Docket No. 20000-___-EA-18
Witness: John J. Spanos

BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

ROCKY MOUNTAIN POWER

Direct Testimony of John J. Spanos

September 2018

Q. Please state your name, business address, and present position.

A. My name is John J. Spanos. I am a Senior Vice President at Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming"). My business address is 207 Senate Avenue, Camp Hill, Pennsylvania, 17011.

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. On whose behalf are you testifying in **this case?**

A. I am testifying on behalf of PacifiCorp d/b/a Rocky Mountain Power (the "Company").

QUALIFICATIONS

Q. Please state your qualifications.

A. Please refer to Exhibit RMP__(JJS-1) for my qualifications.

PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. I sponsor and support the depreciation study titled, "Depreciation Study - Calculated Annual Depreciation Accruals Related to Electric Plant as of December 31, 2017" (the "Depreciation Study"), performed for the Company, attached as Exhibit RMP__(JJS 2). The Depreciation Study sets forth the calculated annual depreciation accrual rates by account as of December 31, 2017. Based on the Depreciation Study, I recommend approval of the depreciation rates using the projected December 31, 2020 plant and reserve balances as discussed in more detail within the direct testimony of Company witnesses Ms. Nikki L. Kobliha and Mr. Steven R. McDougal. The proposed rates appropriately reflect the rates at which the Company's assets should be depreciated over their useful lives and are based on the most commonly used methods and procedures for determining depreciation rates.

DEPRECIATION STUDY

Q. Please define the concept of depreciation.

A. Depreciation refers to the loss in service value that is 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 are known to be in current operation, against which the Company is not protected by insurance. Among the causes to consider 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 the Company in this proceeding?

A. Yes.

Q. Are there guidelines in the preparation of depreciation studies?

A. Yes. In preparing the Depreciation Study, I followed generally accepted practices in the field of depreciation valuation.

Q. How do the methods and procedures of this Depreciation Study compare to those used historically?

A. The methods and procedures of this study are the same as those used in past studies of 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 the Depreciation Study.

A. The Depreciation Study includes nine parts. Part I, Introduction, presents the scope and basis for the Depreciation Study. Part II, Estimation of Survivor Curves, describes the methodology of estimating survivor curves. Parts III and IV set forth the analysis used for determining service life and net salvage estimates. Part V, Calculation of Annual and Accrued Depreciation, includes the concepts of depreciation and amortization using the remaining life. Part VI, Results of Study, describes the results of my analysis 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 by account. 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, 2017.

The table on pages VI-4 through VI-21 of the Depreciation Study presents the estimated survivor curve, the net salvage percent, the original cost as of December 31, 2017, the book depreciation reserve and the calculated annual depreciation accrual and rate for each account or sub-account. The section beginning on page VII-2 presents the results of the retirement rate and simulated plant analyses prepared as the historical bases for the service life estimates. Finally, the Appendix presents the recommended depreciation rates and parameters as of December 31, 2020.

Q. Please explain how you performed the Depreciation Study.

A. I used the straight line remaining life method of depreciation, with the average service life procedure. Under this methodology, the annual depreciation is determined by distributing 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.

Q. In your analysis, how did you determine the recommended annual depreciation accrual rates?

A. I did this in two phases. First, I estimated the service life and net salvage characteristics for each depreciable group, that is, each plant account or sub-account identified as having similar characteristics. Second, 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 the Company'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 to estimate service life characteristics?

A. I analyzed the Company's accounting entries that recorded plant transactions during the 1937 through 2017 period; however, the earliest year of data varied by account. The transactions included additions, retirements, transfers, sales, and the related balances.

Q. What method did you use to analyze the service life data?

A. I used the retirement rate method for most plant accounts. 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 the Company'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. Did you use any other methods to analyze service life data?

A. Yes. For most distribution assets in Utah and Idaho, the Company accounting records do not include the vintage of each transaction. Therefore, I used the simulated plant record method to determine life characteristics.

Q. What are "Iowa-type survivor curves" and how did you use them to estimate the service life characteristics for each property group?

A. They 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. I used the Iowa curves and truncated Iowa curves 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 indicates 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 60-R2 indicates an average service life of 60 years; a right-moded, or R, type curve (the mode occurs after average life for right-moded curves); and a relatively low height, 2, 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 structures 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, I describe the survivor characteristics of such facilities by using 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. For example, for a building, the retirements of its elements include 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 your firm, 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. This technique was applied to develop the current depreciation rates being used by the Company in the same manner recommended in this case.

Q. What are "probable retirement years" and what was your bases for estimating them for each facility?

A. Probable retirement years are life spans for each facility and my estimates are based on the life assessment study, 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 and judgment. 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. Such plans would be premature. At the appropriate time, detailed studies of the economics of rehabilitation and continued use or retirement of the structure will be performed and the results incorporated in the estimation of the facility's life span.

Q. Have you physically observed the Company's plant and equipment in depreciation studies you have performed for the Company in the past?

A. Yes. I made field reviews of the Company's property as part of a past study in May and June 2012 to observe representative portions of plant and equipment. I conduct field reviews to become familiar with Company operations and understand the function of the plant and information on the reasons for past retirements and the expected future causes of retirements. I incorporated this knowledge as well as information from other discussions with management in the interpretation and extrapolation of the statistical analyses.

Q. Please describe how you estimated net salvage percentages.

A. I estimated the net salvage percentages by incorporating the historical data for the period 1992 through 2017 and considered estimates for other electric companies. The net salvage percentages are based on a combination of statistical analyses and informed judgment. The statistical analyses consider the cost of removal and gross salvage ratios to the associated retirements during the 26-year period. I also measured the trends of these data based on three-year moving averages and the most recent five-year indications.

Q. Were the net salvage percentages for generation facilities based on the same analyses?

A. Yes, for the interim analyses. The net salvage percentages for generation 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 1992-2017 period, of the cost of removal and gross salvage amounts as a percentage of the associated plant retired. I determined the final net salvage or dismantlement component 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 generation facilities?

A. Yes. A dismantlement component was included in the net salvage percentage for steam and other production facilities. There is a separate decommissioning reserve for small hydro facilities which are soon to be retired, as the dismantlement component for hydro facilities in the study is zero.

Q. Can you explain how the dismantlement component is included in the Depreciation Study?

A. Yes. The dismantlement component is part of the overall net salvage for each location within the production assets. Based on studies for other utilities and the Company's cost

estimates, I determined that the dismantlement or decommissioning costs for steam production and other production facilities is best calculated on a dollar per kilowatt factor based on surviving plant at final retirement. These amounts at a location basis are added to the interim net salvage percentage of the assets anticipated to be retired on an interim basis to produce the weighted net salvage percentage for each location. The detailed calculation for each location is set forth on pages VIII-2 through VIII-12 of Exhibit RMP__(JJS-2).

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 estimating 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 illustrate how the annual depreciation accrual rate for a particular group of property is presented in the Depreciation Study.

A. I will use Account 353, Station Equipment, as an example because it is one of the largest depreciable mass accounts and represents approximately nine percent of depreciable plant.

I used the retirement rate method to analyze the survivor characteristics of this property group. I compiled aged plant accounting data from 1924 through 2017 and analyzed it in periods that best represent the overall service life of this property. The life tables for the 1924-2017 and 1988-2017 experience bands are presented on pages VII-95

through VII-97 of the Depreciation Study. The life table displays the retirement and surviving ratios of the aged plant data exposed to retirement by age interval. For example, page VII-95 shows $2,133,875 retired at age 0.5 with $2,347,756,170 exposed to retirement. Consequently, the retirement ratio is 0.0009 and the surviving ratio is 0.9991. These life tables, or original survivor curves, are plotted along with the estimated smooth survivor curve, the 58-S0 on page VII-94.

The net salvage percent is presented on pages VIII-49 and VIII-50. 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 1992 through 2017 period. The 26-year period experienced $20,503,595 ($8,621,261–$29,124,856) in net salvage for $179,971,886 plant retired. The result is negative net salvage of 11 percent ($20,503,595/$179,971,886). Although recent trends show more negative indications, I determined that, based on industry ranges and Company expectations, negative 10 percent was the most appropriate estimate.

My calculation of the annual depreciation related to the original cost at December 31, 2017, of electric plant is presented on pages IX-299 through IX-301. The calculation is based on the 58-S0 survivor curve, 10 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-18.

CONCLUSION

Q. Please summarize the results of the Depreciation Study.

A. The depreciation rates as of December 31, 2017, appropriately reflect the rates at which the values of the Company's assets have been consumed over their useful lives to date. These rates are based on the most commonly used methods and procedures for determining depreciation rates. The life and salvage parameters are based on widely used

techniques and the depreciation rates are based on the average service life procedure and remaining life method. Therefore, the depreciation rates set forth on pages VI-4 through VI-21 of Exhibit RMP__(JJS-2) represent the calculated rates as of December 31, 2017.

Q. Does the Depreciation Study recommend new depreciation rates based on December 31, 2020 plant and reserve balances?

A. Yes. The depreciation accrual rates set forth in the Appendix to Exhibit RMP__(JJS-2) represent the rates most applicable in this proceeding. These rates use all of the same methods and procedures described in the Depreciation Study but apply the parameters to the projected December 31, 2020 plant and reserve balances. The projected plant and book reserve balances as of December 31, 2020 properly establish the most reasonable rate base when the rates will go into effect. Thus, I recommend approval of the depreciation accrual rates in the Appendix as being just and reasonable and in the public interest.

Q. Does this conclude your direct testimony?

A. Yes.

BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

IN THE MATTER OF ROCKY MOUNTAIN POWER'S APPLICATION FOR AN ORDER AUTHORIZING A CHANGE IN DEPRECIATION RATES APPLICABLE TO ELECTRIC PROPERTY	DOCKET NO. 20000-___-EA-18 (RECORD NO. _____)

AFFIDAVIT, OATH AND VERIFICATION

John J. Spanos (Affiant) being of lawful age and being first duly sworn, hereby deposes and says that:

Affiant is the Depreciation Consultant for PacifiCorp, which is a party in this matter.

Affiant prepared and caused to be filed the foregoing testimony. Affiant has, by all necessary action, been duly authorized to file this testimony and make this Oath and Verification.

Affiant hereby verifies that, based on Affiant's knowledge, all statements and information contained within the testimony and all of its associated attachments are true and complete and constitute the recommendations of the Affiant in his official capacity as Depreciation Consultant.

Further Affiant Sayeth Not.

Dated this 7th day of September, 2018

John J. Spanos

John J. Spanos
Depreciation Consultant
Gannett Fleming Valuation and Rate Consultants, LLC
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COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF CUMBERLAND)

The foregoing was acknowledged before me by John J. Spanos on this 7th day of September, 2018. Witness my hand and official seal.

Notary Public

My Commission Expires: February 20, 2019

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