

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 TO)	CASE NO.
CONSTRUCT A 138 KV TRANSMISSION LINE)	2019-00361
AND ASSOCIATED FACILITIES IN BOONE)	
COUNTY, KENTUCKY (WOODSPOINT TO AERO)	
TRANSMISSION LINE PROJECT))	

ORDER

On October 31, 2019, Duke Energy Kentucky, Inc. (Duke Kentucky) filed an application requesting a Certificate of Public Convenience and Necessity (CPCN) to construct a new transmission line and associated transmission facilities in Boone County, Kentucky. Specifically, Duke Kentucky proposes to construct an approximately two-mile, 138-kV single-circuit transmission line connecting the 138-kV Woodspoint Substation and the 138-kV Aero Substation.¹ Duke Kentucky states that the project is needed due to load growth in the Boone County area, including the new Amazon Prime Air Hub facility at the Cincinnati/Northern Kentucky International Airport (CVG), and system reliability of the surrounding Duke Kentucky transmission and distribution systems. According to Duke Kentucky, the total estimated capital cost of the transmission project is approximately \$8.4 million. The estimated annual ongoing cost of operation of the project once completed is expected to be approximately \$10,000. Duke Kentucky proposes to

¹ The Aero Substation project was approved by the Commission in Case No. 2019-00251, *Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct a 138 kV Transmission Line and Associated Facilities in Boone County, Kentucky (Oakbrook to Aero Transmission Line Project)* (Ky. PSC Dec. 18, 2019).

finance the construction through continuing operations and debt instruments, as necessary.

On November 8, 2019, the Commission issued an Order extending the deadline for the processing of this matter, pursuant to KRS 278.020(9), and establishing a procedural schedule for the processing of this matter. The procedural schedule established deadlines for requests for intervention and two rounds of discovery upon Duke Kentucky's application. There are no intervenors in this matter. Duke Kentucky provided responses to two rounds of discovery requests propounded by Commission Staff. The matter now stands submitted to the Commission for a decision based on the existing evidentiary record.

PROPOSED TRANSMISSION LINE PROJECT

Duke Kentucky states that the purpose of the proposed transmission line project is to provide an additional 138-kV feed to the Aero Substation to provide reliability to the substation.² The proposed project is needed, according to Duke Kentucky, as part of the overall service plan to support future load growth in the area³ and the reliability of the surrounding Duke Kentucky transmission and distribution systems. Duke Kentucky states that the proposed project is also necessary to serve the new Amazon Prime Air Hub facility by providing a looped feed to enhance reliability to the area in the event of either planned or unplanned transmission outages serving the CVG area and Boone County.⁴

² Direct Testimony of Yanthi W. Boutwell (Boutwell Testimony) at 4.

³ *Id.* Mr. Boutwell also provides examples of other commercial developments in the area such as the Al Neyer development involving a \$65 million industrial building with a one million-square foot distribution center and 240 apartments just south of the Amazon Prime Air Hub facility; GE Aviation On Wing Support Center will be moving into a 68,000 square-foot facility in Florence; as well as potential new facilities from DHL and AeroTerm LLC and new hotels being built near the CVG area. *Id.* at 7.

⁴ *Id.*

Duke Kentucky informs that the Amazon Prime Air Hub will be a new air logistics center out of CVG to support Amazon's business model.⁵ Duke Kentucky further informs that construction of the Amazon Prime Air Hub facilities will be done in phases, with the first phase to be operational by the beginning of 2021 and the entire facility being completed around 2031.⁶ Duke Kentucky states that Amazon has leased more than 1,100 acres from the airport to build the air hub facilities, which will include three million square feet of building space and hangars for cargo planes.⁷

Duke Kentucky states that without this proposed transmission project and in conjunction with the transmission facilities proposed in Case No. 2019-00251, the Aero Substation would be on a radial feed, which presents reliability concerns during storms and severe weather events.⁸ Duke Kentucky points out that the radial configuration limits its ability to perform maintenance and switching on the transmission system as either situation would require an outage at the Aero Substation and interruption to local service customers fed from the Aero Substation.⁹ Duke Kentucky contends that an additional feed is needed for the Aero Substation due to system reliability concerns with the existing 69-kV lines feeding the Oakbrook Substation and strengthening the electric system. Duke Kentucky maintains that there is not a reasonable alternative to meet this need without greater impacts to the public outside of the proposed project.¹⁰

⁵ Boutwell Testimony at 5.

⁶ *Id.*

⁷ *Id.*

⁸ *Id.*

⁹ *Id.* at 5–6.

¹⁰ *Id.* at 6.

The path of the proposed transmission line starts out of the new Woodspoint Substation, which will be located south of Airport Road off of Burlington Pike (State Route 18), and heads northwest across Service Road and Mall Road (State Route 3157). The route passes between two car dealerships, then crosses over Houston Road and continues northwest along a parcel boundary before turning northeast to meet State Route 18. This portion of the route is approximately 0.6 miles in length. The route then parallels State Route 18 for 0.4 miles before crossing over State Route 18 and following the north side of the highway for another 0.2 miles. The route then heads north for 0.8 miles by following parcel lines, eventually turning east prior to reaching Aero Parkway (State Route 1017) and into the Aero Substation located south of CVG.¹¹

Duke Kentucky states that the standard right-of-way for a new transmission line is 100 feet where the line is cross country and 75 feet where the line parallels an existing road right-of-way.¹² Duke Kentucky further states that a greater right-of-way width will not exceed 100 feet for the proposed transmission line.¹³ Duke Kentucky notes that the proposed route corridor is 200 feet to allow for 50 feet on either side of the proposed right-of-way to account for adjustments required during finalized negotiations with landowners and access needs.¹⁴ Duke Kentucky sent letters to landowners within 125 feet of the

¹¹ Boutwell Testimony at 3–4. The Aero Substation, which was approved in Case No. 2019-00251, will be located off Aero Parkway on an approximately 3.75 acre site, which will be under an easement with CVG.

¹² Boutwell Testimony at 10.

¹³ *Id.*

¹⁴ Boutwell Testimony at 11.

selected route notifying them of the placement of the proposed line within or near their property.¹⁵

Duke Kentucky states that it has requested Duke Energy Ohio (Duke Ohio) to provide a switching station for 138-kV equipment to feed the proposed 138-kV transmission line for reliability of the Aero Substation.¹⁶ Duke Kentucky informs that Duke Ohio has agreed to construct, own, and operate the Woodspoint Substation for this purpose.¹⁷ The Woodspoint Substation will be located south of the Airport Ford car dealership, which is located at 8001 Burlington Pike (State Route 18) within Boone County.¹⁸ Access to the substation will be off of Service Road located to the west of Airport Ford.¹⁹

The Woodspoint Substation will be in the vicinity of an existing 138-kV line that is owned and operated by Duke Ohio and will provide a secondary 138-kV connection to the Aero Substation. The Woodspoint Substation will provide switching capability for three 138-kV transmission lines.²⁰ One line will be the proposed line from the Woodspoint Substation to the Aero Substation.²¹ The other two lines will be created by splitting and routing the existing Duke Ohio 138-kV line into the Woodspoint Substation.²² According

¹⁵ Boutwell Testimony at 10.

¹⁶ Boutwell Testimony at 11–12.

¹⁷ Boutwell Testimony at 12.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

²² *Id.*

to Duke Kentucky, this will allow for greater reliability for the supply of power to the proposed Woodspoint to Aero line by eliminating interruptions of supply of that line if there is an event on either of the Duke Ohio 138-kV lines.²³

Construction of the proposed transmission line is expected to begin in the summer of 2020.²⁴ Duke Kentucky anticipates that the new transmission line will be energized by the end of 2020, and that restoration will continue into spring of 2021.²⁵

Duke Kentucky developed a siting study to evaluate and determine the preferred route for the proposed transmission line that minimizes the impact to the natural and built environments while also optimizing Duke Kentucky's business needs.²⁶ Duke Kentucky's siting team consisted of employees who had experience in transmission line siting, planning, engineering, construction, permitting, public engagement, project management, real estate, and agency and public outreach.²⁷ Duke Kentucky also retained Stantec Consulting Services, Inc. (Stantec) to assist in the siting process.²⁸

Duke Kentucky described the siting study methodology as containing the following five steps: (1) establish a study area and siting guidelines; (2) compile data and map constraints; (3) identify a segment network; (4) solicit public comments; (5) create and analyze route alternatives; and (6) select a preferred route.²⁹ Duke Kentucky states that

²³ *Id.*

²⁴ Boutwell Testimony at 13.

²⁵ *Id.*

²⁶ Direct Testimony of John K. Hurd (Hurd Testimony) at 3.

²⁷ Hurd Testimony at 5.

²⁸ *Id.*

²⁹ Hurd Testimony at 7.

the study area encompassed a 2.24-square-mile area between the existing Duke Ohio 138-kV transmission line and an area encompassing the Woodspoint Substation and the Aero Substation.³⁰ Approximately one half of the study area is located in an unincorporated portion of Boone County, with the remainder located in the city of Florence, Kentucky.³¹ According to the Stantec LRE Report, the study area is characterized by mixed residential and commercial development, scattered by hay fields, fallow fields, and woodlots.³² Existing development includes an airport, two golf courses, suburban housing development, warehouse facilities, car dealerships, storage facilities, restaurants, and other retail buildings.³³ Major travel corridors include State Route 18, Mall Road, Hopeful Church Road, Houston Road, and Aero Parkway.³⁴ Duke Kentucky also notes that the study area was developed to provide opportunity to identify unique route alternatives for the proposed transmission line.³⁵

The Duke Kentucky siting team developed the following siting guidelines, which were applied throughout the siting process:

- Minimize the remove or substantial interference with the use of existing residences;
- Minimize the removal of existing barns, garages, commercial buildings, and other non-residential structures;

³⁰ Hurd Testimony at 7. *See also* Application, Exhibit 6, Aero to Woodspoint Transmission Line Project, Line Route Evaluation Report for Detailed Project No. M180077006 by Stantec Consulting Services Inc. (LRE Report) at 10 of 96.

³¹ Hurd Testimony at 8.

³² Stantec LRE at 10 of 96.

³³ *Id.*

³⁴ *Id.*

³⁵ Hurd Testimony at 7.

- Minimize the interference with the use and operation of existing schools, recognized places of worship, cemeteries, and facilities used for cultural, historical, and recreational purposes;
- Minimize interference with economic activities, including agricultural activities;
- Minimize the crossing of environmentally and culturally sensitive lands, such as recreation lands, designated battlefields and other designated historic sites, national and state forests and parks, nature preserves, conservation lands and easements, large lakes and large wetland complexes, critical habitat, and other unique or distinct natural resources;
- Where crossings of sensitive lands are unavoidable, maximize the use of existing crossings;
- Minimize substantial visual impact on residential areas and public resources; and
- Minimize route length, circuitry, cost, and special design requirements.³⁶

The data collection process consisted of reviewing the constraint maps and data collection in the field.³⁷ Certain members of the siting team would conduct reconnaissance of the study area on multiple occasions from public vantage points.³⁸ The field reconnaissance verified information on the locations of certain sensitive receptors, such as schools, residences, and churches, and photographs were taken to document existing site conditions.³⁹

With respect to the development of a network segment, Duke Kentucky identified siting corridors that minimized impacts to the built and natural environment and from the corridors created a segment network that contained 47 feasible study segments.⁴⁰ Duke Kentucky states that the study segments were further reviewed and refined and a field

³⁶ Stantec LRE at 10 of 96.

³⁷ Hurd Testimony at 8.

³⁸ Hurd Testimony at 8–9.

³⁹ Stantec LRE at 13 of 96.

⁴⁰ Hurd Testimony at 9.

reconnaissance was conducted to verify certain landmarks and other data that would later be used in the analysis step.⁴¹ A map depicting the 47 study segments is shown below.



As part of its public outreach during the siting process, Duke Kentucky states that it met with representatives from the city of Florence and Boone County in May of 2019.⁴² Duke Kentucky also conducted an open house on June 19, 2019, and mailed notice to all property owners within 500 feet of the 47 route segments and invited them to the open house.⁴³ The purpose of the open house was to solicit comments and to give participants a broad overview of the purpose and need for the proposed transmission line, a

⁴¹ *Id.*

⁴² *Id.*

⁴³ *Id.*

description of the project elements, the study segments under consideration, and the proposed schedule for construction.⁴⁴

Duke Kentucky describes the fifth step in the siting methodology as combining the study segments into 174 unique routes for analysis.⁴⁵ Duke Kentucky states that the data were categorized by criteria group, criteria, and subcriteria, with each of these category being weighted based on sensitivity to electrical transmission line sitting and compiled into a single composite score for each route.⁴⁶ Duke Kentucky notes that additional qualitative data were also evaluated such as existing and proposed developments and public comments.⁴⁷ The criteria group was made up the following four constraints: ecology, land use, cultural, and engineering.⁴⁸ The criteria and subcriteria consisted of further discrete opportunities or constraints data reflective of the criteria group.⁴⁹ For example, the land use criteria group was broken down into the following criteria: residences, properties, institutional uses, sensitive lands, agricultural and industrial uses, new easement required, and paralleling linear infrastructure.⁵⁰ Each of the criteria were then further broken down to develop the subcriteria factors, i.e., residences was made up of subcriteria consisting of number of residences within the right-of-way, number of residences within 200 feet of the right-of-way, and number of residences between 200

⁴⁴ Hurd Testimony at 10.

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ Stantec LRE at 15–16 of 96.

⁴⁹ *Id.*

⁵⁰ *Id.*

and 500 feet of the right-of-way.⁵¹ The subcriterion scores for each route were then added together to arrive at an overall score for that route.⁵²

The routes were ranked based on each route's overall score, with the lowest score being the top ranked route.⁵³ Duke Kentucky states that the scores were not considered a definitive comparison of the routes, but that they provided a useful index of the relative overall impact associated with each route alternative.⁵⁴ Duke Kentucky informs that the goal was to identify the least impactful route, using both the weighted analysis and the unquantifiable features of the routes as identified through field reconnaissance and interactions with property owners.⁵⁵

Duke Kentucky notes that the scores of the top ten ranked routes were separated by 4.5 points and generally shared many of the same segments. The top ten ranked routes are listed in the following table.⁵⁶

Route	Ecology		Land Use		Cultural		Engineering		Total	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
80	7.78	49	2.95	2	1.78	80	3.76	17	16.26	1
68	7.97	57	2.94	1	1.78	80	3.75	16	16.44	2
63	8.81	64	3.84	8	2.00	143	3.13	4	17.78	3
56	7.89	54	3.23	3	1.78	80	5.29	49	18.18	4
32	9.90	68	3.46	6	1.78	80	3.73	14	18.87	5
20	10.09	74	3.46	5	1.78	80	3.72	13	19.04	6
75	8.62	60	4.25	11	2.00	143	4.72	36	19.59	7
51	8.73	62	3.91	10	2.00	143	5.04	43	19.69	8
15	10.93	87	4.35	12	2.00	143	3.10	3	20.39	9
8	10.02	71	3.74	7	1.78	80	5.25	48	20.79	10

⁵¹ *Id.*

⁵² Stantec LRE at 17 of 96.

⁵³ Stantec LRE at 18 of 96.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

Duke Kentucky states that the routes in the eastern portion of the study area had a relatively higher score than the routes located in the western portion of the study area primarily due to higher scores because of their proximity to residences, golf courses, and churches as well as line length.⁵⁷ Duke Kentucky thus omitted from further consideration any alternative routes that used Segment 47 and traversed the eastern part of the study area.⁵⁸ Among the ten most favorable routes and although it did have the lowest score, Duke Kentucky states that it selected Route 15 as the preferred route because it was the most favorable route in terms of engineering constraints, landowner relationship, proximity to existing road crossings and improvements, and minimization of impacts of future development in the area.⁵⁹ Duke Kentucky notes that Route 15 had the third best engineering score out of all routes considered because it had a shorter route length, avoided development constraints along existing roads, and had minimal existing underground utilities within its right-of-way.⁶⁰ Duke Kentucky points out that Route 15 had similar land and cultural scores to the other top ranked routes, but had a higher ecological score due to the presence of a forested woodlot in the vicinity of Zig Zag Road and potential for small, non-forested wetlands within its right-of-way.⁶¹ Duke Kentucky notes, however, that the location of Route 15 reduced impacts to landowners because it followed property lines when crossing the woodlot and avoided residential dwellings along

⁵⁷ *Id.*

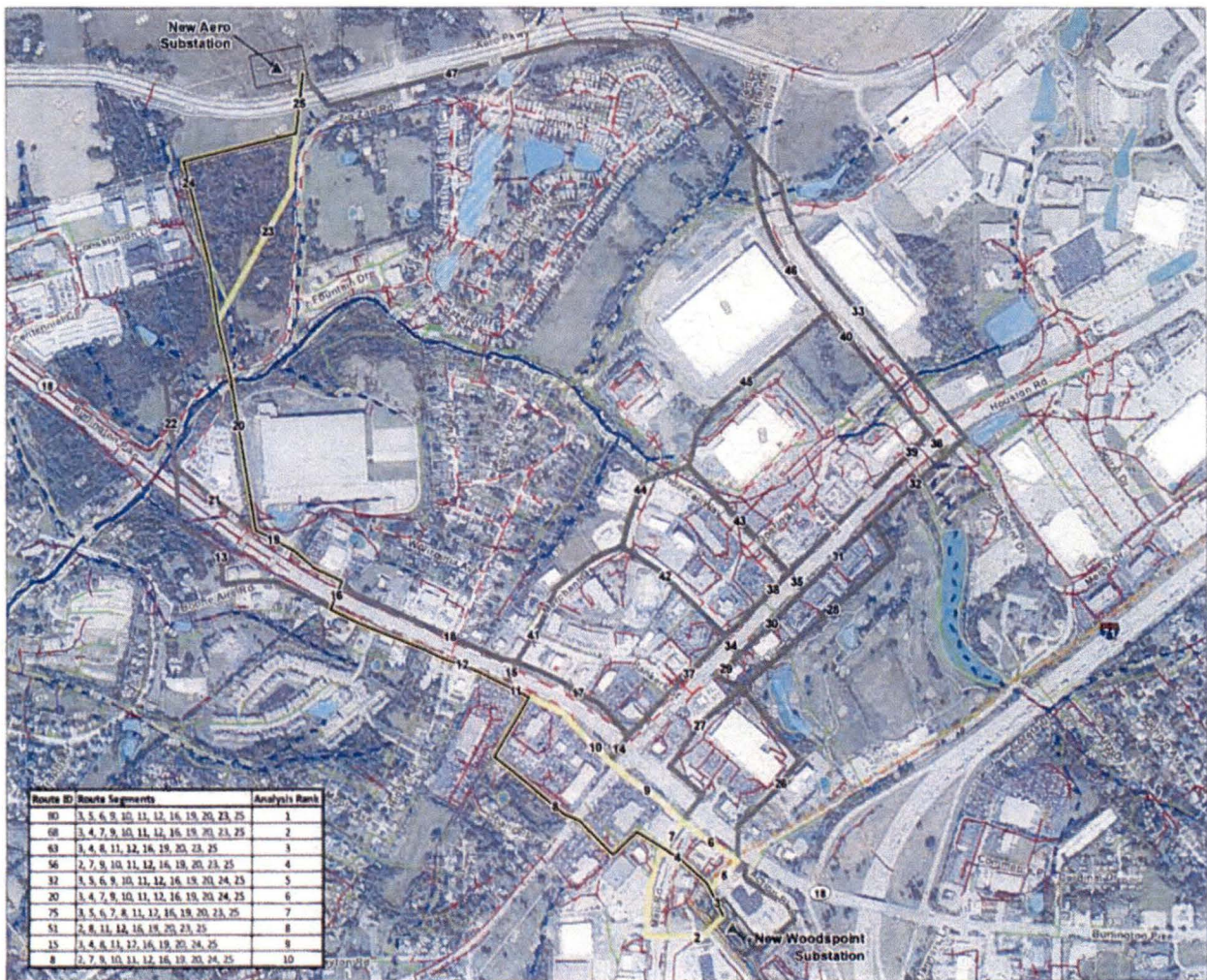
⁵⁸ *Id.*

⁵⁹ Stantec LRE at 20.

⁶⁰ *Id.*

⁶¹ *Id.*

Zig Zag Road.⁶² Although Route 80 had the lowest score, Duke Kentucky did not select this route because it exited the Woodspoint Substation at a location that is constrained by existing transmission and underground utilities and would have entered the road intersection of Mall Road and State Route 18 at a difficult location for construction and maintenance.⁶³ A map depicting the top ten ranked routes and the preferred route is shown as follows.



⁶² *Id.*

⁶³ *Id.*

DISCUSSION

To establish that the public convenience and necessity require the construction of a new facility, an applicant must demonstrate the need for the proposed facilities, and that the proposed construction will not result in the wasteful duplication of facilities.⁶⁴

“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.⁶⁵

“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.”⁶⁶ 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.⁶⁷ Selection of a proposal that ultimately costs more than an alternative does not necessarily result in

⁶⁴ *Kentucky Utilities Company v. Public Service Commission*, 252 S.W.2d 885 (Ky. 1952).

⁶⁵ *Id.* at 890.

⁶⁶ *Id.*

⁶⁷ 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).

wasteful duplication.⁶⁸ All relevant factors must be balanced.⁶⁹ The statutory touchstone for ratemaking in Kentucky is the requirement that rates set by the Commission must be fair, just, and reasonable.⁷⁰

Having reviewed the record and being otherwise sufficiently advised, the Commission finds that Duke Kentucky has established sufficient evidence to demonstrate that the proposed transmission line project is needed to provide service to anticipated load growth in the local area, including the location of the new Amazon Prime Air Hub. The Commission further finds that construction of the proposed 138-kV transmission line is reasonable and will not result in the wasteful duplication of facilities. The evidence also supports Duke Kentucky's selection of the preferred route. Although the top ten ranked routes were separated by four points, the Commission is persuaded by the expert judgment of Duke Kentucky selecting Route 15 as the preferred route based on the fact that Route 15 was able to integrate with existing developments and minimizes potential impact to future land uses.

IT IS THEREFORE ORDERED that:

1. Duke Kentucky is granted a CPCN to construct and operate the proposed transmission line facilities as set forth in its application.

⁶⁸ 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.

⁶⁹ Case No. 2005-00089, *East Kentucky Power Cooperative, Inc.* (Ky. PSC Aug. 19, 2005), final Order at 6.

⁷⁰ KRS 278.190(3).

2. Duke Kentucky shall file a survey of the final location of the line after any modifications are finalized as authorized herein and before construction begins.

3. Duke Kentucky shall file “as-built” drawings or maps within 60 days of the completion of the construction authorized by this Order.

4. Duke Kentucky’s request for authority to move the electric transmission line and associated right-of-way only within the corridor of the preferred route is granted.

5. Duke Kentucky shall immediately notify the Commission upon knowledge of any material changes to the scope of the transmission line project, including, but not limited to, increase in cost, any significant delays in the construction of the transmission line, or any changes in the route of the transmission line.

6. Any documents filed pursuant to ordering paragraph 2, 3, and 5 of this Order shall reference the case number of this matter and shall be retained in the post-case correspondence files.

7. This case is hereby closed and will be removed from the Commission’s docket.

By the Commission

ENTERED
FEB 27 2020
KENTUCKY PUBLIC
SERVICE COMMISSION

ATTEST:



Executive Director

*Debbie Gates
Duke Energy Kentucky, Inc.
139 East Fourth Street
Cincinnati, OH 45201

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

*Minna Sunderman
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