

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF KENTUCKY POWER	)	
COMPANY FOR A CERTIFICATE OF PUBLIC	)	
CONVENIENCE AND NECESSITY	)	CASE NO.
AUTHORIZING THE COMPANY TO CONVERT	)	2013-00430
BIG SANDY UNIT 1 TO A NATURAL GAS-	)	
FIRED UNIT AND FOR ALL OTHER REQUIRED	)	
APPROVALS AND RELIEF	)	

ORDER

On December 6, 2013, Kentucky Power Company (“Kentucky Power”) filed an application, pursuant to KRS 278.020(1), seeking approval for a certificate of public convenience and necessity (“CPCN”) to convert its Big Sandy Unit 1 (“BS1”) from a coal-fired facility to a natural gas-fired unit.<sup>1</sup> Kentucky Power states that the proposed conversion of BS1 reflects a least-cost alternative for addressing the applicable environmental standards affecting that unit’s continued operation.<sup>2</sup> The capital cost of the proposed BS1 conversion, excluding allowance for funds used during construction and the cost of constructing a gas transport lateral, is approximately \$50 million.<sup>3</sup> The annual operation and maintenance cost associated with the proposed conversion of

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<sup>1</sup> Application, p. 1.

<sup>2</sup> Application, p. 2.

<sup>3</sup> Direct Testimony of Robert L. Walton (“Walton Testimony”), p. 16.

BS1 is approximately \$4.692 million.<sup>4</sup> The net present value of the costs of the lateral pipeline is estimated to be \$49.35 million over the 15-year term of that contract.<sup>5</sup>

On January 14, 2014, the Commission issued an Order establishing a procedural schedule for the processing of this case. The procedural schedule provided for a deadline to request intervention, two rounds of discovery on Kentucky Power's application, an opportunity for the filing of intervenor testimony, discovery on intervenor testimony, and an opportunity for Kentucky Power to file rebuttal testimony. The only intervenor in this matter is Kentucky Industrial Utility Customers, Inc. ("KIUC").<sup>6</sup> On June 4, 2014, a formal hearing was held at the Commission's offices. Kentucky Power filed responses to post-hearing data requests and a post-hearing brief on June 12, 2014, and June 16, 2014, respectively. The matter now stands submitted for a decision.

### BACKGROUND

Kentucky Power, a direct and wholly owned subsidiary of American Electric Power Company, Inc. ("AEP"), is an electric utility which generates, transmits, distributes, and sells electricity to approximately 173,000 retail customers in all or portions of 20 eastern Kentucky counties.<sup>7</sup> Kentucky Power is a member of the PJM Interconnection, LLC ("PJM"), a regional transmission organization that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia and operates an energy market and a capacity market.

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<sup>4</sup> Kentucky Power's Response to Commission Staff's Initial Request for Information, Item 2.

<sup>5</sup> Supplemental Testimony of Ranie K. Wohnhas ("Wohnhas Supplemental"), p. 3.

<sup>6</sup> KIUC did not file any testimony in this case.

<sup>7</sup> Application, pp. 2-3.

Currently, Kentucky Power owns and operates the 1,078 megawatt ("MW") coal-fired Big Sandy Generating Station, consisting of the 800-MW Big Sandy Unit 2 ("BS2") and the 278-MW BS1<sup>8</sup> at Louisa, Kentucky. BS2 will be retired effective June 1, 2015.<sup>9</sup> Kentucky Power also has a unit power agreement with AEP Generating Company, an affiliate, to purchase 393 MW of capacity from the Rockport Plant, located in southern Indiana, through December 7, 2022.<sup>10</sup> Kentucky Power also owns an undivided 50 percent interest in the 1,560-MW Mitchell Generating Station ("Mitchell Station") located in Moundsville, West Virginia.<sup>11</sup> Lastly, Kentucky Power has a renewable energy purchase agreement with ecoPower Generation-Hazard LLC for the future purchase of 58.5 MW of capacity from a biomass facility to be located in Perry County, Kentucky.<sup>12</sup>

Kentucky Power asserts that the proposed refueling of BS1 is required to comply with the Mercury and Air Toxics Standard ("MATS") rule,<sup>13</sup> which was promulgated by the United States Environmental Protection Agency ("EPA") and became effective on

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<sup>8</sup> Application, p. 1

<sup>9</sup> Direct Testimony of Scott C. Weaver ("Weaver Testimony"), p.12.

<sup>10</sup> Weaver Testimony, p. 9.

<sup>11</sup> Case No. 2012-00578, Application of Kentucky Power Company for (1) a Certificate of Public Convenience and Necessity Authorizing the Transfer to the Company of an Undivided Fifty Percent Interest in the Mitchell Generating Station and Associated Assets; (2) Approval of the Assumption by Kentucky Power Company of Certain Liabilities in Connection with the Transfer of the Mitchell Generating Station; (3) Declaratory Rulings; (4) Deferral of Costs Incurred in Connection with the Company's Efforts to Meet Federal Clean Air Act and Related Requirements; and (5) All Other Required Approvals and Relief (Ky. PSC Oct. 7, 2013) (Hereinafter referred to as the "Mitchell Transfer Case").

<sup>12</sup> Case No. 2013-00144, Application of Kentucky Power Company for Approval of the Terms and Conditions of the Renewable Energy Purchase Agreement for Biomass Energy Resources Between the Company and ecoPower Generation-Hazard LLC; Authorization to Enter into the Agreement; Grant of Certain Declaratory Relief; and Grant of all Other Required Approvals and Relief (Ky. PSC Oct. 10, 2013). The biomass facility is currently under development and it is anticipated that it will begin commercial operation in early 2017.

<sup>13</sup> 40 C.F.R. pts. 60 and 63.

April 16, 2012. The MATS rule sets forth standards for reducing the emissions of heavy metals (mercury, arsenic, chromium, and nickel) and acid gases (hydrochloric acid and hydrofluoric acid) and applies to new and existing coal- and oil-fired electric utility steam-generating units larger than 25 MW that produce electricity for consumption by the public. Existing units, such as BS1, will have until April 16, 2015, to be in compliance with the MATS rule.<sup>14</sup> A state's permitting agency has the authority to grant a one-year extension to install the control devices. Kentucky Power states that BS1 has, in fact, been granted such an extension until April 16, 2016, to achieve MATS compliance.<sup>15</sup>

In order for BS1 to comply with the MATS requirements, Kentucky Power maintains that it must install additional costly emission-control equipment,<sup>16</sup> switch fuels, or retire the unit. Due to the age of BS1, which was commissioned in 1963, and its relatively small size, Kentucky Power noted that the "relative economies of a large environmental investment"<sup>17</sup> option to retrofit BS1 with pollution-control equipment "lacked sufficient scale to merit consideration."<sup>18</sup> Kentucky Power ultimately determined that converting BS1 from a coal-fired to a natural gas unit is the least-cost alternative to comply with the MATS rule.

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<sup>14</sup> Application, p. 4.

<sup>15</sup> Wohnhas Supplemental, p. 6.

<sup>16</sup> The pollution control technologies that would be needed to comply with MATS are flue gas desulfurization and selective catalytic reduction. See Application, p. 3.

<sup>17</sup> Weaver Testimony, p. 6

<sup>18</sup> *Id.*

## KENTUCKY POWER'S ECONOMIC ANALYSIS

As part of its evaluation in determining the least-cost, reasonable solution to replacing the generation loss associated with the retirement of BS1, Kentucky Power issued a Request for Proposals ("RFP") on March 28, 2013, for up to 250 MW of capacity, energy, and potential ancillary services from designated "PJM Generation Capacity Resources."<sup>19</sup> The RFP sought proposals for a bundled product through a power-purchase agreement, tolling agreement, asset-purchase agreement, or other proposals as defined in the RFP.<sup>20</sup> The potential resource must have been capable of being online by June 1, 2015.<sup>21</sup> The RFP also sought proposals for demand-side management and cost-effective, energy-efficiency resources.<sup>22</sup>

In addition to the proposals solicited pursuant to the RFP, Kentucky Power also considered converting BS1 to a natural gas-fired generation unit.<sup>23</sup> The cost of the conversion project and the operating characteristics of the proposed conversion were developed by AEP Service Corporation's ("AEPSC") Projects, Controls, and Construction Group ("Projects Group").<sup>24</sup>

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<sup>19</sup> Application, Exhibit 2, pp. 3-4. A "PJM Generation Capacity Resource" is defined in the RFP as a generation unit, or the right to capacity from a specified generating unit, that meets certain requirements under the PJM Reliability Assurance Agreement.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> Direct Testimony of Joseph A. Karrasch ("Karrasch Testimony"), p. 3.

<sup>24</sup> *Id.*

The design, development, and management of the RFP process was directed by AEPSC's Development Group.<sup>25</sup> The evaluation of the proposals received in response to the RFP, including the BS1 conversion project, was performed by AEPSC's Evaluation Group.<sup>26</sup> In order to protect the integrity of the RFP process, the Development and Evaluation Groups were separated from the Projects Group and any affiliate of Kentucky Power that may have wished to participate in the RFP.<sup>27</sup> The purpose of the RFP was to allow Kentucky Power to utilize the results of the proposals to assess the least-cost, reasonable solution for replacing the BS1 generation as a coal-fired generating unit.<sup>28</sup>

In evaluating the best alternative for Kentucky Power to meet necessary capacity and energy requirements for its customers, Kentucky Power compared the long-term relative cumulative present worth ("CPW") of the BS1 natural gas conversion against two alternatives:

- Option 2A – Retire BS1 in June 2015 and replace the unit with purchases of capacity and energy from the PJM market for ten years, and then construct a new natural gas combustion turbine or combined-cycle units.
- Option 2B – Retire BS1 in June 2015 and replace the unit with bilaterally purchased capacity and energy from the "lowest cost" conforming offer received in response to the BS1 RFP.<sup>29</sup>

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<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> Application, Exhibit 2, p. 3.

<sup>29</sup> Weaver Testimony, p. 4.

Kentucky Power utilized a long-term resource-optimization tool known as Strategist to identify the least-cost alternative.<sup>30</sup> Kentucky Power asserts that Strategist is a highly sophisticated and industry-wide-accepted economic-modeling software application and that it has utilized Strategist in determining the unit disposition proposals presented in Case No. 2011-00401<sup>31</sup> and Case No. 2012-00578.<sup>32 33</sup> Kentucky Power notes that “the results from Strategist® offer a view of these relative, option-specific economics over the . . . [28]-year analysis study period . . . .”<sup>34</sup> In particular, the economic modeling evaluated each option on a systemwide basis by “being individually and mutually-exclusively substituted into Kentucky Power’s resource portfolio *as an alternative to the continued operation of Big Sandy Unit 1 as a coal unit* effective June 1, 2015.”<sup>35</sup>

The Strategist economic modeling runs utilized long-term forecasts of Kentucky Power’s energy sales and peak demand (“load forecast”), as well as of the price of energy, capacity, coal, natural gas, and emissions allowances (“commodity forecast”), including the assumption of a carbon tax beginning in 2022.<sup>36</sup> The load forecast was developed internally by the AEP Economic Forecasting Group for Kentucky Power, and

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<sup>30</sup> Weaver Testimony, p. 7.

<sup>31</sup> Case No. 2011-00401, Application of Kentucky Power Company for Approval of Its 2011 Environmental Compliance Plan, for Approval of its Amended Environmental Cost Recovery Surcharge, and for the Grant of a Certificate of Public Convenience and Necessity for the Construction and Acquisition of Related Facilities (Ky. PSC May 31, 2012).

<sup>32</sup> Case No. 2012-00578, Kentucky Power Company (Ky. PSC Oct. 7, 2013).

<sup>33</sup> Weaver Testimony, p. 7.

<sup>34</sup> *Id.*

<sup>35</sup> Weaver Testimony, p. 12. (Emphasis in original).

<sup>36</sup> Weaver Testimony, p. 13.

the commodity forecast having been developed by the AEP Fundamental Analyst Group with the load forecast having been completed in June 2013 and the commodity pricing forecast having been completed in August 2013.<sup>37</sup>

Kentucky Power also utilized the pricing and performance data from the conforming responses to the BS1 RFP as benchmarks for the BS1 economic modeling process.<sup>38</sup> Regarding the performance assumptions in connection with the BS1 conversion proposal, Kentucky Power utilized a relatively higher heat rate, a lower capacity factor, and a relatively lower carbon dioxide emissions rate.<sup>39</sup> Regarding the estimated cost of the proposed conversion project, Kentucky Power indicated that the \$50 million capital cost reflects sufficient risk contingency to ensure that the final job cost should not exceed the estimate.<sup>40</sup> According to Kentucky Power, the Strategist results offer an objective comparison of the CPW, or net present value, of costs over the 28-year study period for each of the options evaluated.<sup>41</sup>

When the actual cost of the pipeline lateral was subsequently utilized by Kentucky Power in its economic modeling rather than the preliminary indicative cost estimates, the updated economic analysis revealed that the proposed BS1 conversion had a lower CPW as compared to Option 2A, the market alternative, by approximately \$148 million.<sup>42</sup> Although the economic modeling determined that Option 2B's CPW was

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<sup>37</sup> *Id.* See Also, Post Hearing Brief of Kentucky Power Company, pp. 9-10.

<sup>38</sup> Weaver Testimony, pp. 11-12.

<sup>39</sup> Walton Testimony, p. 6.

<sup>40</sup> Walton Testimony, p. 17.

<sup>41</sup> Weaver Testimony, p. 12.

<sup>42</sup> Kentucky Power's Response to Post-Hearing Data Requests, Item No.1, Attachment 1.



approximately \$2.5 million lower than the CPW associated with the proposed refueling of BS1, Kentucky Power contends that such a difference is not material and well within the economic modeling's margin of error.<sup>43</sup> Kentucky Power contends that the benefits associated with the conversion of BS1 and the risks attendant with Option 2B tilt in favor of the proposed BS1 refueling as the "better least cost alternative."<sup>44</sup> Kentucky Power notes that Option 2B has risks such as counterparty risk, unit condition risk, and the fact that any power purchase agreement or tolling contract would be primarily under federal jurisdiction, rather than under the Commission's on-going jurisdiction.<sup>45</sup> In contrast, Kentucky Power asserts that the proposed BS1 conversion would eliminate all of the risks associated with the market alternative, but also would provide benefits such as allowing the company to diversify its fuel source mix in its generation portfolio (an increase to 18 percent natural gas generation post-conversion);<sup>46</sup> providing a physical hedge against potential higher-than-forecasted natural gas and attendant PJM energy prices;<sup>47</sup> and permitting Kentucky Power to retain a portion of its workforce and continue to pay taxes to the state and Lawrence County.

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<sup>43</sup> Post Hearing Brief of Kentucky Power Company, p. 22.

<sup>44</sup> Post Hearing Brief of Kentucky Power Company, p. 23.

<sup>45</sup> Karrasch Testimony, pp. 10-12.

<sup>46</sup> Direct Testimony of Ranie K. Wohnhas, p. 7.

<sup>47</sup> Weaver Testimony, p. 17.

## DISCUSSION

### Legal Standard

No utility may construct or acquire any facility to be used in providing utility service to the public until it has obtained a CPCN from this Commission.<sup>48</sup> To obtain a CPCN, the utility must demonstrate a need for such facilities and an absence of wasteful duplication.<sup>49</sup>

“Need” requires:

[A] showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed or operated.

[T]he inadequacy must be due either to a substantial deficiency of service facilities, beyond what could be supplied by normal improvements in the ordinary course of business; or to indifference, poor management or disregard of the rights of consumers, persisting over such a period of time as to establish an inability or unwillingness to render adequate service.<sup>50</sup>

“Wasteful duplication” is defined as “an excess of capacity over need” and “an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties.”<sup>51</sup> To demonstrate that a proposed facility does not result in wasteful duplication, we have held that the applicant must demonstrate that a

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<sup>48</sup> KRS 278.020(1).

<sup>49</sup> *Kentucky Utilities Co. v. Pub. Serv. Comm'n*, 252 S.W.2d 885 (Ky. 1952).

<sup>50</sup> *Id.* at 890.

<sup>51</sup> *Id.*

thorough review of all reasonable alternatives has been performed.<sup>52</sup> Selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication.<sup>53</sup> All relevant factors must be balanced.<sup>54</sup> The statutory touchstone for ratemaking in Kentucky is the requirement that rates set by the Commission must be fair, just and reasonable.<sup>55</sup>

### Analysis of Need

Having reviewed the record and being otherwise sufficiently advised, the Commission finds that Kentucky Power has established a need for the proposed conversion of BS1. As Kentucky Power points out, BS1 as it is currently configured will be unable to comply with the MATS rule by April 16, 2016, without having either to make significant capital investments to add emissions control equipment or to convert the unit to burn natural gas instead of coal. Kentucky Power's decision to convert BS1 was the result of extensive analyses to determine the most reasonable least-cost alternative to comply with the MATS rule. Kentucky Power has sufficiently demonstrated that the power generated by BS1 is needed to meet the company's capacity and energy needs. The evidence of record indicates that, in the absence of BS1, Kentucky Power would be approximately 5 MW to 111 MW short of meeting its

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<sup>52</sup> Case No. 2005-00142, Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for the Construction of Transmission Facilities in Jefferson, Bullitt, Meade, and Hardin Counties, Kentucky (Ky. PSC Sept. 8, 2005).

<sup>53</sup> See *Kentucky Utilities Co. v. Pub. Serv. Comm'n*, 390 S.W.2d 168, 175 (Ky. 1965). See also Case No. 2005-00089, Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for the Construction of a 138 kV Electric Transmission Line in Rowan County, Kentucky (Ky. PSC Aug. 19, 2005).

<sup>54</sup> Case No. 2005-00089, East Kentucky Power (Ky. PSC Aug. 19, 2005), Order, p. 6.

<sup>55</sup> KRS 278.190(3).

PJM summer Unforced Capacity (“UCAP”)<sup>56</sup> obligations from 2015 through 2019, if it is assumed that Kentucky Power would add new capacity or reduced load totaling 116 MW through biomass, wind, solar, demand-side management and energy-efficiency resources.<sup>57</sup> Because Kentucky Power is a winter-peaking system and its winter peak is approximately 300 MW higher than its summer peak, Kentucky Power’s capacity-deficit position would be even more pronounced in the winter. The evidence showed that, without the BS1 capacity and again assuming 116 MW of additional new capacity or reduced load, Kentucky Power would be between approximately 157 MW and 254 MW short of the capacity needed to meet its projected winter peak loads for the planning years 2015 through 2028.<sup>58</sup>

Likewise, the evidence demonstrated that Kentucky Power would be energy short in the absence of BS1. For the planning year 2025, Kentucky Power would be energy short for approximately 1,026 hours, or 11.7 percent of the time for 2025.<sup>59</sup>

#### Analysis of Wasteful Duplication of Facilities

The Commission also finds that the proposed refueling of BS1 would not result in wasteful duplication of facilities. Kentucky Power maintains that the proposed refueling of BS1 is the optimal least-cost option compared to other available alternatives presented to deal with known environmental requirements. The analysis undertaken by

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<sup>56</sup> UCAP represents the amount of installed capacity that is available at any given time after discounting for time that an electric generating unit is unavailable due to outages.

<sup>57</sup> Kentucky Power Hearing Exhibit 1, p.1.

<sup>58</sup> *Id.*

<sup>59</sup> *Id.* at 2.

Kentucky Power demonstrates the proposed project's economic viability when evaluated in conjunction with other alternative scenarios.

In considering the decision currently before the Commission, we note that Kentucky Power's decision to convert BS1 was not made in isolation but was arrived at within the context of the company's decision to retire BS2 and to acquire an undivided 50 percent interest in the Mitchell Station and, to a lesser extent, the company's decision to enter into the renewable energy purchase agreement with a biomass merchant facility.<sup>60</sup> The Commission is also cognizant of the new reality within which Kentucky Power must operate with the termination on January 1, 2014, of the AEP Interconnection Agreement ("Pool Agreement"). Under the Pool Agreement, Kentucky Power, along with several other AEP affiliates, jointly operated their systems, which allowed Kentucky Power access to low-cost capacity and energy. Kentucky Power must now operate as a stand-alone utility and will be required to conduct resource planning to meet its load requirements. Kentucky Power's decision is constrained further by the potential additional costs imposed by more stringent environmental regulations, such as the recently issued EPA Clean Power Plan to regulate carbon emissions on existing power units.

The complexity of our review of Kentucky Power's proposal is heightened by the fact that its economic analysis utilizes forecasted assumptions, which we find overall to be reasonable, but any change in the assumptions utilized could have an impact on the outputs. An example might be the early Strategist modeling prior to or during the Mitchell Transfer Case in which it projected a 25 percent capacity factor for BS1 if it

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<sup>60</sup> Case No. 2013-00144, Kentucky Power Company (Ky. PSC Oct. 10, 2013).

were to be kept in service as a gas-fired generating unit. Later in the process, as it reviewed the fuel requirements necessary for the lateral pipeline, Kentucky Power's Commercial Operations Organization utilized another modeling tool, Plexos, which predicted a reduced capacity factor between 9 to 16 percent for the refueled BS1.<sup>61</sup> Variances like these illustrate that the capacity process is not an exact science, yet one with multiple fluctuating components which the Commission is left to analyze when determining the best decision given the best information at the time.

The Commission finds that the proposed conversion of BS1 from a 278-MW coal-fired to a 268-MW natural gas-fired facility would bring that unit into MATS compliance. The change would utilize the majority of BS1's existing infrastructure, including such items as the steam turbine and electrical generator, electrical distribution system, condensate and feedwater systems, wastewater processing equipment, and the plant infrastructure and buildings. There will, however, be necessary changes to the steam-producing boiler, the control systems which monitor the natural gas system, and modifications to the associated balance of plant systems.<sup>62</sup> The conversion is expected to be completed by mid-May 2016.<sup>63</sup>

Kentucky Power provided information to the Commission concerning the BS1 conversion as far back as December 2011, when it filed with the Commission an application, later withdrawn, to retrofit BS2. In its subsequent filing, it proposed retiring

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<sup>61</sup> Weaver, video transcript at 14:03.

<sup>62</sup> Walton testimony, pp. 4-5.

<sup>63</sup> *Id.* at 7.

BS2 and purchasing 50 percent of the Mitchell Station.<sup>64</sup> While Kentucky Power's application to acquire the Mitchell Station was pending before the Commission, Kentucky Power issued an RFP in March 2013. This RFP solicited least-cost, reasonable offers to supply up to 250 MWs to Kentucky Power as an alternative to keeping BS1 operating. The RFP was limited to projects within the PJM footprint that could be delivered by June 2015. Kentucky Power received qualifying proposals and evaluated them within the context of the Mitchell Transfer Case. The RFP analysis showed that the conversion of BS1 to natural gas was a lowest-cost proposal.<sup>65</sup> Based on this analysis, Kentucky Power notified the bidders that it opted to withdraw its RFP.<sup>66</sup>

The economic modeling for the BS1 conversion was first initiated prior to Kentucky Power's filing of its case to retrofit BS2 with a flue-gas desulfurization system. Kentucky Power withdrew the BS2 retrofit case and thereafter filed with the Commission the Mitchell Transfer Case, supported by an analysis that showed the combination of acquiring 50 percent of Mitchell with the BS1 refueling as the best least-cost alternative to meet current environmental regulations.<sup>67</sup> In the Mitchell Transfer Case, AEPSC utilized Strategist to analyze the viability of rational alternatives for replacing BS1 and BS2 over a 30-year period.

In the instant case, Strategist analyzed a number of reasonable economic alternatives over a 28-year projection for Kentucky Power to consider before

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<sup>64</sup> Kentucky Power evaluated 11 different scenarios in Case No. 2012-00578, including the refueling of BS1 in combination with the acquisition of 50 percent of the Mitchell plants.

<sup>65</sup> Weaver Testimony, p. 18.

<sup>66</sup> By the time of the RFP withdrawal, the bids had already expired.

<sup>67</sup> Case No. 2012-00578, Kentucky Power Company (Ky. PSC Oct. 7, 2013), Order, p. 16.

determining that refueling was a least-cost alternative. In an effort to verify this position, Kentucky Power modeled the “worst case” reasonably anticipated cost-overrun scenario.<sup>68</sup> It further updated and used the most recent June 2013 load forecast projection developed by the AEP Economic Forecasting Group. Upon receiving estimates from utility consultants and natural gas transporters, it ran these estimates through the “worst case reasonably anticipated” cost-overrun scenario of the model.<sup>69</sup> To further ensure a robust cost analysis, Kentucky Power used a budget estimator with a 99.9 percent probability of correctness to ensure that all possibilities in the refueling process were included and evaluated such that the resulting estimate was sufficiently robust. With these current and substantial inputs in place, Strategist preferred the refueling option of choice, thereby assuring it as a least-cost option.

At the time Kentucky Power filed this case with the Commission, it had firm projections concerning the cost to convert BS1; however it had not released its January 2014 RFP to obtain firm costs for the lateral pipeline. Although it did not have a firm cost for the gas lateral, for modeling purposes in this case, Kentucky Power utilized cost estimates acquired from FERC-regulated pipeline companies for similar pipeline construction.<sup>70</sup> In this case, the lateral pipeline will be owned and operated by the winning bidder, who is responsible for acquiring all necessary permits and regulatory approvals. All costs associated with the construction of the lateral pipeline will be borne by the winning bidder, and recovered from Kentucky Power over a 15-year term. In May 2014, Kentucky Power received nine pipeline bids from seven bidders, then

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<sup>68</sup> Weaver video transcript at 11:25.

<sup>69</sup> This setting ensures with 70 percent probability that the projected cost will be a maximum cost.

<sup>70</sup> Walton testimony, p. 9



reviewed the conforming bids received for the lowest-cost proposal and notified the winner bidder.

Kentucky Power selected Columbia Gas Transmission, LLC ("Columbia Gas") to construct and operate the \$49.35 million (present value) lateral pipeline. The Columbia Gas lateral pipeline will be constructed exclusively for use by Kentucky Power at the Big Sandy station, will be in service by June 1, 2016, and includes guaranteed firm transmission rights on the Columbia Gas Interstate transmission line. To further support the refueling position as the best least-cost alternative, the lateral pipeline proposal came in \$14 million dollars lower than the modeled cost.

Kentucky Power contends that purchasing natural gas on the spot market is appropriate for BS1. 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. As a load follower, the plant will present difficulties in predicting when it will clear the market and how long it will remain in service. 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 it is needed is more flexible than being tied to a long-term gas purchase contract.<sup>71</sup>

The Commission further finds that the conversion preserves a viable generating plant operating within the Commonwealth, thus retaining some of the current employees and supporting the local tax base. A converted BS1 also permits Kentucky Power to evolve from a utility whose generation has been significantly reliant on coal to one which

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<sup>71</sup> Kentucky Power's Response to Commission Staff's Initial Request for Information, Item 3.

is diversifying its fuel supply. This modification should further allow Kentucky Power to adapt to regulatory or economic changes targeted at a single fuel source.

As noted above, before the Commission authorizes a CPCN, it must find that there is a need and an absence of wasteful duplication. Further, the proposal must be feasible in terms of its impact on rates. The Commission has examined the complex facts and circumstances of this matter, including, but not limited to, existing and proposed EPA regulations; the termination of the AEP Pool Agreement; the multiple economic modeling and commodity pricing assumptions therein; the projected PJM energy pricing and the inherent risks and price volatility of market purchases; and the inclusion of this proposal as an element of Kentucky Power's resource mix as presented in the Mitchell Transfer Case and in Kentucky Power's recently filed IRP.<sup>72</sup> Accordingly, based on the facts of this case, the Commission finds the proposal satisfies the statutory requirements that there is a need, and an absence of wasteful duplication. Here, as in the Mitchell Transfer Case, Kentucky Power's proposal is the most reasonable lowest-cost available option and, therefore, the proposal is feasible in terms of its impact on rates.

IT IS THEREFORE ORDERED that:

1. Kentucky Power's request for a Certificate of Public Convenience and Necessity pursuant to KRS 278.020(1) and 807 KAR 5:001, Section 15, to convert Big Sandy Unit 1 from a coal-fired generating unit to a natural gas-fired generating unit is approved.

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<sup>72</sup> Case No. 2013-00475, Integrated Resource Planning Report of Kentucky Power Company to the Kentucky Public Service Commission (Application filed Dec. 20, 2013).

2. Within 30 days of the completion of the conversion of BS1, Kentucky Power shall file with the Commission the actual cost of the construction.

3. Any documents filed in the future pursuant to ordering paragraph 2 herein shall reference this case number and shall be retained in utility's general correspondence file.

By the Commission  
ENTERED  
AUG 01 2014  
KENTUCKY PUBLIC  
SERVICE COMMISSION

ATTEST:

  
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