COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

An Electronic Examination Of The Application Of The Fuel Adjustment Clause Of Kentucky Power Company From May 1, 2021 Through October 31, 2021	))))	Case No. 2022-00036

INITIAL BRIEF OF KENTUCKY POWER COMPANY

Kentucky Power Company files this brief in support of the entry of an Order by the Public Service Commission of Kentucky approving the application of Kentucky Power's fuel adjustment charge, including the charges and credits billed, during the period May 1, 2021 through October 31, 2021.

Background

1. The Operation Of The Fuel Adjustment Clause During The Review Period.

The fuel adjustment clause factors for the six months of the review period were:

Month[1]	Fuel Adjustment Clause Factor
October 2021	$0.02252/kWh
September 2021	$0.00780/kWh
August 2021	$0.00654/kWh[2]
July 2021	$0.00385/kWh
June 2021	$0.00296/kWh

[1] The corresponding billing months were July 2021 to December 2021.

[2] The base fuel rate decreased from $0.2851/kWh to $0.02612 for service rendered on or after August 1, 2021. Order, *In the Matter of: Electronic Examination Of The Application Of The Fuel Adjustment Clause Of Kentucky Power Company From November 1, 2018 Through October 31, 2020*, Case No. 2021-00053 at 3 (Ky. P.S.C. August 2021). The two base fuel rates were prorated for the October 2021 billing cycle. The fuel adjustment clause factor for that portion of the October 2021 billing cycle prior to August 1, 2021 was $0.00893/kWh.

May 2021	($0.00194)/kWh

The factor thus varied from a credit of $0.00194/kWh for May 2021 to a charge of $0.02252/kWh for October 2021. The unweighted average fuel adjustment clause factor during the review period was $0.00735/kWh.[3]

2. Fuel Procurement.

(a) Coal.

The Company contracts for and takes delivery of coal in the amounts needed to satisfy its forecasted level of generation.[4] Kentucky Power took delivery of 423,099 tons of coal during the review period.[5] It burned 689,283 tons of coal during the same six months.[6]

Kentucky Power purchased during the review period almost all (97.7 percent) of its low sulfur coal for the Mitchell Generating Station pursuant to the terms of long-term contracts with three suppliers.[7] High sulfur coal for the Mitchell Generating Station was purchased under the terms of a long-term contract from a nearby mine; it was delivered to the station almost exclusively by means of a conveyor.[8]

The Company solicits offers for coal contracts through written requests for proposals;[9] there were no oral requests for proposals for coal during the review period.[10] Kentucky acted prudently to issue a written request for proposal for coal in May 2021 during a period when

[3] The average is computed using a $0.02851/kWh base fuel rate for August 2021.

[4] Response to KPSC 2-8

[5] Response to KPSC 1-2, Attachment 1.

[6] Response to KPSC 2-2.

[7] Response to KPSC 1-1.

[8] Responses to KPSC 1-1; KPSC 1-2; KPSC 2-1. A test load of high sulfur coal was delivered to the Mitchell Generating Station under the same contract by barge from the Century mine in Ohio to test the coal barge unloading facilities at the station. Response to KPSC 2-1.

[9] Response to KPSC 1-4; Response to KPSC 2-4.

supplies were abundant and demand was lower[11] to take advantage of expected resultant lower prices. It also issued a second written request for proposals for coal in September 2021 following elevated burn rates during the summer.[12]

The Company managed its coal deliveries by working with coal suppliers, when appropriate, to take delivery of its coal through non-ratable shipments. This benefits both the Company and its suppliers by allowing each "to adjust schedules to allow for reduced shipments when either party may have an outage and then increasing shipments when more coal is available and needed."[13] Kentucky Power also worked with its existing coal suppliers following its September 2021 request for proposals to obtain additional coal supplies in 2022 and 2023.[14]

The Company's coal solicitation and management efforts during the review period were successful despite the fact of an "industry-wide fuel supply shortage" during the fourth quarter of 2021 as a result of increased global and domestic demand for coal during the summer of 2021.[15] Kentucky Power ended the review period with its Mitchell high sulfur coal pile at only one day below the target level (14 days vs. a target level of 15 days).[16] Its Mitchell low sulfur coal pile similarly was only modestly below the target level (25 days vs. a target level of 30 days) at the conclusion of the review period.[17] Importantly, the Company's Mitchell coal inventories during the review period remained above ten days; Kentucky Power was not required to place the two

[10] Response to KPSC 1-5.

[11] *Id*.

[12] *Id*.

[13] Response to KPSC 2-2.

[14] Response to KPSC 2-4.

[15] Response to KPSC 2-8.

[16] Response to KPSC 1-3.

[17] *Id*.

Mitchell units offline under the PJM initiative to protect inventory going into the 2021-2022 winter.[18]

(b) Natural Gas.

Kentucky Power purchases natural gas for the Big Sandy Unit 1 combustion gas-fired unit[19] on the spot market[20] given the unit's variable operation as a load following unit.[21] This is consistent with the Company's fuel procurement for Big Sandy Unit 1 since its conversion to natural gas.[22] Big Sandy Unit 1 took delivery of 3,186,944 gross MMBTUs[23] of natural gas during the review period.[24]

There were no occasions during the review period when Kentucky Power was unable to operate Big Sandy Unit 1, when it otherwise would have run, because of pipeline constraints or the unavailability of natural gas.[25]

[18] Response to KPSC 2-8.

[19] Response to KIUC 1-1(e). Big Sandy Unit 1 is not a peaking unit natural gas turbine and its operation cannot be substituted for the higher peaking unit equivalent calculation. *Id*.

[20] Response to KPSC 1-6, Attachment 1.

[21] Order, *In the Matter of: The Application Of Kentucky Power Company For: (1) A Certificate Of Public Convenience And Necessity Authorizing The Company To Convert Big Sandy Unit 1 To A Natural Gas-Fired Unit; And (2) For All Other Required Approvals And Relief*, Case No. 2013-00430 at 17 (Ky. P.S.C. August 1, 2014) ("The plant will operate as a load-following unit, will be dispatched by PJM, and will remain on line in much the same fashion as a base load unit.")

[22] *Id*. ("Given that a converted BS1 will operate as a load-following unit, the Commission finds that Kentucky Power makes a compelling argument that having the opportunity to purchase gas when needed is more flexible than being tied to a long-term gas purchase contract.")

[23] Response to KPSC 1-6, Attachment 1.

[24] *Id*.

[25] Response to KPSC 1-7.

3. The Operation Of Kentucky Power's Owned Units During The Review Period.

Kentucky Power owns a fifty percent undivided interest in Mitchell Unit 1 and Mitchell Unit 2. It owns the Big Sandy Unit 1 in its entirety. The Company's owned generating units[26] are subject to planned outages, maintenance outages, and forced outages.

Planned outages typically last multiple weeks and are "taken to permit the Company to perform work on major equipment groups that are not immediately required for the safe operation of the unit."[27] They are scheduled approximately a year in advance.[28]

Maintenance outages also are taken to perform repair and maintenance work but may be requested with a shorter lead time than planned outages.[29] To be approved as a maintenance outage the unit must be capable of operating through the following Monday.[30] Thus, a maintenance outage requested on a Tuesday could be taken no earlier than the following Tuesday. If the unit cannot operate through the following Monday, the outage, if taken, is classified as a forced outage. Maintenance outages may be scheduled for a period not to exceed nine days but may extended once they are underway.

Both planned and maintenance outages must be approved by PJM before they may be taken.[31] PJM bars utilities from taking planned outages during the months of January, February, June, July, and August when energy demand typically is high.[32] Kentucky Power further limits its requests for planned outages to the "shoulder months" of March, April, May, September,

[26] Kentucky Power also received energy during the review period under the Company's Rockport Unit Power Agreement. All of the Company's generating resources are offered into the PJM energy market every hour of every day. Response to KIUC 1-2. It similarly purchases the entirety of its load every hour of every day from the PJM energy market. *Id*.

[27] Response to KPSC 2-6(a).

[28] Response to KPSC 2-6(b).

[29] Responses to KPSC 2-6(a), (b).

[30] Response to KPSC 2-6(b).

[31] Response to KPSC 2-6(b).

[32] Response to KPSC 2-8.

October, November, and December when energy demand is reduced. The review period thus includes three of the seven months available for planned outages.

A forced outage does not require PJM approval and is taken "to address an immediate operational or safety concern" regarding the generating unit.[33]

Kentucky Power adhered to PJM's requirements for planned and maintenance outages. During the review period, "Kentucky Power did not designate any unscheduled outages that required substitute power for a continuous period of six hours or longer" as a planned outage or a maintenance outage.[34] Similarly, there was no instance during the review period during which an online unit experienced an unscheduled outage that was classified as a planned outage or maintenance outage.[35]

During the review period Mitchell Unit 1 was forced out during the periods April 9, 2021-June 6, 2021 and August 3, 2021-October 6, 2021.[36] The forced outages arose in connection with a main transformer outage, tube leaks, and other safety and operational issues requiring immediate work.[37] Mitchell Unit 1 also was taken out of service during the review period for a maintenance outage for portions of July 2021 and October 2021, as well as for a planned outage beginning October 16, 2021.[38]

Mitchell Unit 2 took a maintenance outage in portions of June 2021 and July 2021 as well as portions of September 2021 and October 2021.[39] Mitchell Unit 2 was not subject to a forced outage during the review period.[40]

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[33] Response to KPSC 2-6(a).

[34] Response to KPSC 2-6(c).

[35] *Id*.

[36] Response to KPSC 1-15, Attachment 1.

[37] *Id*.

[38] *Id*.

[39] *Id*.

Big Sandy Unit 1 was forced out for a brief period (approximately three days) at the end of June 2021. It also was out during the review period for planned outages in portions of April 2021 and October 2021. Maintenance outages were taken on Big Sandy Unit 1 for periods ranging from two to 15 days in June 2021, July 2021, August 2021, and September 2021.

During the review period Kentucky Power's owned units "were either in service, or available for service but not selected by PJM as economic" during 62.1 percent of the review period.[41] During the remainder of the period the units principally were unavailable, particularly with respect to Mitchell Unit 2 and Big Sandy Unit 1, to permit the Company to address maintenance and operational issues that could have forced the two units out during peak periods. Doing so allowed the Company to avoid increased dependence of purchased power during these peak periods of possibly higher purchased power prices.[42] Mitchell Unit 1 experienced a higher level of forced outages than the other two units.[43] They were prudently taken to address safety and operational issues requiring immediate work.[44]

ARGUMENT

1. 807 KAR 5:056.

807 KAR 5:056 establishes a uniform fuel adjustment clause.[45] Section 3 of the regulation provides for periodic review of each utility's fuel adjustment clause. In addition, the Commission is authorized to disallow any unreasonable fuel charges,[46] and to disallow any adjustments under the Kentucky Power's fuel adjustment clause that "the commission finds

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[40] *Id*.

[41] Response to KPSC 2-8.

[42] *Id*.

[43] Response to KPSC 1-15, Attachment 1.

[44] Response to KPSC 2-6(a).

[45] 807 KAR 5:056, Section 1.

[46] 807 KAR 5:056, Section 3(1).

unjustified due to improper calculation or application of the charge or improper fuel procurement practices."[47]

2. The Charges And Credits Billed Through Kentucky Power's Fuel Adjustment Clause During The Review Period Are Reasonable And Should Be Approved.

(a) The Review Period Fuel Adjustment Clause Charges And Credit Were Calculated In Accordance With The Commission's Regulation, Did Not Involve Any Mathematical Or Computational Errors, And Did Not Result From Any Improper Fuel Procurement Practices.

The charges billed and amount credited to customers through the Company's fuel adjustment clause during the review period were calculated in accordance with the Commission's fuel adjustment clause regulation (807 KAR 5:056). In accordance with long-standing Commission practice applicable to all utilities employing a fuel adjustment clause in the Commonwealth, ***actual*** coal and oil costs for the reference month (two months prior to the billing period) are used in the calculation of the billing period's fuel adjustment clause charges and credit.[48] Thus, actual October 2021 coal and oil costs were used to calculate the fuel adjustment clause charge applied to customers' December 2021 bills.[49] Preliminary natural gas costs for the reference month (two months prior to the billing period), as further adjusted for any true-up of the prior month's preliminary natural gas costs and the actual prior month's natural gas costs, were used in calculating the fuel adjustment clause charges and credit during the review period.[50]

There is no evidence of record of a mathematical or other computational error in the calculation of the monthly fuel adjustment clause charges or credit. The Company also testified it was unaware of any violations of the regulation, which would include computational errors and

[47] 807 KAR 5:056, Section 3(3)(b).

[48] Response to KPSC PH-4; Response to KPSC PH-5.

[49] *Id*.

the use of incorrect fuel cost amounts, during the review period.[51] Kentucky Industrial Utility Customers, Inc. did not allege, nor adduce any evidence of, any such errors.

Nor were there any improper fuel procurement practices during the review. Coal was purchased almost exclusively through long-term contracts.[52] The contracts themselves were acquired through written requests for proposals and represented the least cost conforming fuel offered in response to the requests for proposals.[53] All fuel contracts related to commodity and transportation were filed with the Commission in accordance with 807 KAR 5:056, Section 2(1)-(3).[54] Coal and natural gas were acquired from unrelated third-parties and not utility-owned or utility-controlled suppliers.[55] Further, Kentucky Power followed its fuel procurement policies and procedures during the review period.[56]

(b) The Review Period Fuel Adjustment Clause Charges And Credit Were Reasonable.

KIUC mounts two attacks on the reasonableness of the review period fuel adjustment clause charges: (a) the amount of purchased power fuel costs as a result of outages during the review period; and (b) the application of the peaking unit equivalent ("PUE") calculation in computing the amount of non-economy, non-forced outage that may be recovered through the fuel adjustment clause. Both lack merit.

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[50] *Id*.

[51] Response to KPSC 1-20.

[52] *See* Response to KPSC 1-1, Attachment 1; Response to KPSC 1-2, Attachment 1.

[53] *See* Response to KPSC 1-4, Attachment 2; Response to KPSC 1-4, Attachment 3; Response to KPSC 2-4.

[54] Response to KPSC 1-21.

[55] *See* Response to KPSC 1-1, Attachment 1; Response to KPSC 1-2, Attachment 1; Response to KPSC 1-6, Attachment 1.

[56] Response to KPSC 1-19.

(i) The Review Period Unit Outages Were Proper And Required For The Safe And Economical Operation Of The Company's Generating Units.

a. Planned Outages And Maintenance Outages.

There is no evidence of record that the planned outages and maintenance outages taken by Kentucky Power in connection with its owned generation units were unnecessary, were imprudently taken, or resulted in otherwise avoidable purchased power fuel costs.

Planned outages must be approved in advance by PJM.[57] Planned outages are scheduled approximately one year in advance[58] and thus are scheduled long before market energy prices are, or even could be, known. Moreover, PJM prohibits utilities from taking planned outages during the months of January, February, June, July, and August when energy demand typically is elevated,[59] and market energy prices are higher than in the lower demand months when planned outages are permitted. Kentucky Power further protects its customers from higher purchased power costs during planned outages by limiting planned outages to shoulder months "when energy demand is expected to be less … [and] [m]ilder temperatures typically experienced in shoulder months historically result in lower energy prices and lower customer demand."[60]

Maintenance outages, which typically are of shorter duration than planned outages, also must be approved by PJM in advance.[61] By further requiring that a unit for which a maintenance outage is requested must be capable of operating through the following Monday,[62] PJM protects against any efforts by a utility to "disguise" a forced outage as a maintenance outage.

[57] Response to KPSC 2-6(b).

[58] *Id*.

[59] Response to KPSC 2-8.

[60] *Id*.

[61] Response to KPSC 2-6(b).

[62] *Id*.

Planned outages and maintenance outages, both by their very nature, and through the manner in which Kentucky Power utilizes them, protect the Company's customers from higher purchased power fuel costs and other expenses. First, the outages are taken to protect the customers' investment in the Company's generating facilities. Both planned outages and maintenance outages are used to perform repair and maintenance work required for the safe and efficient operation of Kentucky Power's generating units.[63] The failure to take planned outages and maintenance outages over the long-term can result in damage to, or loss of, the generating units and injury to Company personnel.[64] Second, Kentucky Power schedules planned outages and maintenance outages "when they will have the least effect on customers while keeping those same units operational during peak periods to lessen dependence on purchased power"[65] during periods of high costs.

Third, Kentucky Power appropriately designated maintenance outages as such. As the Company explained, "Kentucky Power did not designate any unscheduled outages that required substitute power for a continuance period in excess of six hours[66] as a Maintenance Outage or a Planned Outage."[67] Stated otherwise, "there were no instances in the review period where a unit was online and experienced an unscheduled outage that was classified as a Maintenance Outage or a Planned Outage."[68] Finally, even if the Company were taking a planned outage or a maintenance outage and a different condition emerged that would otherwise be classified as a forced outage, the designation would be changed to forced outage.[69]

[63] Response to KPSC 2-6(a).

[64] Response to KPSC 2-8.

[65] *Id*.

[66] *Cf*. 807 KAR 5:056, Section 1(4) (definition of forced outage).

[67] Response to KPSC 2-6(c).

[68] *Id*.

[69] *Id*.

b. Forced Outages.

Forced outages are by Commission definition unscheduled outages lasting for a continuous period in excess of six hours.[70] They are taken by Kentucky Power to address immediate operational and safety problems.[71] Failure to take the forced outages when indicated could result in damage to the Company's generating units or injury to its personnel.[72] 807 KAR 5:056 provides utilities with a substantial real-world incentive to control purchased power fuel costs in connection with forced outages, and an incentive to invest in and maintain their generating facilities to protect against forced outages through the limitation on the amount of substitute purchased power fuel costs that may be recovered through the fuel adjustment clause in the case of forced outages resulting from the most common causes of such outages.[73] Thus, notwithstanding their frequency or duration in any particular review period, the purchased power fuel costs recovered through the fuel adjustment clause as a result of such outages are fairly understood as reasonable in amount absent evidence to the contrary. There is no such evidence to the contrary in the record of this proceeding.

[70] 807 KAR 5:056, Section 1(4).

[71] Response to KPSC 2-6(a).

[72] For example, forced outages were taken during the review period to repair water wall tube leaks at Big Sandy Unit 1 and to address a main transformer outage and tube leaks at Mitchell Unit 1. *See* Response to KPSC 1-15, Attachment 1.

[73] See 807 KAR 5:056, Section 1(4) ("faulty equipment, faulty maintenance, faulty design, faulty installations, faulty operations, or faulty maintenance….")

(ii) The Peaking Unit Equivalent Calculations Were Reasonable And Calculated In Accordance With The Commission's Orders.

KIUC challenges the manner of Kentucky Power's use of the PUE in the calculation of the Company's fuel adjustment clause charges and credit during the review period. Based on arguments and statements made at the August 4, 2022 hearing in this matter, as well as discovery,[74] Kentucky Power anticipates that KIUC will argue in its brief that the Company erred in adding fixed start-up costs of $30.00/MWh to the costs used in the calculation of the PUE for each hour of the review period in which the PUE was used. It is the Company's understanding that KIUC contends that the fixed start-up costs should be added only in the first hour of any continuous period in which the PUE is used to calculate the amount of purchased power fuel costs to be recovered through Kentucky Power's fuel adjustment clause.

KIUC errs.

a. The PUE Calculation Is Not Intended To Simulate The Operation Of A Gas-Fired Combustion Turbine.

The fundamental error in KIUC's argument is its apparent belief that the PUE calculation is an algorithm designed to simulate perfectly the real-world operation of a General Electric simple cycle gas turbine. Instead, the PUE calculation is a formula-derived approximation:

> In Case No. 2000-00495-B, the Commission authorized American Electric Power's ("AEP") use of a ***proxy mechanism*** to establish the energy portion of non-economy energy purchases. ***The proxy mechanism approximates the energy costs*** of a "Peaking Unit Equivalent" based on the operating characteristics of a General Electric simple cycle gas turbine.[75]

[74] *See e.g.* Kentucky Industrial Utility Customers, Inc. Data Request 1-6, *In the Matter of: An Electronic Examination Of The Application Of The Fuel Adjustment Clause Of Kentucky Power Company From May 1, 2021 Through October 31, 2021*, Case No. 2022-00036 (Ky. P.S.C. Filed May 9, 2022).

[75] Order, *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 at 1 (Ky. P.S.C. November 10, 2004) (emphasis supplied).

The approximate nature of the proxy is underscored by the 75 percent threshold for consideration of the PUE in connection with the Company's purchased power costs:

> When a power purchase occurs during an expense month, AEP will determine the average daily market price for that month. It will then determine the lowest daily market price for gas for the hypothetical turbine during that month and compare that price to its actual average purchased energy cost for internal uses for the same month. ***If the actual average purchased energy cost for internal use for the month is 75 percent or less of the lowest daily market price for gas for the hypothetical gas turbine during the same month***, AEP will consider this cost as the fuel cost for these purchases. ***If the actual average purchased energy cost for internal use is greater than 75 percent of the lowest daily market price for gas for the hypothetical gas turbine***, then AEP will compare its average purchased energy cost for internal uses with the market price for gas for the hypothetical turbine for each day of the month and exclude for FAC purposes any of the actual purchased energy costs that exceed the daily gas market price.[76]

This 75 percent threshold renders any effort to characterize the application of the peaking unit equivalent as a simulation of the actual operation of the hypothetical turbine both inapposite and inaccurate. If the PUE calculation was intended to simulate the real-world operation of the hypothetical simply cycle unit the PUE calculation would need to be made for each hour of each month because the unit might have run at least once during a month for reasons unrelated to the noneconomic purchase.

b. It Would Be Unreasonable To Modify In This Proceeding A Single Input Of The PUE Calculation That Has Been Applied Consistently By the Commission Over The Past Four Years.

If the PUE is to serve as a real-world simulation of the dispatch of the hypothetical turbine, as KIUC contends it would need to consider all of the inputs related to the operation of unit such as, but not limited to, the availability of gas for the unit, pipeline capability, as well as the engineering and operational characteristics and requisites for the unit. Among the

[76] Order, *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 1, 2001* at 2-3 (Ky. P.S.C. October 3, 2002) (emphasis supplied).

engineering and operational characteristics and requisites for the unit include those real world times the unit would dispatch and for how long. For example, during the review period, the peaking unit equivalent calculation capped costs for the 9:00 AM hour on May 4 and then again from 3:00 PM through 7:00 PM. In a real-world simulation would the unit shut down during the period between 10 AM and 3 PM? What actions affecting dispatch would be required to avoid deleterious effects of multiple starts of the unit? None of these inputs currently are considered in calculating the PUE. It is neither fair nor reasonable to amend a single element of a rate calculation established more than four years ago in a base rate case, particularly where to do so modifies the Commission's long-standing construction of Commission's regulation.[77]

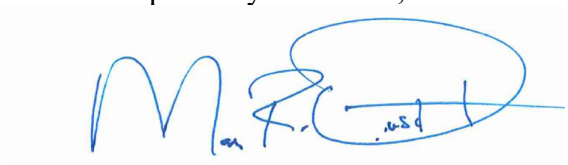
[77] *Hagan v. Farris*, 807 S.W.2d 488, 490 (Ky. 1991) ("A construction of a law or regulation by officers of an agency continued without interruption for a long period of time is entitled to controlling weight.")

WHEREFORE, Kentucky Power Company respectfully requests the Commission to enter an Order:

1. Approving the Company's fuel adjustment clause charges and credits for the review period; and

2. Granting Kentucky Power all further relief to which it may be entitled.

Respectfully submitted,



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