# DATA REQUEST

KYSEIA\_1Reference Kentucky Power's response to Staff 3-1, entitled\_001"KPCO\_R\_KPSC\_3\_1\_Attachment03\_StegallWP1.xlsx". Please provide<br/>the "Individual Class Load Research files" referred to in cell B29 in the<br/>tab labeled "SECDEM".

# **RESPONSE**

Please see KPCO\_R\_KYSEIA\_1\_1\_Attachment1 through KPCO\_R\_KYSEIA\_1\_1\_Attachment17 for the requested files. KPCO\_R\_KYSEIA\_1\_1\_AttachmentIndex contains an index of attachments responsive to this request.

Witness: Jason M. Stegall

# DATA REQUEST

KYSEIA\_1Reference the Direct Testimony of Company Witness Alex E. Vaughan<br/>("Vaughan Direct") at page 28, line 15 through page 29, line 2 discussing<br/>the Company's proposal to increase net metering application fees. a.<br/>Please provide the Company's cost study supporting Witness Vaughan's<br/>statement that "the application fee levels are still not at full cost" at page<br/>28, line 18.

b. If not included in your response to subpart a. of this request, please separately identify the Company's costs in dollars per application for processing a Level 1 and Level 2 interconnection and net metering application.

c. Please identify any actions the Company has undertaken or plans to undertake to reduce the cost of processing Level 1 and Level 2 interconnection and net metering applications.

# **RESPONSE**

a) Please Refer to KPCO\_R\_KYSEIA\_1\_002\_Attachment1 for requested information.

b) The requested information for a level 1 application is included in the Company's response to part a. Additionally, for level 2 applications that require a distribution system impact study, the Company has paid in excess of \$10,000 per study for the required engineering analysis.

c) AEP Service Corporation on behalf of its operating companies, which includes Kentucky Power Company, is undertaking development and deployment of an online portal to partially automate and assist in the processing of Interconnection Applications.

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INTERCONNECTION APPLICATIONS LESS THAN 45 kW AND PASSING LEVEL 1 REVIEW					
Application Processing	Hrs/Application	\$(Labor)/Application	Materials (\$)	One-Time/Monthly	
Customer Communications (phone, email, mail)	0.25	\$14.50		One-Time	
Record Keeping	0.75	\$43.50		One-Time	
Document Generation	0.75	\$43.50		One-Time	
Application Review	0.5	\$29.00		One-Time	
Reporting & Analysis	0.002	\$0.13		Monthly	
Billing & Invoicing	Hrs/Application	\$(Labor)/Application	Materials (\$)	One-Time/Monthly	
Application Fee Invoicing & Processing	0.5	\$29.00		One-Time	
Monthly Billing	0.15	\$8.70		Monthly	
Meter Services	Hrs/Application	\$(Labor)/Application	Materials (\$)	One-Time/Monthly	
Programing and Installation of new meter	1	\$58.00	\$216.57	One-Time	
Drive Time to premise	1.25	\$81.25		One-Time	
Decennial System Inspection	0.015	\$1.00		Monthly	
	Hrs/Application	\$(Labor)/Application	Materials (\$)	TOTAL COST	
TOTAL ONE-TIME COSTS	5.00	\$298.75	\$216.57	\$515.32	
TOTAL MONTHLY COSTS	0.168	\$9.84		\$9.84	

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INTERCONNECTION APPLICATIONS GREATER THAN 45 kW OR FAILING LEVEL 1 REVIEW					
Application Processing	Hrs/Application	\$(Labor)/Application	Materials (\$)	One-Time/Monthly	
Customer Communications (phone, email, mail)	0.25	\$14.50		One-Time	
Record Keeping	0.75	\$43.50		One-Time	
Document Generation	0.75	\$43.50		One-Time	
Application Review	0.5	\$29.00		One-Time	
Reporting & Analysis	0.002	\$0.13		Monthly	
Billing & Invoicing	Hrs/Application	\$(Labor)/Application	Materials (\$)	One-Time/Monthly	
Application Fee Invoicing & Processing	0.5	\$29.00		One-Time	
Monthly Billing	0.15	\$8.70		Monthly	
Meter Services	Hrs/Application	\$(Labor)/Application	Materials (\$)	One-Time/Monthly	
Programing and Installation of new meter	1	\$58.00	\$216.57	One-Time	
Drive Time to premise	1.25	\$81.25		One-Time	
Decennial System Inspection	0.015	\$1.00		Monthly	
Distribution Engineering	Hrs/Application	\$(Labor)/Application	Materials (\$)	One-Time/Monthly	
Engineering Review	2.75	\$159.50		One-Time	
Additional Record Keeping & Document Generation	0.25	\$14.50		One-Time	
	Hrs/Application	\$(Labor)/Application	Materials (\$)	TOTAL COST	
TOTAL ONE-TIME COSTS	8.00	\$472.75	\$216.57	\$689.32	
TOTAL MONTHLY COSTS	0.168	\$9.84		\$9.84	

# DATA REQUEST

KYSEIA\_1 Reference Kentucky Power's response to Staff 3-1, entitled \_003 "KPCO\_R\_KPSC\_3\_1\_Attachment17\_VaughanWP3.xlsx", the workpaper associated with Vaughan Direct Exhibit AEV-3. Please identify the source and provide all workpapers associated with the following values that are hardcoded in the tab labeled "Excess Gen Price": a. Cell B7 (G Capacity – Solar Pk Reduction MW, listed at 9.55 MW) b. Cell C7 (G Capacity – Price, listed at \$100) c. Cell B8 (T Avoided Cost – Solar Pk Reduction MW, listed at 5.51 MW) d. Cell C8 (T Avoided Cost – Price, listed at \$93,054) e. Please clarify whether the T Avoided Cost includes only transmission costs or also includes sub-transmission and distribution voltage level avoided costs.

### **RESPONSE**

a. Please refer to KPCO\_R\_KYSEIA\_1\_3\_Attachment1.

- b. The \$100/MW-day is an estimated value of PJM RPM capacity.
- c. Please refer to KPCO\_R\_KYSEIA\_1\_3\_Attachment1.
- d.Please refer to KPCO\_R\_KYSEIA\_1\_3\_Attachment1

e. Avoided transmission costs refer to PJM LSE OATT expenses allocated to the Company per PJM's Tariff and the FERC approved AEP Transmission Agreement, that portion of the excess generation rate does not include distribution loss credit.

# DATA REQUEST

KYSEIA\_1 Reference Kentucky Power's response to Staff 3-1, entitled \_004 "KPCO\_R\_KPSC\_3\_1\_Attachment17\_VaughanWP3.xlsx", the workpaper associated with Vaughan Direct Exhibit AEV-3. Please identify the source and provide all workpapers associated with the following values that are hardcoded in the tab labeled "Typical Install Excess Percent":

a. Cells I21 through I24, under the column heading Summer Peak 5CP Hours wt.
b. Cells L14 through L16 and L20 through L26 labeled 12 CP Hours Wt.

# **RESPONSE**

a.-b. Please refer to the "peak reduction" tab in KPCO\_R\_KYSEIA\_1\_3\_Attachment1 in the Company's response to KYSEIA 1-3.

# DATA REQUEST

KYSEIA\_1 Reference Kentucky Power's response to Staff 3-1, entitled "KPCO\_R\_KPSC\_3\_1\_Attachment17\_VaughanWP3.xlsx", the workpaper associated with Vaughan Direct Exhibit AEV-3, in the tab labeled "Typical Install Excess Percent". Cells F31 (1,365 kWh of monthly solar production) and E31 (1,240 kWh of total monthly usage) indicate a system sized to produce 110% of a customer's on-site needs. a. Does the Company permit customers to oversize a net metering system to this degree? If the Company caps or limits the size of a net metering system, identify and describe the cap or limit.
b. Please provide the Company's internal manual, instructions, or other guidance for how it implements the net metering tariff requirement that a qualifying system "Has the primary purpose of supplying all or part of the customer's own electricity requirements".

c. Should the amount of monthly production in Cell F31 be interpreted as an amount for first year production or average monthly production over the life of the system?

# **RESPONSE**

a. The Company administers Tariff NMS as it is written in the Company's tariff book.

b. Please refer to Tariff NMS and proposed Tariff NMS II.

c. The 1,365 kWh is the typical sized installation at a 20% average capacity factor. The calculation does not account for panel degradation over the life of the panels.

# DATA REQUEST

KYSEIA\_1Reference Kentucky Power's response to Staff 3-1, entitled\_006"KPCO\_R\_KPSC\_3\_1\_Attachment17\_VaughanWP3.xlsx", the<br/>workpaper associated with Vaughan Direct Exhibit AEV-3, in the tab<br/>labeled "Typical Install Excess Percent". Please explain in detail how the<br/>values in Cell J31 (51.39%) and M31 (26.72%) are used in the calculation<br/>of the proposed price for excess generation from N.M.S. II systems

### **RESPONSE**

Please refer to Company witness Vaughan's direct testimony at page 26, line 20 through page 27, line 3.

# DATA REQUEST

KYSEIA\_1Reference Kentucky Power's response to Staff 3-1, entitled\_007"KPCO\_R\_KPSC\_3\_1\_Attachment17\_VaughanWP3.xlsx", the<br/>workpaper associated with Vaughan Direct Exhibit AEV-3, in the tab<br/>labeled "Solar Profile".

a. Please identify the source of the hourly solar production data and all assumptions used in developing the solar production estimate, including but not limited to the modeling software used, module type, system azimuth, system tilt, inverter losses, and other energy losses.

b. Please identify whether the hourly solar production profile reflects prevailing time accounting for daylight savings time.

c. Please explain in detail why a solar profile developed based on a utilityscale production estimate is appropriate for representing a typical rooftop solar production profile.

d. Identify the typical rooftop solar production profile for the Kentucky Power service territory in a format equivalent to the profile used by Witness Vaughan denoting 8,760 hourly production values.

# **RESPONSE**

a. Please refer to the Company's response to KPSC Staff 4-82, part h. Please also refer to KPCO\_R\_KYSEIA\_1\_7\_ConfidentialAttachment1.

b. Yes. It does.

c. A utility scale project's output provides a higher excess generation value due to its higher average capacity factor and thus was used as a conservative way of pricing the excess generation under proposed Tariff NMS II. Please see also the Company's response to KPSC Staff 4-82, part h.

d. The Company does not separately meter NMS customers' solar generation due to the current net metering construct; thus, the data is not available as requested.

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KPCO\_R\_KYSEIA\_1\_7\_PublicAttachment1 has been redacted in its entirety.

# DATA REQUEST

KYSEIA\_1 Reference Kentucky Power's response to Staff 3-1, entitled \_008 "KPCO\_R\_KPSC\_3\_1\_Attachment17\_VaughanWP3.xlsx", the workpaper associated with Vaughan Direct Exhibit AEV-3, in the tab labeled "Residential Profile".
a. Is it the Company's contention that the standard residential load profile Witness Vaughan uses is representative of a typical residential solar customer? If so please explain and provide the analysis the Company conducted in reaching this conclusion.
b. Did the Company perform an analysis of its existing residential solar customers when developing the Residential Profile? If so, please provide the results of this analysis, and if not please explain why it did not do so.

# **RESPONSE**

a-b. The standard residential load profile is representative of the typical Kentucky Power Company residential customer. Current net metering customers are not served in a separate tariff class and thus do not have a separate load research profile. Rates are made to serve the typical or "average" customer, they cannot be tailored to each customer's load profile and their associated qualifying generation resource; nor is that necessary to calculate fair and reasonable cost based rates. No further analysis was conducted to provide this response.

# DATA REQUEST

KYSEIA\_1Reference Vaughan Direct at page 13, line 23 through page 14, line 2,<br/>stating "Based on test year data, the average kWh usage for the<br/>Company's low income energy assistance customers (1,367 kWh/month)<br/>is greater than the average usage for the residential class as a whole<br/>(roughly 1,240 kWh/month)."

a. Please provide the Company's workpapers supporting these statements in executable spreadsheet format with all formulas and file linkages intact, and describe in detail all associated data sources and any assumptions used by Witness Vaughan.

b. Did the Company perform an equivalent analysis for low-income customers that did not receive energy assistance? If so, please provide the results of that analysis and all associated workpapers. If not, explain why not.

c. If the Company did not perform the analysis referred to in subpart b of this question, please identify and provide all of the data that would be necessary to produce such an analysis.

# **RESPONSE**

a. The Company does not have any documents responsive to this request. The referenced kWh values are queried data points for the test year from the Company's billing system.

b. No. Customer accounts receiving low income energy assistance have an associated indicator flag/field in the Company's billing system which allows the Company to identify them. The Company does not otherwise have customer account level income data to perform the referenced analysis.

c. Please see the Company's response to part b.

# DATA REQUEST

KYSEIA\_1 Reference Vaughan Direct at page 14, lines 5-7, stating "The Company's electric heating customers will also benefit from the increased service charge because their average usage (1,480 kWh/month) is also above the residential class average."
a. Please provide the Company's analysis supporting the 1,480 kWh/month figure for average residential electric heating customer usage.
b. Has the Company performed load research studies identifying how peak demand varies between electric heating customers and non-electric heating customers? If so, please provide this analysis in executable spreadsheet format with all formulas and file linkages intact.

# **RESPONSE**

a. The Company does not have any documents responsive to this request. The referenced kWh figure is a queried data point from the Company's billing system.

b. The Company has not performed the requested analysis.

#### Page 1 of 2

### DATA REQUEST

KYSEIA\_1Reference Vaughan Direct at page 16, lines 8-11, stating "Second, the<br/>Company incurs residential system distribution costs by sizing the<br/>distribution system to meet customer peak kW demand. These sizing costs<br/>vary by peak demand requirements, not by kWh usage or by simply<br/>connecting a customer to the system."

a. Does the presence of electric heating influence customer peak demand, and therefore the costs incurred by the Company to provide distribution service?

b. Do the Company's distribution planning and line extension protocols with respect to equipment sizing account for the presence of electric heating and the expected amount of electric heating load (e.g., size of the heating unit or units)?

c. Please provide a copy of the Company manuals, instructions, or other guidance governing protocols for equipment sizing for new customer connections.

#### **RESPONSE**

The Company interprets this request to be seeking information regarding the general planning of its distribution system.

a. Yes, electric heating demand would influence the portion of the cost of service that varies based upon kW peak demand.

b. Yes, the Company's distribution planning protocols take into account the presence of electric heating along with all the estimated total peak load connected to the distribution facilities for summer and winter. The peak demand for any customer is impacted by the presence of all loads connected to the metering point. Connected loads can include lighting, air conditioning, refrigeration, motors, TV's, electric stoves/ovens, etc. and include electric heating where present. The total peak load impacts the cost to provide distribution service. The Company utilizes CYME Distribution System Analysis Software to model the primary facilities and DDS (Distribution Design Studio) for secondary facilities.

c. The Company does not maintain load data for individual customers. For new customers, load characteristics are analyzed using the CYME Distribution System Analysis and DDS software which are sophisticated, commercially available software packages for utilities to analyze and design their distribution systems. The modeling

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assumptions, information, and algorithms contained in the software applications are inherent in the software and are not capable of production in discovery.

Witness: Everett G. Phillips

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# **DATA REQUEST**

Reference Kentucky Power's response to Staff 3-1, entitled "KPCO R KYSEIA\_1 KPSC 3 1 Attachment15\_VaughanWP1.xlsx" in the tab labeled "Cogen". 012 a. Reference Row 138, a calculation of avoided line losses. Please explain why it is appropriate to divide reported line losses (Cell I137) by two for the purpose of calculating a gross up for line loss savings included in the proposed Cogen rates (reflected in Row 147). b. Would a facility under the Cogen tariff connected at Primary voltage be expected to backfeed onto the sub-transmission or transmission system and therefore incur sub-transmission and transmission line losses? c. Would a facility connected under the N.M.S. II tariff be expected to backfeed onto the sub-transmission or transmission system and therefore incur sub-transmission and transmission line losses? d. Reference Row 146 showing time-varying Avoided Energy Costs 2020-2022 Average. Please explain in detail how these values were derived and provide the underlying data and all workpapers associated with any calculations made by the Company based on the underlying data in executable spreadsheet format with formulas and file linkages intact. e. Please provide documentation supporting all of the parameters and assumptions used for the hypothetical generation unit used in the calculation of avoided capacity costs, including but not limited to the capital cost of capacity (Cell J5) and the assumptions underlying the derivation of fixed and variable O&M costs calculated in Cell J11 from inputs on Rows 117-123.

# **RESPONSE**

a. The value is divided by two because not all losses are avoided. There are losses even if the flow reverses.

b. It depends on the specific installation on the specific primary distribution circuit; actual results will vary.

c. It is unlikely, but again is dependent upon the specific installation on the specific distribution circuit.

d. Please refer to the Company's response to KPSC 4-102.

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e. Please refer to the Company's response to KPSC 4-94.

### **DATA REQUEST**

KYSEIA\_1Reference 1: Vaughan Direct at page 24, lines 5 and 6. Kentucky Power<br/>states that "The Company's proposed changes to the NMS tariff will only<br/>apply to customers whose eligible electric generating facility begins<br/>service after January 1, 2021." Reference 2: Vaughan Direct Exhibit<br/>AEV-4, "TARIFF N.M.S. II (Net Metering Service II)," at page 1.<br/>Kentucky Power states, "DATE EFFECTIVE: Service Rendered On And<br/>After December 30, 2020."

a. Clarify the apparent discrepancy between Kentucky Power's testimony stating that the effective date of Tariff N.MS. II is "after January 1, 2021," and Tariff N.M.S. II stating that it is effective "On And After December 30, 2020" and identify the specific date on which Tariff N.M.S. II will become effective.

b. Confirm whether the effective date of Tariff N.M.S. II refers to the date by which an eligible customer must submit a completed Net Metering application to Kentucky Power in order to be eligible for service under N.M.S. I., or describe in detail what the effective date refers to if this is not the case.

c. Explain under what circumstances, if any, an eligible customergenerator submitting an application to Kentucky Power for Net Metering service prior to the effective date of Tariff N.M.S. II will be permitted subsequently to amend, supplement, or correct their net metering application after the effective date of Tariff N.M.S. II without becoming ineligible for service under N.M.S. I.

# **RESPONSE**

a. The effective date of the proposed NMS II tariff will be the date the Commission determines the tariff is approved.

b. All customers with eligible generators that begin operation after proposed tariff NMS II is approved will take service under NMS II regardless of their application date. Please see KRS 278.466(6).

c. Please see the Company's response to part b.

# DATA REQUEST

KYSEIA\_1Reference Vaughan Direct at page 29, lines 16 through 18. Kentucky<br/>Power states, "IF THE COMPANY'S AMI PROPOSAL IS APPROVED<br/>WOULD YOU PROPOSE A CHANGE TO THE NETTING PERIOD IN<br/>NMS II IN A FUTURE CASE? A. Yes."<br/>a. Identify the grandfathering period, if any, that will apply to the netting<br/>period of an existing customer-generator taking service under Tariff<br/>N.M.S. II, if and when Kentucky Power implements changes to the netting<br/>period in the future.<br/>b. If there will be no grandfathering period, explain why not.

# **RESPONSE**

a. Unless otherwise directed by the Commission, there will be no grandfathering period if the NMS II netting period is reduced in a future rate case proceeding to hourly netting.

b. The Company's rates and tariffs are subject to change by rate case filings and Commission orders; no other customers or the Company are guaranteed a certain rate structure or level beyond what is included in the Company's currently approved tariffs. NMS II customers are subject to the same treatment and rules.

# DATA REQUEST

KYSEIA\_1 Reference Vaughan Direct page 26, lines 12 and 13. Kentucky Power states "All excess generation will be compensated at the dollar denominated avoided cost rate of 0.03659 \$/kWh."
a. Identify the grandfathering period, if any, that will apply to the compensation rate for excess generation for a customer-generator taking service under Tariff N.M.S. II, if and when Kentucky Power implements changes to the compensation rate for excess generation.
b. If there will be no grandfathering period, explain why not.
c. Describe the process by which Kentucky Power intends to update the compensation rate for excess generation in the future and the anticipated frequency of changes to the compensation rate for excess generation

### **RESPONSE**

a. There will be no grandfathering period under NMS II regarding compensation rate changes.

b. See the Company's response to KYSEIA 1-14.

c. The Company cannot speculate on the frequency of rate changes under tariff NMS II, but it could be as often as each Kentucky Power Company base rate case or as otherwise directed by the Commission.

# DATA REQUEST

KYSEIA\_1 Reference Vaughan Direct Exhibit AEV-4, "TARIFF N.M.S. II (Net Metering Service II)," page 1. Kentucky Power states that "An eligible customer-generator shall mean a retail electric customer of the Company with a generating facility that: ... (2) Has a rated capacity of not greater than forty-five (45) kilowatts."
a. Describe how Kentucky Power will calculate the capacity of an eligible customer-generator's system that is comprised of both a solar facility and a battery storage facility for purposes of determining whether the system is eligible for Net Metering services under Tariff N.M.S. II.

# **RESPONSE**

As described in KRS 278.466(2), the 45 kW system capacity refers to the size of the eligible system generating electricity, batteries do not generate electricity.

# DATA REQUEST

Reference Vaughan Direct at page 24, lines 11 through 13. Kentucky KYSEIA\_1 Power states, "This filing however should serve as notice to customers 017 that the NMS tariff is changing and that a new compensation system will be in place for customers who choose to net meter in the future." a. Identify any other ways in which Kentucky Power has provided or will provide notice to net metering applicants, potential customers for service under Tariff N.M.S. I, and existing customers under Tariff N.M.S. I of the date on which their service under Tariff N.M.S. I will be closed. b. Identify the specific steps, requirements, and deadlines that a customer must meet in order for the customer's new, modified, or expanded generating system to be eligible for service under Tariff N.M.S. I. c. Identify the notice and any documentation that will be provided to each Kentucky Power customer taking service under Tariff N.M.S. I of the start date and end date of the grandfathering period for service under Tariff N.M.S. I.

# **RESPONSE**

a. The Company does not know who may be a future potential NMS II customer. The Company's public notices and printed newspaper notices also serve as public notices regarding the proposed tariff changes in this case.

b. See the Company's response to KYSEIA 1-13 and KRS 278.466(6).

c. The Company does not yet have a new net metering tariff in place and thus the grandfathering period has not begun, therefore the Company has not determined what documentation will be provided to customers grandfathered under tariff NMS.

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#### DATA REQUEST

018

Reference: Vaughan Direct page 24, lines 10 and 11. Kentucky Power KYSEIA 1 states that customer-generators under Tariff N.M.S. I "will be grandfathered under the previous compensation regime for up to 25 years."

> a. Explain how Kentucky Power will calculate and apply the 25-year grandfathering period to a customer-generator taking service under Tariff N.M.S. I.

b. Describe how Kentucky Power will identify and track grandfathered facilities under Tariff N.M.S. I over the 25-year grandfathering period, including how Kentucky Power will ensure grandfathered systems will continue to be served under Tariff N.M.S. I if the customer-generator's premises are sold or conveyed during the applicable 25-year period.

c. Describe how Kentucky Power will apply the grandfathering period to an existing customer-generator taking service under Tariff N.M.S. I who subsequently adds additional eligible capacity to the existing net-metered facility prior to the effective date of Tariff N.M.S. II, provided that the expansion of the customer-generator's existing facility does not increase the total capacity to more than 45 kilowatts.

d. Describe how Kentucky Power will apply the grandfathering period to a customer-generator taking service under Tariff N.M.S. I who subsequently adds additional eligible capacity to the existing net-metered facility after the effective date of Tariff N.M.S. II, provided that the expansion of the customer-generator's existing facility does not increase the total capacity to more than 45 kilowatts.

e. Describe how Kentucky Power will apply the grandfathering period to a customer-generator taking service under Tariff N.M.S. I who subsequently adds additional capacity to the existing net-metered facility after the effective date of Tariff N.M.S. II, provided that the expansion of the customer-generator's existing facility does increase the total capacity to more than 45 kilowatts.

f. Describe how Kentucky Power will apply the grandfathering period to a customer-generator taking service under Tariff N.M.S. I who subsequently adds a battery energy storage system to the existing net-metered facility after the effective date of Tariff N.M.S. II.

g. Describe how Kentucky Power will apply the grandfathering period to a customer-generator that repairs or replaces components, such as a solar panel, of the existing net-metered facility.

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#### **RESPONSE**

a. The 25 year grandfathering period will begin when the Commission approves a new net metering tariff for the Company, such as proposed tariff NMS II. See also KRS 278.466(6).

b.The existing grandfathered facilities will remain on tariff NMS, which will be closed for new entrants. The Company will verify grandfathered systems by their premise identity in the Company's billing system.

c. Tariff N.M.S. (Sheet No. 27-7), as addition of a Distributed Energy Resource not initially approved would constitute a material modification to the customer-generator. That provision states:

(10) Customer shall agree that, without the prior written permission from Company, no changes shall be made to the generating facility as initially approved. Increases in generating facility capacity will require a new "Application for Interconnection and Net Metering" which will be evaluated on the same basis as any other new application. Repair and replacement of existing generating facility components with like components that meet UL 1741 certification requirements for Level 1 facilities and not resulting in increases in generating facility capacity is allowed without approval.

Kentucky Power interprets any changes or modifications to existing systems requiring submission of a new "Application for Interconnection and Net Metering" to terminate the grandfather period.

d. See the Company's response to part c.

e. See the Company's response to part c.

f. Please see the Company's response to KYSEIA 1-27.

g. See the Company's response to part c. Routine maintenance and repairs do not require a new net metering application.

# DATA REQUEST

KYSEIA\_1Has Kentucky Power estimated the financial impact of net metering<br/>service on non-net metered customers? If yes, identify the cost stated to be<br/>a subsidy borne by non-net metering customers and describe how the<br/>estimate was developed.

# **RESPONSE**

Yes. The Company has calculated the current subsidy being paid to net metering customers by non-net metering customers under Tariff NMS. Non-net metering customers are paying a subsidy of approximately 7.2 cents per kWh for excess generation produced by net metering customers' systems. Excess generation is generation not being consumed (netted) with the actual, instantaneous load of the net metering customer. Please refer to KPCO\_R\_KYSEIA\_1\_19\_Attachment1 for the calculation of this cost.

# **DATA REQUEST**

KYSEIA\_1Does Kentucky Power have a demand profile representative of its current<br/>net metering customers? If yes, provide the profile. If no, explain why not.

# **RESPONSE**

Please refer to the Company's response to KYSEIA 1-8.

# DATA REQUEST

KYSEIA\_1Has Kentucky Power considered offering community solar to satisfy<br/>customer demands and make solar power more accessible to its<br/>customers? If yes, please explain those considerations. If no, explain why<br/>not.

# **RESPONSE**

Yes, the Company has evaluated various solar projects and offerings for its customers. At this time and for various reasons the Company has not yet proposed a project or offering to the Commission for approval.

# DATA REQUEST

**KYSEIA\_1** Reference Application, Filing Requirements, Exhibit F, page 23 of 41,

\_022

Level 1 and Level 2 Definitions, Level 1, (1). In pertinent part, Exhibit F states: "For interconnection to a radial distribution circuit, the aggregated distribution on the circuit, including the proposed generating facility, will not exceed 15% of the Line Section's most recent annual one hour peak load."

a. Explain how Kentucky Power determined 15% of the Line Section's most recent annual one hour peak load as an upper bound for net metered systems?

b. In light of other utilities allowing interconnections far in excess of 15%, please explain the limitations specific to Kentucky Power's distribution circuits.

c. Does the Company possess the information necessary to identify a Line Section's most recent one hour peak load that occurred during daylight hours?

# **RESPONSE**

a. AEP/Kentucky Power contributed to the development of the FERC Small Generator Interconnection Procedures (SGIP), in which this criterion was established as a threshold for analysis. Absent state interconnection rules dictating different review requirements, AEP/Kentucky Power follows FERC SGIP guidelines.

b. The 15 percent threshold is not a specific limitation preventing interconnection. It instead serves to indicate that additional review is needed to ensure grid safety and reliability, and to assess any potential impacts to the electric distribution system.

c. Metered data is available only from substations that have SCADA. Not all substations in Kentucky Power have SCADA.

Witness: Everett G. Phillips

# DATA REQUEST

KYSEIA\_1 Reference Application, Filing Requirements, Exhibit F, page 23 of 41,
\_023 Level 1 and Level 2 Definitions, Level 1, (2). In pertinent part, Exhibit F states: "If the proposed generating facility is to be interconnected on a single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed generating facility, will not exceed the smaller of 20 kVA or the nameplate rating of the transformer." Explain why Kentucky Power has set a limit of 20 kVA.

### **RESPONSE**

AEP/Kentucky Power contributed to the development of the FERC Small Generator Interconnection Procedures (SGIP), in which this criteria was established as a threshold for analysis. Absent state interconnection rules dictating different review requirements, AEP/Kentucky Power follows FERC SGIP guidelines.

Witness: Everett G. Phillips

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#### DATA REQUEST

KYSEIA\_1Reference Application, Filing Requirements, Exhibit F, page 26 of 41,\_024Terms and Conditions for Interconnection, part (8). In pertinent part,<br/>Exhibit F states: "For Level 1 and 2 generating facilities, where required<br/>by the Company, an eligible customer shall furnish and install on<br/>customer's side of the point of common coupling a safety disconnect<br/>switch which shall be capable of fully disconnecting the customer's<br/>energy generating equipment from Company's electric service under the<br/>full rated conditions of the customer's generating facility. The external<br/>disconnect switch (EDS) shall be located adjacent to Company's meters or<br/>the location of the EDS shall be noted by placing a sticker on the meter,<br/>and shall be of the visible break type in a metal enclosure which can be<br/>secured by a padlock.",br> a. Why is Kentucky Power requiring a safety<br/>disconnect switch adjacent to the meter?

b. Has the Company ever utilized such a switch on an existing system? If yes, identify the number of instances and the duration of each instance for each use by the Company of an external disconnect switch at a netmetered facility from the past five years. If the Company does not keep records of this information, explain why not.

c. Is the Company aware of instances of UL-listed system components failing and requiring use of such a disconnect? If yes, please identify the instances and provide details.

d. Are the other ways for the Company to isolate the system by removing service to the location without the additional cost of a switch being borne by the customer?

e. Does Kentucky Power require a similar switch for standby generators or other power supplies?

f. Are the locations of Level 1 and Level 2 generating facilities mapped in the Company's internal systems in a manner that permits Company workers performing line work to utilize an EDS as needed (e.g., during power restoration work)?

g. Please identify the number of times during each of the last five years that a Company worker has activated an EDS for the purpose of protecting worker safety. Your response should exclude any equipment or functionality tests that took place as part of commissioning or inspection of a new facility

#### Page 2 of 2

#### **RESPONSE**

- a. Meter location is known and available to Company personnel and co-location of the EDS provides quick and efficient capability to safely isolate the customergenerator from the electric distribution system. The EDS is utilized to safely isolate the customer-generator from the electric distribution system during an outage when work is needed to be performed by Company personnel.
- b. Records of these types of events are not kept. Keeping record of this information is overly burdensome.
- c. No, the Company is not aware of instances of UL-listed system components failing.
- d. No.
- e. Kentucky Power requires this type of EDS to be installed for any system seeking to connect in parallel to the electric distribution system.
- f. Kentucky Power maps all DER systems interconnected to the Electric Distribution system. These maps are available to Company personnel.
- g. Records of these types of events are not kept.

Witness: Everett G. Phillips

# DATA REQUEST

KYSEIA\_1 Reference Application, Filing Requirements, Exhibit F, page 26 of 41, Terms and Conditions for Interconnection part (10). In pertinent part, Exhibit F states: "Customer shall agree that, without the prior written permission from Company, no changes shall be made to the generating facility as initially approved. Increases in generating facility capacity will require a new "Application for Interconnection and Net Metering" which will be evaluated on the same basis as any other new application. Repair and replacement of existing generating facility components with like components that meet UL 1741 certification requirements for Level 1 facilities and not resulting in increases in generating facility capacity are allowed without approval."

a. What constitutes an increase in generating facility capacity?b. Please explain the metrics and methods the Company uses to identify

b. Please explain the metrics and methods the Company uses to identify what constitutes repair and replacement with "like components" from repairs or replacements that would not qualify as "like components".

### **RESPONSE**

- a. An upgrade in any system component that increases the generation capacity output.
- b. "Like Components" are components with the same manufacturer and model, the same nameplate/nominal/continuous electrical characteristics, and the same software/firmware version.

Witness: Everett G. Phillips

# DATA REQUEST

KYSEIA\_1 Reference Application, Filing Requirements, Exhibit F, page 27 of 41, Terms and Conditions for Interconnection part (12). In pertinent part, 026 Exhibit F states: "The customer shall maintain general liability insurance coverage (through a standard homeowner's, commercial, or other policy) for both Level 1 and Level 2 generating facilities. Customer shall, upon request, provide Company with proof of such insurance at the time that application is made for net metering." a. What benefit does Kentucky Power seek by requiring the customer to maintain general liability insurance coverage? b. Does the Company require other customers to provide liability coverage as a condition of service? If yes, please identify all other instances. c. Has Kentucky Power determined that solar generators pose an increased risk to grid infrastructure? If yes, please indicate and explain the basis for this determination. Provide all supporting data.

# **RESPONSE**

- a. Kentucky Power seeks to ensure that any incident caused by the operation of customer-generator facilities that results in damage to Kentucky Power Distribution Facilities or other connected customers is covered financially by the customer-generator.
- b. The Company requires any customer that own generation to provide evidence of general liability coverage.
- c. Based upon the Company's experience operating its facilities with customer interconnected generation, any electrical generation connected to the Company's system, including solar generation, poses risks associated with damage or destruction of Company or public property/equipment.

Witness: Everett G. Phillips

#### Page 1 of 3

#### DATA REQUEST

**KYSEIA\_1** Reference Battery storage.

\_027

a. For a customer receiving service under N.M.S. I, a grandfathered customer, does Kentucky Power interpret the addition of battery storage to the customer's system as a change in the system requiring the approval of Kentucky Power? If yes, identify the pertinent section(s) of N.M.S. I that address the issue and explain why the approval of Kentucky Power is necessary.

b. If Kentucky Power interprets the addition of battery storage to an existing system that is grandfathered for service under N.M.S. I as a change in the system requiring the approval of Kentucky Power, state the effect of the change on status of the system as to continued service under N.M.S. I, including, but not limited to, Kentucky Power's position on whether the change terminates the grandfathering period.

c. State separately for N.M.S. I and the proposed N.M.S. II whether Kentucky Power requires an application for a customer who is only adding an energy storage facility.

d. Does Kentucky Power require an application for a customer who is taking service under a tariff other than N.M.S. I or the proposed N.M.S. II for battery storage? If yes, identify the pertinent tariff provisions that require an application.

e. Does Kentucky Power's net metering application for service under N.M.S. I request information about the installation or addition of storage? f. Does Kentucky Power's proposed net metering application for service under N.M.S. II request information about the installation or addition of storage?

g. Is Kentucky Power investigating or otherwise considering the addition of utility-controlled storage or utility-controlled solar within the remaining forecast period of its most recent integrated resource plan? If yes, explain the nature and status of the investigation or consideration. If no, explain why not.

h. If Kentucky Power is investigating or otherwise considering the addition of utility-controlled storage or utility-controlled solar as described in sub-part g, identify and explain the value that Kentucky Power anticipates those technologies will offer its ratepayers.

i. Explain how Kentucky Power will present information about net metering and the addition of storage if the Commission approves the Company's proposed N.M.S. II tariff.

#### **RESPONSE**

a.) Yes. Existing N.M.S qualified systems installing a new Energy Storage Device ("ESD"), such as a battery, would require permission and approval from the Company pursuant to Section 10 of the Terms and Conditions for Interconnection set forth in Tariff N.M.S. (Sheet No. 27-7), as addition of a Distributed Energy Resource not initially approved would constitute a material modification to the customer-generator. The tariff provision states:

(10) Customer shall agree that, without the prior written permission from Company, no changes shall be made to the generating facility as initially approved. Increases in generating facility capacity will require a new "Application for Interconnection and Net Metering" which will be evaluated on the same basis as any other new application. Repair and replacement of existing generating facility components with like components that meet UL 1741 certification requirements for Level 1 facilities and not resulting in increases in generating facility capacity is allowed without approval.

b.) Kentucky Power interprets any changes or modifications to existing systems requiring submission of a new "Application for Interconnection and Net Metering" to terminate the grandfather period.

c.) Yes, Kentucky Power requires an application for systems only wishing to connect ESDs under both the existing Tariff N.M.S. and the proposed Tariff N.M.S. II. ESDs are considered distributed energy resources ("DERs"). Because ESDs operate in parallel with the Company's electric distribution system and have the physical capability of exporting to the electric distribution system, Kentucky Power requires an application to interconnect that must be approved prior to physical interconnection and operation in parallel with the Area Electric Power System.

d.) Kentucky Power requires an application for interconnection for any DER system seeking to connect in parallel with the Company's electric distribution system. Interconnection of a DER not seeking to do so under Tariff N.M.S I/II would be governed by Tariff COGEN/SPP I or COGEN/SPP II.

e.) Yes, Kentucky Power's "Application for Interconnection and Net Metering" under N.M.S. I requires an applicant to indicate whether battery storage is present and, if it is, to provide the battery's power rating.

f.) Yes, Kentucky Power's "Application for Interconnection and Net Metering" under N.M.S. II requires an applicant to indicate whether battery storage is present and, if it is, to provide the battery's power rating.

Page 3 of 3

g.) The Company's 2019 Integrated Resource Plan ("IRP") assessed "potentially costeffective resource options available to" Kentucky Power, including both solar and battery storage. The Company's Preferred Plan in the IRP represents Kentucky Power's resource assessment and acquisition plan for providing "an adequate and reliable supply of electricity to meet forecasted electricity requirements at the lowest possible cost." 807 KAR 5:058, Section 8(1); 807 KAR 5:058, Section 8(4). The Company's Integrated Resource Plan is a snapshot of the future at a specific time and is not a commitment to specific resource additions or other courses of action.

A full description of the Company's assessment of solar and battery storage resources is contained in the Company's 2019 IRP filed on December 20, 2019 in Case No. 2019-00443. Without limiting that discussion, Kentucky Power notes that the IRP's Preferred Plan adds utility scale solar beginning with 101 MW (nameplate) in 2023 and reaching 455 MW (nameplate) in 2034. The Company modeled battery storage as a peaking resource available in 10 MW blocks each year using lithium-ion storage technology with a nameplate rating of 10 MW and 40 MWh and an efficiency of 83 percent. Battery storage was not selected as part of the optimized modeling for the Preferred Plan.

h.) See generally, the Company's response to subpart (g). Also see, Sections 4.5.4.4 and 4.5.6.1 of the December 20, 2109 Integrated Resource Plan.

i.) The Company objects to this request as vague, ambiguous, and overly broad. It is unclear to what "information about net metering and the addition of storage" the request refers, to whom the Company would provide such information, or when such information would be provided. Subject to and without waiving the foregoing objections, the Company includes information about net metering and the addition of storage in its Integrated Resource Plan filings, and it expects to continue to provide such information in those filings if the Commission approves the proposed Tariff N.M.S. II.

Witness: Brian K. West

Page 1 of 2

### **DATA REQUEST**

**KYSEIA\_1** Reference Carbon-based fuels.

**\_\_028** a. For a Kentucky Power customer who wants to avoid utilizing carbonbased fuels, what option(s) does Kentucky Power provide and/or propose? b. For a Kentucky Power customer who seeks to be carbon neutral, is there an option through which the customer can avoid all or part of the environmental requirements compliance costs associated with carbonbased fuels otherwise collected through rates? If yes, please explains how. If no, confirm that Kentucky Power will continue to collect through rates for each customer the full amount of environmental requirements compliance costs regardless of whether the customer is utilizing carbonbased fuels.

c. Identify, by year for each year 2021, 2022, and 2023, Kentucky Power's anticipated or projected spending for environmental requirements compliance costs. For each year, separately provide the anticipated or projected capital project spending and the non-capital project spending for compliance.

#### **RESPONSE**

a. The electrons serving the Company's customers come from the PJM RTO, and thus customers that impose an instantaneous demand on the Company's system are receiving some representative slice of that generation fuel mix, which is weighted heavily towards natural gas and coal generation. Customers can financially arrange to cover some portion of their usage with renewable energy certificates (RECs) if they wish to promote renewable energy while not installing an on-site renewable generation system. The Company's Rider RPO (renewable power option) is an example of such an option. The only current method for any customer, including a net metering customer, to ensure that they are in fact not utilizing carbon-based fuels would be to disconnect from the Company and the region's grid.

b. The Company objects to this request as vague and ambiguous as to the phrase "seeks to be carbon neutral" and because it seeks a legal opinion. Subject to and without waiving the foregoing objections, the Company states as follows: Please see the Company's response to part a. The Company's cost of providing electric service to all customers appropriately includes environmental compliance costs associated with carbon-based fuels. No customer of Kentucky Power exclusively "utiliz[es] carbon-[free] fuels."

Page 2 of 2

c. The Company objects to this request as because it is vague, ambiguous, and would require the Company to speculate as to the outcome of pending litigation and with respect to the outcome of numerous pending regulatory activities, including ongoing reviews of the National Ambient Air Quality Standards (NAAQS), pending amendments to the requirements of the Effluent Limitations Guidelines (ELG) regulations, the remand of the Cross State Air Pollution Rule (CSAPR), other ongoing state and federal rulemakings. Subject to and without waiving the foregoing objections, please see KPCO\_R\_KYSEIA\_1\_28\_ConfidentialAttachment1.

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See the Company's response to this data request, AG 1-10, for a full description of these costs.

		Year								
Cost Type	Regulation	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Air									
Capital	Water									
-	Solid Waste									
	Air									
O&M	Water									
	Solid Waste									

\* Kentucky Power's Unit Power Agreement with the Rockport Plant terminates in December 2022

# DATA REQUEST

KYSEIA\_1 Reference: Section II, Application, Filing Requirements, Exhibit F. a. Provide a schedule that contains the average monthly usage by month 029 for the test year for residential service under N.M.S. I and, separately, non-residential service usage under N.M.S. I. b. Provide the average monthly bill by month for the test year for residential service under N.M.S. I and, separately, non-residential service under N.M.S. I. c. Under the assumption that the Commission were to approve Kentucky Power's proposed change in rates and using the average monthly usage amounts identified in sub-part a, provide the projected average monthly bill by month for residential service under N.M.S. I and, separately, nonresidential service under N.M.S. I. d. Under the assumptions that the Commission were to approve Kentucky Power's proposed change in rates, Kentucky Power's proposed N.M.S. II, and using the average monthly usage amounts identified in sub-part a, provide the projected average monthly bill by month for residential service under N.M.S. II and, separately, non-residential service under N.M.S. II.

# **RESPONSE**

a.-b. Please refer to the Company's response to KPSC Staff 4-82 part a.

c. The Company has not performed the requested analysis.

d. Current tariff NMS customers would not be subject to the proposed rates under NMS II. Also, the proposed billings under NMS II could not be calculated for current NMS customers because of the time of use netting periods.

Page 1 of 2

#### DATA REQUEST

**KYSEIA\_1** Reference: Advanced Metering Infrastructure (AMI).

\_030

a. Currently, upon request of a customer, will Kentucky Power share demand-interval data for the meter(s) associated with the customer's account(s)? If yes, please explain the process the customer must follow for submitting such a request and identify any conditions or limitations, including but not limited to fees or charges for providing the information. If no, please explain why not.

b. If Kentucky Power shares demand-interval data with a customer upon request, how does the Company provide the information (e.g., a written report, electronic report, etc.)?<br/>br. c. For a customer applying for service under N.M.S. I or the proposed N.M.S. II, will Kentucky Power provide data collected by or otherwise available through the customer's meter(s) and account(s)? If yes, please explain the process the customer must follow for requesting and obtaining the information. If no, please explain why not.

d. For a customer applying for service under N.M.S. I or the proposed N.M.S. II, does Kentucky Power require the customer pay a fee or charge for access to data collected by or otherwise available through the customer's meter(s) or account(s)? If yes, identify the fees or charges. e. Under Kentucky Power's AMI proposal, upon installation, will a customer have access to the information identified in sub-parts a and d? If yes, fully explain including the identification of any conditions or limitations, including but not limited to fees or charges for the information. If no, please explain why not.

f. For any fee or charge identified in the responses to sub-parts a through e, please reference the corresponding provision in Kentucky Power's filed tariffs.

g. Identify all benefits of AMI for customers or potential applicants for service under N.M.S. I and the proposed N.M.S II.

#### **RESPONSE**

a. The Company's practice is to put the customer in charge of who receives their energy usage data.

Customers can currently gain access to their energy usage data (including any demandinterval data that is available, depending upon their current meter capabilities) through the Company's Letter of Authorization (LOA) process or on the Company's website via

#### Page 2 of 3

Green Button Download My Data (DMD)

(https://www.kentuckypower.com/account/usage/GreenButtonInformation.aspx). First, an LOA form can be obtained by calling the Company's Customer Operations Center, accessing the Company's website or following this link https://www.kentuckypower.com/global/utilities/lib/docs/account/service/Kentucky%20P ower\_Business3rdPartyAuthorization.pdf. Once completed by the customer, the LOA form, which acts as the customer's informed, written consent, can be submitted to the Company's Customer Service personnel by email at inforrelease@aep.com, fax at 1-800-281-3916 or U.S. mail. Once the Company receives the LOA form, the information is then transferred to the customer or the customer's designated third party by email or mail. Second, customers can utilize Green Button DMD to access their energy usage data in an electronic format that allows for an efficient way to share that data with third parties at the customer's discretion.

Lastly, as discussed in the Direct Testimony of Cynthia G. Wiseman pg. 9, lines 14-19 and pg. 15-16, the Company intends to deploy a Home Energy Management system (referred to as the Customer Engagement Platform) in 2020, which is a tool to provide residential customers with access to energy usage data and cost information during the billing period that they do not have access to today. The Customer Engagement Platform includes functionality that will allow residential customers to download energy usage information into an Excel format that is easily transferrable to third parties if the customer so chooses. There are no conditions, limitations, or fees for providing this standard information.

b. Generally, demand-interval data is provided through an electronic data file (.CSV format) via email. A written report can also be provided upon customer request.

c. Please refer to the response to (a).

d. Kentucky Power does not assess a fee or charge to a customer for access to standard data collected by or otherwise available through the customer's meter(s) or account(s).

e. Yes, customers would continue to have access to this data via the processes discussed above in response to (a). There is no fee or charge associated with the provision of this standard data to customers.

f. There is no fee or charge associated with the provision of this standard data to customers.

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g. Please see the Direct Testimony of Stephen Blankenship, pg. 11-13 for customer related benefits and pg. 14-16 for reliability benefits related to AMI. For additional details regarding customer related benefits please see KIUC\_AG\_1\_089.

Witness: Stephen D. Blankenship

Witness: Cynthia G. Wiseman





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#### E-Signature 1: Jason M. Stegall (JMS)

August 21, 2020 08:08:44 -8:00 [CB6EA5D4359F] [161.235.221.80] jmstegall@aep.com (Principal) (Personally Known)

#### E-Signature Notary: Sarah Smithhisler (SRS)

August 21, 2020 08:08:44 -8:00 [6A784B1242DD] [167.239.221.85] srsmithhisler@aep.com

I, Sarah Smithhisler, did witness the participants named above electronically sign this document.



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The undersigned, Jason M. Stegall, being duly sworn, deposes and says he is a Manager-Regulatory Pricing & Analysis for American Electric Power Service Corporation that he has personal knowledge of the matters set forth in the forgoing responses and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.

Jaur	Calleboard La Vier J. L 1 on 2020 682 1 08 08 44 - 8:00
Jaso	on M. Stegall
) ) Ca )	ase No. 2020-00174

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Jason M. Stegall this 21<sup>st</sup> day of August 2020.



STATE OF OHIO

COUNTY OF FRANKLIN

		6A754812420D	
	SC		
	) Juni	thole	
C	Signed on 2020/08/21	08:08:44 -8:00	

Notary Public

Notary ID Number: 2019-RE-775042

My Commission Expires: April 29, 2024





# **KY Discovery Verification - Vaughan.docx**

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#### **E-Signature Summary**

#### E-Signature 1: Alex E Vaughan (AEV)

August 24, 2020 08:19:44 -8:00 [B694FB97B8BA] [167.239.221.80] aevaughan@aep.com (Principal) (Personally Known)

#### E-Signature Notary: Sarah Smithhisler (SRS)

August 24, 2020 08:19:44 -8:00 [534F5390061F] [167.239.2.87] srsmithhisler@aep.com

I, Sarah Smithhisler, did witness the participants named above electronically sign this document.



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The undersigned, Alex E. Vaughan, being duly sworn, deposes and says he is a Director-Regulatory Pricing & Renewables for American Electric Power Service Corporation that he has personal knowledge of the matters set forth in the forgoing responses and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.

	Alex & Vaughan Signed on 2020/08/24 (Sec. 19. 44 - 8:00	
	Alex E. Vaughan	
STATE OF OHIO	) ) Case No. 2020-00174	
COUNTY OF FRANKLIN	)	

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Alex E. Vaughan this 24<sup>th</sup> day of August 2020.



$\int$	S. Smittheoler	
C	Signed on 2020/08/24 08:19:44 -8:00	ر

Notary Public

Notary ID Number: 2019-RE-775042

My Commission Expires: April 29, 2024

The undersigned, Everett G. Phillips, being duly sworn, deposes and says he is Vice President of Distribution Region Operations for Kentucky Power Company that he has personal knowledge of the matters set forth in the forgoing responses and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.

Everett G. Phillips

COMMONWEALTH OF KENTUCKY

COUNTY OF BOYD

) ) Case No. 2020-00174

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Everett G. Phillips, this 21st day of August 2020.

Iniska Nance stary Public

Notary ID Number: 632421

My Commission Expires: 9-26-2023



The undersigned, Stephen D. Blankenship, being duly sworn, deposes and says he is a Region Support Manager for Kentucky Power Company that he has personal knowledge of the matters set forth in the forgoing responses and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.

Stephen D. Blankenship

COMMONWEALTH OF KENTUCKY

COUNTY OF BOYD

) Case No. 2020-00174

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Stephen D. Blankenship, this 24th day of August 2020.

Notary Public

Notary ID Number: 632421

My Commission Expires: 9-26-2023



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

Brian K. West

COMMONWEALTH OF KENTUCKY

COUNTY OF BOYD

) Case No. 2020-00174

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Brian K. West, this 24th day of August 2020.

Notary Public

Notary ID Number: 63242 My Commission Expires: 9-26-2023



The undersigned, Cynthia G. Wiseman, being duly sworn, deposes and says she is the Vice President of External Affairs and Customer Service for Kentucky Power Company that she has personal knowledge of the matters set forth in the forgoing responses and the information contained therein is true and correct to the best of her information, knowledge and belief after reasonable inquiry.

Cynthia G. Wiseman

COMMONWEALTH OF KENTUCKY

COUNTY OF BOYD

) Case No. 2020-00174

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Cynthia G. Wiseman, this day of August 2020.

lance

Notary Public

Notary ID Number: 632431

My Commission Expires: 9 - 26-2023

