COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application Of Kentucky Power Company For Approval Of (1) A Certificate Of Public Convenience And Necessity To Make The Capital Investments Necessary To Continue Taking Capacity And Energy From The Mitchell Generating Station After December 31, 2028, (2) An Amended Environmental Compliance Plan, (3) Revised Environmental Surcharge Tariff Sheets, And (4) All Other Required Approvals And Relief	)	Case No. 2025-00175

REBUTTAL TESTIMONY OF

ALEX E. VAUGHAN

ON BEHALF OF KENTUCKY POWER COMPANY

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I. INTRODUCTION

Q. ARE YOU THE SAME ALEX E. VAUGHAN THAT FILED DIRECT AND SUPPLEMENTAL DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I am.

II. PURPOSE OF REBUTTAL TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my testimony is primarily to respond to the assumptions and claims in Sierra Club Witness Devi Glick's Direct Testimony related to the investment needed to continue receiving the capacity and energy from the Mitchell Plant after 2028. I will also briefly address AG-KIUC Witness Lane Kollen's Direct Testimony as it relates to depreciation and amortization expense associated with the Company's proposal in this case.

III. DEPRECIATION PROPOSAL

Q. PLEASE ADDRESS AG-KIUC WITNESS KOLLEN'S PROPOSALS REGARDING DEPRECIATION AND AMORTIZATION EXPENSE ASSOCIATED WITH THE PROPOSED ELG INVESTMENT AND REVENUE REQUIREMENTS.

A. In his testimony, AG-KIUC Witness Kollen proposed that the Commission approve the creation of a regulatory asset for Kentucky Power's 50% share of the ELG Project costs that have already been paid by Wheeling Power Company customers and, instead of amortizing that regulatory asset over a six year period as proposed by the Company, amortize recovery of the regulatory asset over a 15 year period. The Company does not object to AG-KIUC Witness Kollen's proposal.

Q. DOES THE TESTIMONY OF AG-KIUC WITNESS KOLLEN INCLUDE ANY PROPOSALS REGARDING THE CHANGES TO THE MANNER IN WHICH THE COMPANY RECOVERS COSTS ASSOCIATED WITH THE COAL COMBUSTION RESIDUALS ("CCR") PROJECT APPROVED BY THE COMMISSION IN CASE NO. 2021-00004?

A. Yes. AG-KIUC Witness Kollen proposes that the Company update the depreciation rates for the Company's CCR capital investment costs to reflect a 2040 retirement date instead of 2028, as previously approved by the Commission's May 3, 2022 Order in Case No. 2021-00004. He also proposes that the Commission establish a regulatory liability for what he describes as excess recoveries arising from utilizing the shorter depreciation period and amortizing that regulatory liability through 2040.

Q. DOES THE COMPANY AGREE WITH AG-KIUC WITNESS KOLLEN'S RECOMMENDATIONS AS THEY RELATE TO THE COMPANY'S RECOVERY OF COSTS ASSOCIATED WITH CCR PROJECT?

A. In part. The Company agrees that a prospective change in CCR plant depreciation rates to 2040 is acceptable. However, the Company disagrees with his proposal to create a regulatory liability for "excess recoveries" on the amounts already recovered from customers. This portion of his proposal amounts to retroactive ratemaking and should not be adopted by the Commission. Mr. Kollen's proposal also neglects to take into account that had the depreciation amounts been lower in the past, the net rate base of the CCR plant would have been higher, and the Company would have earned a larger return on its investment. If the Commission were to adopt Mr. Kollen's full recommendation regarding recovery of the costs of the CCR project, including the retroactive ratemaking portion, then it would need to also account for the resulting higher rate base and larger return to the Company. As such, the Company proposes that only the change to depreciation rates to extend the recovery to 2040 for the CCR plant be approved on a prospective basis.

Q. DID AG-KIUC WITNESS MAKE ANY ADDITIONAL RECOMMENDATIONS IN HIS TESTIMONY?

A. Yes. Mr. Kollen proposed that the Company recover the costs incurred as part of its study of the ELG Project over 18 years instead of the two years approved by the Commission in the May 3, 2022, Order in Case No. 2021-00004. The Company has already recovered through the environmental surcharge the full $1.4 million ELG study costs amortized over two years as approved by the Commission. Accordingly, the Company cannot implement Mr. Kollen's recommendation.

IV. <u>ECONOMIC ANALYSIS OF INVESTMENTS</u>

Q. PLEASE ADDRESS SIERRA CLUB WITNESS GLICK'S CLAIM ON PAGE 15 OF HER TESTIMONY THAT THE COMPANY'S "ORIGINAL ANALYSIS WAS PIECEMEAL."

A. Sierra Club Witness Glick asserts that the Company's analysis in this proceeding was "piecemeal" because it evaluated the near term (2029 through 2031) separately from the period after 2031. Ms. Glick's testimony ignores the specific request made by the Company in the current proceeding. It is necessary for the Company to break the analysis into the time periods of 2029-2031 and after 2031 because the Company requests a CPCN in this case to make ELG and other capital investments, which supports the near-term capacity needs of the Company for the years 2029-2031. The Company is not seeking approval in this case to make further investments in addition to the ELG and other capital investment (the total capital catch-up of approximately $138 million) necessary to operate the Mitchell Plant beyond 2031, under current environmental regulations. The post-2031 analysis was also included to demonstrate that regardless of the environmental compliance options pursued to continue operating the Mitchell Plant after 2031, making the investments to allow Kentucky Power to continue to receive capacity and energy from the Mitchell Plant provides the Company and its customers with multiple viable and reasonable cost options for the post-2031 period. The decision on whether to co-fire the Mitchell plant with gas, convert fully to gas, retire the unit and build a new natural gas combined cycle, or keep the Mitchell Plant running on 100% coal[1] will be further analyzed in light of the then current environmental regulations and the ultimate decision will be brought back to this Commission in a future proceeding.

Q. PLEASE ADDRESS WITNESS GLICK'S CLAIMS ON PAGE 15 THAT THE COMPANY DID NOT CONDUCT A FULL ANALYSIS SINCE ITS LAST IRP WAS PREPARED IN 2023.

A. An IRP is a complicated and intricate modeling exercise that is costly and requires months to complete. An IRP does not represent the Company's decisions regarding the generation resources it utilizes to serve its customers. Instead, an IRP is intentionally a snapshot in time and is a tool used to help inform the Company's policy decisions and strategies. Additionally, the IRP planning tool does not perform its analyses utilizing retail revenue

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[1] Continued operation utilizing 100% coal past 2031 is not authorized under current environmental regulations.

requirement calculations for the generation options. Therefore, the portfolios it selects are not necessarily the lowest cost options for the Company's customers.

The Company performs revenue requirement analyses as part of its ultimate resource selection process, accounting for real-world resource availability and costs that are obtained through an RFP or other market evaluations. This revenue requirement analysis drives the Company's resource acquisition process as it evaluates the reasonable, least cost option of available generation to provide reliable service to its customers.

That being said, prior to making this application, while the Company was informed by its latest IRP as to potential resource selection, it ultimately relied on more up-to-date information from the 2023-2024 RFP review process described throughout this case and the Company's recent experience and expertise with real-world resource costs, to support the analysis in this case.

Q. PLEASE ADDRESS SIERRA CLUB WITNESS GLICK'S CLAIMS STARTING ON PAGE 15 THAT THE "BREAK-EVEN ANALYSIS THAT THE COMPANY PERFORMED WAS OPAQUE, AND THE COMPANY PROVIDED INSUFFICIENT DOCUMENTATION FOR ITS METHODOLOGY AND ASSUMPTIONS."

A. Ms. Glick's testimony ignores the record in this case. My Supplemental Direct Testimony, starting on page 7, describes the steps taken to perform the break-even analysis. All assumptions and inputs were held constant in the Mitchell Plant cost of service (Alternative E5), and the Company increased the additional capital dollars until it either reached the present value of the revenue requirement from Alternative E4 or the average revenue requirement from that same alternative.

Q. WHY DID THE COMPANY CHOOSE TO EVALUATE THE BREAK-EVEN ANALYSIS UTILIZING ALTERNATIVE E4 AS OPPOSED TO THE NEXT LEAST-COST OPTION AS SUGGESTED BY WITNESS GLICK ON PAGE 15?

A. The reasoning is two-fold. First, the intent of the Company's break-even analysis was to show the tipping point or maximum amount of capital that could be spent on the Mitchell Plant before it was no longer advantageous for customers to invest in the Plant. Second, Ms. Glick fails to recognize that the cooling tower project must be completed even if the Company converts the Mitchell Plant to 100% gas. As shown in Confidential Table AEV-SD3, the capital identified for the Unit 2 cooling project would be incremental capital to Alternatives E1, E2, E3, and E5. All those alternatives require a safe and reliable cooling tower.

Q. ON PAGE 17 OF WITNESS GLICK'S TESTIMONY, SHE STATES THAT IF THE COMPANY CHOOSES TO FULLY CONVERT MITCHELL TO GAS IT WOULD AVOID THE UP-FRONT CAPITAL INVESTMENTS IN THE COOLING TOWER. IS THAT ACCURATE?

A. No. As stated previously, the cooling tower upgrades are needed no matter if the Company continues to operate the Mitchell Plant on coal, makes the upgrades to co-fire with coal and gas, or fully converts to gas. Put simply, even if the Mitchell Plant were converted to 100% gas, the Plant would still require cooling towers because it would still operate using a boiler, a steam turbine, and a generator. The steam produced by the Plant would still need to be cooled somehow. Fundamentally, the main thing that would change about the operation of the Mitchell Plant if it were converted to 100% gas would be that it would be fired by natural gas instead of coal.

V. ALTERNATIVES CONSIDERED

Q. WITNESS GLICK CLAIMS ON PAGE 16 OF HER DIRECT TESTIMONY THAT THE COMPANY DID NOT EVALUATE ALL OPTIONS FOR THE 2028-2031 PERIOD. IS THAT ACCURATE?

A. No. The Company has been in the process of evaluating options for several years now. More recently, during the 2023-2024 RFP process, the Company evaluated non-thermal (including battery energy storage systems and solar) PPAs and thermal PPAs. The Company ultimately sought approval in Case No. 2024-00243 of a PPA with the most economic solar facility from the RFP (80 MW Bright Mountain Solar), but the Commission ultimately denied that application. In its final order in that case the Commission expressed concerns about the "stark" difference between ELCC ratings and accredited capacity between solar and traditional dispatchable resources. While the Company maintains that renewables have a place in the system, they do not provide dispatchable energy nor large amounts of accredited capacity, as recognized by the Commission.

Q. WERE BATTERY ENERGY STORAGE SYSTEMS EVALUATED IN THE 2023 RFP?

A. Yes, they were. Those battery storage options ultimately were not selected to move forward in the process because they were not the least-cost, reasonable option for customers. Additionally, batteries suffer from accredited capacity discounts compared to traditional generation sources, similar to the concerns expressed by the Commission with respect to solar resources.

Q. WHAT OTHER FACTORS WERE CONSIDERED WITH REGARD TO NON-THERMAL ALTERNATIVES?

A. First, the Company considered the amount of accredited capacity it would have to procure without the Mitchell Plant in its generation portfolio, which would be approximately 606 MW. Table AEV-R1 below illustrates, based on ELCC ratings, how many MW of non-dispatchable and storage resources the Company would have to add or procure to provide the same amount of accredited capacity as the Mitchell Plant.

Table AEV-R1

Resource Type	ICAP MW	UCAP MW
Coal	800	606
Solar	8,391	606
Onshore Wind	2,058	606
Storage	1,771	606

In addition to the issues previously discussed with these resource options, the size of the project required to achieve the same level of accredited capacity of the Mitchell Plant would cause rate impact and affordability issues. It also could be challenging to implement in the real world. Finally, given the current dynamics of generation resource additions in the PJM market, it is unclear, and unlikely, that the Company could procure that much accredited capacity by 2029.

Q. WITNESS GLICK CLAIMS ON PAGE 16 OF HER TESTIMONY THAT THE COMPANY DID NOT REFRESH THE RESULTS OF THE 2023 RFP. IS THAT ACCURATE?

A. No. As stated in direct testimony and discovery, the RFP was issued in 2023 but pricing was updated by thermal bidders in August 2024 due to changes in environmental regulations. Based upon industry news and trends, and the continuous narrowing of supply and demand in the market, the Company considers the PPA prices from the 2023 RFP to be conservatively low at this time.

Q. PLEASE DISCUSS WITNESS GLICK'S SUGGESTION ON PAGE 16 OF HER TESTIMONY THAT KENTUCKY POWER ENTER INTO AN AGREEMENT WITH WHEELING POWER COMPANY TO BUY POWER FROM THE MITCHELL PLANT FOR THE PERIOD 2028-2031?

A. Witness Glick's suggestion ignores how a PPA would be priced and is on its face redundant. Entering into a PPA with Wheeling Power would be the same as Alternative 1 (Mitchell plant cost of service) presented in my Direct Testimony. Importantly, neither Wheeling Power, nor any other utility for that matter, would provide the Company with a PPA for service from the Mitchell Plant for an amount less than its cost of service. The real-world result of Witness Glick's proposal would actually be that the Company's customers would pay the same amount for service from the Mitchell Plant for the 2028-2031 period, but then the Company would not have access to the energy and capacity from the Plant after 2031. The Company would then be forced to acquire costly replacement capacity. In addition, the Company would still have to recover its share of the Plant's net book value from customers. Thus, Witness Glick's suggestion to enter into an agreement with Wheeling Power to buy power from the Mitchell Plant is not a viable option for consideration in this proceeding.

Q. WHAT IS YOUR ULTIMATE CONCLUSION OR RECOMMENDATION IN THIS CASE?

A. It is clear from the analysis in both my Direct and Supplemental Testimony that making the investments necessary for the Company and its customers to continue to receive a 50%

share of the capacity and energy from the Mitchell Plant for the period 2029 through 2031 is, by far, the least-cost, reasonable option. This is further demonstrated by the break-even analysis in my Supplemental Testimony, which essentially shows that even under the most expensive scenario for addressing the Unit 2 cooling tower, making the investments in the Mitchell Plant as detailed herein remains the lowest cost alternative. AG-KIUC Witness Kollen agrees that the Mitchell Plant is the best option for customers for the 2029 to 2031 time period, and nothing in Sierra Club Witness Glick's testimony proves otherwise. The Commission should not be distracted by Ms. Glick's attempts to cloud these clear facts. Approving the Company's proposals herein, as modified by Witness Kollen's proposals that the Company agrees are acceptable, is in Kentucky Power's customers' best interest.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

VERIFICATION

The undersigned, Alex E. Vaughan, being duly sworn, deposes and says he is the Managing Director of Regulated Pricing – Generation and Fuel Strategy for American Electric Power Service Corporation that he has personal knowledge of the matters set forth in the foregoing testimony and the information contained therein is true and correct to the best of his information, knowledge, and belief after reasonable inquiry.

Alex E. Vaughan

Commonwealth of Kentucky	)	
	)	Case No. 2025-00175
County of Boyd	)	

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Alex E. Vaughan, on November 13, 2025.

Notary Public

My Commission Expires Does Not Expire

Notary ID Number

NOTARIAL SEAL
STATE OF OHIO

HAYDEN CAPACE
NOTARY PUBLIC - OHIO