

**BEFORE THE
ARKANSAS PUBLIC SERVICE COMMISSION**

IN THE MATTER OF THE APPLICATION OF)
OKLAHOMA GAS AND ELECTRIC COMPANY)
FOR APPROVAL OF A GENERAL CHANGE IN)
RATES AND TARIFFS)

DOCKET NO. 06-070-U

Direct Testimony

of

John J. Spanos

on behalf of

Oklahoma Gas and Electric Company

July 28, 2006

John J. Spanos
Direct Testimony

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

2 A. My name is John J. Spanos. My business address is 207 Senate Avenue, Camp Hill,
3 Pennsylvania 17011.

4

5 Q. **Are you associated with any firm?**

6 A. Yes. I am associated with the firm of Gannett Fleming, Inc.

7

8 Q. **How long have you been associated with Gannett Fleming, Inc.?**

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

10

11 Q. **What is your position with the firm?**

12 A. I am a Vice President of the Valuation and Rate Division.

13

14 Q. **What is your educational background?**

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

18

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

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

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

1 A. Yes. The Society of Depreciation Professionals has established national standards for
2 depreciation professionals. The Society administers an examination to become certified
3 in this field. I passed the certification exam in September 1997, and was recertified in
4 August 2003.

5

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

7 A. In June 1986, I was employed by Gannett Fleming Valuation and Rate Consultants, Inc.
8 as a Depreciation Analyst. During the period June 1986 through December 1995, I
9 assisted in the preparation of numerous depreciation and original cost studies for utility
10 companies in various industries. I assisted in the conduct of depreciation studies for the
11 following telephone companies: United Telephone Company of Pennsylvania, United
12 Telephone Company of New Jersey and Anchorage Telephone Utility. In addition, I
13 assisted in the conduct of depreciation studies for the following companies in the railroad
14 industry: Union Pacific Railroad, Burlington Northern Railroad and Wisconsin Central
15 Transportation Corporation.

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

20 I assisted in the preparation of depreciation studies for the following pipeline
21 companies: TransCanada Pipelines Limited, Trans Mountain Pipe Line Company Ltd.,
22 Interprovincial Pipe Line Inc., Nova Gas Transmission Limited and Lakehead Pipeline
23 Company.

1 I assisted in the preparation of depreciation studies for the following gas
2 companies: Columbia Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples
3 Natural Gas Company, T. W. Phillips Gas & Oil Company, CG&E, ULH&P,
4 Lawrenceburg Gas Company and Penn Fuel Gas, Inc.

5 I assisted in the preparation of depreciation studies for the following water
6 companies: Indiana-American Water Company, Consumers Pennsylvania Water
7 Company and The York Water Company; and depreciation and original cost studies for
8 Philadelphia Suburban Water Company and Pennsylvania-American Water Company. In
9 each of the above studies, I assembled and analyzed historical and simulated data,
10 performed field reviews, developed preliminary estimates of service life and net salvage,
11 calculated annual depreciation, and prepared reports for submission to state public utility
12 commissions or Federal regulatory agencies.

13 In January 1996, I was assigned to the position of Supervisor of Depreciation
14 Studies. In July 1999, I was promoted to the position of Manager, Depreciation and
15 Valuation Studies. In December 2000, I was appointed to my current position of Vice
16 President.

17 I am responsible for conducting depreciation, valuation and original cost studies,
18 including the preparation of final exhibits and responses to data requests for submission
19 to the appropriate regulatory bodies. Since January 1996, I have conducted depreciation
20 studies similar to those previously listed including assignments for Hampton Water
21 Works Company, Omaha Public Power District, Enbridge Pipe Line Company, Inc.,
22 Columbia Gas of Virginia, Inc., Virginia Natural Gas Company, National Fuel Gas
23 Distribution Corporation - New York and Pennsylvania Divisions, The City of Bethlehem

1 - Bureau of Water, The City of Coatesville Authority, The City of Lancaster - Bureau of
2 Water, Peoples Energy Corporation, The York Water Company, Public Service Company
3 of Colorado, Reliant Energy-HLP, Massachusetts-American Water Company, St. Louis
4 County Water Company, Missouri-American Water Company, Chugach Electric
5 Association, Alliant Energy, Oklahoma Gas and Electric Company, Nevada Power
6 Company, Dominion Virginia Power, NUI-Virginia Gas Companies, Pacific Gas &
7 Electric Company, PSI Energy, NUI - Elizabethtown Gas Company, Cinergy Corporation
8 – CG&E, Cinergy Corporation – ULH&P, Columbia Gas of Kentucky, SCANA, Inc.,
9 Idaho Power Company, El Paso Electric Company, Central Hudson Gas & Electric,
10 Centennial Pipeline Company, CenterPoint Energy-Arkansas, CenterPoint Energy –
11 Oklahoma, CenterPoint Energy – Entex, CenterPoint Energy - Louisiana, NSTAR –
12 Boston Edison Company, Westar Energy, Inc., South Jersey Gas Company, Duquesne
13 Light Company, MidAmerican Energy Company, Laclede Gas, Duke Energy Company,
14 Bonneville Power Administration, NSTAR Electric and Gas Company, EPCOR
15 Distribution, Inc. and B. C. Gas Utility, Ltd.

16 My additional duties include determining final life and salvage estimates,
17 conducting field reviews, presenting recommended depreciation rates to management for
18 its consideration and supporting such rates before regulatory bodies.

19
20 **Q. Have you submitted testimony to any state utility commissions on the subject of**
21 **utility plant depreciation?**

22 **A.** Yes. I have submitted testimony to the Pennsylvania Public Utility Commission, the
23 Kentucky Public Service Commission, the Public Utilities Commission of Ohio, the

1 Public Utilities Board of New Jersey, the Missouri Public Service Commission, the
2 Massachusetts Department of Telecommunications and Energy, the State Corporation
3 Commission of Kansas, the Arkansas Public Service Commission, North Carolina Utility
4 Commission, the Regulatory Commission of Alaska, the California Public Utility
5 Commission, the Public Utility Commission of Texas, the Alberta Energy & Utilities
6 Board, the Nevada Public Utility Commission, the Idaho Public Utility Commission, the
7 Louisiana Public Service Commission, the Oklahoma Corporation Commission, the
8 Public Service Commission of South Carolina, the Texas Railroad Commission – Gas
9 Services Division, the New York Public Service Commission, the Illinois Commerce
10 Commission, and the Indiana Utility Regulatory Commission.

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

13 A. Yes. I have completed the following courses conducted by Depreciation Programs, Inc.:
14 “Techniques of Life Analysis,” “Techniques of Salvage and Depreciation Analysis,”
15 “Forecasting Life and Salvage,” “Modeling and Life Analysis Using Simulation” and
16 “Managing a Depreciation Study.”

17
18 Q. **What is the purpose of your testimony in this proceeding?**

19 A. My testimony will support and explain the current depreciation study of electric utility
20 plant of Oklahoma Gas and Electric Company (“OG&E” or “Company”). The study
21 covers all of OG&E's electric and general plant assets.

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

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

7

8 Q. **Please identify Exhibits JJS-1 AND JJS-2.**

9 A. Exhibit JJS-1 is a report entitled, "Depreciation Study, Calculated Annual Depreciation
10 Accruals Related to Electric Plant as of December 31, 2004." Exhibit JJS-2 is a report
11 entitled, "Holding Company Assets, Depreciation Study Calculated Annual Depreciation
12 Accruals Related to General Plant as of December 31, 2004." These reports set forth the
13 results of my depreciation studies for OG&E. Exhibits JJS-1 and JJS-2 were prepared
14 and the analyses that underlie the report were conducted under my direction and
15 supervision.

16

17 Q. **Are Exhibits JJS-1 and JJS-2 a true and accurate copy of your depreciation studies?**

18 A. Yes.

19

20 Q. **Do exhibits JJS-1 and JJS-2 accurately portray the results of your depreciation
21 studies as of December 31, 2004?**

22 A. Yes.

1 Q. **What was the purpose of your depreciation studies?**

2 A. The purpose of the depreciation studies was to estimate the annual depreciation accruals
3 related to electric and common plant in service for financial and ratemaking purposes and
4 determine appropriate average service lives and net salvage percentages for each plant
5 account.

6
7 Q. **Please describe the contents of your Exhibits JJS-1 and JJS-2.**

8 A. Each report is presented in three parts. Part I, Introduction, describes the scope and basis
9 for the depreciation study. Part II, Methods Used in the Estimation of Depreciation,
10 explains the basis of the study, the estimation of survivor curves and net salvage and the
11 calculation of annual and accrued depreciation. Part III, Results of Study, presents a
12 description of the results, and a summary of the depreciation calculations.

13 The tables on pages III-4 through III-10 of Exhibit JJS-1 and page III-4 of Exhibit
14 JJS-2 show the estimated survivor curve, the net salvage percent, the original cost as of
15 December 31, 2004, the book reserve and the calculated annual depreciation accrual and
16 rate for each account or subaccount for the companies.

17
18 Q. **Please explain how you performed your depreciation studies.**

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

1 For General Plant Accounts 391.0, 393.0, 394.0, 395.0, 397.0, and 398.0 in
2 Exhibit JJS-1 and General Plant Accounts 391.0, 391.01, 391.011, 391.09, 394.0, 395.0,
3 397.0 and 398.0 in Exhibit JJS-2, I used the straight line remaining life method of
4 amortization. The annual amortization is based on amortization accounting that
5 distributes the unrecovered cost of fixed capital assets over the remaining amortization
6 period selected for each account and vintage.

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

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

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

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

1 Q. **What historic data did you rely on to estimate service life characteristics?**

2 A. I analyzed the Company's accounting entries relating to plant additions, transfers, and
3 retirements recorded during the period 1977 through 2002. The Company records also
4 included surviving dollar value by year installed for each plant account as of December
5 31, 2004.

6

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

8 A. I used the simulated plant record method. This is the most appropriate method when
9 vintaged retirement data are not available, because this method identifies standard
10 survivor curves utilized to reasonably simulate recent patterns of plant activity during the
11 period of time covered by the study.

12

13 Q. **Please describe how you used the simulated plant record method to analyze OG&E's
14 service life data.**

15 A. I applied the simulated plant record method to each group of property in the study. The
16 simulated plant record method is a generally accepted method of deriving indications
17 from unaged data and is explained on pages II-19 and II-24 of Exhibit JJS-1. The
18 simulated plant record method identifies standard survivor curves which, when applied to
19 historical additions, reasonably simulates recent patterns of plant balances, or retirements.
20 Iowa-type survivor curves also were used as the standard curves in this method of
21 analysis.

1 Q. **Have you described the method used in your historical service life analyses in the**
2 **report attached as Exhibit JJS-1?**

3 A. Yes. A brief description of the simulated plant record method is presented on pages II-19
4 and II-24 and references are made to publications where the methods are explained in
5 greater detail. The plant accounts for which statistical analyses were a significant factor
6 in the survivor curve estimation, are listed on page II-25.

7

8 Q. **Are the results of analyses by the simulated plant record method presented in your**
9 **report?**

10 A. Yes. Simulated plant record analyses are presented for plant accounts with substantial
11 data to run analyses on pages III-12 through III-77.

12 For an example of the simulated plant record method, refer to pages III-50 and III-
13 51 for the analysis of Account 364, Poles, Towers and Fixtures. The table on page III-51
14 shows a comparison of book balances and simulated balances for the 26-year term of
15 comparison, 1977 through 2002. The simulated balances presented in the table are the
16 results of applying the Iowa 45-S0.5 curve to the historical plant additions of the account.
17 The differences between the book balances and simulated balances are shown in the last
18 column.

19 Indices useful for evaluating the results of the simulated plant balance method are
20 developed at the lower portion of the table. The average book balance shown in the first
21 column is the average of the book balances listed in the upper portion of the table. The
22 residual measure shown in the second column is the square root of the mean square of the
23 differences shown in the fourth column of the upper portion of the table. The

1 conformance index is the ratio of the average book balance to the residual measure. The
2 retirements experience index is shown at both the beginning and the end of the term of
3 comparison.

4 The chart on page III-50 is a plotting of the simulated balances and book balances,
5 which are listed on page III-51. The chart illustrates the close historical similarity of
6 balances derived from the estimated curve and actual balances.

7
8 **Q. What is an “Iowa-type survivor curve” and how did you use such curves to estimate**
9 **the service life characteristics for each property group?**

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

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

20 The estimated survivor curve designations for each depreciable property group
21 indicate the average service life, the family within the Iowa system to which the property
22 group belongs, and the relative height of the mode. For example, the Iowa 48-R2
23 indicates an average service life of forty-eight years; a right-moded, or R, type curve (the

1 mode occurs after average life for right-moded curves); and a moderate height, 2, for the
2 mode (possible modes for R type curves range from 1 to 5).

3
4 **Q. What approach did you use to estimate the lives of significant structures and**
5 **production facilities?**

6 A. I used the life span technique to estimate the lives of significant facilities for which
7 concurrent retirement of the entire facility is anticipated. In this technique, the survivor
8 characteristics of such facilities are described by the use of interim survivor curves and
9 estimated probable retirement dates. The interim survivor curve describes the rate of
10 retirement related to the replacement of elements of the facility, such as, for a building,
11 the retirements of plumbing, heating, doors, windows, roofs, etc., that occur during the
12 life of the facility. The probable retirement date provides the rate of final retirement for
13 each year of installation for the facility by truncating the interim survivor curve for each
14 installation year at its attained age at the date of probable retirement. The use of interim
15 survivor curves truncated at the date of probable retirement provides a consistent method
16 for estimating the lives of the several years of installation for a particular facility
17 inasmuch as a single concurrent retirement for all years of installation will occur when it
18 is retired.

19
20 **Q. Has Gannett Fleming used this approach in other proceedings?**

21 A. Yes, we have used the life span technique in performing depreciation studies presented to
22 many public utility commissions across the United States and Canada.

1 Q. **Are the factors considered in your estimates of service life and net salvage percents**
2 **presented in Exhibit JJS-1?**

3 A. Yes. A discussion of the factors considered in the estimation of service lives and net
4 salvage percents are presented on pages II-24 through II-31 of Exhibit JJS-1.

5

6 Q. **Did you physically observe OG&E's plant and equipment as part of your**
7 **depreciation study?**

8 A. Yes. I made a field review of OG&E's property to observe representative portions of
9 plant. Field reviews are conducted to become familiar with Company operations and
10 obtain an understanding of the function of the plant and information with respect to the
11 reasons for past retirements and the expected future causes of retirements. This
12 knowledge was incorporated in the interpretation and extrapolation of the statistical
13 analyses.

14

15 Q. **Would you please explain the concept of "net salvage"?**

16 A. Net salvage is a component of the service value of capital assets that is recovered through
17 depreciation rates. The service value of an asset is its original cost less its net salvage.
18 Net Salvage is the salvage value received for the asset upon retirement less the cost to
19 retire the asset. When the cost to retire exceeds the salvage value, the result is negative
20 net salvage.

21 Inasmuch as depreciation expense is the loss in service value of an asset during a
22 defined period, e.g. one year, it must include a ratable portion of both the original cost
23 and the net salvage. That is, the net salvage related to an asset should be incorporated in

1 the cost of service during the same period as its original cost so that customers receiving
2 service from the asset pay rates that include a portion of both elements of the asset's
3 service value, the original cost and the net salvage value.

4 For example, the full recovery of the service value of a \$1000 pole will include
5 not only the \$1000 of original cost, but also, on average, a \$400 cost to remove the pole at
6 the end of its life and a \$50 credit for salvage value. In this example, the net salvage
7 component is negative \$350 ($\$50 - \400), and the net salvage percent is negative 35%
8 ($(\$50 - \$400)/\$1000$).

9
10 **Q. Please describe how you estimated net salvage percentages.**

11 A. I estimated the net salvage percentages incorporating the historical data for the period
12 1991 through 2002 and considered estimates for other electric companies.

13
14 **Q. Please describe the second phase of the process that you used in the depreciation
15 study in which you calculated composite remaining lives and annual depreciation
16 accrual rates.**

17 A. After I estimated the service life and net salvage characteristics for each depreciable
18 property group, I calculated the annual depreciation accrual rates for each group based on
19 the straight line remaining life method, using remaining lives weighted consistent with
20 the average service life procedure. The calculation of annual depreciation accrual rates
21 were developed as of December 31, 2004.

22
23 **Q. Please describe the straight line remaining life method of depreciation.**

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

4
5 **Q. Please describe amortization accounting.**

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

19
20 **Q. For which plant accounts is amortization accounting implemented?**

21 A. Amortization accounting is only appropriate for certain General Plant accounts. These
22 accounts are General Plant Accounts 391.0, 393.0, 394.0, 395.0, 397.0 and 398.0 in
23 Exhibit JJS-1 and General Plant Accounts 391.0, 391.01, 391.011, 391.09, 304.0, 395.0,

1 397.0 and 398.0 in Exhibit JJS-2 which represent approximately one percent of
2 depreciable plant.

3
4 **Q. Please use an example to illustrate the development of the annual depreciation**
5 **accrual rate for a particular group of property in your depreciation study.**

6 A. I will use Account 3640, Poles, Towers and Fixtures, as an example because it is one of
7 the largest depreciable groups for mass accounts and represents an easily understood
8 asset.

9 The simulated plant record method was used to analyze the survivor
10 characteristics of this property group. Gross plant accounting data were compiled from
11 1977 through 2002 and analyzed to best represent the overall service life of this property.

12 The table setting forth the comparison of the actual book balance to simulated book
13 balance for the 1977-2002 period is presented on page III-51 of Exhibit JJS-1. For
14 example, page III-51 of Exhibit JJS-1, shows a book balance of \$68,587,366 and a
15 simulated balance of \$68,435,194 for a difference of \$152,172 during 1977. All the
16 subsequent years, 1978 through 2002, are presented in the same fashion. Consequently,
17 the table, on page III-51 sets forth actual book balances plotted along with the simulated
18 book balances using the 45-S0.5.

19 The table on page III-92 of Exhibit JJS-1, sets forth the historical indications of
20 net salvage for the period 1991 through 2002. The 12-year period averages negative 33%
21 and the most recent five-year period, 1998-2002, averages negative 34%. Therefore, the
22 trending upward produced the determination to use negative 35% for this account.

1 My calculation of the annual depreciation related to original cost of electric utility
2 plant at December 31, 2004, is presented on pages III-205 through III-207 of Exhibit JJS-
3 1. The calculation is based on the 45-S0.5 survivor curve, 35% negative net salvage, the
4 attained age, and the allocated book reserve. The tabulation sets forth the installation
5 year, the original cost, calculated accrued depreciation, allocated book reserve, future
6 accruals, remaining life and annual accrual. These totals are brought forward to the table
7 on page III-9.

8 **Q. Does the example for exhibit JJS-1 support the contents in Exhibit JJS-2?**

9 A. Yes, it does. Exhibit JJS-1 and JJS-2 were conducted in the same manner.

10
11 **Q. In your opinion, are the depreciation and amortization rates set forth in JJS-1 and**
12 **JJS-2 the appropriate rates for the Arkansas commission to adopt in this proceeding**
13 **for OG&E?**

14 A. Yes. These rates appropriately reflect the rates at which the value of OG&E's assets are
15 being consumed over their useful lives. These rates are an appropriate basis for setting
16 electric rates in this matter and for the Company to use for financial purposes and in
17 booking depreciation and amortization expense going forward.

18
19 **Q. Does this conclude your direct testimony?**

20 A. Yes.