Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_1 Explain whether the Covid-19 crisis has changed any of the assumptions and/or conclusions reached in the current IRP. If so, explain in detail.

RESPONSE

The Covid-19 crisis is currently expected to have near-term implications for the load forecast but is not projected to impact materially the long-term forecast that is used in IRP modeling. Moreover, the IRP optimization analysis considered multiple load forecast scenarios, specifically the high and low economic scenarios which would account generally for a range of any possible long-term impacts that Covid-19 may have on the economy of Kentucky Power Company's service territory.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_2 Reference the response to AG DR 1-10, confidential attachment. Provide a description of the causes for the following costs:

a. Capital, water, 2022-2024.
b. Capital, solid waste, 2022-2023.
c. O&M, air, 2022.

RESPONSE

Please note the Rockport Unit Power Agreement ends in 2022, therefore no Rockport costs are included in the IRP in 2023 or beyond.

a. Water-related capital projects from 2022-2024 for the Mitchell Plant include planned projects for flue gas desulfurization wastewater treatment, a biological wastewater treatment system, and bottom ash pond closure. For the Rockport Plant, 2022 costs include changes to the plant's bottom ash transportation system and changes to various plant wastewater handling streams.

b. Capital projects related to solid waste in 2023-2023 for the Mitchell Plant include relining the bottom ash pond, and civil engineering work for solid waste storage areas. For Rockport in 2022 these projects include work related to closing the existing bottom ash ponds.

c. Air-related O&M expense in 2022 includes the following projects for the Mitchell plant: mercury monitor testing, precipitator repairs, nuclear certification (associated with precipitator equipment), flue gas desulfurization (FDG) oxidation pump rebuild, FGD valve repairs, limestone silo inspection and maintenance, hydroclone rebuilds, ID fan inspection and repairs, compressor maintenance, low-nitrogen oxide (NOx) burner repairs, selective catalytic reduction (SCR) duct inspection, fiberglass flue inspection and maintenance, induced draft (ID) fan repair and insulation, and catalyst shipping and storage.

For the Rockport Plant, 2022 air-related O&M projects include: mercury monitor testing, activated carbon injection maintenance, dry sorbent injection system maintenance, and SCR system software.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_3 Reference the response to AG DR-1-16, attachment 1.

a. Explain the reason for the capital costs for Big Sandy Unit-2 for the years 2016-2019.

b. With regard to fixed O&M for the two Mitchell units, confirm that costs have increased almost every year. Explain whether KPCo expects this trend to continue, and if so, explain why.

c. Confirm that the Mitchell Units' net capacity factor has decreased for each year from 2017-2019.

RESPONSE

a. AG1_16 Attachment 1 does not show any capital expenditures for Big Sandy Unit 2 in the time frame referenced.

b. Confirmed. The Company expects fixed O&M to flatten out in the near term, and trend up slightly in the longer term.

c. Confirmed.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_4 Reference the response to AG DR 1-18. Provide the same information for each of the past three calendar years, on an annualized basis.

RESPONSE

See the Company's response to AG 1-16 in this proceeding for the requested net capacity factors.

The Company objects to the request for annualized historic dispatch rankings for the generating units identified in AG DR 1-18 because it seeks an analysis the Company has not performed. Furthermore, the Company objects on the basis that the request seeks data that is not relevant to this proceeding, or likely to lead to the discovery of admissible evidence, because the calculation of an "annualized" dispatch order will not result in meaningful data. Units are dispatched on a daily basis, and numerous factors influence this dispatch, such as unit availability, curtailments, other operational considerations, as well as fluctuations in fuel prices. The dispatch order that was provided in response in AG 1-18 is generally representative of long-term dispatch trends for Kentucky Power's generating units.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_5 Reference the response to AG DR 1-19 (a). The link provided depicts nearly 600 pages of supplemental transmission projects throughout the entire PJM footprint. Identify all such projects that are applicable solely to KPCo's service territory, and provide them in a separate Excel attachment.

RESPONSE

See KPCO_R_AG_2_5_Attachment1 for the requested information.
This data may be obtained by going to the previously provided link and performing the following filtering:

- Project Type - Supplemental
- Sub Region - All
- Transmission Owner - AEP
- State - Kentucky
- Status - All
- Required Date - All
- Projected In-Service Date: 2017, 2018, 2019, 2020, 2021, 2022, 2023

Note there are no supplemental projects with projected in-service dates beyond 2023 at this time.

Information for the 44 projects obtained through the above filtering process is reflected in KPCO_R_AG_2_5_Attachment1 in the worksheet labeled 'Data', as exported from the PJM site into Microsoft Excel. For each project, links to the Regional Transmission Expansion Plan documents are included, which include project details and cost.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_6 Reference the response to AG DR 1-20, Attachment 1. Explain what is meant by Account 5550124, "PJM Implicit Congestion-LSE," and include in your response:

(i) an identification and explanation of any costs that are normally included within this account; and

(ii) an explanation of how this account differs from account no. 4470126.

RESPONSE

(i) These congestion costs are the net charges for the Company's internal load customers.

(ii) Account 4470126 includes the net charges only for the energy sold through off-system sales.

Witness: John F. Torpey

DATA REQUEST

AG 2_7 Reference the response to AG DR 1-20 (a). Given that an aeroderivative (AD) plant does not utilize the waste heat to generate steam, explain:

a. whether a standard combined cycle gas plant (CC) is more efficient than an AD design; and

b. the factors that AEP took into consideration in determining an AD unit to be more cost-effective than a CC plant, and in what scenarios that is true;

c. in what scenarios a CC plant would become more cost effective than an AD unit.

RESPONSE

a. A CC plant is typically more efficient from a heat rate perspective than an AD plant and the Company includes both resources in its modeling to support different needs to serve its load. The use of AD resources for peaking alternatives is further explained in section 4.5.4.2 of the IRP.

b. The Company's modeling is developed to identify an optimized portfolio to meet its PJM Reserve Margin obligation at the least cost. The key assumptions for each resource available to be selected by the model are shown in Table 13 on page 93 of the IRP. Other factors described in the IRP include the load forecast and fundamental commodity forecasts.

For the scenarios modeled, the Company found the AD resource to be the optimized resource selected for the "Optimized Portfolios for Commodity Pricing Scenarios" (cases 1-4) described in section 5.2.2.1. The AD resource provides adequate capacity to meet the Company's PJM Reserve Load obligations without exceeding this obligation excessively.

c. The Company modeled low and high load scenarios to test boundaries for the model. For the high load scenario, the modeling results showed that the CC unit would be the optimized resource selected beginning in 2031.

The Company notes a typographical error in section 5.2.2.2, where it states "The High Load scenario calls for STMP in the earlier years and incorporates a natural gas aeroderivative resource for capacity by 2031." In fact, the sentence should have referred to the addition of the CC resource instead of the aeroderivative resource, as correctly reflected in Exhibit E-1, page 206. The CC can be identified by the amount of MWs included in the plan, which is 401MW. The AD can be identified by the 122MW value. This correction does not impact the overall conclusions in the Company's Preferred Plan.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_8 Reference the response to AG DR 1-28 (c), wherein the Company states "[t]he IRP modeling did not explicitly consider other AEP affiliates generating resources as resource options for this IRP." Explain how and to what extent the Company did consider the potential for procuring any excess capacity that might be available at any one or more plants in which any AEP affiliates have an ownership interest.

RESPONSE

The procurement of excess capacity specifically from other AEP affiliates was not considered for this IRP. For this IRP, the procurement of any capacity is assumed to be at market rates. The IRP analysis did not make an assumption as to the source of that capacity. At the time the capacity is acquired, to the extent an AEP affiliate may be able to provide capacity at a market rate, that offer may be considered in addition to offers from other entities.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_9 Reference the response to AG DR 1-29 (a)-(b). Describe what, if any analyses the Company undertook to determine whether PPAs might be more cost-effective than self-build options. Include in your response the value of any RECs that might be available under either option.

RESPONSE

All supply and demand side resources in the IRP were assumed to be Company-owned. The Company has not performed the requested analysis regarding whether a PPA is more (or less) cost effective than a Company-owned asset in the instant Integrated Resource Plan (IRP). The Company's IRP modeling uses proxies for resources, and does not analyze actual projects. Any potential REC value would be dependent on the technology selected for a renewable asset, and the state in which the asset is located as different states (all assumed to be within PJM) have differing renewable portfolio standards for which an asset may qualify. REC values in different areas may also be affected by demand from corporate entities, among other things. Assuming a future PPA would include the environmental attributes (RECs) associated with an asset, the value of RECs generated by a Company-owned asset or by the same asset in the same location under a PPA would not be expected to differ.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_10 Reference the response to AG DR 1-29 (e), wherein the Company responded that no additional congestion costs were included in the Preferred Plan. Explain whether the Company's analysis identified any new congestion costs, and if so, explain why they were not included within the Preferred Plan.

RESPONSE

For this IRP, the Company has not identified any such congestion costs.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_11 Reference the response to AG DR 1-33 (a). Explain whether there are any material differences between the two depreciation studies, and if so, explain the reasons therefor.

RESPONSE

With respect to the depreciation studies provided in response to AG 1-33, the Mitchell Plant is the only plant included in both studies. The Kentucky Power study was provided because it is the most recent study performed by the Company that includes the Mitchell Plant. The study for Appalachian Power Company and Wheeling Power Company was provided for reference because it is more recent, and is reflective of Wheeling Power Company's 50% ownership share of the Mitchell Plant. However, the retirement date for the Mitchell Plant remains unchanged at 2040 in both depreciation studies. Because each study is jurisdiction and operating company specific and was performed at a different time, the differences include changes to plant balances and the net salvage ratio.

Witness: Brian K. West

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_12 Reference the response to AG DR 1-38. Explain why a battery resource was not selected in the modeling results.

RESPONSE

The model selects resources that contribute to the least cost portfolio of supply side and demand side resources to meet the Company's load obligation. As shown in Table 13 of the IRP, besides coal and nuclear resources (also not selected), the Levelized Cost of Energy (LCOE) for battery generation resources was the highest of all resources, suggesting the resource at this time did not contribute as favorably to the least cost portfolio for the Company as alternative resources.

Witness: John F. Torpey

Kentucky Power Company
KPSC Case No. 2019-00443
Attorney General's Second Set of Data Requests
Dated June 4, 2020

DATA REQUEST

AG 2_13 Reference the response to AG DR 1-48 (c). Given that on-peak energy prices remain lower than wind resources (even with PTC subsidies) throughout the planning period, explain how wind can remain the least cost resource.

RESPONSE

The Company's response to AG1-48(c) was a high level look comparing the annual On-Peak energy pricing to the wind resource Levelized Cost of Electricity (LCOE) by in-service year. This comparison in no way is a substitute for the analysis that is performed by the Plexos model within the IRP process. The Plexos model compares the life-cycle cost to the life-cycle benefits of each resource to determine an optimal portfolio of resources. The comment that the wind resource remains a least cost resource is based on the observation that within the Optimized portfolios, as discussed in Section 5.2.2.1, page 116 - 119, all scenarios selected the wind resource.

Witness: John F. Torpey

VERIFICATION

The undersigned, John F. Torpey, being duly sworn, deposes and states he is the Managing Director of Resource Planning and Operation Analysis for the American Electric Power Service Corporation, that he has personal knowledge of the matters set forth in the foregoing responses, and that the information contained therein is true and correct to the best of his information, knowledge, and belief.

John F Torpey

John F. Torpey

State of Indiana)
) Case No. 2019-00443
County of Allen)

Subscribed and sworn before me, a Notary Public, by John F. Torpey this 17 day of July, 2020.

Regiana M. Sistevaris Digitally signed by Regiana M. Sistevaris Date: 2020.07.17 09:42:09 -04'00'

Notary Public, Regiana Maria Sistervaris

My Commission Expires: January 7, 2023

VERIFICATION

The undersigned, Brian K. West, being duly sworn, deposes and states he is the Director of Regulatory Services for Kentucky Power Company, that he has personal knowledge of the matters set forth in the foregoing responses, and that the information contained therein is true and correct to the best of his information, knowledge, and belief.

Brian K. West

State of Indiana)
) ss Case No. 2019-00443
County of Allen)

Subscribed and sworn to before me, a Notary Public, in and for said County and State, Brian K. West this 17th day of July, 2020.

Regiana M. Sistevaris

Digitally signed by Regiana M. Sistevaris
Date: 2020.07.17 09:23:24 -04'00'

Regiana M. Sistevaris, Notary Public

My Commission Expires: January 7, 2023