COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR A GENERAL ADJUSTMENT OF RATES, APPROVAL OF DEPRECIATION STUDY, AMORTIZATION OF CERTAIN REGULATORY ASSETS AND OTHER GENERAL RELIEF	))))))	Case No. 2021-00103

REBUTTAL TESTIMONY OF JOHN J. SPANOS

PRESIDENT, GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.

Filed: July 21, 2021

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND ADDRESS.

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

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. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?

A. Yes. I submitted direct testimony with the initial filing on April 1, 2021.

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

A. In my rebuttal testimony, I respond to the depreciation-related recommendations of the Office of the Attorney General ("AG") and Nucor Steel Gallatin ("Nucor") witness Lane Kollen. Mr. Kollen's proposals are based on a fundamental misunderstanding of the purpose of depreciation and, rather than proposing depreciation rates that will recover the full service value of the Company's assets over their service lives he proposes to defer recovery until after many of the Company's assets are retired. His proposal is inequitable and inconsistent with established depreciation concepts and the Commission's Uniform System of Accounts ("USOA[1]"). Specifically, Mr. Kollen proposes to exclude estimates of

[1] Please note that for depreciation concepts and accounting the RUS Uniform System of Accounts and the FERC Uniform System of Accounts are generally the same.

terminal net salvage and interim retirements from depreciation rates, which would result in the inequitable recovery of these costs after the related assets are retired. He also proposes longer lives for combustion turbine facilities and proposes a reduction in depreciation for general plant amortization accounts that is inconsistent with the remaining lives of the Company's assets.

Q. HOW WILL YOU ADDRESS MR. KOLLEN'S PROPOSALS?

A. I will begin by discussing depreciation concepts and the purpose of depreciation. This is important because Mr. Kollen, who is not a depreciation expert[2], is fundamentally incorrect about the objective and purpose of depreciation. He does not appear to understand that the costs of a company's assets – including any removal or decommissioning costs – should be recovered over their service lives so that customers pay their fair share of the costs of providing electric service. After discussing these concepts, I will then address Mr. Kollen's proposals related to terminal net salvage, interim retirements and general plant amortization accounts in more detail.

II. DEPRECIATION CONCEPTS AND INTERGENERATIONAL EQUITY

Q. WHAT IS DEPRECIATION?

A. Depreciation is defined in the FERC Uniform System of Accounts ("USOA"):

> 12. *Depreciation*, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes

[2] See Mr. Kollen's response to data request EKPC 1-9

in the art, changes in demand and requirements of public authorities.

Q. WHAT IS THE OBJECTIVE OF DEPRECIATION?

A. The objective of depreciation is to allocate, in a systematic and rational manner, the full cost of an asset (original cost less net salvage) over its service life. The USOA requires this in General Instruction 22-A:

> *Method*. Utilities must use a method of depreciation that allocates in a systematic and rational manner the service value of depreciable property over the service life of the property.

Thus, the USOA confirms that depreciation represents the allocation of the full costs of a company's assets (original cost less any net salvage) over their service lives – that is, over the period of time the assets are providing service. Costs are allocated over the service lives of the assets so that customers pay for the costs of the assets that provide them service.

Q. THE USOA DEFINITION USES THE TERM "SERVICE VALUE." WHAT IS THE SERVICE VALUE OF AN ASSET?

A. Definition 37 of the USOA defines service value as "the difference between original cost and net salvage value of electric plant." Net salvage value is defined in Definition 19 as "the salvage value of property retired less the cost of removal." Cost of removal is defined in Definition 10 as "the cost of demolishing, dismantling, tearing down or otherwise removing electric plant, including the cost of transportation and handling incidental thereto." Combined, these definitions require that cost of removal (including demolishing, dismantling and tearing down electric plant) be included in depreciation. As a result, depreciation for a generating

facility should include an estimate of the cost to decommission the plant at the end of its life.

Q. WHAT IS THE DEFINITION OF SERVICE LIFE?

A. The USOA defines service life as follows:

> 36. *Service life* means the time between the date electric plant is includible in electric plant in service, or electric plant leased to others, and the date of its retirement. If depreciation is accounted for on a production basis rather than on a time basis, then service life should be measured in terms of the appropriate unit of production.[3]

For generation facilities, assets may be retired as either final retirements or interim retirements. Final retirements occur at the end of the life of the facility and interim retirements are those retirements related to assets that are retired prior to the final retirement (e.g., the replacement of pumps or motors throughout the life of the plant). In order to recover the costs of assets over their service lives, interim retirements (as well as any cost of removal associated with interim retirements) should be recovered through depreciation over a period that is shorter than the full life span of a plant – that is, they should be recovered over their service lives.

Q. WHY IS IT IMPORTANT TO RECOVER THE FULL SERVICE VALUE OF AN ASSET THROUGH DEPRECIATION OVER ITS SERVICE LIFE?

A. It is important to match the recovery of the cost of an asset (including removal costs) with the assets service life so that the customers who pay for the asset are those that receive electric service from the asset. If cost recovery is deferred until after the asset is retired, the result is intergenerational inequity.

[3] FERC USOA, Definition 36.

Q. WHAT IS THE CONCEPT OF "INTERGENERATIONAL EQUITY"?

A. Intergenerational equity is a ratemaking principle in which customers receiving the benefit from the use of an asset (e.g., from electric utility property used to provide electric service) are the same customers who pay the cost of that asset. Intergenerational equity contrasts with intergenerational inequity which results from a situation in which customers pay for assets from which they receive no service. For example, if a power plant is retired before becoming fully depreciated, then customers subsequent to the retirement will have to pay for an asset from which they are not receiving service. The same is true if customers have to pay the cost of decommissioning a power plant after it is retired. This is inequitable, as one generation of customers bears the cost of an asset from which they receive no service (and that provided service to an earlier generation).

Q. WILL MR. KOLLEN'S PROPOSAL RESULT IN INTERGENERATIONAL INEQUITY?

A. Yes. Mr. Kollen's proposals to exclude terminal net salvage and interim retirements will, by design, produce intergenerational inequity. In his testimony, Mr. Kollen appears to give no consideration to the concept of intergenerational equity or the importance of recovering the full service value of assets over their service lives. Indeed, his claims[4] that recovering decommissioning costs after a plant is retired is "superior" completely ignore the concept of intergenerational inequity and the requirements of the USOA.

[4] Kollen Direct Testimony. p. 25, 8:23

III. TERMINAL NET SALVAGE

Q. DO YOUR PROPOSED DEPRECIATION RATES INCLUDE TERMINAL NET SALVAGE?

A. Yes. The estimates of terminal net salvage I have included are consistent with those for similar facilities for other utilities. In the time since the Company's last depreciation study the industry has experienced the retirement of numerous power plants. This experience has shown that there are costs to decommission these facilities upon retirement and, in particular for coal-fired generation, these costs can be significant. As a result, it is both appropriate and necessary to include decommissioning costs in depreciation so that these costs are recovered while the plants are providing electric service to customers.

Q. DOES MR. KOLLEN INCLUDE TERMINAL NET SALVAGE?

A. No. Mr. Kollen proposes to defer recovery of terminal net salvage until after the Company's plants are retried. As discussed in the previous section, this is inequitable and inconsistent with regulatory principles and the USOA.

Q. MR. KOLLEN CITES TO EXAMPLES FOR KPCo AND LG&E AND KU FOR WHICH TERMINAL NET SALVAGE WAS OR WILL BE RECOVERED AFTER RETIREMENTS OF CERTAIN POWER PLANTS. PLEASE ADDRESS HIS DISCUSSION OF THESE FACILITIES.

A. Mr. Kollen cites to situations in which plants were either retired earlier than expected or for which decommissioning costs were higher than anticipated in depreciation rates[5]. As a result, there was a relatively limited time to recover these

[5] Kollen Direct Testimony. p. 24, 20:23, p. 25, 1:6

costs over their service lives and alternative mechanisms were used. This has occurred for some facilities in the industry, particularly as coal-fired power plants have retired earlier than may have been anticipated and as decommissioning costs have increased. However, the situations Mr. Kollen cites to are exactly what we should be trying to avoid when establishing depreciation rates, they are not a desirable outcome.

Q. PLEASE EXPLAIN.

A. As discussed above, the objective of depreciation is to recover the original cost and decommissioning costs of a plant over its service life. In doing so, customers equitably pay for the cost of their electric service. If costs are not fully recovered upon retirement, then customers have to pay for a plant that is already retired and have to pay for replacement generation. This is inequitable and inconsistent with the USOA. Depreciation rates should be designed to include terminal net salvage so that these costs are fully recovered when the plants are retired, not after they are retired.

For the facilities cited by Mr. Kollen, costs have had to be recovered after retirement because the life spans used for these facilities ended up being too short, the estimates of decommissioning costs were too low, or both. While this can occur because depreciation is, by its nature, a process of estimating the future, contrary to Mr. Kollen's testimony it is not desirable to have costs remaining to recover after facilities are retired because it is inequitable for customers to both pay for retired plants from which they receive no service and pay for the replacement generation. That is, the examples cited by Mr. Kollen are not examples of the most equitable

outcomes. Instead, they should provide caution as to why it is important to include estimates of decommissioning costs in depreciation so that these costs are paid for by the customers who receive electric service from the plants.

Q. DO EITHER OF THE COMPANIES CITED BY MR. KOLLEN INCLUDE TERMINAL NET SALVAGE IN DEPRECIATION?

A. Yes. LG&E and KU have included terminal net salvage in depreciation in their adopted depreciation rates for some time. While Mr. Kollen cites on page 26 to "certain of their coal-fired units" recovering terminal net salvage after retirement, these are only units that have been retired or will be retired in the near term. For LG&E and KU's other units, terminal net salvage is included in depreciation rates. Additionally, Duke Energy Kentucky has included a terminal net salvage component in their depreciation rates for many years. Thus, the Company's proposal in the instant case is consistent with those companies' practice for terminal net salvage as well as for the depreciation rates the Commission has previously adopted for LG&E, KU and Duke Energy Kentucky.

Q. MR. KOLLEN NOTES THAT THE COMPANY'S CURRENT DEPRECIATION RATES DO NOT INCLUDE TERMINAL NET SALVAGE. DOES THIS PROVIDE A CONVINCING REASON NOT TO INCLUDE TERMINAL NET SALVAGE?

A. No. First, I should emphasize that terminal net salvage is included in depreciation for generating facilities for most utilities in the industry and as discussed above, has been included in depreciation rates adopted by the Commission for other utilities. Mr. Kollen's testimony could give the impression that the inclusion of terminal net

salvage (and interim retirements) is a change to an unusual practice in the industry. Instead, the opposite is true. The inclusion of terminal net salvage in the Company's depreciation rates is not a change in methodology to something that is unique or unusual in the industry. Instead, the inclusion of terminal net salvage (and interim retirements) is appropriate and necessary to properly recover depreciation expense and is consistent with the standard approach in the industry. That is, the inclusion of terminal net salvage (and interim retirements) will bring the Company's depreciation rates more in line with the rest of the industry.

Additionally, the prior depreciation study for the Company was conducted more than a decade ago. At the time, the level of terminal net salvage power plants would experience was less certain -- fewer plants had been retired and decommissioned. However, in the time since the Company's previous study numerous coal-fired power plants have been retired and decommissioned. We now know that there will be terminal net salvage for power plants once retired and, as a result, these costs should be included in depreciation rates. Indeed, Mr. Kollen's citations to examples of power plants that have been retired and will incur decommissioning costs are an implicit acknowledgment that these costs will occur. As a result, his proposal to exclude these costs from depreciation means that he is deliberately proposing intergenerational inequity. Accordingly, his proposal should be rejected.

IV. INTERIM RETIREMENTS

Q. WHAT HAVE YOU PROPOSED FOR INTERIM RETIREMENTS?

A. Consistent with the USOA and industry standard practice, I have included estimates of interim retirements in the development of depreciation rates for generation plant

accounts. This approach recovers the costs of the Company's assets over their service lives and, therefore, is equitable to customers.

Q. HAS MR. KOLLEN INCLUDED INTERIM RETIREMENTS IN HIS DEPRECIATION PROPOSAL?

A. No. Mr. Kollen instead believes[6] that interim retirements should be excluded and recovered after the retirements occur, which would violate the USOA and result in intergenerational inequity.

Q. ARE INTERIM RETIREMENTS TYPICALLY INCLUDED IN DEPRECIATION RATES?

A. Yes. Interim retirements have been included in depreciation rates adopted by the Commission, such as for LG&E and KU. Indeed, Mr. Kollen testified in the cases he cited for LG&E and KU and did not challenge the use of interim retirements in those cases (2020-00349 and 2020-00350). There is no reason why the interim retirements should be excluded for the Company but not for LG&E and KU, particularly because excluding interim retirements would be inconsistent with the requirements of the USOA. Interim retirements are also used in the vast majority of depreciation studies for generation assets across the country. Mr. Kollen does not provide any valid reasons to exclude interim retirements and, as discussed previously, his proposal would result in intergenerational inequity.

Q. MR. KOLLEN ALSO ARGUES THAT THE SPURLOCK TURBINE OVERHAUL SHOULD NOT BE INCLUDED IF INTERIM RETIREMENTS ARE INCLUDED IN DEPRECIATION RATES. PLEASE

[6] Kollen Direct Testimony. p. 27, 1:3

ADDRESS HIS PROPOSAL.

A. Mr. Kollen does not explain how or why this proposal would work[7]. However, I have already appropriately incorporated this activity into my estimates. First, the referenced work at Spurlock was related to a ten-year turbine overhaul, which is generally reoccurring activity. However, as can be seen on page VII-12 of the depreciation study, my estimated interim survivor curve is above the historical data starting at age 10. As a result, my estimate anticipates future interim retirements will be smaller than those related to the retirements cited by Mr. Kollen. Accordingly, to the extent it is appropriate to give less consideration to these retirements I have already done so.

V. LIFE SPANS OF COMBUSTION TURBINES FACILITIES

Q. WHAT HAVE YOU PROPOSED FOR THE LIFE SPANS OF THE COMPANY'S COMBUSTION TURBINES?

A. For the Company's combustion turbine facilities at the JK Smith and Bluegrass plants, the life spans I have proposed are consistent with the life spans of similar facilities within the industry.

Q. HOW ARE LIFE SPANS TYPICALLY ESTIMATED?

A. A power plant is typically retired as the result of an economic decision. As a plant ages and becomes more expensive to operate, and as new technologies become more efficient and economical relative to existing generation, it eventually becomes economical to replace the existing plant. Also, in many cases there are

[7] Kollen Direct Testimony. [. 27, 5:17

environmental regulations that determine the retirement date. The retired plant may be able to physically operate for a longer period of time but it would be a more costly option to keep the plant in service.

Thus, the process of estimating the life spans of a utility's power plants is more than determining how long a plant could physically last. It must also consider the economic decision as to when to replace the plant with newer generation. Factors considered in determining life span estimates include the life spans and experience of other similar facilities for the Company and others in the industry; an understanding of technological, environmental, regulatory and operational changes that could impact the life of a facility; and an understanding of other factors that impact the economics of operating a facility, such as fuel prices for both the plant at issue and for competing sources of generation.

As discussed in Section II of my rebuttal testimony, the objective of depreciation is to recover the costs of the Company's assets over their service lives. Increasing the life spans of facilities increases the risk that they will not be fully recovered upon retirement. Experience has shown that life spans for power plants can be shorter than anticipated, particularly in times of regulatory and technological change. From a standpoint of intergenerational equity, one should, therefore, be cautious when extending the life spans of generation facilities. Importantly, just because some older generation plants have had longer lives does not mean current generating facilities will have the same lives. Indeed, experience has shown this to be the case. While many older coal-fired power plants from the 1950s and 1960s

may have had longer life spans, this has not necessarily been the case for facilities built in the 1970s and 1980s.

Q. IN ESTIMATING THE LIFE SPANS FOR EKPC'S FACILITIES, WERE THESE TYPES OF FACTORS CONSIDERED?

A. Yes. The economic estimation of life spans for the Company's facilities incorporated these types of factors. I performed an independent review based on my experience and knowledge of other facilities in the industry as well as conducted field reviews in prior depreciation assignments for EKPC. In my judgment, the recommended retirement dates in the depreciation study represents the most reasonable probable retirement dates for each facility.

Q. WHAT HAS MR. KOLLEN PROPOSED FOR THE LIFE SPANS OF THE COMPANY'S COMBUSTION TURBINE FACILITIES AT JK SMITH AND BLUEGRASS?

A. Mr. Kollen proposed to increase the life spans of all units at these facilities to 45 years. Mr. Kollen's support for his proposals is to cite to certain (generally older) facilities that have had longer life spans and to instances in which lives have been extended for the Company in the past[8]. However, he misconstrues the information he uses from Energy Information Administration (EIA) documents and does not appear to have considered the trends within the industry. Mr. Kollen states that "other utilities have an actual history of operating and maintaining their CTs for 45 to 70 years".[9] He supports this range of life spans by citing to his own testimony from a prior case in which he discusses EIA data through 2018. Attachment A to

[8] Kollen Direct Testimony. P. 29, 12:19
[9] Kollen Direct Testimony. P. 31, 31:32

my testimony is the EIA data updated through 2020 relating to Natural Gas Fired Combustion Turbines, which are the same type of turbines as the JK Smith and Bluegrass facilities (Operating Year is in Column N of the attachment and Retirement Year is in Column P). As can be seen from the updated EIA data, the true range of lives for these types of units is 3 years to 59 years with an average life span of 37 years. That is not to say that an estimate of life span should rely solely on statistical analysis of prior retirements, but it calls into question the reliability and source of the data Mr. Kollen was analyzing when developing his estimate of a 45-year life span for these facilities.

Additionally, the plants with longer lives are typically for older facilities that are operated infrequently and experienced much of their lives with different emissions rules and technological innovations than the current environment. It is improper to assume that the experience of these older plants will translate to newer combustion turbines. The Company's proposed life spans are more consistent with the life span estimates for similar facilities used by other utilities and are most appropriate.

Q. ARE THERE ANY EXAMPLES OF PLANTS THAT WERE RETIRED EARLIER THAN ESTIMATED BY MR. KOLLEN?

A. Yes. In a 2016 case for Florida Power & Light, Mr. Kollen proposed to increase the life spans for the St. John's River Power Park ("SJRPP") and Scherer Unit 4 generating units and his recommendation resulted in life spans of over 60 years for

both of these facilities.[10] However, in the time since Mr. Kollen's testimony, both facilities have been retired and experienced life spans of 30 to 33 years.[11] That is, the actual life spans of these facilities were only about half of what Mr. Kollen had estimated. This provides reason for caution in increasing the life spans of generation facilities, as Mr. Kollen has done here.

VI. GENERAL PLANT AMORTIZATION

Q. PLEASE EXPLAIN YOUR PROPOSAL RELATED TO GENERAL PLANT AMORTIZATION ACCOUNTS.

A. As discussed in my direct testimony[12], often when a company adopts general plant amortization it is reasonable to establish depreciation rates that align with the recommended amortization period (e.g., a 5% rate for a 20-year amortization period). However, because past lives and retirements may have differed from the current amortization periods, there is typically an adjustment needed to ensure that the full cost of the assets are recovered. For the Company, this adjustment results in a decrease in depreciation. I have recommended to amortize the adjustment amount over 10 years, which generally aligns with the average remaining life of the relevant accounts.

Q. WHAT HAS MR. KOLLEN PROPOSED?

[10] See the testimony of Lane Kollen in Florida Public Service Commission Docket No. 160021-EI, pp. 31-32.
[11] See the direct testimony of Ned W. Allis in Florida Public Service Commission Docket No. 20210015-EI, p. 29.
[12] Spanos Direct Testimony. P. 4, 16:20

A. Mr. Kollen does not disagree with the use of an adjustment for these accounts, but he proposes to amortize these amounts over five years[13] instead of ten years.

Q. DO YOU AGREE WITH MR. KOLLEN?

A. No. Most of these amounts are related to accounts with amortization periods of ten years or more and the remaining lives of each of the amortization accounts is more than five years. For example, the largest amount to amortize is for communication equipment, which has a remaining life of 9.5 years. The composite remaining life of all of these amortization accounts is approximately 9 years. As a result, an amortization period of 10 years is more consistent with the approach of recovering costs over the remaining life than the 5 years proposed by Mr. Kollen.

VII. CONCLUSION

Q. IN YOUR OPINION, ARE THE DEPRECIATION RATES SET FORTH IN YOUR DEPRECIATION STUDY THE RATES THE KENTUCKY PUBLIC SERVICE COMMISSION SHOULD ADOPT IN THIS PROCEEDING FOR EKPC?

A. Yes, these rates appropriately reflect the rates at which the value of EKPC's assets are being consumed over their useful lives. These rates are an appropriate basis for setting electric rates in this matter and for the Companies to use for booking depreciation and amortization expense going forward.

Q. DOES THIS CONCLUDE YOUR PRE-FILED REBUTTAL TESTIMONY?

A. Yes.

[13] Kollen Direct Testimony. P. 11:13

COMMONWEALTH OF KENTUCKY

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VERIFICATION OF JOHN J. SPANOS

COMMONWEALTH OF PENNSYLVANIA)
)
COUNTY OF CUMBERLAND)

John J. Spanos, being duly sworn, states that he has supervised the preparation of his Rebuttal Testimony in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

John J. Spanos

The foregoing Verification was signed, acknowledged and sworn to before me this 22nd day of July 2021, by John J. Spanos.

Commonwealth of Pennsylvania - Notary Seal
Cheryl Ann Rutter, Notary Public
Cumberland County
My commission expires February 20, 2023
Commission number 1143028
Member, Pennsylvania Association of Notaries

Notary Commission No.: 1143028

Commission expiration: February 20, 2023