# COMMONWEALTH OF KENTUCKY

## BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF DUKE ENERGY KENTUCKY, INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR CONSTRUCTION OF A NUMBER 2 DISTILLATE FUEL OIL SYSTEM AT THE COMPANY'S WOODSDALE NATURAL GAS-FIRED GENERATING STATION

CASE NO. 2017-00186

#### ORDER

On May 31, 2017, Duke Energy Kentucky ("Duke Kentucky") filed an application, pursuant to KRS 278.020 and 807 KAR 5:001, Section 15, requesting a Certificate of Public Convenience and Necessity to construct an ultra-low-sulfur diesel ("ULSD") distillate fuel oil system at Duke Kentucky's Woodsdale Generating Station ("Woodsdale Station").<sup>1</sup> The proposed fuel oil system will be used as an alternate fuel source to natural gas for the Woodsdale Station.<sup>2</sup> The estimated capital cost to construct the fuel oil system is \$55.4 million, with non-fuel related operations and maintenance expenses estimated to be \$100,000 annually.<sup>3</sup> Duke Kentucky anticipates annual fuel expense to be approximately \$1.7 million to \$2.7 million per year, depending upon the price of fuel and based upon an annual fuel oil usage of approximately 976,000 gallons.<sup>4</sup> Duke Kentucky asserts that the need for the proposed project is driven by compliance with

<sup>&</sup>lt;sup>1</sup> Application at 1.

<sup>&</sup>lt;sup>2</sup> Id.

<sup>&</sup>lt;sup>3</sup> Application at 13.

<sup>&</sup>lt;sup>4</sup> Direct Testimony of Joseph A. Miller, Jr. ("Miller Testimony") at 14.

PJM Interconnection, LLC's ("PJM") recently enacted Capacity Performance ("CP") requirement, which reflects significant changes to PJM's capacity market Reliability Performance Model ("RPM") construct.<sup>5</sup>

For the following reasons, the Commission will approve Duke Kentucky's application.

## BACKGROUND

Duke Kentucky, a Kentucky corporation, is a utility engaged in the gas and electric business.<sup>6</sup> Among other things, Duke Kentucky generates and distributes electricity for sale in Boone, Campbell, Grant, Kenton, and Pendleton counties.<sup>7</sup> Duke Kentucky's current portfolio of generation assets includes East Bend Generating Station ("East Bend Station") and Woodsdale Station.<sup>8</sup> The East Bend Station consists of a single coal-fired base load 600-megawatt ("MW") unit.<sup>9</sup> Commissioned in 1981, the East Bend Station is located in Boone County, Kentucky.<sup>10</sup> According to Duke Kentucky, the East Bend Station has an onsite coal pile that provides the unit with approximately a 45-day supply of coal reserve.<sup>11</sup>

- <sup>9</sup> Miller Testimony at 3.
- <sup>10</sup> *Id*.
- <sup>11</sup> Id.

<sup>&</sup>lt;sup>5</sup> Application at 5–6.

<sup>&</sup>lt;sup>6</sup> Application at 2.

<sup>&</sup>lt;sup>7</sup> Application at 3.

<sup>&</sup>lt;sup>8</sup> Miami Fort Unit 6 was retired on May 31, 2015.

The Woodsdale Station, located in Butler County, Ohio, consists of six simplecycle, combustion turbine peaking units with a total net winter rating of 564 MW and a net summer rating of 492 MW.<sup>12</sup> The Woodsdale Station's primary fuel is natural gas, and the station is connected to a transmission pipeline owned by Texas Eastern Transmission Company ("Texas Eastern").<sup>13</sup> Duke Kentucky states that the Woodsdale Station previously had been connected to a Texas Gas Transmission Company ("Texas Gas") transmission pipeline, but that the Texas Gas pipeline is no longer usable, due primarily to that pipeline's inability to guarantee minimum gas pressures desired to serve the Woodsdale Station.<sup>14</sup> Prior to 2013, the Woodsdale Station had dual fuel capability, with access to natural gas via the Texas Eastern pipeline and a direct pipeline to the nearby Todhunter Propane Storage Cavern ("Todhunter").<sup>15</sup> However, in late 2013, the owner of the propane storage cavern notified Duke Kentucky that the cavern needed to be closed and permanently decommissioned due to structural integrity issues caused by propane leaking into the soil.<sup>16</sup>

During the 2014 Polar Vortex, PJM experienced forced outage rates in excess of 20 percent caused by mechanical outages due to extreme cold and demand or weatherdriven fuel unavailability.<sup>17</sup> As a result, PJM implemented significant changes to its capacity market by imposing new performance-based incentives and assessments for

<sup>13</sup> Id.

<sup>14</sup> Id.

<sup>&</sup>lt;sup>12</sup> Miller Testimony at 4.

<sup>&</sup>lt;sup>15</sup> Miller Testimony at 5–6.

<sup>&</sup>lt;sup>16</sup> *Id.* at 6. See also Application, Exhibit 6.

<sup>&</sup>lt;sup>17</sup> Direct Testimony of John A. Verderame ("Verderame Testimony") at 11.

non-performance and re-defining its capacity products, all aimed at improving the reliability of generating resources in the PJM footprint.<sup>18</sup> PJM's new "Capacity Performance" construct initially establishes two types of capacity resources: 1) Capacity Performance and 2) Base Capacity.<sup>19</sup> A Capacity Performance resource will be required to be available to PJM during performance assessment hours throughout the PJM Delivery Year (June 1 through May 31). A Capacity Performance resource will be subject to significant penalties if it is unable to perform when called upon by PJM during periods of high load demand or system emergency. Conversely, if a Capacity Performance resource is called upon and over performs during any performance assessment hour, it will be rewarded based upon performance-based bonuses.<sup>20</sup> Duke Kentucky states that PJM anticipates there to be, on average, 30 compliance hours per year over time.<sup>21</sup>

Capacity Performance resources are subject to non-performance assessments during emergency conditions throughout the entire Delivery Year. Base Capacity products are required to meet the Capacity Performance standard from June through September of each Delivery Year.<sup>22</sup> Duke Kentucky states that PJM will transition fully to all capacity resources being Capacity Performance by the 2020/2021 Delivery Year.

Currently, Duke Kentucky participates in the PJM capacity market as a Fixed Resource Requirement ("FRR") entity. As such, Duke Kentucky is required to provide

- <sup>19</sup> *Id*.
- <sup>20</sup> *Id.* at 10.
- <sup>21</sup> *Id.* at 11.
- <sup>22</sup> *Id.* at 10.

<sup>&</sup>lt;sup>18</sup> Verderame Testimony at 9.

its own specific generation to PJM to meet Duke Kentucky's internal load and would be subject to the same Capacity Performance standards as full participants in the PJM capacity market.<sup>23</sup> Because the East Bend Station has a 45-day supply of coal on-site, combined with asset hardening investments, Duke Kentucky believes that the East Bend Station meets the minimum requirements of a Capacity Performance resource.<sup>24</sup> However, Duke Kentucky states that the Woodsdale Station does not currently meet minimum Capacity Performance requirements, due to its lack of fuel certainty.<sup>25</sup> As stated earlier, natural gas for the Woodsdale Station is provided only by the Texas Eastern pipeline and, because of the station's low capacity factor, the fuel is delivered under an interruptible delivery contract.<sup>26</sup> Due to the peaking characteristics of the Woodsdale Station, it would not be economical to contract for firm transportation.<sup>27</sup> In addition, Duke Kentucky points out that Texas Eastern has declared operational flow orders and other limitations that could affect gas availability and pipeline flexibility during peak periods that could coincide with Capacity Performance compliance events.<sup>28</sup>

If the status quo is maintained with respect to the Woodsdale Station, Duke Kentucky states that it runs the risk of the resource being rejected by PJM or challenged by the Independent Market Monitor ("IMM") as failing to meet the requirements for

<sup>24</sup> Id.

- 25 Id. at 15.
- <sup>26</sup> Id. at 16.
- <sup>27</sup> Id. at 17.
- <sup>28</sup> Id. at 16.

<sup>&</sup>lt;sup>23</sup> Verderame Testimony at 14.

Capacity Performance.<sup>29</sup> Duke Kentucky asserts that if Woodsdale Station is rejected, the station cannot be used or relied upon in its FRR Plan. Duke Kentucky contends that it will have to replace, within five days, approximately 460 MWs with unit-specific capacity that is not otherwise committed elsewhere in the RPM.<sup>30</sup> Failure to do so will expose Duke Kentucky to significant penalties from PJM, possibly in excess of \$133 million.<sup>31</sup> Duke Kentucky further states that it does not believe that it can acquire, through the bilateral market, 460 MWs of Capacity Performance capacity in five days.<sup>32</sup>

Duke Kentucky further asserts that even if the IMM or PJM did not challenge the ability of the Woodsdale Station to meet performance obligations and if no improvements were made, the station would not be able to meet the performance threshold established in the Capacity Performance rules, and Duke Kentucky would, therefore, be exposed to non-performance assessments that could be as much as \$1.6 million per hour if the station were unavailable during an emergency event, with the maximum single planning year assessment of \$70.5 million.<sup>33</sup>

In evaluating the various alternative compliance strategies, Duke Kentucky states that it focused on strategies that fit within its corporate strategy to enable customer growth and to maximize the alignment of customer and shareholder interests, as well as to maximize the value of its generation assets for customers and to maintain competiveness for dispatching, while minimizing exposure to non-performance

29 Id. at 21.

<sup>30</sup> Id.

<sup>31</sup> Id.

<sup>32</sup> Id.

33 Id. at 21-22.

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compliance assessments.<sup>34</sup> Duke Kentucky also focused upon need for regulatory approvals, operating impacts, and where possible, a quantification of long-term and short-term capital and operating and maintenance ("O&M") costs.<sup>35</sup> Duke Kentucky conducted a Kepner-Tregoe decision analysis to identify the problem condition, attendant risks, and possible solutions.<sup>36</sup> It then narrowed the scope of solutions to most effectively address the problem and mitigate identified risks.<sup>37</sup> Duke Kentucky state that high-level cost estimates were performed for most of the alternatives where such quantification was possible or when estimated costs were believed to be comparable to alternatives with known costs of the benchmark alternatives.<sup>38</sup>

In addition to the ULSD fuel system, Duke Kentucky states that it evaluated the following compliance alternatives: 1) exiting PJM and moving back to the Midcontinent Independent System Operator ("MISO"); 2) exiting PJM and becoming its own balancing authority; 3) transitioning from an FRR entity to a full RPM auction participant in PJM and electrically pseudo-tie Woodsdale Station into the MISO market for dispatch; 4) purchasing firm natural gas transportation; 5) investing in redundant non-firm natural gas infrastructure; 6) refurbishing the existing propane system; 7) refurbishing the existing propane cavern; and 8) establishing a pipeline connection to a nearby ethane pipeline and conversion of the

<sup>35</sup> Id.

<sup>38</sup> Id.

<sup>34</sup> Id. at 26.

<sup>&</sup>lt;sup>36</sup> Duke Kentucky Response to Commission Staff's First Data Request, Item 14.

<sup>37</sup> Id.

Woodsdale Station to ethane-firing ability.<sup>39</sup> Duke Kentucky states that it performed a comprehensive evaluation of each of the alternatives and concluded that the proposed ULSD fuel system was the most reasonable alternative. Duke Kentucky maintains that the other alternatives had additional costs, feasibility issues, economic risks to customers, and other risks in terms of reliability and operational constraints.<sup>40</sup>

With respect to exiting PJM alternative and moving back to MISO, Duke Kentucky states this would involve some level of exit costs to leave PJM and costs associated with integration into MISO, and that there could be a risk that MISO would implement some capacity performance-like measures in the future.<sup>41</sup> Because it relies solely upon the transmission system owned by Duke Energy Ohio, Inc. ("Duke Ohio"), which is a PJM member, Duke Kentucky would need to build its own transmission system, purchase an existing transmission system, or enter into an extremely complicated operational arrangement to continue its reliance upon Duke Ohio's transmission system in order to transition into MISO.<sup>42</sup> Constructing or purchasing an existing transmission system would cost approximately \$150 million.<sup>43</sup>

With respect to exiting PJM and operating as a separate balancing authority, Duke Kentucky states that this alternative would impose significant challenges and

<sup>&</sup>lt;sup>39</sup> Verderame Testimony at 26–27.

<sup>&</sup>lt;sup>40</sup> Miller Testimony at 12.

<sup>&</sup>lt;sup>41</sup> Verderame Testimony at 28.

<sup>42</sup> Id. at 29.

<sup>&</sup>lt;sup>43</sup> *Id*.

costs.44 Among other things, Duke Kentucky would be responsible for all North American Electric Reliability Corporation balancing standards and Transmission Operator standards, as well as for retaining a Reliability Coordinator. In addition to foregoing the benefits of easy access to economic and replacement energy in PJM, Duke Kentucky's annual O&M costs would increase due to the need to staff the Woodsdale Station around the clock or add remote operation capability to supply required contingency reserves; to change or add additional gas supply contracts, or dual fuel capability, to allow the Woodsdale Station to be called upon to run for deployment of contingency reserves at any time without notice; to negotiate entry into a reserve sharing group; and by the likelihood of having to run the Woodsdale Station at all times when the East Bend Station is offline to meet both load and reserve requirements.45 Duke Kentucky states that while some of these costs were unguantifiable, it nonetheless notes that the risks of substantial annual and on-going cost impacts were determined to be significant, given the breadth of operational changes that would be required.<sup>46</sup>

With respect to the alternative involving a transition to RPM and pseudo-tie the Woodsdale Station into MISO, Duke Kentucky states that there would be additional transmission expense and regulatory approvals to implement this alternative.<sup>47</sup> Under this scenario, Duke Kentucky points out that the Woodsdale Station could not be used under PJM's FRR rules to satisfy its load requirements and would need to be replaced,

- 46 Id. at 31.
- 47 Id. at 33-34.

<sup>44</sup> Id. at 31.

<sup>45</sup> Id. at 31-32.

by either constructing or acquiring a physical asset or entering into a purchase power agreement.<sup>48</sup> Duke Kentucky contends that neither option is economical or practical. Consequently, Duke Kentucky would need to transition to RPM participation. Duke Kentucky estimates that it would cost more than \$20 million per year to replace the 460 MWs of capacity associated with the Woodsdale Station through the PJM wholesale market.49 Although this cost could be mitigated by energy or capacity revenues received in the MISO market, Duke Kentucky avers that this would be dependent upon the capacity and energy price spread between MISO and PJM, which cannot be projected with any precision and is, therefore, not quantifiable, but would create additional risks in terms of customer cost volatility.<sup>50</sup> More significantly, Duke Kentucky informs that the company and its customers are better off remaining as an FRR entity.<sup>51</sup> Duke Kentucky states that the primary driver to participate as either an FRR or RPM entity is the company's net generation position, or the difference between generation available to serve as PJM capacity and the expected customer-load obligation.<sup>52</sup> Duke Kentucky asserts that the benefit of RPM lies in a generation owner's ability either to monetize the market value of owned generation in excess of customer demand or to gain access to the market liquidity inherent in RPM in order to fill any shortfall in generation.<sup>53</sup> Because Duke Kentucky's net generation position is relatively flat, i.e., its

<sup>51</sup> *Id.* at 35.

<sup>52</sup> Id. at 36.

<sup>53</sup> Id.

<sup>48</sup> Id. at 34.

 <sup>&</sup>lt;sup>49</sup> Duke Kentucky assumes a capacity price of \$120 per MW-Day. See, Verderame Testimony at 19.
<sup>50</sup> Verderame Testimony at 34–35.

customer load nearly matches its available capacity, Duke Kentucky states that it does not expect to be a significant buyer or seller of capacity in the market and, therefore, will not likely accrue any benefits from being an RPM entity.

Regarding the firm natural gas transportation alternative, Duke Kentucky states that it sought information from the three gas pipelines that are in close proximity to the Woodsdale Station: Texas Eastern, Texas Gas, and Rockies Express Pipeline ("Rockies Express").<sup>54</sup> Duke Kentucky advises that each of the pipeline transmission company required a 20-year commitment for firm transportation and that the costs for firm transportation for full burn quantity ranged from \$168 million to \$482 million on a nominal basis.<sup>55</sup> Duke Kentucky states that this was cost prohibitive when compared to the proposed ULSD project and in light of the low capacity factor of the Woodsdale Station.<sup>56</sup>

With respect to the redundant non-firm gas infrastructure alternative, Duke Kentucky contends that this alternative would require substantial capital investments, and having multiple interruptible contracts would still fall short of complying with the Capacity Performance rules.<sup>57</sup> With respect to the Texas Gas pipeline, Duke Kentucky avers that it would take approximately \$1.5 million to bring that pipeline back into service. However, Duke Kentucky states that this does not resolve the pipeline's inability to guarantee minimum gas pressures desired to serve the Woodsdale Station,

- <sup>55</sup> Id.
- <sup>56</sup> Id.
- 57 Id. at 41.

<sup>54</sup> Id. at 39.

which limitation caused Duke Kentucky to deactivate the pipeline in the first instance.<sup>58</sup> As to the Rockies Express pipeline, Duke Kentucky asserts that it would cost approximately \$7.0 million to construct an interconnection to serve the Woodsdale Station.<sup>59</sup> Although the capital costs for a redundant non-firm gas infrastructure is less than the cost of the proposed ULSD fuel system. Duke Kentucky points out that interruptible gas transportation, even redundant ones, would most likely not comply with the Capacity Performance requirements. Duke Kentucky explains that interruptible transport and delivery of gas has a low likelihood of reducing fuel-supply risk during high-demand situations because of operational limitations that could result in operational flow orders during those periods.<sup>60</sup> Duke Kentucky further explains that there is a substantial likelihood that during a severe weather event like the 2014 Polar Vortex, all three pipelines, which operate in the Lebanon Hub gas-trading region, would initiate operational flow orders and restrictions to the Woodsdale Station.<sup>61</sup> Lastly, Duke Kentucky states that there are operational limitations at the Woodsdale Station that would render redundant non-firm gas transportation impractical. According to Duke Kentucky, the Woodsdale Station can consume gas from only one pipeline during any given run, and there is no feasible way for the Woodsdale Station's fuel supply to be automatically diverted, without a forced shutdown, between and among different pipelines while the station is running.62

- <sup>58</sup> Id. See also Miller Testimony at 4.
- <sup>59</sup> Verderame Testimony at 41.
- 60 Id.
- <sup>61</sup> *Id*.
- 62 Id. at 42-43.

Regarding the alternative associated with refurbishing the existing propane system, Duke Kentucky states that the on-site propane storage has a capacity of approximately 485,000 gallons.63 This would allow Duke Kentucky to run the Woodsdale Station for fewer than five hours at full burn.<sup>64</sup> Given the volume of fuel required to operate the Woodsdale Station on propane and the logistics of propane delivery, Duke Kentucky contends that there is no practicable way to run the Woodsdale Station directly from propane trucks with real time resupply.<sup>65</sup> Expanding the propane storage system would cost approximately \$40 million, but Duke Kentucky evaluated propane as being less reliable than fuel oil in terms of fuel availability, and that fuel oil has greater exposure to commodity fuel price volatility, and presents significant operational constraints and greater safety risks.<sup>66</sup> Duke Kentucky notes that there is little sufficient and readily available supply of propane that can be procured and delivered to the Woodsdale Station in a timely manner, especially during the winter months.<sup>67</sup> The operational equivalent of a 72-hour ULSD fuel supply is approximately 5.8 million gallons of propane, which would require roughly 700 standard truckloads of propane.68

- 63 Id. at 44.
- 64 Id. at 45.
- <sup>65</sup> Id.
- <sup>66</sup> Id.
- 67 Id. at 46.
- <sup>68</sup> Id.

Other than the Todhunter fuel terminal, there are no major propane supply centers within 100 miles of the Woodsdale Station.<sup>69</sup> The closest significant supply sources of propane are located in Pennsylvania, West Virginia, and the Chicago area, which are all more than 200 miles away.<sup>70</sup> Duke Kentucky further notes that propane demand is highly skewed toward the winter heating season, which affects pricing and physical availability.<sup>71</sup> Duke Kentucky states that propane pipelines, including the one supplying propane to Todhunter, can go into allocation protocol during periods of high demand in which the pipeline company prioritizes the finite pipeline availability to higher volume purchasers. At such times, Duke Kentucky contends that it would be nearly impossible to find significant volumes of spot propane to refill storage during allocation periods.<sup>72</sup>

Regarding the alternative of converting the Woodsdale Station to burn ethane, Duke Kentucky states that there are very few electric generation plants that utilize ethane as a fuel. Although the conversion costs would be similar to that of fuel oil, Duke Kentucky avers that the risks of handling such a volatile pressurized liquid and the same batch delivery risks similar to propane rendered this alternative less reasonable than the proposed ULSD fuel system.

After evaluating all of the possible alternatives, Duke Kentucky selected the proposed ULSD fuel system as the risk mitigation and compliance solution for the Capacity Performance requirements given that it was the most effective, operationally

<sup>&</sup>lt;sup>69</sup> Id. <sup>70</sup> Id

<sup>&</sup>lt;sup>71</sup> Id. at 47.

<sup>72</sup> Id.

practical, and least-cost option over the remaining life of the Woodsdale Station.<sup>73</sup> Although the alternative involving expansion of the existing propane storage system was relatively less expensive from a capital investment basis, Duke Kentucky states that the fuel oil proposal has less risk concerning fuel availability at peak periods.<sup>74</sup> Duke Kentucky informs that there are multiple diesel fuel terminals in the greater Cincinnati area that are sourced from pipelines or barges.<sup>75</sup> The ULSD fuel system includes equipment for unloading, storage, forwarding, and firing systems for each of the Woodsdale Station's six combustion turbine units.<sup>76</sup> The ULSD fuel system will store nearly 4 million gallons of diesel fuel at the Woodsdale Station, which would allow 72 hours of full load burn before the station would exhaust its supply of fuel oil with no refill.<sup>77</sup> The ULSD fuel system is designed with four fuel oil unloading stations, which will allow the Woodsdale Station to refill the fuel oil tanks at a rate of five trucks per hour delivering approximately 42,500 gallons of fuel oil, with the units capable of burning 51,000 gallons per hour at full load.<sup>78</sup>

Construction of the proposed ULSD fuel system will begin in April 2018 with projected in-service dates for units 1 and 2 in December 2018 and the remainder of the units in March and April 2019.<sup>79</sup> Duke Kentucky states that the proposed construction

<sup>78</sup> Id.

<sup>&</sup>lt;sup>73</sup> Id. at 51.

<sup>74</sup> Id. at 52-53.

<sup>&</sup>lt;sup>75</sup> *Id.* at 53.

<sup>&</sup>lt;sup>76</sup> Direct Testimony of Troy A. Wilhelm ("Wilhelm Testimony") at 3.

<sup>&</sup>lt;sup>77</sup> Verderame Testimony at 53.

<sup>&</sup>lt;sup>79</sup> Wilhelm Testimony at 5–6.

will not require an investment sufficient to materially affect its financial condition.<sup>80</sup> Duke Kentucky will finance the construction of the ULSD fuel system through continuing operations and, if necessary, through debt issuances.<sup>81</sup> Duke Kentucky is not seeking to include the cost of construction and O&M costs associated with the proposed ULSD fuel system in this proceeding, but will seek to include such costs in its electric base rates at some point in the future.<sup>82</sup>

### DISCUSSION

The Commission's standard of review of a request for a CPCN is well settled. 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>83</sup> To obtain a CPCN, the utility must demonstrate a need for such facilities and an absence of wasteful duplication.<sup>84</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

<sup>81</sup> Id.

82 Id. at 3-4.

<sup>83</sup> KRS 278.020(1). Although the statute exempts certain types of projects from the requirement to obtain a CPCN, the exemptions are not applicable to this case.

<sup>&</sup>lt;sup>80</sup> Direct Testimony of William Don Wathen, Jr. ("Wathen Testimony") at 3.

<sup>&</sup>lt;sup>84</sup> Kentucky Utilities Co. v. Pub. Serv. Comm'n, 252 S.W.2d 885 (Ky. 1952).

time as to establish an inability or unwillingness to render adequate service.<sup>85</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>86</sup> To demonstrate that a proposed facility does not result in wasteful duplication, we have held that the applicant must demonstrate that a thorough review of all reasonable alternatives has been performed.<sup>87</sup> Selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication.<sup>88</sup> All relevant factors must be balanced.<sup>89</sup>

Having reviewed the record and being otherwise sufficiently advised, the Commission finds that Duke Kentucky has established that there is a need to comply with the Capacity Performance requirements implemented by PJM to ensure that capacity resources that are offered and accepted into the PJM capacity market are available when called upon to perform. The Capacity Performance requirements are applied to generation owners in both the RPM construct and the FRR construct, which

<sup>85</sup> *Id.* at 890.

<sup>86</sup> Id.

<sup>&</sup>lt;sup>87</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>&</sup>lt;sup>88</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), final Order.

<sup>&</sup>lt;sup>89</sup> Case No. 2005-00089, *East Kentucky Power Cooperative, Inc.* (Ky. PSC Aug. 19, 2005), final Order at 6.

include Duke Kentucky. Failure to perform when called upon would expose Duke Kentucky and its ratepayers to strict and significant financial penalties and assessments. Because the Woodsdale Station does not have on-site fuel storage, and due to the interruptible gas transportation, we find it reasonable for Duke Kentucky to address measures to mitigate this risk exposure.

The Commission further finds that there is sufficient evidence in the record to support the conclusion that proposed ULSD fuel system is the most reasonable least-cost alternative for complying with PJM's Capacity Performance requirements. The record shows that Duke Kentucky evaluated the various options based upon several factors such as relative cost, operational risk, minimum compliance requirements, mitigating risks of non-performance, feasibility, and fuel supply risk. The Commission finds that Duke Kentucky's evaluation revealed that the proposed ULSD fuel system is, on balance, favorable in terms of overall project costs and ability to meet the requirements of PJM's Capacity Performance with relatively minimal impacts to current operational processes and relatively lower risk with respect to fuel availability during the winter season. The Commission finds Duke Kentucky's selection to be reasonable. Accordingly, based on the foregoing reasons, the Commission will approve Duke Kentucky's application.

IT IS THEREFORE ORDERED that Duke Kentucky's request for a CPCN to construct a ULSD fuel system at its Woodsdale Station is granted.

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By the Commission



ATTEST:

war R. Pinson **Executive** Director

Case No. 2017-00186

\*Adele Frisch Duke Energy Kentucky, Inc. 139 East Fourth Street Cincinnati, OH 45201

\*Duke Energy Kentucky, Inc. 139 East Fourth Street Cincinnati, OH 45202

\*Duke Energy Kentucky, Inc. 139 East Fourth Street Cincinnati, OH 45202

\*E. Minna Rolfes-Adkins Paralegal Duke Energy Kentucky, Inc. 139 East Fourth Street Cincinnati, OH 45201

\*Rocco O D'Ascenzo Duke Energy Kentucky, Inc. 139 East Fourth Street Cincinnati, OH 45201