

Kentucky Power Company  
KPSC Case No. 2023-00145  
Commission Staff's First Set of Data Requests  
Dated May 10, 2023

**DATA REQUEST**

**KPSC 1\_1** Refer to the Application, page 1 and as used *passim*, confirm that the phrase "non-F.A.C. eligible fuel costs" refers to power or energy purchases and not fuel purchases.

**RESPONSE**

Confirmed. All references in the Application to "non-F.A.C. eligible fuel costs" should be read to mean "non-F.A.C. eligible purchased power costs."

Respondent: Counsel

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**DATA REQUEST**

**KPSC 1\_2** Refer to the Application, page 3. Provide an itemized list of the total amount of regulatory assets on Kentucky Power's books as of May 1, 2023.

**RESPONSE**

Kentucky Power published its first quarter 2023 interim GAAP financial statements on May 4, 2023 and will file its first quarter 2023 Form 3Q with FERC later in May 2023 (Kentucky Power's first quarter 2023 Form 3Q is not available at the time of this response). Please refer to KPCO\_R\_KPSC\_1\_2\_Attachment1 for a listing of Kentucky Power's regulatory assets as of the date of its most recently issued interim financial statements (first quarter 2023), prepared in a format generally consistent with FERC Form 3Q/1 Page 232.

Witness: Heather M. Whitney

**DATA REQUEST**

- KPSC 1\_3** Refer to the Application, pages 6 to 7, where Kentucky Power discusses its peaking unit equivalent (PUE). Kentucky Power states that the gas index used to calculate the PUE is located in the western region of PJM.
- a. Explain why the gas index used is located in western region of PJM and not the eastern region of PJM.
  - b. Calculate the effect on the PUE during Winter Storm Elliott if the PUE was calculated using gas prices from the eastern region of PJM.

**RESPONSE**

a. The index is used because it was included in the PUE methodology approved by the Commission in its October 3, 2022 Order in Case No. 2000-00495B, which stated: "The cost of the gas used by this hypothetical turbine will be the sum of the daily midpoint price for Columbia Gas Transmission (delivered Citygate) as published in that day's edition of Platt's Gas Daily and the current tariff rate for Columbia s Park and Lend Rate."<sup>1[1]</sup>

The methodology was later modified by the Commission's November 10, 2004 Order in Case No. 2004-00375 to "permit the use of the Columbia Gas Appalachia price published in *Platt's Gas Daily* in lieu of the published Columbia (delivered-Citygate) price."<sup>2[2]</sup> The Commission found that the "Columbia Gas Appalachia price [was] representative of natural gas cost in the general area in which AEP serves and has similar pricing characteristics as the Columbia (delivered-Citygate) price."<sup>3[3]</sup>

This is the basis for the index used by the Company. It is also important to note that this index is applicable to the Big Sandy Plant.

b. Regardless of which natural gas pricing point is used in the PUE calculation, no single point will be representative of the marginal cost of spot market energy in PJM in all operational situations across an operating year. This is due to PJM LMPs being set by the cost of the marginal supply resource scheduled to operate through PJM's economic

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dispatch solution. The marginal unit and its offer costs can and will differ based on resource availability and locational fuel costs across the RTO at any given time. However, in accordance with this request, the Company has recalculated the PUE-related purchased power exclusion for the dates of December 23 - 25 and the result is a \$7.6 million increase in the amount of purchased power recovered through the FAC. The table below provides the summary of the Company's calculation.

PUE Exclusion			
	As-Filed - Columbia Gas Appalachian Nat. Gas Price	Alternative - Transco, Zone 5 South	Increase/(Reduction) in Purchased Power excluded via PUE Mechanism
12/23/2022	\$2,802,648	\$934,365	(\$1,868,283)
12/24/2022	\$4,767,422	\$1,092,900	(\$3,674,522)
12/25/2022	\$2,074,864	\$0	(\$2,074,864)
	\$9,644,934	\$2,027,265	(\$7,617,669)

<sup>[1]</sup> Order at 2, *In The Matter Of: An Examination By The Public Service Commission Of The Application Of The Fuel Adjustment Clause Of American Electric Power Company From May 1, 2001 To October 31, 2001*, Case No. 2000-00495B (Ky. P.S.C. October 3, 2002).

<sup>[2]</sup> Order at 2, *In The Matter Of: The Request Of Kentucky Power Company D/B/A American Electric Power To Change The Gas Price Index It May Use In Determining The Costs Recoverable Through Its Fuel Adjustment Clause*, Case No. 2004-00375 (Ky. P.S.C. November 10, 2004).

<sup>[3]</sup> *Id.*

Witness: Jason M. Stegall

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**DATA REQUEST**

**KPSC 1\_4** Refer to the Application, page 14. Provide the journal entries Kentucky Power would record to create the proposed regulatory asset.

**RESPONSE**

If approved, Kentucky Power would record the following journal entry to establish the proposed regulatory asset:

Debit Account 182.3 (increase to regulatory asset) \$11,519,695.47  
Credit Account 501.0 (reduction to fuel expense) \$11,519,695.47

Excluding the \$11,519,695.47 of extraordinary and non-recurring cost related to Winter Storm Elliott, Kentucky Power's actual non-F.A.C. eligible purchased power costs for the 12-months ended December 31, 2022 and the 3-months ended March 31, 2023 exceed the annual level reflected in base rates of \$176,882.75 as shown on KPCO\_R\_KPSC\_1\_4\_Attachment1. Therefore, the extraordinary and non-recurring non-F.A.C. eligible purchased power cost of \$11,519,695.47 related to Winter Storm Elliott, in total, is incremental to the annual level reflected in Kentucky Power's base rates.

If Kentucky Power is not approved to establish the proposed regulatory asset, this amount would be recoverable in the Company's next base rate case.

Witness: Heather M. Whitney

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**DATA REQUEST**

**KPSC 1\_5** Refer to Case No. 2000-00496-B, where the Commission, discussing power purchases made to meet native load, described an economy purchase as:

[R]ecoverable through an electric utility's FAC as purchases that an electric utility makes to serve native load, that displace its higher cost of generation, and that have an energy cost less than the avoided variable generation cost of the utility's highest cost generating unit available to serve native load during that FAC expense month.<sup>2</sup>

The Commission defined non-economy energy purchases as “energy purchases made to serve native load that have an energy cost greater than the avoided variable cost of the utility's highest cost generating unit available to serve native load during that FAC expense month.”<sup>3</sup> Confirm that the power purchases for which Kentucky Power seek regulatory accounting treatment are “non-economy energy purchases.” If not, explain why Kentucky Power does not think the purchases are non-economy energy purchases.

<sup>2</sup> Case No. 2000-00496-B, An Examination by the Public Service Commission of the Fuel Adjustment Clause of East Kentucky Power Cooperative, Inc. from May 1, 2001 to October 31, 2001 (Ky. PSC May 2, 2002), Order at 4.

<sup>3</sup> Case No. 2000-00496-B, May 2, 2002 Order at 4.

**RESPONSE**

Confirmed. The power purchases meet the Commission’s definition for FAC recovery purposes. However, the Company does not agree that these market purchases are “non-economy,” as their pricing is the product of PJM’s security-constrained economic dispatch model.

Witness: Scott E. Bishop

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**DATA REQUEST**

**KPSC 1\_6** Provide a detailed explanation of how Kentucky Power's generating units were operating during Winter Storm Elliott. Include in the response a list and event description in chronological order showing by unit and date any scheduled, actual, and forced outage for the months of November and December 2022.

**RESPONSE**

Winter Storm Elliott began in the Pacific Northwest on December 20, 2022 and moved east at a rapid pace becoming a bomb cyclone, an area of low pressure that intensifies rapidly, and entering the PJM territory on December 23, 2022. Winter Storm Elliott impacted the PJM territory from December 23, 2022 until December 27, 2022. During that period, none of the Company's generating units were forced from service.

Big Sandy Unit 1 was in its Planned Outage (9/9/22 – 1/14/23) which was extended from its planned end date of 12/12/2022 due to emergent generator repair work discovered during its reassembly. The completion of this work was required so the unit could be returned to service and operated safely and reliably.

Both Mitchell units operated continuously throughout the Winter Storm Elliott period (12/23/2022 – 12/27/2022). At times during that period, each of units' output was reduced (or derated) due to operational issues. Those deratings resulted in Net Capacity Factors (NCF) of 80.3% and 74.1% for Units 1 and 2, respectively and were largely unrelated to the extreme weather.

Table 1 below describes the performance of the Company's generating units during the period.

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**Table 1. KPCo Unit Performance During the 5 day Winter Storm Elliott Period (12/23/2022 - 12/27/2022)**

	Equivalent Forced Outage Rate (EFOR)	Equivalent Availability Factor (EAF)	Net Capacity Factor (NCF)
Big Sandy Unit 1	0.0%	0.0%	0.0%
Mitchell Unit 1	13.7%	86.3%	80.3%
Mitchell unit 2	21.6%	78.4%	74.1%

Performance Metric Definitions
<b>Equivalent Forced Outage Rate (EFOR)</b> <sup>1</sup> - The ratio of unit's forced outage hours + derates to the its forced outage hours + service hours expressed as a percentage.
<b>Equivalent Availability (EAF)</b> <sup>1</sup> - The ratio of the unit's available hours - all derate hours to the number of hours in the period.
<b>Net Capacity Factor (NCF)</b> <sup>1</sup> - The ratio of the unit's net generation to it maximum potential output for the period.
<sup>1</sup> Formal definitions and equations for performance metrics can be found in the <i>NERC 2023 Data Reporting Instructions - Appendix F</i>

Attachment KPCO\_R\_KPSC\_1\_6\_Attachment1 lists the curtailing (derating) events for the period by unit and in chronological order.

Attachment KPCO\_R\_KPSC\_1\_6\_Attachment2 lists the forced, maintenance and planned outages in chronological order for the months of November and December 2022.

Witness: Robert A. Jessee



Unit Name	Event Type Code *		Event Start	Event End	Event Description	MW Reduction	Period Elapsed Loss (MWH)	Event Number	Event Elapsed Time (Hours)
	Outages	Curtail.							
Big Sandy 1	PO		09/09/22 11:00 PM	01/14/23 11:47 AM	Boiler i/r, Generator Field Out inspection/possible rewedge, Turbine Valve i/r, Corrosion Fatigue i/r, Cooling Tower i/r, ReHeat Attemperator i/r, Gas valve i/r, FD Fan and Motor i/r, High Energy Piping (HEP) i/r, Flow Accelerated Corrosion (FAC) i/r, Core Loop testing.	295	35,448	71	119.98
Mitchell 1		D3	12/22/22 12:00 AM	12/30/22 12:00 AM	Large clinker growing on North side of Boiler	35	4,200	948	119.98
Mitchell 1		D1	12/24/22 06:48 AM	12/24/22 07:06 AM	Reagent slurry feed tanks have frozen level indications and tanks were lower than expected	465	140	949	0.30
Mitchell 1		D1	12/24/22 07:06 AM	12/24/22 07:43 AM	Reagent slurry feed tanks have frozen level indications and tanks were lower than expected	97	60	950	0.62
Mitchell 1		D1	12/24/22 07:43 AM	12/24/22 08:20 AM	Reagent slurry feed tanks have frozen level indications and tanks were lower than expected	465	287	951	0.62
Mitchell 1		D1	12/24/22 08:20 AM	12/24/22 12:00 PM	Reagent slurry feed tanks have frozen level indications and tanks were lower than expected	140	514	952	3.67
Mitchell 1		D1	12/24/22 01:48 PM	12/24/22 07:34 PM	Opacity	80	462	953	5.77
Mitchell 1		D1	12/24/22 07:34 PM	12/25/22 09:00 AM	Opacity	90	1,210	954	13.43
Mitchell 1		D1	12/25/22 10:07 AM	12/25/22 12:31 PM	Frozen lumps of coal causing conveyor trip out outs	135	324	955	2.40
Mitchell 1		D1	12/26/22 12:20 AM	12/26/22 08:29 AM	Opacity	45	368	956	8.15
Mitchell 1		D1	12/26/22 08:29 AM	12/26/22 08:46 AM	Opacity	60	17	957	0.28
Mitchell 1		D1	12/26/22 08:46 AM	12/27/22 12:00 AM	Opacity	85	1,296	958	15.23
Mitchell 1		D3	12/27/22 12:00 AM	12/27/22 01:40 AM	Opacity	85	142	959	1.67
Mitchell 1		D3	12/27/22 01:40 AM	12/27/22 02:02 AM	Opacity	135	50	960	0.37
Mitchell 1		D3	12/27/22 02:02 AM	12/27/22 02:53 AM	Opacity	155	132	961	0.85
Mitchell 1		D3	12/27/22 02:53 AM	12/27/22 04:43 AM	Opacity	185	339	962	1.83
Mitchell 1		D3	12/27/22 04:43 AM	12/27/22 07:22 AM	Opacity	205	544	963	2.65
Mitchell 1		D3	12/27/22 07:22 AM	12/27/22 11:03 AM	Opacity	235	866	964	3.68
Mitchell 1		D3	12/27/22 11:03 AM	12/28/22 12:00 AM	Opacity	245	3,174	965	12.93
Mitchell 2		D1	12/23/22 10:10 AM	12/23/22 10:28 AM	25 Pulv issue	95	29	908	0.30
Mitchell 2		D1	12/23/22 10:28 AM	12/23/22 05:44 PM	25 Pulv issue, could not get dampers to operate	90	654	910	7.27
Mitchell 2		D1	12/23/22 12:07 PM	12/23/22 01:56 PM	Opacity	25	46	909	1.82
Mitchell 2		D1	12/23/22 01:56 PM	12/23/22 02:53 PM	Opacity	50	48	913	0.95
Mitchell 2		D1	12/23/22 02:53 PM	12/23/22 07:22 PM	Opacity	100	448	914	4.48
Mitchell 2		D1	12/23/22 07:22 PM	12/23/22 09:08 PM	Opacity	90	159	915	1.77
Mitchell 2		D1	12/23/22 09:08 PM	12/24/22 02:46 AM	Opacity	150	845	916	5.63
Mitchell 2		D1	12/24/22 02:46 AM	12/24/22 04:41 AM	Opacity	90	173	917	1.92
Mitchell 2		D1	12/24/22 04:41 AM	12/24/22 02:08 PM	Opacity	75	709	918	9.45
Mitchell 2		D1	12/24/22 06:48 AM	12/24/22 07:08 AM	Reagent slurry feed tanks have frozen level indications and tanks were lower than expected	415	138	911	0.33
Mitchell 2		D1	12/24/22 07:08 AM	12/24/22 12:00 PM	Reagent slurry feed tanks have frozen level indications and tanks were lower than expected	210	1,023	912	4.87
Mitchell 2		D1	12/24/22 02:08 PM	12/25/22 12:00 AM	Opacity	90	888	919	9.87
Mitchell 2		D3	12/25/22 12:00 AM	12/26/22 12:00 AM	Anticipated opacity	190	4,565	920	24.00
Mitchell 2		D3	12/26/22 12:00 AM	12/27/22 12:38 PM	Opacity	190	6,968	921	36.63
Mitchell 2		D3	12/27/22 12:38 PM	12/27/22 02:02 PM	Opacity	210	294	923	1.40
Mitchell 2		D3	12/27/22 02:02 PM	12/27/22 03:12 PM	Opacity	230	268	924	1.17
Mitchell 2		D3	12/27/22 03:12 PM	12/27/22 04:08 PM	Opacity	340	317	925	0.93
Mitchell 2		D3	12/27/22 04:08 PM	12/28/22 11:40 PM	Opacity	365	2,871	926	7.85

**Event Type \***

**Outages**

- FO Forced Outage
- MO Maintenance Outage
- PO Planned Outage
- RS Reserve Shutdown
- SF Startup Failure

Note: i/r = inspection and repair

**Curtailment**

- D1 Requires immediate reduction in capacity
- D2 Does not require an immediate reduction in capacity but requires a reduction within six (6) hours
- D3 Can be postponed beyond six (6) hours, but requires reduction in capacity before the end of the next weekend

Unit Name	Event Type *	Event Start	Event End	Event Description
Big Sandy 1	PO	09/09/22 11:00 PM	01/14/23 11:47 AM	Boiler i/r, Generator Field Out inspection/possible rewedge, Turbine Valve i/r, Corrosion Fatigue i/r, Cooling Tower i/r, ReHeat Attenuator i/r, Gas valve i/r, FD Fan and Motor i/r, High Energy Piping (HEP) i/r, Flow Accelerated Corrosion (FAC) i/r, Core Loop testing.
Mitchell 1	PO	10/07/22 11:00 PM	11/19/22 05:32 PM	Boiler i/r, Precip i/r, Pulverizer/Feeder MATS i/r, Economizer wash, Replace Precip Transformer power cables, Replace SCR XJ s 14,15 and 115, Replace Exit Duct XJ FGX-71009, Water Cannon upgrades, Ovation Evergreen upgrade, Inter-lock testing, HE Piping i/r.
Mitchell 1	RS	11/19/22 05:32 PM	11/29/22 11:45 AM	Reserve Shutdown
Mitchell 1	SF	11/29/22 11:45 AM	11/29/22 06:03 PM	Unable to get firing permissives.
Mitchell 1	MO	12/03/22 01:47 AM	12/08/22 09:18 AM	Economizer tube leak repair
Mitchell 1	FO	12/08/22 11:45 AM	12/09/22 12:00 AM	PH Issues
Mitchell 1	FO	12/09/22 12:00 AM	12/10/22 08:01 AM	due to Urea from Hydrolyzer system entering the Condensate Return System. Samples will be collected and tested once the unit cools. Hydrolyzer will need pressurized to search for potential leaks.
Mitchell 1	FO	12/10/22 01:07 PM	12/13/22 04:30 PM	Due to Primary Superheater Outlet valve . packing blew out. Superheater Bypass Control valve URV 4, controller failed closed due to burned up controller.
Mitchell 1	RS	12/13/22 04:30 PM	12/14/22 02:45 AM	Reserve Shutdown
Mitchell 1	SF	12/14/22 02:45 AM	12/14/22 07:15 PM	Start Failure
Mitchell 1	MO	12/30/22 12:00 AM	01/22/23 05:59 PM	Boiler i/r, Boiler Hydro, Duct repairs, Clunker Removal, IK Soot Blower Repairs, 12 ID Fan Stall margin probe i/r.
Mitchell 2	PO	09/09/22 11:00 PM	12/16/22 02:25 PM	Boiler i/r, Cooling Tower i/r, Low Pressure Turbine "A"&"B" Valve replacement, SCR Catalyst #4 layer replacement, AH Basket i/r, Precip i/r.
Mitchell 2	PO	12/16/22 02:52 PM	12/16/22 03:28 PM	Boiler i/r, Cooling Tower i/r, Low Pressure Turbine "A"&"B" Valve replacement, SCR Catalyst #4 layer replacement, AH Basket i/r, Precip i/r.
Mitchell 2	FO	12/17/22 02:12 PM	12/20/22 04:08 PM	A Bus Relay PA Fan

**Event Type \***

FO Forced Outage  
 MO Maintenance Outage  
 PO Planned Outage  
 RS Reserve Shutdown  
 SF Startup Failure  
 Note: i/r = inspection and repair

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**DATA REQUEST**

**KPSC 1\_7** Explain, in detail, why Kentucky Power had to purchase power during Winter Storm Elliott. Include a detailed explanation of any plans or contingencies Kentucky Power had in place to avoid having to purchase power from the PJM market.

**RESPONSE**

The Company's capacity resources are planned on a long-term basis and informed by forecasts including weather-normalized projected capacity requirements. Energy requirements related to possible extreme weather events during the planning horizon, beyond those covered by the projected capacity margins, are not a basis for long-term planning of capacity resources. The Company had to purchase power from the PJM spot energy market during the winter storm Elliott event because the Company's load obligations were in excess of its available generation supply. Winter storm Elliott was an extreme cold weather event that affected the entire PJM region. The combination of higher than expected loads and numerous forced outages across the RTO resulted in extremely high LMPs.

The Company's peak load during the winter storm Elliott event was 46% higher (1,358 MW vs 929 MW) than the Company's previous 12 month average peak demand (12CP). There were 85 hours during the event in which the Company's hourly average load was higher than its most recent 12CP demand. This extreme cold event caused load and energy market impacts that are not normal and very unique to that circumstance. Please also refer to PJM's State of the Market Report for 2022 ([https://www.monitoringanalytics.com/reports/PJM\\_State\\_of\\_the\\_Market/2022.shtml](https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2022.shtml)) Volume II at pages 210-215 for their discussion of the winter storm Elliott event and its effects on the PJM energy market operations.

The Company's contingency plan when its load obligations are in excess of available generation supply is to purchase the balance of its energy requirements from the PJM spot energy markets. This practice is prudent in light of Kentucky Power's participation in the PJM RTO. The Company's customers receive the lower of cost to generate or market energy prices as determined by PJM's FERC approved tariff and economic dispatch model.

Witness: Jason M. Stegall

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**DATA REQUEST**

**KPSC 1\_8** Refer to the Application, Exhibit 2. Provide an update to Exhibit 2 including all the supporting worksheets as would be filed during a fuel adjustment clause investigation.

**RESPONSE**

Please see KPCO\_R\_KPSC\_1\_8\_Attachment1 for the requested information.

Witness: Jason M. Stegall

VERIFICATION

The undersigned, Heather M. Whitney, being duly sworn, deposes and says she is the Director in Regulatory Accounting Services for American Electric Power Service Corporation, that she has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of her information, knowledge, and belief.

*Heather M. Whitney*  
\_\_\_\_\_  
Heather M. Whitney

State of Ohio )  
County of Franklin )

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Subscribed and sworn before me, a Notary Public, by Heather M. Whitney this 18<sup>th</sup> day of May 2023.

*Callie Kessler*  
\_\_\_\_\_  
Notary Public

My Commission Expires 12/02/2023

Notary ID Number: \_\_\_\_\_



CALLIE KESSLER  
Notary Public, State of Ohio  
My Commission Expires 12-02-2023



**VERIFICATION**

The undersigned, Scott E. Bishop, being duly sworn, deposes and says he is a Regulatory Consultant Sr. for Kentucky Power Company, that he has personal knowledge of the matters set forth in the foregoing responses, and the information contained therein is true and correct to the best of his information, knowledge, and belief after reasonable inquiry.

*Scott E. Bishop*

Scott E. Bishop

Commonwealth of Kentucky )

County of Boyd )

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Subscribed and sworn before me, a Notary Public, by Scott E. Bishop this 17<sup>th</sup> day of May 2023.

*Jennifer A. Young*

Notary Public

My Commission Expires 6/21/2025

Notary ID Number: KYNP31964



