

VERIFICATION

The undersigned, Kelly D. Pearce, being duly sworn, deposes and says he is the Director Contract and Analysis for American Electric Power, that he has personal knowledge of the matters set forth in the forgoing responses for which he is the identified witness and that the information contained therein is true and correct to the best of his information, knowledge and belief

Kelly D. Pearce

Kelly D. Pearce

STATE OF OHIO

)

) Case No. 2016-00413

COUNTY OF FRANKLIN

)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Kelly D. Pearce, this the 3rd day of April, 2017.

Ann Dawn Clark

Notary Public

Notary ID: 15RE553375

My Commission Expires: 12/3/20



ANN DAWN CLARK
Notary Public, State of Ohio
My Commission Expires 12-03-2020

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Witness: John F. Torpey

- Q - 1** Refer to your response to SC 1-1(a) and (b). With regards to the “uncertainty associated with planning criteria” referenced therein:
- a. State whether the referenced uncertainty would require “continual updates” to the results of any evaluation of renewal or continuation of the UPA after its current expiration date.
 - i. If not, explain why not.
 - b. Explain why the referenced uncertainty “makes reliance on the current UPA more reasonable for modeling purposes.”
 - c. State whether the Company could have evaluated any scenarios in which the UPA is not renewed beyond its current expiration date and dealt with the referenced uncertainty through sensitivity analyses.
 - i. If not, explain why not.
- A - 1**
- a. Yes. The uncertainties referenced in response to SC 1-1(a) and (b) could result in changes to the assumptions used in evaluating the renewal or continuation of the UPA.. Significant variations in the input assumptions could affect the results of analyses that were performed before those inputs changed.
 - b. Reliance on the current UPA is in essence a "placeholder" that maintains Kentucky Power's capacity position. Any alternate plan developed at this point in time would be premature because the terms of a renewed UPA are unknown, and the factors and conditions used in evaluating any renewed UPA are subject to change.
 - c. While the Company could have evaluated any number of scenarios and sensitivities with respect to the continuance of the UPA, until new UPA terms are available such evaluations would be premature.

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Witness: John F. Torpey

- Q - 2** Refer to your response to SC 1-1(e). State whether the Company has reviewed any analyses, studies, or other documents regarding whether to renew or extend the UPA beyond its current expiration date. If so, produce each such analysis, study, or other document.
- A - 2** No. See the Company's response to SC 2 - 3.

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Witness: John F. Torpey

- Q - 3** Refer to your response to SC 1-1(f). State whether the Company has reviewed any analyses, studies, or other documents regarding the economics of continued operation versus retirement in any year through 2031 of either or both of the Rockport units. If so, produce each such analysis, study, or other document.
- A - 3** Prior to the start of the 2016 IRP planning process, the Company reviewed Indiana Michigan Power's 2015 IRP Report. I&M's 2015 IRP Report is included as attachment KPCO_R_SC_2_3_Attachment1.

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Witness: John F. Torpey

Q - 4 Refer to your response to SC 1-3

a. State whether the "approach taken to potential CO2 mitigation policy" in your capacity price forecasts partially or entirely explains why the forecasted 2020 capacity price in your 2016 forecast is less than 25% of the forecasted 2020 capacity price in your 2013 forecast.

i. If so, explain how.

ii. If partially, identify and explain what other factors explain why the forecasted 2020 capacity price is lower in your 2016 forecast than in your 2013 forecast.

iii. If not, identify and explain what factors do explain why the forecasted 2020 capacity price is lower in your 2016 forecast than in your 2013 forecast.

b. State whether the "approach taken to potential CO2 mitigation policy" in your capacity price forecasts partially or entirely explains why the forecasted capacity prices for 2021 through 2027 in your 2016 forecast are less than 10% of the forecasted capacity price for 2021 through 2027 in your 2013 forecast.

i. If so, explain how.

ii. If partially, identify and explain what other factors explain why the forecasted capacity prices for 2021 through 2027 are lower in your 2016 forecast than in your 2013 forecast.

iii. If not, identify and explain what factors do explain why the forecasted capacity prices for 2021 through 2027 are lower in your 2016 forecast than in your 2013 forecast.

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A - 4

a. Partially

i. - ii The approach taken to potential CO2 mitigation policy is the primary difference in assumptions of the 2013 and 2016 forecasts. Additionally, the 2016 capacity price forecast incorporates assumptions for fuel prices, load, and capital expenses that have been updated since the

2013 capacity price forecast was developed. The AuroraXMP model makes Long Term North American resource decisions based upon these assumptions and, throughout the IRP planning horizon, these economic decisions are influenced by the approach taken to potential CO2 mitigation policy. The 2016 forecast also includes updated information on resource additions and retirements that occurred after 2013. The lower capacity price forecast throughout the IRP planning period is the result of the combined effects of these factors.

iii. Not applicable.

b. Please see response to SC2-4(a) above.

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Witness: Randy E. Holliday

- Q - 5** Refer to Attachment 1 to your response to SC 1-5.
- a. Identify the actual level of mine power energy sales in GWhs for 2016.
 - b. Explain why you forecast that mine power energy sales will decline only 19 GWhs between 2017 through 2031, after falling 442 GWhs from 2010 through 2015.
 - c. Refer to Figure 4 and pages 41 to 42 of the IRP. Identify the forecasted level of Eastern Kentucky coal production for each of the years 2017 through 2031 that was assumed in your mine power energy sales forecast for each of those years. Provide the basis for such forecasted levels.
- A - 5**
- a. The company's billed and estimated sales for 2016 were 365.7 GWh.
 - b. Please see response to KPSC 2-11 for the discussion of trends in coal production for Eastern Kentucky and Kentucky Power mine power energy sales.
 - c. KPCO_R_SC_2_5_Attachment1 provides the forecast of Eastern Kentucky coal production utilized in the Company's mine power energy sales forecast. The forecast is tied to the Energy Information Administration's forecast for Central Appalachian coal.

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Witness: John F. Torpey

- Q - 6** Refer to your response to SC 1-7. Explain why Rockport ELG related capital costs were projected through 2019, as opposed to 2023.
- A - 6** The Company's 2016 IRP assumed that any capital costs necessary for the Rockport Plant to achieve compliance with the ELG rule would be incurred prior to 2020.

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Witness: John F. Torpey

Q - 7 Refer to your response to SC 1-11 and Attachments 1 through 4 to that response. Identify and explain the difference in assumptions or scenarios between each of Attachments 1 through 4.

A - 7 Refer to sections 4.3.1.2, 4.3.1.3, 4.3.1.4, and 4.3.1.5 of the 2016 IRP.

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Witness: Edgar J. Clayton

- Q - 8** Refer to your response to SC 1-14. a. Identify and produce any analysis, study, survey, or other document that you have created or reviewed supporting the assumption that “industrial customers will self-invest in EE measures based on customer-specific economic evaluation regardless of the existence of utility-sponsored energy efficiency programs.” b. For each of the years 2010 through 2015, identify the level in dollars of self-investment in EE measures by the Company’s industrial customers, and the level of energy savings achieved by industrial customers from such investments. c. For each of the years 2017 through 2031, identify the projected level in dollars of self-investment in EE measures by the Company’s industrial customers, and the level of energy savings achieved by industrial customers from such investments. d. Describe the Company’s industrial DSM program referenced therein, and state when the program was initiated, when it was terminated, and the annual budget for the program for each year it was in existence. e. For the year 2015, identify the number of industrial customers that the Company had; the maximum, minimum, and average load of such industrial customers; and the maximum, minimum, and average energy demand of such industrial customers. f. For the each of the years 2017 through 2031, identify the forecasted number of industrial customers that the Company had; the forecasted maximum, minimum, and average load of such industrial customers; and the forecasted maximum, minimum, and average energy demand of such industrial customers.
- A - 8** a. The assumption is based on the Company’s experience working with its industrial customers. Please see the Company’s response to SC 2-4 in Case No. 2015-00271, *In The Matter Of: Application Of Kentucky Power Company For (1) Authority To Modify Certain Existing Demand-Side Management Programs; (2) Authority To Implement New Programs; (3) Authority To Discontinue Certain Existing Demand-Side Management*

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Programs; (4) Authority To Recover Costs And Net Lost Revenues, And To Receive Incentives Associated With The Implementation Of The Programs; And (5) All Other Required Approvals and Relief attached as KPCO_R_SC_2_8_Attachment1.pdf. No such “analysis, study, survey, or other document” was created or reviewed in connection with the statement.

- b. Kentucky Power does not collect or report this information.
- c. Kentucky Power does not develop forecast for this information.
- d. The Company implemented two industrial DSM programs prior to their termination in 1998:

Smart Audit: The Smart Audit program was designed to assist industrial customers in identifying the measures to improve their overall energy efficiency. The Smart Audit program began in 1995. The year 1996 was the first reporting year. The program was discontinued on December 31, 1998 in accordance with the Commission's October 27, 1998 order in Case No. 95-427.

Smart Incentive: The Smart Incentive program was designed as an incentive program for industrial customers that would facilitate the implementation of cost effective energy improvements. The Smart Incentive program started in 1996 and was discontinued on December 31, 1998 in accordance with the Commission's October 27, 1998 order in Case No. 95-427.

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Annual expenses for the Smart Audit and Smart Incentive programs were as follows:

Program Expense

Year	Smart Audit	Smart Incentive
1995	\$0	\$0
1996	\$20,201	\$3,919
1997	\$16,177	\$24,427
1998	\$7,310	\$3,768

Please also see [KPCO_R_SC_2_8_Attachment1.pdf](#).

e. The Company had 1,258 industrial customers with a total energy consumption of 2,693,461 MWh in 2015. The average energy consumption for the Company's industrial customers was 2,141 MWh per customer. Energy data are collected on a monthly basis and the data are not amenable to calculating minimum and maximum loads. The Company cannot produce the requested information regarding customer demand because not all industrial customers have demand meters.

f. See [KPCO_R_SC_2_8_Attachment2](#) for forecasted industrial energy (MWh), customer count, and average industrial energy (MWh per customer). Also provided on [KPCO_R_SC_2_8_Attachment2](#) are average, minimum and maximum industrial sector demands (MW).

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Witness: John F. Torpey

Q - 9 Refer to your response to AG 1-2(g). Explain why you assumed for planning purposes in this IRP that Big Sandy Unit 1 will retire in May 2031.

A - 9 The 15-year service life is the same assumption used by Kentucky Power in connection with its application for a certificate of public convenience and necessity to convert Big Sandy Unit 1 to a gas-fired unit. *See, In The Matter Of: The Application Of Kentucky Power Company For: (1) A Certificate Of Public Convenience And Necessity Authorizing Kentucky Power To Convert Big Sandy Unit 1 To A Natural Gas-Fired Unit; And (2) For All Other Required Approvals And Relief*, Case No. 2013-430. In the hearing in that case, Scott C. Weaver testified that 15 years after conversion, which would place the unit's service life at 67 years, was "a very, very achievable level." Robert L. Walton similarly testified that "it would not be a very challenging situation for that unit to operate as a gas-fired unit for 15 years." In addition, the same assumption was used in the Company's modeling in support of its application for approval of the transfer of a 50% undivided interest to Kentucky Power. *See Response to KPSC 2-32, In the Matter of: Application of Kentucky Power Company for (1) A Certificate of Public Convenience and Necessity Authorizing the Transfer to the Company of an Undivided Fifty Percent Interest in the Mitchell Generating Station and Associated Assets; (2) Approval of the Assumption by Kentucky Power Company of Certain Liabilities in Connection with the Transfer of the Mitchell Generating Station; (3) Declaratory Rulings; (4) Deferral of Costs Incurred in Connection with the Company's Efforts to Meet Federal Clean Air Act Requirements; and (5) All Other Required Approvals and Relief*, Case No. 2012-00578.

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Witness: Kelly D. Pearce

- Q - 10** Refer to your response to KIUC 1-1(d).
- a. Identify each other provision of the contract that would be “subject to change” if the Company challenged the ROE in the contract.
 - b. Explain why each provision identified in subsection a would be “subject to change” if the Company challenged the ROE in the contract.
 - c. Identify what the “equity content of the capital structure” would be if the 40% cap were not in effect.
 - d. Identify each “FERC-approved cost-based wholesale power supply agreements to which Kentucky Power is a party” referenced therein, the ROE for each such agreement, and the year in which such ROE was approved or established.
- A - 10**
- a. The Company has not performed an assessment of all the potential changes a party could request in negotiations in exchange for a revised ROE. Such an assessment would not necessarily identify all changes that could be requested.
 - b. Please see the Company's response to a.
 - c. What the equity content of the capital structure would be if the 40% cap were not in effect is a hypothetical situation that does not exist and would require speculation.
 - d. The agreements referenced are wholesale generation, full requirements agreement with the Cities of Vanceburg and Olive Hill. The ROEs approved are indexed each year to the average Moody's Baa Corporate Bond rate from the prior December plus 585 basis points. These agreements were originally entered into in 2005 with an ROE of 12.17%.

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Witness: John F. Torpey

Q - 11 Refer to your response to KPSC 1-1. Identify by when the Company would need to start planning to replace the capacity and/or energy from the UPA if the Company were to not renew or extend the UPA beyond its current expiration date. Explain your response.

A - 11 The analysis in the IRP did not require a determination of the timeframe to commence a formal resource planning process relating to the potential extension of the Rockport UPA . The Company anticipates completing such a process no later than early 2019 to accommodate the timing of the Company's need to commit capacity for the 2022/2023 planning year. The Company intends to conduct the resource planning process regarding the Rockport UPA in a way that incorporates the most current information available regarding the Company's needs. The Company is continually receiving information that will be used in making future decisions on resource needs.

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Witness: John F. Torpey

Q - 12 Refer to the IRP, p. 15 of 1497. State whether you considered either in your Plexos modeling or as an addition to the Plexos modeling results, any end-effects beyond the year 2035.

a. If so, identify the time period over which such end-effects were considered, and explain how they were considered including each category of costs and revenues that were considered.

b. If not, explain why not.

A - 12 a. End-effects are included as a part of both the Plexos model and the analysis of the Plexos results. When making resource selections for a portfolio the Plexos model factors end-effects into costs and revenue for each resource considered. Once Plexos has identified a portfolio of resources the IRP group determines the Cumulative Present Worth of the revenue requirements of the portfolio. This determination includes end-effects which represent perpetual net costs of a portfolio that would exist beyond the modeling period, which for this IRP was 2016-2035. Net costs include fixed and variables costs, as well as market revenue.

In both instances the same end-effects factor and methodology is used.

b. Not applicable.

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Witness: John A. Rogness

Q - 13 Refer to your response to KPSC 1-8(b). Explain why the Company has not considered changes to its net metering tariff to encourage distributed generation.

A - 13 Consistent with the requirements of KRS 278.467(3), the IRP assumes that Kentucky Power's net metering tariffs will continue to comply with the guidelines established by the Commission in its January 8, 2009 order in Administrative Case No. 2008-00169. Those guidelines in turn were developed by the Commission pursuant to KRS 278.467(2) and implement the requirements of KRS 278.468 to KRS 278.468 governing net metering of electricity.

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Witness: Randy E. Holliday

- Q - 14** Refer to your response to KPSC 1-14 and Attachment 1 to that Response.
- a. Confirm that Attachment 1 presents Mine Power Energy Sales, as opposed to Miner Power Energy Sales.
 - b. Identify the Mine Power Energy Sales per month for each month in 2015.
- A - 14**
- a. Confirmed. Data provided in KPSC 1-14 are billed and accrued, which are consistent with monthly energy requirements for the Company.
 - b. KPCO_R_SC_2_14_Attachment1 provides billed and estimated energy sales for the Company. The data provided are January 2015 through January 2017. The billed and estimated data are as used in the modeling process.

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Witness: Randy E. Holliday

Q - 15 Refer to your response to KPSC 1-20. Identify the source for the referenced forecast that coal mining will be more stable after a sharp decline in 2016. Produce any studies, reports, or other documents supporting or regarding that forecast.

A - 15 Please see the Company's response to KPSC 2-11(b).

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Witness: John F. Torpey

Q - 16 Refer to your response to KPSC 1-28(c). Produce the modeling analysis for the Mitchell Plant referenced therein.

A - 16 The modeling analysis referenced is an analysis prepared by the West Virginia Department of Environmental Protection (WVDEP) as the basis for WVDEP's attainment state implementation plan submittal to US EPA. The modeling analysis belongs to WVDEP. The Company requested a copy of the analysis from WVDEP. Due to the size and nature of the files included in the WVDEP modeling analysis, the Company is providing KPCO_R_SC_2_16_Attachment1 on DVD.