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

RESPONSE BRIEF OF KENTUCKY POWER COMPANY

Kentucky Power Company files this brief in response to the September 7, 2022 initial brief of Kentucky Industrial Utility Customers, Inc. ("KIUC"), and in further support of its request that the Commission enter an Order approving the application of Kentucky Power's fuel adjustment charge, including the charges and credits billed, except as required to recover the $174,925 under recovery of fuel costs, during the period May 1, 2021 through October 31, 2021.

A. KIUC's Arguments Concerning The Company's Peaking Unit Equivalent Calculation Fail.

1. The $30/MWH Start-Up Costs Shown In Exhibit AEV-8 And Employed By Kentucky Power In Its Peaking Unit Equivalent Calculations Are Reasonable And Conform To The Commission's Orders.

KIUC's attack on Kentucky Power's use, in accordance with the Commission's Orders, of the peaking unit equivalent ("PUE") to limit the Company's recovery through the fuel adjustment clause of non-economic purchase power costs is founded upon KIUC's misconceptions regarding: (a) the nature of the PUE calculation; and (b) Exhibit AEV-8 and the Commission's Order in Case No. 2017-00179 permitting the inclusion of start-up costs in the calculation of the PUE. Neither of these misconceptions find support in the record or the Commission's Orders.

KIUC argues that the PUE calculation is intended to model precisely the cost of operating the hypothetical combustion turbine. Thus, KIUC contends that the $30/MWh start-up costs approved by the Commission in Case No. 2017-00179 are applicable only to the hypothetical combustion turbine's first hour of operation. For the reasons already detailed in the Company's initial brief,[1] the PUE calculation during the 20 years since it was first approved has always served as a price cap on non-economic purchase power costs and not an algorithm precisely modeling the real-world operation of the hypothetical combustion turbine. For example, for the first sixteen years of its application, the PUE calculation did not include any start-up costs or O&M expense.[2] But even KIUC concedes that such expenses (at some level) are incurred in the operation of a combustion turbine.[3]

Equally important, the Commission's 2002 Order approving the use of the PUE calculation required that the PUE be calculated on a daily basis and not an hourly basis as would be required if start-up costs were to be applied, as KIUC argues, only to the first hour of the hypothetical combustion turbine's operation:

> AEP will compare its average purchased energy costs for internal uses with the market price for gas for the hypothetical turbine [PUE calculation] ***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*** [PUE calculation].[4]

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[1] Kentucky Power Initial Brief at 13-15.

[2] *See* Order, *In the Matter of: Electronic Application Of Kentucky Power Company For (1) A General Adjustment Of Its Rates For Electric Service; (2) An Order Approving Its 2017 Environmental Compliance Plan; (3) An Order Approving Its Tariffs And Case No. 2017-00179 Riders; (4) An Order Approving Accounting Practices To Establish Regulatory Assets Or Liabilities; And (5) An Order Granting All Other Required Approvals And Relief*, Case No. 2017-00179 at 55-56 (Ky. P.S.C. January 8, 2018).

[3] *See* Brief of Kentucky Industrial Utility Customers, Inc., *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 10-12 (Ky. P.S.C. Filed September 7, 2022) ("KIUC Brief").

[4] 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 3 (Ky. P.S.C. October 3, 2002) (emphasis supplied) ("PUE Order").

This single daily value is wholly inconsistent with KIUC's contention that the PUE calculation should reflect the actual operation of a hypothetical combustion turbine.[5] Indeed, that is why the Commission twice characterized the PUE calculation as a "proxy"[6] in its Order authorizing its use.

KIUC also points to Mr. Vaughan's testimony, including Exhibit AEV-8, in the Company's 2017 rate case as evidence that the $30/MWh value proposed by Mr. Vaughan was a "monthly" total of start-up costs for the hypothetical combustion turbine.[7] KIUC thrice errs.

First, nothing in Mr. Vaughan's testimony or Exhibit AEV-8 indicates that the $30/MWh is a monthly value. AEV-8 simply illustrates a PUE calculation using the Commission-ordered[8] *monthly* heat rates – which vary on a seasonal basis – for the hypothetical combustion turbine.[9] Similarly, Mr. Vaughan's statement that start-up and variable O&M costs "would be incurred to operate an actual natural gas combustion turbine," is nothing more than a statement of fact. It does not convert the proxy nature of the PUE calculation into an algorithm precisely modeling the hourly operation of the hypothetical combustion turbine any more than the long-standing use of an "actual" daily market gas price in the calculation changed the proxy nature of the PUE.[10]

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[5] KIUC's argument also assumes that the hypothetical combustion starts only once a day. But in the real world a combustion turbine could start and stop multiple times in a single day. *See* Response to KPSC PHDR-2 ("[A]ny simulation of the dispatch of the hypothetical turbine would need to consider other factors 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 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 AM hour on May 4 and then again from 3 PM through 7 PM. In a real-world simulation would the unit shut down during the period between 10 AM and 3 PM?")

[6] *See id* at 2 ("AEP proposes a proxy mechanism for the energy portion of the non-economy purchases."); *id*. at 3 ("This anomaly requires us to consider the use of AEP's proposed proxy mechanism.")

[7] KIUC Brief at 7 ("Rather than using monthly start-up costs of $30/MWh as depicted in Company Witness Vaughan's Exhibit AEV-8 in Case No. 2017-00179….")

[8] PUE Order at 2 n.3.

[9] *See* Exhibit AEV-8 ("**Proposed new Peaking Unit Equivalent cost calculation = (Daily Gas Price * Heat Rate/1000) + Total $/MWh Adjustment**") (emphasis in original).

[10] Likewise, Mr. Vaughan's statement that the PUE calculation is intended to "mimic the costs of operating an actual CT" in no sense changes the PUE's long-standing status as a proxy. Certainly, such a radical change would have been noted by Mr. Vaughan in his testimony.

Second, KIUC's argument that the $30/MWh is a monthly value is at war with its attempt in this proceeding to apply the $30/MWh value on an hourly basis by dividing $30/MWh by the KIUC-calculated average run time of the Ceredo combustion turbine. It cannot be both.

Third, and most importantly, KIUC's argument that start-up costs are a monthly value to be divided by the average run-time of the hypothetical combustion turbine finds no support in the Commission January 18, 2018 and February 27, 2018 Orders in Case No. 2017-00179. Certainly, the Commission would not have been shy about directing such a precise calculation if that were its intent.

Also unavailing is KIUC's implication that Kentucky Power somehow furtively concealed[11] the basis for the $30/MWh value for start-up costs, first approved in 2018, from the Commission and KIUC until late in this proceeding. Nothing could be further from the truth. The Company proposed adding start-up and variable O&M costs in its July 20, 2017 application in Case No. 2017-00179. The basis for the addition of the costs to the calculation was discussed in Mr. Vaughan's testimony[12] and a sample calculation provided by Mr. Vaughan in Exhibit AEV-8. The Company's application and supporting testimony, including Mr. Vaughan's, was subject to multiple rounds of discovery by the Commission Staff and parties, and three days of hearing, with cross-examination by Commission Staff, the Commissioners, and two intervenors. Based on this record, the Commission found the Company's proposal to be reasonable. Since then, the application of the Company's fuel adjustment clause has been subject to six six-month review proceedings and one two-year proceeding.

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[11] *See* KIUC Brief at 5 ("Not until the Company's August 18, 2022 Response to Staff's Post-Hearing Data Request 2, Attachment 1 was the basis for the hypothetical startup cost calculation disclosed.")

[12] Testimony, Alex E. Vaughan, *In the Matter of: Electronic Application Of Kentucky Power Company For (1) A General Adjustment Of Its Rates For Electric Service; (2) An Order Approving Its 2017 Environmental Compliance Plan; (3) An Order Approving Its Tariffs And Case No. 2017-00179 Riders; (4) An Order Approving Accounting Practices To Establish Regulatory Assets Or Liabilities; And (5) An Order Granting All Other Required Approvals And Relief*, Case No. 2017-00179 at 33-35 (Ky. P.S.C. Filed July 20, 2017).

There was nothing surreptitious about the start-up cost value or its application in the more than three years since the Commission approved its use.

2. Kentucky Power's Fuel Adjustment Clause Charges and Credits For The Review Period Were Reasonable And Should Be Approved.

Nothing in KIUC's initial brief challenges Kentucky Power's fuel procurement practices, the application of its fuel adjustment clause (outside KIUC's 13th hour attempt to rewrite the Commission's Orders in Case No. 2017-00179), or the Company's adherence to the requirements of 807 KAR 5:056. Instead, KIUC limits its arguments to general and sometimes erroneous assertions regarding the operation of the Company's generating units. Those assertions in large part were anticipated and addressed in the Company's initial brief.[13] This response is limited to previously unaddressed matters.

KIUC raises two previously unaddressed challenges to the Company's application of its fuel adjustment clause as a result of the operation of Kentucky Power's generating units. First, KIUC attacks the Company's strategy for offering the Mitchell units into PJM during October 2021:

> PJM would have dispatched the low-cost Mitchell units all hours they were available in October 2021 unless AEP bid them at prices well above cost. It appears AEP did not want the Mitchell units to run. Perhaps to conserve coal. But whatever the reason customers suffered through the recovery of expensive market purchases in the FAC.[14]

KIUC next speculates, in a gratuitous attempt to poison the well, that Kentucky Power elected not to run its baseload coal-fired generation during the review period in furtherance of American Electric Power Company, Inc.'s ("AEP") ESG goals.[15]

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[14] KIUC Brief at 9-10; *see also id*. at 13.

[15] *Id*. at 9.

(a) Kentucky Power Appropriately Offered Its Units Into PJM.

KIUC's argument concerning Kentucky Power's offer strategy rests almost entirely upon a single factual assertion:

> "After factoring all known outages, in October 2021 Mitchell Units 1 and 2 (with generation costs of $30.01/MWh and $20.72/MWh) operated during only 63% and 67% of the hours they were available to run."[16]

KIUC's calculations, which suffer from the fact they were not sponsored by any witness or substantiated under oath, and which were objected to at the hearing, represent something other than what KIUC apparently understands them to be.

KIUC references its Exhibit 5 as the source for the 63 percent and 67 percent values it offers. That exhibit labels the 63 percent and 67 percent values for Mitchell Unit 1 and Mitchell Unit 2 as the units' Net Output Factors:

Net Output Factor (Generation During Available Hours)	
Big Sandy 1	-
Mitchell 1	63%
Mitchell 2	67%
Rockport 1	-
Rockport 2	-

Source Data: Attachments included in Response to Staff 1-15, Staff 1-16 and KIUC 2-5.

A unit's net output factor is not, as KIUC represents, the percentage of hours the two units operated when available. Rather, net output factor is equal to a unit's actual generation divided by the product of its nameplate capacity multipiled by its service hours:[17]

[16] *Id*.; *see also id*. at 13 (same).

[17] Appendix F, North American Electric Reliability Corporation, Generation Availability Data System, Data Reporting Instructions (**BRIEF APPENDIX 1**). A unit that is in reserve shutdown is available to operate but those hours are not counted as service hours.

16. Net Output Factor – NOF

$$\mathbf{NOF} = \frac{\textbf{Net Actual Generation}}{\textbf{SH x NMC}} \textbf{ x 100\%}$$

Thus, even when a unit is operating, its net output factor can be reduced if it is not operating at its nameplate capacity. Although KIUC does not show its work, the 63 percent and 67 percent values presented by KIUC appear to be calculated using the net output factor formula.[18]

There are multiple reasons unrelated to an offer strategy that can result in a generating unit running at less than its nameplate capacity. For example, a unit, although running all available hours, may run at less than its nameplate capacity (thus resulting in a lower net output factor) as a result of grid constraints, PJM High Voltage Alerts (more generation available than there is load to serve), operational needs of the unit (such as blowing slag, blowing down impulse lines, etc.), fuel constraints, environmental testing at various outputs, and equipment liabilities resulting in de-rates. In fact, it is uncommon for units such as the two Mitchell units to run at nameplate capacity for more than a two consecutive weeks. Stated otherwise, the net output factors for Mitchell Unit 1 and Mitchell Unit 2 upon which KIUC relies do not tell the story KIUC hopes.

Mitchell Unit 1 and Mitchell Unit 2 operated for a substantially higher percentage of October 2021 available hours than KIUC posits:

[18] KIUC appears to have calculated the 63 percent value for Mitchell Unit 1 by dividing the 27,613 MWh shown in the "Actual Generation (MWh)" section of its Exhibit 5 for Mitchell Unit 1 by the 44,109 MWh it displays for Mitchell Unit 1 in the "Maximum Generation for Available Hours (MWh)" section of Exhibit 1. The Maximum Generation for Available Hours for Mitchell Unit 1 is equally to the product of the 740 hours in October 2021 multiplied by the nameplate capacity (385 MW) for Mitchell Unit 1. The math thus is 27,613 MWh ÷ 44,109 MWh (385 MW * 740 hours) = 62.6 percent. A similar calculation using the values for Mitchell Unit 2 shown on KIUC's Exhibit 5 yields the 67 percent net output factor calculated by KIUC: 133,877 MWh ÷ 199,080 MWh (395 MW * 740 hours) = 67.2 percent.

Percent of Available In Service October 2021	**GADS**[19]	**KIUC Brief**
Mitchell Unit 1	74.5%	63.0%
Mitchell Unit 2	95.4%	67.0%

KIUC's attack on Kentucky Power's offer strategy thus collapses on its own calculations.

Equally importantly, KIUC's argument turns a blind eye to a fundamental fact of the Company's October 2021 offer strategy. The review period saw a transformation in the coal and natural gas markets. In April 2021 coal was readily available.[20] There were elevated coal inventory levels, low demand, and limited exports of domestic coal.[21] In addition, forecasts indicated that coal consumption in Kentucky Power's units would be reduced for the balance of 2021.[22]

Beginning July 2021 the cost of natural gas increased.[23] That in turn led to increased demand for coal-fired generation, and hence coal, as coal-fired generation became a lower cost means of energy production.[24] Increased demand for coal during the summer of 2021, coupled with greater coal exports, led to decreased coal availability and higher prices for coal leading into fall 2021.[25] For example, Kentucky Power's September 2021 request for proposals for coal deliveries beginning in the fourth quarter of 2021 and continuing through 2023 yielded no offers for 2021 coal deliveries, and only limited offers for NAPP and CAPP coal for 2022 and 2023.

[19] **BRIEF APPENDIX 2**.

[20] Response to KPSC 2-4.

[21] *Id*.

[22] *Id*.

[23] *Id*.

[24] *Id*.

[25] *Id*.

Even these limited offers were at significantly higher prices than coal the Company had under contract.[26]

Kentucky Power is a winter-peaking utility. In light of the industry-wide fuel shortage going into the fourth quarter of 2021, Kentucky Power began including price adders to its PJM bids beginning October 2021[27] to help conserve coal for the winter peaking months when demand is high and purchase power prices also tend to be higher. The Company's actions were consistent with, and in furtherance of, a PJM initiative to maintain coal supplies going into the winter of 2021-2022:

> In the 4th quarter of 2021, in response to an industry-wide fuel shortage, PJM began requiring weekly updates on fuel inventories for each of the generating plants. As part of this initiative, PJM initiated a process whereby utilities are required to report weekly updates on inventory and if inventory falls below 10 days, PJM could require the unit be placed offline until fuel inventories reached at least 21 days. Kentucky Power's inventory levels did not fall below 10 days during the review period.[28]

The Commission expressed similar concerns on December 8, 2021 about the availability of fuel during the winter of 2021-2022.[29]

Reliance on an increased percentage of market purchases in a shoulder month such as October, when demand is expected to be lower and temperatures typically are milder, to protect against fuel shortages and concomitant need to make increased market purchases in January and February when demand is increased and prices are higher,[30] was not only a prudent strategy,

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[26] *Id*. Kentucky also evaluated non-traditional sources of coal and worked with existing suppliers to maintain an adequate supply of coal. *Id*.

[27] Adders to conserve fuel were included beginning October 13, 2021 for Mitchell Unit 2 and October 30, 2021 for Mitchell Unit 1.

[28] Response to KPSC 2-8.

[29] December 8, 2021 letter from Linda C. Bridwell to Ranie K. Wohnhas (**BRIEF APPENDIX 3**). The Commission's concerns were based in part on expectations of a "colder-than-ordinary winter and against the backdrop of nationwide concerns regarding fuel supplies and inventory generally," and the November 8, 2021 Winter Reliability Assessment issued by the North American Reliability Council "discuss[ing] concerns that electricity generators could face challenges in obtaining fossil fuels as supply chains are stressed." *Id.*

[30] *Id*.

designed to protect all customers, but is far removed from the sinister conspiracy alluded to by KIUC.[31]

(b) AEP's ESG Goals Did Not Affect The Operation Of The Company's Coal-Fired Units.

KIUC seeks to leave the Commission with impression, without support within or without the record, that Kentucky Power elected not to run its baseload coal generation in October 2021 in furtherance of AEP's ESG goals. According to KIUC, those goals "book[] purchases as having zero CO_2 impact."[32] As the Kentucky Supreme Court observed in a different matter, "correlation does not necessarily imply causation, and this proof does not even rise to the level of correlation."[33]

As part of its effort to tar Kentucky Power, KIUC noted that "in hour nine of October 27, 2021, 658.19 MW of 670 MW (or 98.24%) of Kentucky Power's native load was served by non-Rockport purchased power rather than the Company's generating units."[34] The reason the Company's owned units were unavailable in hour nine of October 27, 2021 was that each was in a planned outage or maintenance outage.[35] The decision by Kentucky Power to take its generation offline during portions of October 2021 for planned and maintenance outages represents a prudent effort to ensure the owned generation was available to serve the Company's customers during the winter when demand and purchase power costs typically are higher:

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[31] *See* KIUC Brief at 9-10

[32] *Id*. at 9.

[33] *Morris v. Commonwealth*, 2015 WL 4967138 *7 (Ky. 2015) **BRIEF APPENDIX 2**.

[34] KIUC Brief at 9. In fact, the percentage was 100 percent because all of Kentucky Power's generation during hour 9 of October 27, 2021 (not 98.24 percent) was out for planned or maintenance outages. *See* Response to KPSC 1-15. Big Sandy Unit 1, was on a planned outage on October 27, 2021. *Id*. Such outages must be approved by PJM and typically are scheduled a year in advance. Response to KPSC 2-6. Mitchell Unit 1 and Mitchell Unit 2 were on maintenance outage on October 27, 2021. *Id*. Those outages also must be approved in advance by PJM. Response to KPSC 2-6.

[35] Response to KPSC 1-15.

> The Company schedules Planned Outages during the "shoulder months" of March, April, May, September, October, November and December when energy demand is expected to be less. Milder temperatures typically experienced in shoulder months historically result in lower energy prices and lower consumption [hence reducing customer bills]. PJM restricts the Company's ability to schedule Planned Outages during the months of January, February, June, July and August. ***Planned Outages and Maintenance Outages help ensure that Company-owned units are available and reliable during periods of high energy demand when prices tend to be higher***.[36]

B. KIUC's Identification Of Issues To Be Considered In The Company's Next Two-Year FAC Case Is Premature And Largely Untethered From The Facts And Record.

KIUC proposes six areas of Commission inquiry for the Company's next two-year fuel adjustment clause case. That is a determination that can and should await the two-year review proceeding.

KIUC first unfavorably compares the 2021 net unit capacity factors of the Kentucky Power owned or contracted units to those of the four Spurlock units owned by East Kentucky Power Cooperative, Inc. ("EKPC"). It excludes without explanation from its comparison the units owned by Duke Energy Kentucky, Inc., Louisville Gas and Electric Company, Kentucky Utilities Company, Big Rivers Electric Corporation, as well as EKPC's Cooper Station. Indeed, EKPC's Cooper Station operated at capacity factors[37] during the six months that are the subject of this proceeding that were not dissimilar from those decried by KIUC:

[36] Response to KPSC 2-8 (emphasis supplied).

[37] East Kentucky Power Cooperative, Inc. Response to KPSC 1-16, *In the Matter of: Electronic Examination Of The Application Of The Fuel Adjustment Clause Of East Kentucky Power Cooperative, Inc. From November 1, 2018 Through October 31, 2020*, Case No. 2021-00053 at 2 (Ky. P.S.C. Filed April 15, 2022)

Cooper Unit 1	2021	5	11.27%
Cooper Unit 1	2021	6	9.07%
Cooper Unit 1	2021	7	30.11%
Cooper Unit 1	2021	8	23.33%
Cooper Unit 1	2021	9	7.09%
Cooper Unit 1	2021	10	-0.83%
Cooper Unit 2	2021	5	15.69%
Cooper Unit 2	2021	6	5.71%
Cooper Unit 2	2021	7	54.81%
Cooper Unit 2	2021	8	37.15%
Cooper Unit 2	2021	9	31.75%
Cooper Unit 2	2021	10	10.96%

Most fundamentally, KIUC's comparison is meaningless. Capacity factors are influenced by many different factors including outage schedules and where a unit is in its maintenance cycle, EFOR, unit offer strategy, production cost, environmental permit limits, and, as discussed above, fuel strategies. Thus, comparisons limited to a single year can be misleading at best.

KIUC next points to its misunderstanding of the meaning of a net operating factor, as well as the benefits of the manner in which the Company schedules its planned and maintenance outages, to suggest erroneously that Kentucky Power's units were not running when available. That issue, as well as the KIUC's mistaken attack on Kentucky Power's offer strategy, are addressed above.[38]

KIUC's concern about the assignment of purchased power costs among the AEP operating companies appears to be founded upon the anomaly resulting from the misalignment of rows on KPCO_R_KPSC_1_16_Attachment4 (08-21 tab).[39] Correction of the misalignment resolves KIUC's concern.[40]

[38] *See supra*.

[39] KIUC Brief at 14.

[40] Supplemental Response to KPSC 1-16.

KIUC next challenges the manner in which the Commission has applied, over the past 35 years, its forced outage limitation under 807 KAR 5:056 to Rockport UPA purchase power costs.[41] The Commission's long-standing construction is entitled to controlling weight.[42]

KIUC finally urges the Commission to re-examine all input assumptions into the PUE calculation. The PUE calculation has been the subject of approximately 30 six-month review proceedings and approximately nine two-year proceedings in its 20-year history. It continues to serve in its current form its original purpose as a "reasonable"[43] approach of calculat[ing] the level of non-economy purchased power costs to flow through … [Kentucky Power's] its FAC …."[44]

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

1. Authorizing the recovery in the first billing period following the Commission's Order in this proceeding of an additional $174,925 in fuel costs to correct for the under recovery associated with the misalignment identified in KPCO_SR_KPSC_1_16_Attachment2_August_2021 (08-21 tab);

2. Otherwise approving the Company's fuel adjustment clause charges and credits for the review period; and

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

[41] KIUC Brief at 15.

[42] *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.")

[43] 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 Through October 31, 2001* at 3 (Ky. P.S.C. October 3, 2002).

[44] *Id*.

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