Nuclear	2.01	57,415,319	2.20	62,959,264
Hydraulic	2.33	8,630,978	2.30	8,528,715
Other	1.95	24,145,158	2.15	26,507,413
Transmission	2.45	18,988,028	2.48	19,184,930
Distribution	3.33	162,649,793	3.08	150,748,765
General	4.75	24,838,753	4.74	24,745,244
Accrual Amortization	-	-	-	(4,985,427)
Total		$408,003,335		$427,938,270

Q. CAN YOU EXPLAIN SOME OF THE MAJOR FACTORS THAT CAUSED THE CHANGE IN DEPRECIATION RATES?

A. Yes. The major components that caused rates to change by function are as follows:

- Steam Production Plant: the utilization of more appropriate interim survivor curves and the shorter life span date for Meramec. Also, a slight increase in negative net salvage for some accounts.

- Nuclear Plant: the utilization of longer interim survivor curves for most accounts.
- Other Production Plant: the utilization of more appropriate interim survivor curves and an increase in negative net salvage.
- Distribution Plant: the utilization of longer average service lives for some accounts.

II. DEPRECIATION STUDY

Q. PLEASE DEFINE THE CONCEPT OF DEPRECIATION.

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

Q. DID YOU PREPARE THE DEPRECIATION STUDY FILED BY AMEREN MISSOURI IN THIS PROCEEDING?

A. Yes. I prepared the depreciation study submitted by Ameren Missouri with its filing in this proceeding. My report is entitled: "2013 Depreciation Study - Calculated Annual Depreciation Accruals Related to Electric Plant as of December 31, 2013." This report sets forth the results of my depreciation study for Ameren Missouri.

Q. IN PREPARING THE DEPRECIATION STUDY, DID YOU FOLLOW GENERALLY ACCEPTED PRACTICES IN THE FIELD OF DEPRECIATION VALUATION?

A. Yes.

Q. ARE THE METHODS AND PROCEDURES OF THIS DEPRECIATION STUDY CONSISTENT WITH PAST PRACTICES?

A. The methods and procedures of this study are the same as those utilized in the last study for this company as well as others before this Commission. Depreciation rates are determined based on the average service life procedure and the remaining life method.

Q. PLEASE DESCRIBE THE CONTENTS OF YOUR REPORT.

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

The table on pages VI-4 through VI-11 presents the estimated survivor curve, the net salvage percent, the original cost as of December 31, 2013, the book depreciation reserve and the calculated annual depreciation accrual and rate for each

account or subaccount. The section beginning on page VII-2 presents the results of the retirement rate analyses prepared as the historical bases for the service life estimates. The section beginning on page VIII-2 presents the results of the salvage analysis. The section beginning on page IX-2 presents the depreciation calculations related to surviving original cost as of December 31, 2013.

Q. PLEASE EXPLAIN HOW YOU PERFORMED YOUR DEPRECIATION STUDY.

A. I used the straight line remaining life method of depreciation, with the average service life procedure. The annual depreciation is based on a method of depreciation accounting that seeks to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of each unit, or group of assets, in a systematic and reasonable manner.

For General Plant Accounts 391.0, 391.1, 391.2, 391.3, 393, 394, 395, 397 and 398, I used the straight line remaining life method of amortization. Additionally, certain general plant assets recorded in Generating Accounts 316.21, 316.22, 316.23, 325.21, 325.22, 325.23, 335.21, 335.22, 335.23, 346.21, 346.22 and 346.23 as well as training assets in General Plant Accounts 390.05, 392.05, 394.05 and 397.05 use the straight line remaining life method of amortization. The account numbers identified throughout my testimony represent those in effect as of December 31, 2013. The annual amortization is based on amortization accounting that distributes the unrecovered cost of fixed capital assets over the remaining amortization period selected for each account and vintage.

Q. HOW DID YOU DETERMINE THE RECOMMENDED ANNUAL DEPRECIATION ACCRUAL RATES?

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

Q. PLEASE DESCRIBE THE FIRST PHASE OF THE DEPRECIATION STUDY, IN WHICH YOU ESTIMATED THE SERVICE LIFE AND NET SALVAGE CHARACTERISTICS FOR EACH DEPRECIABLE GROUP.

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

Q. WHAT HISTORICAL DATA DID YOU ANALYZE FOR THE PURPOSE OF ESTIMATING SERVICE LIFE CHARACTERISTICS?

A. Generally speaking, I analyzed the Company's accounting entries that record plant transactions during the period 1922 through 2013. The transactions included additions, retirements, transfers, sales and the related balances.

Q. WHAT METHOD DID YOU USE TO ANALYZE THESE SERVICE LIFE DATA?

A. I used the retirement rate method. This is the most appropriate method when retirement data covering a long period of time is available because this method determines the average rates of retirement actually experienced by the Company during the period of time covered by the depreciation study.

Q. PLEASE DESCRIBE HOW YOU USED THE RETIREMENT RATE METHOD TO ANALYZE AMEREN MISSOURI'S SERVICE LIFE DATA.

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

Q. WHAT IS AN "IOWA-TYPE SURVIVOR CURVE" AND HOW DID YOU USE SUCH CURVES TO ESTIMATE THE SERVICE LIFE CHARACTERISTICS FOR EACH PROPERTY GROUP?

A. Iowa type curves are a widely-used group of survivor curves that contain the range of survivor characteristics usually experienced by utilities and other industrial companies. The Iowa curves were developed at the Iowa State College Engineering

Experiment Station through an extensive process of observing and classifying the ages at which various types of property used by utilities and other industrial companies had been retired.

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

The estimated survivor curve designations for each depreciable property group indicate the average service life, the family within the Iowa system to which the property group belongs, and the relative height of the mode. For example, the Iowa 50-R1 indicates an average service life of fifty years; a right-moded, or R, type curve (the mode occurs after average life for right-moded curves); and a relatively low height, 1, for the mode (possible modes for R type curves range from 1 to 5).

Q. WHAT APPROACH DID YOU USE TO ESTIMATE THE LIVES OF SIGNIFICANT FACILITIES SUCH AS PRODUCTION PLANTS?

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

The interim survivor curves describe the rate of retirement related to the replacement of elements of the facility, such as, for a building, the retirements of plumbing, heating, doors, windows, roofs, etc., that occur during the life of the facility. The probable retirement date provides the rate of final retirement for each

year of installation for the facility by truncating the interim survivor curve for each installation year at its attained age at the date of probable retirement. The use of interim survivor curves truncated at the date of probable retirement provides a consistent method for estimating the lives of the several years of installation for a particular facility inasmuch as a single concurrent retirement for all years of installation will occur when it is retired.

Q. HAS GANNETT FLEMING USED THIS APPROACH IN OTHER PROCEEDINGS?

A. Yes, we have used the life span technique in performing depreciation studies presented to and accepted by many public utility commissions across the United States and Canada, including Missouri. This technique is currently being utilized by Ameren Missouri in the same manner recommended in this case.

Q. WHAT ARE THE BASES FOR THE PROBABLE RETIREMENT YEARS THAT YOU HAVE ESTIMATED FOR EACH FACILITY?

A. The bases for the probable retirement years are life spans for each facility that are based on judgment, the life assessment study and incorporate consideration of the age, use, size, nature of construction, management outlook and typical life spans experienced and used by other electric utilities for similar facilities. Most of the life spans result in probable retirement years that are many years in the future. As a result, the retirements of these facilities are not yet subject to specific management plans (with the exception of the Meramec Plant as will be addressed in other testimony filed by Ameren Missouri). Such plans would be premature because the specific date at which a given plant will actually be retired is generally not

determined until the retirement date becomes much closer than the dates that have been estimated for Ameren Missouri's plants. I would note that Ameren Missouri witness Larry W. Loos from Black & Veatch conducted a detailed study from which he developed informed estimates of the probable life spans of the Company's coal-fired plants, which I then used in my depreciation study. Retirement dates for other hydroelectric or nuclear facilities were based on license dates or on informed judgment using the factors I discuss above.

Q. DID YOU PHYSICALLY OBSERVE AMEREN MISSOURI'S PLANT AND EQUIPMENT AS PART OF YOUR DEPRECIATION STUDY?

A. Yes. I made a field review of Ameren Missouri's property as part of this study during March 2014 to observe representative portions of plant. Field reviews are conducted to become familiar with company operations and to obtain an understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements. This knowledge, as well as information from other discussions with management, was incorporated in the interpretation and extrapolation of the statistical analyses.

Q. WOULD YOU EXPLAIN THE CONCEPT OF "NET SALVAGE"?

A. Net salvage is a component of the service value of capital assets that is reflected in depreciation rates. The service value of an asset is its original cost less its net salvage. Net salvage is the salvage value received for the asset upon retirement less the cost to retire the asset. When the cost to retire exceeds the salvage value, the result is negative net salvage.

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

For example, the full recovery of the service value of a $10,000 transmission tower includes not only the $10,000 of original cost, but also, on average, $3,500 to remove the tower at the end of its life and $500 in salvage value. In this example, the net salvage component is negative $3,000 ($500 - $3,500), and the net salvage percent is negative 30% (($500 - $3,500)/$10,000).

Q. PLEASE DESCRIBE HOW YOU ESTIMATED NET SALVAGE PERCENTAGES.

A. I estimated the net salvage percentages by reviewing the Company's account specific historical salvage and cost of removal data for the period 1961 through 2013 as a percentage of the associated retired plant as well as considering industry experience in terms of net salvage estimates for other electric companies.

Q. WERE THE NET SALVAGE PERCENTAGES FOR GENERATING FACILITIES BASED ON THE SAME ANALYSES?

A. Yes, for the interim analyses. The net salvage percentages for generating facilities were based on two components, the interim net salvage percentage and the final net salvage percentage. The interim net salvage percentage is determined based on the historical indications from the period, 1961-2013, of the cost of removal and gross

salvage amounts as a percentage of the associated plant retired. The final net salvage or dismantlement component was determined to be zero based on the assets anticipated to be retired at the concurrent date of final retirement.

Q. HAVE YOU INCLUDED A DISMANTLEMENT COMPONENT INTO THE OVERALL RECOVERY OF GENERATING FACILITIES?

A. No. A dismantlement component has not been included to the net salvage percentage for any production facilities.

Q. PLEASE DESCRIBE THE SECOND PHASE OF THE PROCESS THAT YOU USED IN THE DEPRECIATION STUDY IN WHICH YOU CALCULATED COMPOSITE REMAINING LIVES AND ANNUAL DEPRECIATION ACCRUAL RATES.

A. After I estimated the service life and net salvage characteristics for each depreciable property group, I calculated the annual depreciation accrual rates for each group, using the straight line remaining life method, and using remaining lives weighted consistent with the average service life procedure.

Q. PLEASE DESCRIBE THE STRAIGHT LINE REMAINING LIFE METHOD OF DEPRECIATION.

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

Q. PLEASE DESCRIBE AMORTIZATION ACCOUNTING.

A. In amortization accounting, units of property are capitalized in the same manner as they are in depreciation accounting. Amortization accounting is used for accounts

with a large number of units, but small asset values. Depreciation accounting is difficult for these assets because periodic inventories are required to properly reflect plant in service. Consequently, retirements are recorded when a vintage is fully amortized rather than as the units are removed from service. That is, there is no dispersion of retirements. All units are retired when the age of the vintage reaches the amortization period. Each plant account or group of assets is assigned a fixed period which represents an anticipated life during which the asset will render full benefit. For example, in amortization accounting, assets that have a 20-year amortization period will be fully recovered after 20 years of service and taken off the Company's books, but not necessarily removed from service. In contrast, assets that are taken out of service before 20 years remain on the books until the amortization period for that vintage has expired.

Q. FOR WHICH PLANT ACCOUNTS IS AMORTIZATION ACCOUNTING BEING UTILIZED?

A. Amortization accounting is only appropriate for certain General Plant or General Plant related accounts. These accounts are 316.21, 316.22, 316.23, 325.21, 325.22, 325.23, 335.21, 335.22, 335.23, 346.21, 346.22, 346.23, 390.05, 391.0, 391.1, 391.2, 392.05, 393, 394, 394.05, 395, 397, 397.05 and 398. These accounts represent less than 2 percent of the Company's depreciable plant.

Q. PLEASE USE AN EXAMPLE TO ILLUSTRATE HOW THE ANNUAL DEPRECIATION ACCRUAL RATE FOR A PARTICULAR GROUP OF PROPERTY IS PRESENTED IN YOUR DEPRECIATION STUDY.

A. I will use Account 362, Station Equipment, as an example because it is one of the largest depreciable mass accounts and represents approximately six percent of depreciable plant.

The retirement rate method was used to analyze the survivor characteristics of this property group. Aged plant accounting data was compiled from 1932 through 2013 and analyzed in periods that best represent the overall service life of this property. The life tables for the 1932-2013 and 1984-2013 experience bands are presented on pages VII-158 through VII-163 of the report. The life table displays the retirement and surviving ratios of the aged plant data exposed to retirement by age interval. For example, page VII-158 shows $544,715 retired at age 0.5 with $879,837,132 exposed to retirement. Consequently, the retirement ratio is 0.0006 and the surviving ratio is 0.9994. These life tables, or original survivor curves, are plotted along with the estimated smooth survivor curve, the 60-R2.5 on page VII-157.

The net salvage percent is presented on pages VIII-67 through VIII-69. The percentage is based on the result of annual gross salvage minus the cost to remove plant assets as compared to the original cost of plant retired during the period 1961 through 2013. The 53-year period experienced $4,556,308 ($3,422,995 - $7,979,302) in net salvage for $68,293,063 plant retired. The result is negative net salvage of 7 percent ($4,556,308/$68,293,063). While the result was negative 7 percent, recent trends have shown indications of negative 8 percent. However, based on industry ranges, historical indications and Company expectations, I determined that a slightly more conservative negative 5 percent was the most appropriate estimate for this account.

My calculation of the annual depreciation related to the original cost at December 31, 2013, of electric plant is presented on pages IX-109 through IX-111. The calculation is based on the 60-R2.5 survivor curve, 5 percent negative net salvage, the attained age, and the allocated book reserve. The tabulation sets forth the installation year, the original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual. These totals are brought forward to the table on page VI-9.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

SCHEDULE JJS-1

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; 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; 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; Madison Gas and Electric; Central Maine Power; PEPCO; PacifiCorp; Minnesota Energy Resource Group; Jersey Central Power & Light Company; Cheyenne Light, Fuel and Power Company; 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; Public Service Company of Oklahoma; Peoples Gas Light and Coke Company; North Shore Gas Company; 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; and the North Carolina Utilities Commission.

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY

	Year	Jurisdiction	Docket No.	Client/Utility	Subject
1.	1998	PA PUC	R-00984375	City of Bethlehem-Bureau of Water	Original Cost and Depreciation
2.	1998	PA PUC	R-00984567	City of Lancaster	Original Cost and Depreciation
3.	1999	PA PUC	R-00994605	The York Water Company	Depreciation
4.	2000	D.T.&E.	DTE 00-105	Massachusetts-American Water Company	Depreciation
5.	2001	PA PUC	R-00016114	City of Lancaster	Original Cost and Depreciation
6.	2001	PA PUC	R-00016236	The York Water Company	Depreciation
7.	2001	PA PUC	R-00016339	Pennsylvania-American Water Company	Depreciation
8.	2001	OH PUC	01-1228-GA-AIR	Cinergy Corp. - Cincinnati Gas and Electric Company	Depreciation
9.	2001	KY PSC	2001-092	Cinergy Corp. - Union Light, Heat and Power Company	Depreciation
10.	2002	PA PUC	R-00016750	Philadelphia Suburban Water Co.	Depreciation
11.	2002	KY PSC	2002-00145	Columbia Gas of Kentucky	Depreciation
12.	2002	NJ BPU	GR02040245	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	Cause 42359	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	Doc. 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 Co.	Depreciation
23.	2004	Alberta Energy & Util. Board	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.	PUD 200400187	CenterPoint Energy - Arkla	Depreciation
28.	2004	OH PUC	04-680-El-AIR	Cinergy Corp. - Cincinnati Gas and Electric Company	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client/Utility	Subject
29.	2004	RR Com of TX	GUD#	CenterPoint Energy – Entex Gas Svcs. Div.	Depreciation
30.	2004	NY PUC	04-G-1047	National Fuel Gas Distribution Corp. (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	GR-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 Svcs. Div.	Depreciation
39.	2005	FERC		Cinergy Corporation	Accounting
40.	2005	OK CC	PUD 200500151	Oklahoma Gas and Electric Co.	Depreciation
41.	2005	MA Dept Telcom & Energy	DTE 05-85	NSTAR	Depreciation
42.	2005	NY PUC	05-E-0934/05-G-0935	Central Hudson Gas & Electric Co.	Depreciation
43.	2005	AK Reg Cm	U-04-102	Chugach Electric Association	Depreciation
44.	2005	CA PUC	A.05-12-002	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		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	SC PSC		Duke Energy Kentucky	Depreciation
				SCANA	Depreciation
54.	2006	AK Reg Cm	U-06-6	Municipal Light and Power	Depreciation
55.	2006	DE PSC		Delmarva Power and Light	Depreciation
56.	2006	IN URC	IURC43081	Indiana American Water Co.	Depreciation
57.	2006	AK Reg Cm	U-06-134	Chugach Electric Association	Depreciation
58.	2006	MO PSC	WR-2007-0216	Missouri American Water Company	Depreciation
59.	2006	FERC	ISO5-82, et.al	TransAlaska Pipeline	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client/Utility	Subject
60.	2006	PA PUC	R-00061493	National Fuel Gas Distribution Corp. (PA)	Depreciation
61.	2007	NC Util Cm	E-7	Duke Energy Carolinas, LLC	Depreciation
62.	2007	OH PSC	08-709-EL-AIR	Duke Energy Ohio Gas	Depreciation
63.	2007	PA PUC	R-00072155	PPL Electric Utilities Corp.	Depreciation
64.	2007	KY PSC	2007-00143	Kentucky American Water Company	Depreciation
65.	2007	PA PUC	R-00072229	Pennsylvania American Water Co.	Depreciation
66.	2007	KY PSC	2007-00008	NiSource - Columbia Gas of Kentucky	Depreciation
67.	2007	NY PSC	07-G-0141	National Fuel Gas Distribution Corp. (NY)	Depreciation
68.	2008	AK PSC	U-08-004	Anchorage Water & Wastewater Utility	Depreciation
69.	2008	TN Reg Ath	08-00039	Tennessee American Water Company	Depreciation
70.	2008	DE PSC	08-96	Artesian Water Company	Depreciation
71.	2008	PA PUC	R-2008-2023067	The York Water Company	Depreciation
72.	2008	KS CC	08-WSEE1-RTS	Westar Energy	Depreciation
73.	2008	IN URC	43526	Northern Indiana Public Service Co.	Depreciation
74.	2008	IN URC	43501	Duke Energy Indiana	Depreciation
75.	2008	MD PSC	9159	NiSource - Columbia Gas of Maryland	Depreciation
76.	2008	KY PSC	2008-000251	Kentucky Utilities	Depreciation
77.	2008	KY PSC	2008-000252	Louisville Gas & Electric	Depreciation
78.	2008	PA PUC	2008-2032689	Pennsylvania American Water Co.	Depreciation
79.	2008	NY PSC	08-E887/08-G0888	Central Hudson	Depreciation
80.	2008	WV TC	VE-080416/VG-8080417	Avista Corporation	Depreciation
81.	2009	IL CC	09-	Peoples Gas, Light and Coke Co.	Depreciation
82.	2009	IL CC	09-	North Shore Gas Company	Depreciation
83.	2009	DC PSC	1076	Potomac Electric Power Company	Depreciation
84.	2009	KY PSC	2009-00141	NiSource – Columbia Gas of Kentucky	Depreciation
85.	2009	FERC	ER08-1056-002	Entergy Services	Depreciation
86.	2009	PA PUC	R-2009-2097323	Pennsylvania American Water Co.	Depreciation
87.	2009	NC Util Cm	E-7, Sub 909	Duke Energy Carolinas, LLC	Depreciation
88.	2009	KY PSC	2009-00202	Duke Energy Kentucky	Depreciation
89.	2009	VA	St CCPUE-2009-00059	Aqua Virginia, Inc.	Depreciation
90.	2009	PA PUC	2009-2132019	Aqua Pennsylvania, Inc.	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client/Utility	Subject
91.	2009	MS PSC	09-	Entergy Mississippi	Depreciation
92.	2009	AK PSC	09-084-U	Entergy Arkansas	Depreciation
93.	2009	TX PUC	37744	Entergy Texas	Depreciation
94.	2009	TX PUC	37690	El Paso Electric Co.	Depreciation
95.	2009	PA PUC	R-2009-2106908	The Borough of Hanover	Depreciation
96.	2009	KS CC	10-KCPE-415-RTS	Kansas City Power & Light	Depreciation
97.	2009	PA PUC	R-2009-	United Water Pennsylvania	Depreciation
98.	2009	OH PUC		Aqua Ohio Water Company.	Depreciation
99.	2009	WI PSC	3270-DU-103	Madison Gas & Electric Co.	Depreciation
100.	2009	MO PSC	WR-2010	Missouri American Water Co.	Depreciation
101.	2009	AK Reg Cm.	U-09-097	Chugach Electric Association	Depreciation
102.	2010	IN URC		Northern Indiana Public Service Co.	Depreciation
103.	2010	WI PSC	6690-DU-104	Wisconsin Public Service Corp.	Depreciation
104.	2010	PA PUC	R-2010-2161694	PPL Electric Utilities Corp.	Depreciation
105.	2010	KY PSC	2010-00036	Kentucky American Water Co.	Depreciation
106.	2010	PA PUC	R-2009-2149262	Columbia Gas of Pennsylvania	Depreciation
107.	2010	MO PSC	GR-2010-0171	Laclede Gas Company	Depreciation
108.	2010	SC PSC	2009-489-E	South Carolina Electric & Gas Co.	Depreciation
109.	2010	NJ Bd of PU	ER09080664	Atlantic City Electric	Depreciation
110.	2010	VA St. CC	PUE-2010-00001	Virginia American Water Company	Depreciation
111.	2010	PA PUC	R-2010-2157140	The York Water Company	Depreciation
112.	2010	MO PSC	ER-2010-0356	Greater Missouri Operations Co.	Depreciation
113.	2010	PA PUC	R-2010-2167797	T. W. Phillips Gas and Oil Co.	Depreciation
114.	2010	PSC SC	2009-489-E	SCANA - Electric	Depreciation
115.	2010	PA PUC	R-2010-2201702	Peoples Natural Gas, LLC	Depreciation
116.	2010	AK PSC		Oklahoma Gas and Electric Co.	Depreciation
117.	2010	IN URC		Northern Indiana Public Serv. Co. – NIFL	Depreciation
118.	2010	IN URC		Northern Indiana Public Serv. Co. – Kokomo	Depreciation
119.	2010	PA PUC	R-2010-2166212	Pennsylvania American Water Co. – WW	Depreciation
120.	2010	NC Util Cm.		Aqua North Carolina, Inc.	Depreciation
121.	2011	OH PUC	11-4161-WS-AIR	Ohio American Water Company	Depreciation
122.	2011	MS PSC	EC-123-0082-00	Entergy Mississippi	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client/Utility	Subject
123.	2011	CO PUC	11AL-387E	Black Hills Colorado	Depreciation
124.	2011	PA PUC	R-2010-2215623	Columbia Gas of Pennsylvania	Depreciation
125.	2011	IN URC	43114 IGCC 4S	Duke Energy Indiana	Depreciation
126.	2011	FERC	IS11-146-000	Enbridge Pipelines (Southern Lights)	Depreciation
127.	2011	Il CC	11-0217	MidAmerican Energy Corporation	Depreciation
128.	2011	OK CC	201100087	Oklahoma Gas & Electric Co.	Depreciation
129.	2011	PA PUC	2011-2232243	Pennsylvania American Water Company	Depreciation
130.	2011	FERC		Carolina Gas Transmission	Depreciation
131.	2012	WA UTC		Avista Corporation	Depreciation
132.	2012	AK Reg Cm	U-12-009	Chugach Electric Association	Depreciation
133.	2012	MA PUC	DPU 12-25	Columbia Gas of Massachusetts	Depreciation
134.	2012	TX PUC	40094	El Paso Electric Company	Depreciation
135.	2012	ID PUC	IPC-E-12	Idaho Power Company	Depreciation
136.	2012	PA PUC	R-2012-2290597	PPL Electric Utilities	Depreciation
137.	2012	PA PUC	R-2012-2311725	Hanover, Borough of – Bureau of Water	Depreciation
138.	2012	KY PSC	2012-00222	Louisville Gas and Electric Company	Depreciation
139.	2012	KY PSC	2012-00221	Kentucky Utilities Company	Depreciation
140.	2012	PA PUC	R-2012-2285985	Peoples Natural Gas Company	Depreciation
141.	2012	DC PSC	Case 1087	Potomac Electric Power Company	Depreciation
142.	2012	OH PSC	12-1682-EL-AIR	Duke Energy Ohio (Electric)	Depreciation
143.	2012	OH PSC	12-1685-GA-AIR	Duke Energy Ohio (Gas)	Depreciation
144.	2012	PA PUC	R-2012-	Lancaster, City of – Bureau of Water	Depreciation
145.	2012	PA PUC	R-2012-2310366	Lancaster, City of – Sewer Fund	Depreciation
146.	2012	PA PUC	R-2012-2321748	Columbia Gas of Pennsylvania	Depreciation
147.	2012	FERC		ITC Holdings	Depreciation
148.	2012	MO PSC	ER-2012-0174	Kansas City Power and Light	Depreciation
149.	2012	MO PSC	ER-2012-0174	KCPL Greater Missouri Operations Co.	Depreciation
150.	2012	MO PSC	GO-2012-0363	Laclede Gas Company	Depreciation
151.	2012	MN PUC	G007,001/D-12-533	Integrys – MN Energy Resource Group	Depreciation
152.	2012	TX PUC		Aqua Texas	Depreciation
153.	2012	PA PUC	2012-2336379	York Water Company	Depreciation
154.	2013	NJ BPU	ER12121071	PHI Service Co.– Atlantic City Electric	Depreciation
155.	2013	KY PSC	2013-00167	Columbia Gas of Kentucky	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client/Utility	Subject
156.	2013	VA St CC	2013-00020	Virginia Electric and Power Co.	Depreciation
157.	2013	IA Util Bd	2013-0004	MidAmerican Energy Corporation	Depreciation
158.	2013	PA PUC	2013-2355276	Pennsylvania American Water Co.	Depreciation
159.	2013	PA PUC	2013-2355886	Peoples TWP LLC	Depreciation
160.	2013	ME PUC	2013-168	Central Maine Power Company	Depreciation
161.	2013	DC PSC	Case 1103	PHI Service Co. – PEPCO	Depreciation
162.	2013	WY PSC	2003-ER-13	Cheyenne Light, Fuel and Power Co.	Depreciation
163.	2013	FERC	ER13- -0000	Kentucky Utilities	Depreciation
164.	2013	FERC	ER13- -0000	MidAmerican Energy Company	Depreciation
165.	2013	FERC	ER13- -0000	PPL Utilities	Depreciation
166.	2013	PA PUC	R-2013-2372129	Duquesne Light Company	Depreciation
167.	2013	NJ BPU	ER12111052	Jersey Central Power and Light Co.	Depreciation
168.	2013	PA PUC	R-2013-2390244	Bethlehem, City of – Bureau of Water	Depreciation
169.	2013	OK CC	UM 1679	Oklahoma, Public Service Company of	Depreciation
170.	2013	IL CC	13-0500	Nicor Gas Company	Depreciation
171.	2013	WY PSC	20000-427-EA-13	PacifiCorp	Depreciation
172.	2013	UT PSC	13-035-02	PacifiCorp	Depreciation
173.	2013	OR PUC	UM 1647	PacifiCorp	Depreciation
174.	2014	IL CC	14-0225	Peoples Gas Light and Coke Company	Depreciation
175.	2014	IL CC	14-0226	North Shore Gas Company	Depreciation
176.	2014	FERC	ER14-	Duquesne Light Company	Depreciation
177.	2014	WY PSC		Black Hills Power Company	Depreciation

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service.	)))	**Case No. ER-2014-0258**

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 and my office is located in Camp Hill, Pennsylvania and I am associated with Gannett Fleming Valuation and Rate Consultants, LLC (Gannett Fleming).

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 15 pages and Schedule(s) JJS-1 through JJS-2, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

John J. Spanos

John J. Spanos

Subscribed and sworn to before me this 30th day of June, 2014.

Notary Public

My commission expires: February 20, 2015

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Cheryl Ann Rutter, Notary Public
East Pennsboro Twp., Cumberland County
My Commission Expires Feb. 20, 2015
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES