COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application Of Kentucky Power Company For A Certificate Of Public Convenience And Necessity To Construct A 138 kV Transmission Line In And Associated Facilities In Pike And Floyd Counties (Kewanee-Enterprise Park 138 kV Transmission Project	)	Case No. 2020-00062

DIRECT TESTIMONY OF

EMILY S. LARSON
POWER ENGINEERS, INC.

ON BEHALF OF KENTUCKY POWER COMPANY

September 2020

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TESTIMONY INDEX

SECTION **PAGE**

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Emily S. Larson. I am employed by POWER Engineers, Inc. ("POWER"), 11 South 12th Street, Richmond, Virginia 23219, as Project Manager in the Environmental Division.

II. BACKGROUND

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I hold a Bachelor of Science degree in Environmental Science from Towson University and have completed graduate coursework at George Washington University. I have been associated with POWER since 2015 and have had various technical, supervisory, and managerial roles in many of POWER'S electric utility transmission siting projects in that time. I have thirteen years of experience in siting and environmental permitting of electric transmission lines. I routinely oversee the work of POWER technical staff members who are responsible for the environmental permitting and siting aspects of POWER's transmission line projects with a focus in Kentucky, Virginia and West Virginia.

Q. PLEASE DETAIL FOR THE COMMISSION POWER'S EXPERIENCE IN ANALYZING ALTERNATIVE ROUTING FOR ELECTRIC TRANSMISSION LINES.

A. POWER has been providing routing, siting, and permitting services for companies that construct electric transmission lines throughout the country for over 40 years. POWER has successfully sited and permitted over 400 transmission line projects covering thousands of miles of high voltage transmission lines and associated facilities. POWER's senior environmental specialists and transmission line engineers coordinate closely to evaluate alternative routes, prudently weighing all aspects of the project based on need, project specific criteria, agency and public concerns, resource studies, and project technical specifications.

Q. HAVE YOU PREVIOUSLY BEEN INVOLVED IN ELECTRIC TRANSMISSION LINE SITING STUDIES?

A. Yes. I have served as Project Manager or otherwise supervised routing, siting, planning and permitting for large interstate transmission line projects in more than ten states over my career, including Kentucky, Virginia, West Virginia, New Jersey, Pennsylvania, Kansas, Missouri, Illinois, Indiana, Florida, South Carolina, and Idaho.

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY TO THIS COMMISSION ON BEHALF OF KENTUCKY POWER?

A. Yes. I filed testimony on behalf of Kentucky Power in connection with its application for a certificate of public convenience and necessity for the Hazard–Wooton 161 kV transmission line (Case No. 2017-00328) as well as Case No. 2018-00209, in which the Commission conditionally granted the Company's application for a certificate of public

convenience and necessity to construct the Kewanee 138 kV Transmission Line Extension and the Kewanee 138 kV Substation.

III. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I am testifying in support of Kentucky Power Company's ("Kentucky Power" or the "Company") Application for a Certificate of Public Convenience and Necessity to construct the proposed Kewanee-Enterprise Park 138 kV Transmission Project in Floyd and Pike counties (the "Application"). In my testimony, I:

- Describe the methodology employed by POWER in conducting the siting study that was used in identifying and evaluating the alternative transmission line routes and substation sites.
- Describe the results and conclusions of the siting study, as well as the basis for the recommendation of the Proposed Route.
- Sponsor the siting study.

IV. THE SITING STUDY

A. Overview

Q. PLEASE DESCRIBE POWER'S ROLE RELATED TO THE PROPOSED PROJECT.

A. POWER was retained in 2018 by the Company to identify and evaluate alternative substation sites and transmission line routes for a proposed substation (the "Kewanee 138 kV Substation") and proposed approximately five mile 138 kV double-circuit transmission line (the "Kewanee 138 kV Transmission Line Extension"). POWER evaluated several locations for the Kewanee 138 kV Substation, two of which were presented to the public, and ultimately determined a preferred site immediately adjacent to and south of the

Kentucky Enterprise Industrial Park (the "Enterprise Park"). POWER was responsible for assisting Kentucky Power in determining the most suitable route for the Kewanee 138 kV Transmission Line Extension, which will begin at a tap point on the Company's existing Sprigg–Beaver Creek 138 kV Transmission Line and extend to the new Kewanee 138 kV Substation[1] in the City of Pikeville. The transmission line and substation, together with the retirement of the Fords Branch 46 kV Substation, constitute the "Kewanee-Enterprise Park 138 kV Transmission Project" (or the "Project"). POWER prepared a report to document environmental suitability and feasibility of the Project and the alternative routes reviewed and evaluated. The Kewanee-Enterprise Park 138 kV Transmission Project Siting Study (the "Siting Study") is filed as **EXHIBIT 7** to the Application. I served as the Project Manager on behalf of POWER in connection with the siting and environmental work associated with the Project.

Q. DID POWER WORK ALONE TO DEVELOP THE ALTERNATIVE ROUTES?

A. No. A multi-disciplinary team assisted with the development of the alternative routes and in the selection of the Proposed Route (the "Siting Team"). The Siting Team members provided a wide range of experience including transmission line siting, impact assessment for a wide variety of natural resources and the human environment, impact mitigation, outreach, engineering, right-of-way, and construction management. Members of the Siting Team were from several companies including Kentucky Power, POWER, Engineering Analysis Services Incorporated (Outreach Support), and O. R. Colan Associates (right-of-way support).

[1] Kentucky Power's existing Fords Branch 46 kV Substation will be retired in conjunction with the construction of the new Kewanee 138 kV Substation. See Company Witness Koehler's Direct Testimony for additional information concerning the retirement of the Fords Branch 46 kV Substation.

Q. PLEASE DESCRIBE THE PURPOSE OF THE SITING STUDY.

A. The purpose of the Siting Study is to identify a route for the Kewanee 138 kV Transmission Line Extension that will enable the Company to acquire the required right-of-way, engineer, build, operate, and maintain the line, while minimizing overall environmental and land use impacts. The new transmission line will be located between the existing Sprigg–Beaver Creek 138 kV Transmission Line and the proposed Kewanee 138 kV Substation. Prior to the final selection of the Proposed Route for the Kewanee 138 kV Transmission Line Extension, POWER completed a Substation Selection Study, which identified the proposed substation location, and is an attachment to the Siting Study.

A. THE COMMISSION CANCELLED THE CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY ISSUED IN CASE NO. 2018-00209 FOLLOWING ENERBLU, INC'S BANKRUPTCY FILING. DID POWER AND KENTUCKY POWER RE-EXAMINE THE EARLIER SITING STUDY AND SITING DECISIONS FOLLOWING KENTUCKY POWER'S DECISION TO RE-ENGAGE THE PROJECT?

A. Yes. As described below, the Company examined the siting of both the substation and the transmission line.

B. The Kewanee 138 kV Substation Site**.**

Q. WHAT FACTORS WERE CONSIDERED IN EVALUATING LOCATIONS FOR THE PROPOSED KEWANEE 138 kV SUBSTATION SITE?

A. The proposed Kewanee 138 kV Substation should be located in proximity to the existing Fords Branch 46 kV Substation to minimize the amount distribution work required to connect the new substation to the existing system. The Fords Branch 46 kV Substation will

be retired as part of the Company's efforts to address the Baseline criteria violations and its deteriorating equipment and infrastructure as further discussed by Company Witness Koehler. The proposed Kewanee 138 kV Substation must serve customers previously served by the Fords Branch 46 kV Substation and will provide a new 12 kV/34.5 kV electrical distribution service to the general area including portions of Pike County, the City of Pikeville, and the Enterprise Park. The specific location of the substation was dependent on engineering and constructability considerations, future development plans, as well as efforts to avoid or minimize environmental and land use impacts. The location of the substation also affects the transmission line routes and associated impacts on residences and environment. POWER worked extensively with Kentucky Power and the City of Pikeville (the industrial park owner and developer) to complete a Substation Site Selection Study to determine the most suitable location for the proposed substation (Attachment A to the Siting Study).

Q. HOW MANY SUBSTATION SITES WERE EXAMINED?

A. Five possible substation sites were considered and reviewed with the City of Pikeville to ensure compatibility with current and future land use plans. The proposed substation site also needed to be located to enable the substation to provide service to both existing customers served by the Fords Branch 46 kV Substation (to be retired) and future electric customers in eastern Kentucky and the Enterprise Park. Three substation sites initially considered were eliminated due to possible conflicts with the development of the industrial park or because the locations were not advantageous for the 138 kV transmission line due to land use, terrain, or future mining permits. Ultimately, the substation location was narrowed to the two alternative sites that best avoided existing and future development.

Q. WHERE ARE THE TWO ALTERNATIVES LOCATED?

A. The northern alternative (Substation Site A) is located on the northeast side of the Enterprise Park south of Left Fork Island Creek Road and between Long Branch Road and Road Fork. The southern alternative (Substation Site B) is located at the very southern portion of the general Enterprise Park area. See **Map 4** of the Siting Study filed as **EXHIBIT 7** to the Application.

Q. HOW WAS THE PROPOSED SUBSTATION SITE SELECTED?

A. The two remaining sites were carried forward and shown to the public at an open house in 2018. No opposition to either site was expressed. In summary, the transmission line route entrance into the southern substation site is farther from development and residences along Road Fork and Left Fork Island Creek Road. The southern substation site allows for the most efficient transmission line design and avoids or minimizes impacts on people and environment better than the study segments connecting to the northern substation site. Ultimately, the southern substation site or Substation Site B was chosen as the proposed substation site because it has the least impact on natural resources and human uses of the land; it avoids the need for nonstandard design requirements and has the least constructability risks; it avoids unreasonable costs; and the landowner is willing to sell the property.[2]

Q. DISCUSS WHY THE PROPOSED SUBSTATION SITE IS UNCHANGED AFTER ENERBLU CANCELLED ITS FACILITY.

A. The proposed substation site remains the most suitable location for both transmission and distribution purposes notwithstanding the cancellation of the EnerBlu facility. In regard to

[2] An additional 1.5 acres is to be purchased from the City of Pikeville for the proposed Kewanee 138 kV Substation. The Company has already completed purchase of the 16.4-acre site as described in the Application.

transmission, the proposed site provides the most efficient transmission line design by minimizing line length across the Enterprise Park. Locating the substation outside, yet immediately adjacent to, Enterprise Park also avoids conflict with future development of the industrial park site while locating the substation in proximity to a similar land use and away from residential areas.

The proposed substation site also remains the most suitable site for distribution purposes. Because the existing Fords Branch 46 kV Substation cannot be expanded and upgraded in its current location due to the surrounding and immediately adjacent residential development, it must be retired. The existing distribution circuits currently served by the Fords Branch 46 kV Substation must connect to the new substation; therefore, it is important to locate the new substation in proximity to the substation being retired to limit the length of the required new or relocated connections to the distribution circuits. The proposed Kewanee 138 kV Substation and existing Fords Branch 46 kV Substation are less than two miles apart, thereby allowing the Company to feasibly relocate the distribution load and to continue serving customers previously served by the Fords Branch 46 kV Substation. See Company Witness Koehler's Direct Testimony for additional information concerning the proposed location of the substation as it relates to the Project's electrical needs.

C. Transmission Line Siting Methodology.

Q. ARE YOU FAMILIAR WITH THE ELECTRIC POWER RESEARCH INSTITUTE/GEORGIA TRANSMISSION CORPORATION'S ("EPRI") "OVERHEAD ELECTRIC TRANSMISSION LINE SITING METHODOLOGY"?

A. Yes.

Q. ARE YOU FAMILIAR WITH THE RELATED "KENTUCKY TRANSMISSION LINE SITING METHODOLOGY" ("KENTUCKY EPRI METHODOLOGY")?

A. Yes.

Q. PLEASE DESCRIBE THE KENTUCKY EPRI METHODOLOGY.

A. The Kentucky EPRI methodology develops and ranks alternative routes by assigning differing weights to different landscape resources or variables.[3] A study area comprising multiple differing land uses/land covers can yield sufficient differentiation in the values assigned to the alternatives to inform decision making; the larger the study area, the greater the possibility to consider a larger number of alternative routes based on differences in the land use or land cover across a large area.

Q. WAS THE KENTUCKY EPRI METHODOLOGY USED HERE?

A. No. Use of the Kentucky EPRI methodology was not feasible or probative due to the homogenous landscape, including land use and land cover, in the area between the tap point in the Sprigg–Beaver Creek 138 kV Transmission Line in Floyd County and the eastern terminus of the line near the Enterprise Park in the City of Pikeville.

Q. HOW DOES THE HOMOGENOUS LANDSCAPE AFFECT THE RESULTS PRODUCED BY THE KENTUCKY EPRI METHODOLOGY?

A. The study area is dominated by undeveloped land on former surface mining sites, forested areas on slopes, and scattered residential development located along roadways located in valley bottoms (Left Fork and Right Fork of Island Creek Road, Road Fork, and Toler Creek Road). These predominant land uses and limited resource variability would not yield

[3] The Kentucky EPRI Methodology considers a number of variables related to the Project area landscape. These include parameters for land use, land cover, proposed development, presence and density of buildings, public lands, water and wetland resources, floodplains, cultural resources, wildlife habitat, infrastructure, and slope.

sufficient differentiation among land uses or the resulting transmission corridors under the Kentucky EPRI methodology to make its use probative. This lack of differentiation was magnified here by the short length of the line, as the land use or land cover does not change significantly over the usable portions of the study area. Further constraining the usefulness of the Kentucky EPRI methodology was the linear residential development in the valleys, running perpendicular across the study area, which limited the locations where a transmission line right-of-way could be constructed. The spatial distribution of homes within these valleys provided limited opportunities for a transmission line to cross while avoiding impacts to residential structures.

Q. WHAT METHODOLOGIES WERE USED?

A. The Siting Team used a multi-step methodology to identify and evaluate potential routes. It is the same multi-step methodology previously employed successfully by Kentucky Power and its experts on the following projects: Hays Branch-Morgan Fork (Case No. 2007-00155), Bonnyman-Soft Shell (Case No. 2011-00295), Hazard-Wooton (Case No. 2017-00328), and EastPark (Case No. 2018-00072). These steps included efforts at various points in the process to identify constraints and opportunities, to identify and address stakeholder and landowner concerns, and to coordinate with local officials. These traditional methodologies are industry accepted, robust, tested and defensible, and the resulting alternative routes are buildable and efficient while avoiding or minimizing impacts on environmental resources and residents of the surrounding areas. This methodology has been used successfully on multiple other state-approved AEP projects in Virginia, West Virginia, and Ohio.

Q. IS INFORMATION CONCERNING THE METHODOLOGY USED IN LOCATING THE PROPOSED ROUTE OF THE KEWANEE 138 kV TRANSMISSION LINE EXTENSION INCLUDED IN THE SITING STUDY?

A. Yes. The methodology employed is described in detail in Section 2.0 of the Siting Study. Section 3.0 of the Siting Study discusses the constraints within the study area that were considered and discusses the development of the alternative routes. A detailed comparison of the alternative routes based on the resource description of the study area is provided in Section 4.0 of the Siting Study (Application **EXHIBIT 7**).

Q. PLEASE OUTLINE THE GENERAL STEPS THE SITING METHODOLOGY IMPLEMENTED.

A. In general, the siting methodology consisted of six steps:

1. Identification of the study area and opportunities and constraints within;
2. Development of siting guidelines (general and technical);
3. Development of routing concepts;
4. Identification, evaluation, and refinement of the study segments, including the consideration of stakeholder and public input;
5. Creation of alternative routes by assembling the study segments that best meet the siting guidelines into individual routes for analysis; and
6. Completion of a quantitative and qualitative analysis and comparison of the alternative routes to determine the preferred alternative route (the "Proposed Route").

Q. PLEASE DESCRIBE IN MORE DETAIL THE FIRST STEP OF THE SITING METHODOLOGY UTILIZED BY THE SITING TEAM.

A. The first step was to identify a study area for locating a new 100-foot wide transmission line corridor. The study area generally consisted of the area between the Project end points: the Sprigg–Beaver Creek 138 kV Transmission Line in Floyd County and the Enterprise

Park in the City of Pikeville, near where the proposed Kewanee 138 kV Substation will be constructed. The existing Big Sandy–Broadford 765 kV Transmission Line bounds the study area to the south and west, and the City of Pikeville bounds the study area to the north and east. The Siting Team ultimately identified a 25.3-square mile area in Floyd and Pike counties as the study area. The boundaries of the study area encompass the termini of the proposed transmission line and sufficient surrounding area to accommodate reasonable routes between the Project end points. **Map 1** of the Siting Study shows the study area. Following identification of the study area, POWER initiated the collection of high-level data concerning environmental, land use and ownership, and topographic constraints within this area.

Q. BRIEFLY DESCRIBE YOUR DATA COLLECTION PROCESS AND CONSTRAINTS MAPPING.

A. A list of publicly available data collected is included as Attachment D to the Siting Study. In general, publicly available data were collected regarding land use, natural resources, and cultural resources. In addition to the collection of publicly available data, site visits and discussions with landowners and local stakeholders were conducted to better understand the Project area. An open house was held to give the general public the opportunity to offer comments and gather additional information. The Siting Team also completed field reviews of the study area from publicly accessible areas and collected data regarding land use. Furthermore, Light Detection and Ranging Data (LiDAR airborne laser photography) was performed May 9 – 11, 2018. LiDAR information provides current aerial photography and contours data suitable for detailed transmission line design; this information is more

detailed than other data sources and provides information on areas otherwise not publicly accessible since it is collected via aircraft.

Q. PLEASE DESCRIBE GENERALLY THE TOPOGRAPHY AND LAND USE CURRENTLY FOUND IN THE STUDY AREA.

A. The study area is characterized by forested mountainous ridgelines bisected by valleys with roadways and scattered residential development. Extensive surface mining has occurred in the past throughout the study area and several ridges have been mined and are now terraced hillsides. Additionally, there are permitted and future mining areas within the study area. The predominant land uses in the study area are forested slopes and hillsides, reclaimed mine areas, and scattered residential development located along roadways in the valley bottoms. The Enterprise Park is located at a high elevation and on a large flat benched area at which a surface mining operation previously occurred. The former surface mining site subsequently was converted into an industrial park.

Q. WHAT WAS THE SECOND STEP IN THE SITING METHODOLOGY EMPLOYED BY THE SITING TEAM?

A. The Siting Team next developed the siting guidelines to be used in locating the transmission line corridor to achieve three primary goals or objectives. The goals are that the proposed route should (1) reasonably avoid or minimize adverse impacts on residential areas and the natural and cultural environment; (2) minimize special design requirements and unreasonable costs; and (3) permit the line to be constructed and operated in a timely, safe, and reliable manner. The Siting Guidelines are listed in Section 2.4 of the Siting Study.

Q. WHAT WAS THE THIRD STEP IN THE SITING METHODOLOGY EMPLOYED BY THE SITING TEAM?

A. The Siting Team next identified routing concepts for consideration for the location of the transmission line corridors. Routing concepts are high level ideas from which study segments can be based. Three routing concepts were considered: northern routing concepts, which minimized total length of transmission line; central routing concepts, which took advantage of higher terrain and optimized the tap location; and southern routing concepts, which considered a parallel alignment to the Big Sandy–Broadford 765 kV Transmission Line and are farthest from residential development (see **Map 2**, Routing Concepts, of the Siting Study). Routing Concepts were refined into study segments, which are partial alignments developed based on the routing concepts that can be combined into alternative routes.

Q. WHAT WAS THE FOURTH STEP IN THE SITING METHODOLOGY EMPLOYED BY THE SITING TEAM?

A. From the routing concepts, study segments were created using the siting criteria, desktop review, field visits, and stakeholder input (see **Maps 3 and 4,** Study Segments, of the Siting Study). The Siting Team focused on creating study segments that would minimize impact to the residential development in the valley bottoms and provide the most direct route, while also considering constructability on steep terrain and paralleling opportunities. Study segments developed from the northern routing concepts were ultimately rejected due to denser residential development along roadways, terrain, future mining areas, and the fact that additional angles and circuitous routes would be required. Study segments originating from the central and southern routing concepts were further developed.

Q. WHY WERE STUDY SEGMENTS USED IN THE FOURTH STEP OF THE SITING METHODOLOGY?

A. Study segments are partial alignments based on the routing concepts that are created to avoid known constraints, take advantage of opportunities, and most feasibly connect the Project end points. Study Segments can be combined in a variety of ways to create full alternative routes. By using multiple shorter segments, constraints can be more easily avoided by providing multiple options to connect end points.

Q. WAS THE ENTIRE STUDY AREA AVAILABLE IN CREATING THE SEGMENTS?

A. No. The study area was constrained in places by current and planned development or mining activities, as well as residential development along Left Fork and Right Fork Island Creek Road, Road Fork, and Toler Creek Road. Once viable road crossings and tap locations were identified, study segments were refined and developed into a network that could be combined to form the alternative routes between the Sprigg–Beaver Creek 138 kV Transmission Line and the Enterprise Park area. Stakeholder input was critical and used to modify and refine study segments (see **Map 5,** Refined Study Segments, of the Siting Study).

Q. WHICH STAKEHOLDERS WERE CONSULTED DURING THE SITING PROCESS?

A. Stakeholders included local public officials, the affected landowners, and the general public. In the early stages of study segment development, members of the Siting Team met with representatives of the City of Pikeville and Pike County on March 8, 2018. Representatives attending the meeting included the Pike County Deputy Judge Executive,

the Pike County Executive Director of Economic Development, the Deputy City Manager of Operations, the City Manager of Pikeville, and a member of the County Economic Development Administration. These local stakeholders were supportive of the Project and did not foresee any major issues or conflicts with the Project. Kentucky Power also met with Central Appalachia Mining, LLC. ("CAM"), a mining company, that owns permitted mining areas in the study area on March 19, 2018 and March 24, 2020. Lastly, on April 4, 2018, members of the Siting Team met with Utility Management Group, LLC. ("UMG"), which owns a water tank and maintains water lines throughout the industrial park. UMG informed the Siting Team of the existing and proposed waterline locations in the Enterprise Park and the upcoming development plans within the industrial park. Kentucky Power spoke with Judge Executive Hale from Floyd County to discuss the Project; an in-person meeting was not requested nor required by the county, as Judge Hale did not have any comments on the Project.

Q. WERE STAKEHOLDERS CONSULTED ONCE THE PROJECT WAS REINITIATED EARLIER THIS YEAR?

A. Yes. Kentucky Power initiated the stakeholder coordination process as part of the Project's reengagement earlier this year. The local officials were provided an update concerning the reengagement of the Project and the Company's intent to refile its Application in 2020. Right-of-way representatives also began contacting landowners whose property is crossed by the Proposed Route. In March 2020, right-of-way representatives met with

representatives of Western Pocahontas Properties ("WPP") and Raven Coal, which operate mines in the area.

Q. PLEASE DESCRIBE THE PUBLIC OUTREACH PROCESS, INCLDUING CONTACT WITH LANDOWNERS, IN MORE DETAIL.

A. Kentucky Power published a news release on March 20, 2018 to announce the Project and inform landowners that study segments were under development. Kentucky Power right-of-way agents met with or spoke to many landowners within the study area who might be affected by a study segment to start soliciting feedback and addressing concerns, including future or existing land use conflicts, early in the siting process. Once a study segment network was created, the Company published another news release on April 19, 2018 and held a public open house to solicit additional input. In preparation for the public open house, the Company sent letters and postcards to potentially affected landowners and used a DAVOX automated call system to contact affected landowners. After the open house Kentucky Power continued to speak with landowners along the study segments about the Project to aid in the selection of the proposed route. Once the proposed route was selected, Kentucky Power published a third News Release on June 25, 2018 and sent letters notifying previously contacted landowners of the proposed route. Kentucky Power right-of-way agents continued speaking with landowners impacted by the proposed route to further solicit input. The Siting Team made certain adjustments to the study segments and routes as necessary in response to input from the public throughout the siting process.

Q. WERE STAKEHOLDERS AND THE GENERAL PUBLIC PROVIDED NOTICE OF KENTUCKY POWER'S DECISION TO REINITIATE THE PROJECT?

A. Yes. On March 9, 2020 Kentucky Power updated the Project website to provide an update the public on the Project and inform landowners of the intent to re-file the Project with the PSC in the spring of 2020, since it had been approximately two years since the Project open house.

Q. PLEASE DESCRIBE THE 2018 PUBLIC OPEN HOUSE.

A. Kentucky Power conducted a public open house in Pikeville, Kentucky on May 3, 2018. Affected landowners and general public were invited to meet with Kentucky Power representatives to provide their input and to learn more about the Project. The open house was preceded by an extensive public notification campaign, multiple news releases, published advertisements in the local Pike County and Floyd County newspapers, an established Project website, and direct contact with affected landowners. A total of 41 persons attended the open house. At the open house, representatives of Kentucky Power provided information on the Project, were available to answer questions, and collected concerns from the public. Additionally, representatives of Kentucky Power aided attendees in locating their property or other features of concern on aerial maps showing the array of existing infrastructure, study segments, and the two potential substation locations under consideration.

Q. WAS A SECOND OPEN HOUSE CONDUCTED FOLLOWING THE DECISION TO CONTINUE THE PROJECT?

A. No. An additional open house was not conducted. Kentucky Power is committed to keeping the public informed but is also dedicated to keeping customers and employees safe

and healthy. As a result of the COVID-19 pandemic and the social distancing recommendations made by the Centers for Disease Control and Prevention (CDC) an open house was not conducted. Instead, Kentucky Power updated the website and mailed landowners a notification letter regarding the Project's re-engagement in March 2020. Kentucky Power right-of-way agents also spoke with landowners in 2020 whose property may be crossed by the Proposed Route right-of-way to personally update them on the Project. Depending on the landowner preferences, Project information was relayed to the property owners either in-person, phone conversations, and/or email correspondence.

Q. WERE ROUTES MODIFIED AS A RESULT OF INITIAL STAKEHOLDER AND LANDOWNER INPUT?

A. Yes, route adjustments requested by landowners were reviewed by the Siting Team. The majority of suggestions were addressed. For example, a study segment was moved slightly to avoid a previously unknown family cemetery. In several other areas, there were route adjustments to reduce visual impacts and proximity to residences. Additionally, Kentucky Power met with CAM, which owns permitted mining areas in the study area. CAM indicated that several of the preliminary study segments crossed permitted or future mining areas. The affected study segments were modified or eliminated in response to this information to avoid the future land use and to avoid a future relocation of the transmission line.

Q. WERE ANY ADDITIONAL MODIFICATIONS OR ELIMINATIONS TO STUDY SEGMENTS MADE FOLLOWING THE 2018 OPEN HOUSE?

A. Yes. Following the open house, the three remaining tap locations were reviewed again in the field by the Siting Team to further evaluate constructability. At the middle tap,

previously mined areas and clear evidence of slips and slides were identified. These in turn could result in future complications for structure placement and result in high maintenance and replacement costs in addition to environmental degradation. Near the middle tap, the residential development in the low valley areas near Keathley Branch Road and Toler Creek Road resulted in a unique engineering design and would have required additional structures. Due to the unstable hillside, land use constraints, and the need for unique engineering design, the middle tap and associated study segments were eliminated (see **Map 5,** Refined Study Segments, of the Siting Study).

Q. DID THE SELECTION OF THE SITE FOR THE PROPOSED 138 kV SUBSTATION ALSO RESULT IN THE ELIMINATION OF SOME STUDY SEGMENTS?

A. Yes. The southernmost substation site was chosen from the two alternative sites displayed at the public open house. Subsequently, the study segments connecting to the northernmost site were eliminated (see **Map 5** of the Siting Study).

Q. WHAT WAS THE FIFTH STEP IN THE SITING METHODOLOGY?

A. The remaining study segments were combined to form two alternative routes that connect the existing Sprigg–Beaver Creek 138 kV Transmission Line and the proposed Kewanee 138 kV Substation (see **Map 6,** Alternative Routes, of the Siting Study). More information on these two alternative routes is provided in Sections 3.0 and 4.0 of the Siting Study and in Section V of my testimony.

Q. WHAT WAS THE FINAL STEP IN THE PROCESS?

A. The two alternative routes were evaluated and a proposed route was selected. The Proposed Route, including route modifications, is further described in Section 5.0 of the Siting Study and in Section VI of my testimony.

V. RESULTS AND CONCLUSIONS OF THE STUDY

Q. YOU PREVIOUSLY INDICATED THAT TWO ALTERNATIVE ROUTES WERE DEVELOPED. WILL YOU PLEASE DESCRIBE EACH OF THOSE ROUTES?

A. Yes. The two alternative routes are presented on **Map 6** of the Siting Study and **EXHIBIT 14** to the Application. They can be generally described as follows:

- **Alternative Route A** is the northernmost route and is approximately 4.8 miles in length. Alternative Route A is located on a combination of forested and previously mined areas. Alternative Route A is in closer proximity to residences due to its location in the middle and northern portions of the study area, and is closer to the City of Pikeville than Alternative Route B. In order to avoid residential development, Alternative Route A would require more structures and heavy angles (angles greater than 30 degrees), which generally add to the total cost for construction.
- **Alternative Route B** is the southernmost route and parallels the Big Sandy – Broadford 765 kV Transmission Line. It is approximately five miles long. Alternative Route B is located farther away from residential areas and known permitted mining areas. Alternative Route B is located in the southern portion of the study area and crosses rugged and remote terrain, most of which was previously mined and reclaimed. Alternative Route B, which parallels the 765 kV transmission line for approximately 1.3 miles, limits the impacts on the viewshed and provides more existing access roads for use during construction. Alternative Route B also provides a more direct route into the proposed substation, while avoiding residential development along Right and Left Fork Island Creek Road and Road Fork.

Q. WHICH ROUTE WAS SELECTED AS THE PROPOSED ROUTE?

A. Alternative Route B was selected as the Proposed Route. It has following advantages over Alternative Route A:

- Alternative Route B is a more direct route and provides a paralleling opportunity to the Company's existing Big Sandy – Broadford 765 kV Transmission Line, thereby reducing habitat fragmentation and minimizing additional viewshed impacts. Paralleling existing linear infrastructure is a common and accepted transmission line-siting criterion.

- Alternative Route B crosses fewer parcels, has a fewer number of residences within 500 feet of the centerline, and is generally farther from residential development and the public viewshed. Additionally, any known landowner objections to Alternative Route B were addressed and no objections are known at this time.

- Alternative Route B requires fewer road and parcel crossings, fewer structures, fewer angles, and can make the greatest use of existing access roads for construction and maintenance; these reasons, make Alternative B the most efficient and lower cost route.

- Alternative B required fewer structures and heavy angles than Alternative A. It is also anticipated to be less costly than Alternative A.

- Alternative Route B has a more favorable tap location on the Sprigg–Beaver Creek 138 kV transmission line due to better terrain and overall, constructability and access.

Despite being slightly longer, Alternative Route B is the most direct, efficient route that minimizes impacts on residences, viewsheds and environmental resources. Section 5.0 provides additional detail concerning the basis for the Company's recommendation of Alternative Route B as the Proposed Route. In addition, Tables 1, 3, and 4 of the Siting Study provide a comparative evaluation of the constraints and opportunities attending Alternative Routes A and B.

Q. YOU MENTIONED EARLIER THAT AFFECTED LANDOWNERS WERE CONTACTED THROUGHOUT THE PROCESS. DID ANY LANDOWNERS CONTACTED EXPRESS OPPOSITION TO THE ROUTE INITIALLY CONSIDERED?

A. After the selection of the Proposed Route in 2018, Kentucky Power attempted to contact all persons or entities owning property crossed by the right-of-way associated with the route initially developed through the siting study to obtain permission to survey their property. During the proceedings in Case No. 2018-00209, Gary Bishop, on behalf of the Sendelbach Family Trust, requested that the route be moved southwest to avoid the trust's parcel.

Q. DID KENTUCKY POWER ADDRESS THE TRUST'S REQUEST?

A. According to the data provided by the Pike County PVA office the proposed centerline proposed in 2018 did not cross the Sendelbach Family Trust parcel. In response to the concern raised by Mr. Bishop on behalf of the trust, Kentucky Power conducted a ground survey in the vicinity of the and determined that the boundaries provided by the Pike County PVA were inaccurate. Based on the detailed ground survey, the center line in fact crossed the southern edge of the parcel owned by the trust. On October 24, 2018 Kentucky Power representatives met with Mr. Bishop on the parcel to review the centerline. Kentucky Power subsequently determined that it was feasible, and would not materially change the proposed line route, to shift the centerline farther south and avoid the Sendelbach Family Trust parcel. As shown on **EXHIBIT 6** and **EXHIBIT 11** to the Application, the parcel owned by the trust is no longer crossed by the ROW, but it remains within the Filing Corridor.

Q. DID ANY OTHER LANDOWNERS WHO WERE CONTACTED OBJECT TO THE ROUTE OF THE PROPOSED TRANSMISSION LINE?

A. No. To date, no other property owners located within the right-of-way and whom the Company has been able to contact, oppose the Project.

Q. WERE ANY OTHER ALIGNMENT SHIFTS REQUIRED FOR ALTERNATIVE ROUTE B?

A. Yes. After the selection of Alternative Route B, Kentucky Power began preliminary engineering. Typical and minor engineering modifications were made to the Alternative Route B as a result of these efforts. These additional adjustments were made to take better advantage of topography, avoid side slopes, and to address engineering and construction requirements. The Proposed Route was shifted approximately 300 feet to the south between Left Fork of Island Creek Road and Billy Compton Branch in response to constructability issues and landowner input. Based on information acquired from Light Detection and Ranging Data (LiDAR) in May 2018, an additional shift to the north between Billy Compton Branch and Road Fork was developed to better address constructability and accessibility issues due to steep terrain. The Proposed Route, with additional modifications, remains approximately five miles in length. **EXHIBIT 6** to the Application shows Proposed Route after the above modifications. It also illustrates the resulting preliminary transmission line structure locations.

Q. BASED ON THE EFFORTS UNDERTAKEN BY THE SITING TEAM AND DESCRIBED ABOVE, DO YOU HAVE AN OPINION ON THE COMPANY'S PROPOSED ROUTE FOR THE KEWANEE 138 kV TRANSMISSION LINE EXTENSION?

A. Yes. I believe the Proposed Route is the most suitable route to connect the Company's existing Sprigg–Beaver Creek 138 kV Transmission Line to the proposed Kewanee 138 kV Substation. Based on the information gathered as part of the siting process, it is most consistent with the siting guidelines and meets the goals of minimizing impacts on land use and the natural and cultural resources along the route, while avoiding circuitous routes, extreme costs, and non-standard design requirements. The Proposed Route also spans residential development along roadways in such a way to minimize visual impacts to the residences. Long spans will be necessary to span the residential areas and take advantage of terrain over Left Fork Island Creek Road, Long Branch, Road Fork and Bill Compton Branch. By spanning the topography from peak to peak, impacts on the viewshed from residences located in valleys will be minimized and residents will see fewer structures. By contrast, a route that followed lower topography would likely require additional structures and impact the viewshed to a greater extent. See preliminary structure locations shown on **EXHIBIT 6** of the Application.

VI. PROPOSED ROUTE

Q. PLEASE DESCRIBE THE PATH OF THE PROPOSED 138 kV TRANSMISSION LINE.

A. The proposed Kewanee 138 kV Transmission Line Extension will connect to the Beaver Creek–Cedar Creek Circuit of the Company's existing Sprigg–Beaver Creek 138 kV

Transmission Line, between Route 3379 and Route 1426, in eastern Floyd County, Kentucky. The line will then proceed parallel to the existing Big Sandy–Broadford 765 kV Transmission Line for approximately 1.3 miles. The transmission line then turns in a southeasterly direction for approximately 3.7 miles where it terminates at the proposed Kewanee 138 kV Substation. The transmission line principally crosses remote and rugged terrain that previously was surface mined and reclaimed. More detailed information regarding the selection of the Proposed Route is provided in the Siting Report (Application **EXHIBIT 7**).

Q. HAS THE PROPOSED TRANSMISSION LINE ROUTE AND ASSOCIATED FILING CORRIDOR CHANGED SINCE THE COMPANY'S PREVIOUS FILING IN 2018 (CASE NO. 2018-00209)?

A. The five-mile Proposed Route is the generally the same line route that was filed in 2018, except for minor shifts as a result of the further engineering and landowner input described above. The Filing Corridor itself was modified in one location, as shown on Application **EXHIBIT 6**.

Q. WHY WAS THE FILING CORRIDOR MODIFIED?

A. The Company's right-of-way representatives identified mining activity near the Proposed Route that resulted in additional stakeholder discussions and engineering analysis. To mitigate potential mining risks and allow for added design flexibility in rugged topography, the Filing Corridor was expanded an additional 500 feet between proposed structures 6 and 8. For this 2,000 foot section of centerline, the Filing Corridor is 1,500 feet wide (about 500 feet to the south of the centerline and 1,000 feet to the north of the centerline).

Q. WHEN DID KENTUCKY POWER LEARN ABOUT THE MINING ACTIVITY?

A. During reengagement of the Project in March 2020, the Company's right-of-way representatives discovered active mining off Left Fork Island Creek Road. The Company contacted WPP (listed as ACIN c/o WPP in Application **EXHIBIT 11**) to discuss its operations. WPP's Vice President and Regional Manager indicated WPP had proposed surface and contour mining activities on its properties near the Proposed Route centerline, specifically near Structures 7 and 8, and the intervening span (see Application **EXHIBIT 6**).

Q. DID KENTUCKY POWER CONTACT THE MINING COMPANY DURING THE INITIAL SITING PROCESS?

A. Yes. The siting process largely considers future land use and potential impacts, including mining operations. During the initial siting process in 2018, WPP had been identified as a landowner along the Proposed Route, with the owner listed as CSTL, LLC. The Company sought out input from stakeholders and affected landowners by contacting properties on various occasions. Discussions with WPP in 2018 did not identify any conflicts or impacts to future land uses being identified. In 2018, the WPP property had been mined and the Company was not aware of any future plans for mining activity in the area crossed by the Proposed Route. Mining plans are generally sensitive information, change often, and not readily available in the Kentucky State database. The Company largely depends on input from mining companies during the siting and right-of-way process to identify future and planned operations. The Company nevertheless discussed the line with WPP in 2018 and WPP did not identify any then-known conflicts.

Q. PLEASE SUMMARIZE THE STEPS KENTUCKY POWER PLANS TO TAKE TO MITIGATE THIS IDENTIFIED MINING CONFLICT?

A. The Company plans to coordinate closely with WPP. In ongoing discussions, WPP indicated its mining activities in proximity to the Proposed Route will likely be complete prior to Project construction and the Proposed Route centerline could remain in its current location. If it appears the mining activity will not be completed by the start of Project construction, the Company will consider an approximate 400-foot shift of the Proposed Route (within the Filing Corridor) at Structure 7 to the northeast, which is the farthest extent of the planned mining activities based on the most recent information the Company received from WPP. The filing corridor was widened at this location and includes room for the potential 400-foot shift which could be implemented if, at the time of final engineering, it is determined necessary to avoid land use conflicts. Partial "sterilization" of the impacted coal reserves by purchase will also be considered as a last recourse if the above options are not feasible.

Q. WOULD THE POTENTIAL 400-FOOT PROPOSED ROUTE SHIFT RESULT IN ANY ADDITIONAL IMPACTS?

A. The potential northeastern shift does not result in significantly greater impacts than the current alignment. The potential 400-foot northeastern shift is located entirely on the same landowner's property. It would cross Left Fork of Island Creek about 300 feet to the northeast of the original proposed location. Landowner impacts are essentially unchanged as no new landowners are crossed for the potential shift; however, the widened filing corridor requires additional landowners to be contacted. The largely undeveloped area surrounding the 400-foot shift does not alter potential environmental impacts.

Q. IS IT POSSIBLE FOR THE PROPOSED ROUTE TO BE ADJUSTED TO ENTIRELY AVOID COAL MINING LAND USE?

A. No. As discussed in the Siting Study (Application **Exhibit 7**), the area between the Sprigg–Beaver Creek 138 kV transmission line and the proposed Kewanee 138 kV Substation is dominated by previous, existing or future mining activities. Unavoidably, all alternative routes cross previous or future coal mining land use. Near the City Pikeville there are potentially fewer coal mining areas present, but there is a significant increase in residential development. Therefore, the Project Team determined a widened filing corridor, to accommodate a possible minor adjustment to the Proposed Route, and ongoing coordination with WPP was reasonable.

Q. WHAT STEPS HAS THE COMPANY TAKEN TO CONFIRM THE PROPOSED ROUTE DOES NOT CONFLICT WITH ANY ADDITIONAL FUTURE MINING PLANS?

A. Confirming future mining plans is challenging as plans are competitive, dynamic, and market dependent. Mining plans typically involve multiple parties including the mineral rights owner, the surface owner, and mining operator/lessee, which makes determining future plans complicated. Nevertheless, the siting and right-of-way team has taken every practicable step to identify conflicts including the following: (i) during siting activities the active mining permits from the state databases were mapped and extensive stakeholder input was collected from local officials and affected landowners; (ii) the right-of-way team contacted all affected landowners to seek permissions to survey agreements, begin easement acquisition, and identify conflicts upon discussions with landowners; and lastly, (iii) the Company is seeking approval for generally a 1,000-foot filing corridor, in which

the final 100-foot-wide right-of-way will be located, to allow for later possible adjustments for minor conflicts.

VII. RIGHT-OF-WAY

Q. WHAT RIGHT-OF-WAY ACTIVITIES HAS KENTUCKY POWER UNDERTAKEN TO DATE?

A. Representatives of Kentucky Power have contacted all owners the Company has been able to locate from public records, including the records of the Floyd County Property Valuation Administrator and the Pike County Property Valuation Administrator, of property located within the proposed right-of-way. Surveys are underway to identify the boundaries of the required right-of-way. In addition, Kentucky Power's right-of-way representatives have completed the majority of title searches on the parcels to be crossed by the proposed right-of-way. Kentucky Power anticipates completing right-of-way acquisition in April 2021.

Q. WHAT DID THE TITLE SEARCHES REVEAL?

A. None of the parcels are subject to restrictive covenants or other restrictions that would prevent the construction of the proposed line.

VIII. PERMITTING AND ENVIRONMENTAL STUDIES

Q. WHAT ENVIRONMENTAL PERMITTING OR STUDIES ARE ANTICIPATED FOR THIS PROJECT?

A. Kentucky Power anticipates that the following environmental studies, permits or approvals may be required for the construction of the Project:

> A wetland delineation and stream identification survey will be conducted for the Project. It is anticipated that any impact to these resources will be covered under the United States Army Corps of Engineers (Army Corps of Engineers) Nationwide Permit 12, non-reporting, for the installation of culverts on access roads. Construction activities that take place in, along, or over a wetland or a stream (if

the watershed is one square mile or more in size) or within a floodplain will require a Kentucky Division of Water (KDOW) Stream Construction Permit.

Because the total earth disturbance will be greater than one acre, a construction stormwater permit will be required from the Kentucky Department of Environmental Protection, Division of Water. A Kentucky Pollutant Discharge Elimination System (KPDES) Stormwater Pollution Prevention Plan (SWPPP) will be developed for the Project.

Kentucky Power will coordinate with the U.S. Fish and Wildlife Service (USFWS) regarding the potential for impacts to sensitive species. Based on review of the USFWS Information for Planning and Consultation system, three species of bats potentially occur in the study area. Mist net and portal searches will be conducted for these species, as appropriate, and the results coordinated with the USFWS.

A Phase I cultural resources survey will be conducted and coordinated with the Kentucky Heritage Council and the Kentucky Office of State Archaeology.

In addition to the environmental permits, engineering related permits will be filed with the appropriate agencies or companies once the transmission line design is completed. It is anticipated that these may include aerial road crossing permits from the Kentucky Transportation Cabinet (KYTC), Federal Highway Administration, or county engineering offices; and construction entrance permits for state or county roads. The Company will also coordinate with the Federal Aviation Administration and KYTC as necessary regarding aviation related approvals.

Q. HAVE ANY OF THE ENVIRONMENTAL PERMITS OR STUDIES BEEN COMPLETED FOR THE PROJECT?

A. The Company started the required environmental studies in 2018 after the initial filing of the Project with the Commission; however, no permits were obtained. To date, a preliminary design is complete; access roads and structure locations were field verified; and the majority of permissions to survey have been obtained for the Proposed Route and associated access roads. Mist-net surveys were completed from July 31 to August 15, 2018, and concurrence for the survey results was received on September 26, 2018 from the

USFWS. Wetland surveys were initially completed during the weeks of August 6 and September 24, 2018, and a Wetland Stream and Delineation Report was completed; however, additional wetland surveys may be needed for the Project after final engineering. Phase I Cultural surveys were completed during the week of December 17, 2018 and will be updated as necessary prior to construction. The anticipated permit requirements are typical for a transmission line and the Company does not anticipate any extraordinary issues or delays. The Company will update any surveys as necessary to obtain the appropriate environmental permits and approvals before the anticipated start of construction in November 2021.

Q. DO YOU EXPECT ANY ENVIRONMENTAL PERMITTING ISSUES OR DELAYS IN CONNECTION WITH THE CONSTRUCTION OF THE SUBSTATION OR LAYDOWN YARD?

A. None are anticipated. During the site identification process, the Company's environmental specialists inspected the site and did not identify any permitting risks. Furthermore, an Army Corps of Engineers representative reviewed the proposed Kewanee 138 kV Substation Site and surrounding area for the presence of waters of the United States and concluded that there are no federal jurisdictional wetlands on the proposed substation site and that it is unlikely that there are any federal jurisdictional wetlands on the Enterprise Park as a whole (where the laydown yard will be located). As a result, there is a low likelihood that Army Corps of Engineers wetland or stream permitting will be required for the construction of the substation or a laydown yard. Additionally, the area surrounding the proposed site is located on a former strip mine and has been previously disturbed; therefore, no archaeological or historical resource risks are expected.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

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E-Signature Summary

E-Signature 1: Emily Larson (ESL)
September 02, 2020 12:32:05 -8:00 [30E5A2212CC3] [71.176.250.198]
emily.larson@powereng.com (Principal) (Personally Known)

E-Signature Notary: Brenda Williamson (BW)
September 02, 2020 12:32:05 -8:00 [9A6955AF7FB9] [167.239.221.81]
bgwilliamson@aep.com
I, Brenda Williamson, did witness the participants named above electronically sign this document.

VERIFICATION

The undersigned, Emily S. Larson, being duly sworn, deposes and says she is a Project Manager for POWER Engineers, Inc., that she has personal knowledge of the matters set forth in the foregoing responses and the information contained therein is true and correct to the best of her information, knowledge, and belief.

Emily Larson
Signed on 2020/09/02 12:32:05 -8:00
Emily S. Larson

STATE OF OHIO)
)
COUNTY OF FRANKLIN)

Case No. 2020-00062

Subscribed and sworn before me, a Notary Public, by Emily S. Larson this 09/02/2020 day of September, 2020.

Brenda G. Williamson
Signed on 2020/09/02 12:32:05 -8:00

NOTARY PUBLIC STATE OF OHIO

Brenda G. Williamson
Commission # 2016-RE-579446
Electronic Notary Public
State of Ohio
My Comm Exp. Apr 25, 2021
Notary Stamp 2020/09/02 12:32:05 PST 9A6955AF7FB9

My Commission Expires _____