

**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 161 kV) Case No. 2017-00328
Transmission Line In Perry And Leslie Counties,)
Kentucky And Associated Facilities)
(Hazard-Wooton Line))

DIRECT TESTIMONY OF

RANIE K. WOHNHAS

ON BEHALF OF KENTUCKY POWER COMPANY

November 17, 2017

**DIRECT TESTIMONY OF
RANIE K. WOHNHAS, ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

CASE NO. 2017-00328

TABLE OF CONTENTS

I.	Introduction	1
II.	Background	1
III.	Purpose of Testimony	3
IV.	Overview of Project.....	3
V.	Notices	14
VI.	Financial Aspects	16

DIRECT TESTIMONY OF
RANIE K. WOHNHAS
ON BEHALF OF KENTUCKY POWER COMPANY

I. INTRODUCTION

1 **Q: PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.**

2 A: My name is Ranie K. Wohnhas. My position is Managing Director, Regulatory and
3 Finance, Kentucky Power Company. My business address is 855 Central Avenue, Suite
4 200, Ashland, Kentucky 41101.

II. BACKGROUND

5 **Q: PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**
6 **BUSINESS EXPERIENCE.**

7 A: I received a Bachelor of Science degree with a major in accounting from Franklin
8 University, Columbus, Ohio in December 1981. I began work with Columbus Southern
9 Power Company in 1978, and worked in various customer services and accounting
10 positions. In 1983, I transferred to Kentucky Power Company and worked in accounting,
11 rates, and customer services. I became the Billing and Collections Manager in 1995. My
12 duties included overseeing all billing and collection activity for the Company. In 1998, I
13 transferred to Appalachian Power Company and worked in rates. In 2001, I transferred to
14 the American Electric Power Service Corporation working as a Senior Rate Consultant.
15 In July 2004, I transferred back to Kentucky Power Company and assumed the position
16 of Manager, Business Operations Support. I was promoted to Director in April 2006. I
17 was promoted to my current position as Managing Director, Regulatory and Finance
18 effective September 1, 2010.

1 **Q: WHAT ARE YOUR RESPONSIBILITIES AS MANAGING DIRECTOR,**
2 **REGULATORY AND FINANCE?**

3 A: I am primarily responsible for managing the regulatory and financial strategy for
4 Kentucky Power. This includes planning and executing rate filings for both federal and
5 state regulatory agencies, as well as certificate of public convenience and necessity
6 filings before this Commission. I am also responsible for managing the Company's
7 financial operating plans. Included as part of this responsibility is the preparation and
8 coordination of various capital and O&M operating budgets with other American Electric
9 Power Company, Inc. affiliates. I work with various American Electric Power Service
10 Corporation departments to ensure that adequate resources such as debt, equity, and cash
11 are available to build, operate, and maintain Kentucky Power's electric system assets
12 used to provide service to our retail and wholesale customers. In my role as Managing
13 Director, Regulatory and Finance, I report directly to Matthew J. Satterwhite, President
14 and Chief Operating Officer of Kentucky Power.

15 **Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?**

16 A: Yes, I have testified on multiple times. Most pertinent to this proceeding, I testified in
17 Case No. 2011-00295.¹ I also testified before this Commission in various fuel
18 adjustment clause review proceedings and filed testimony in the Company's five most
19 recent base rate case filings, Case No. 2005-00341, Case No. 2009-00459, Case No.
20 2013-00197, Case No. 2014-00396, and Case No. 2017-00179. Other cases in which I
21 testified include an environmental compliance plan, Case No. 2011-00401; a real-time
22 pricing proceeding, Case No. 2012-00226; the transfer of a fifty percent undivided

¹ *In the Matter of: The 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 Breathitt, Knott and Perry Counties, Kentucky (Bonnyman-Soft Shell Line).*

1 interest in the Mitchell generating station to Kentucky Power, Case No. 2012-00578; the
2 filing to convert Big Sandy Unit 1 to a gas-fired unit, Case No. 2013-00430; and a DSM
3 application, Case No. 2014-00271.

III. PURPOSE OF TESTIMONY

4 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

5 A: I am testifying in support of Kentucky Power's application for a certificate of public
6 convenience and necessity to rebuild the proposed Hazard-Wooton 161 kV transmission
7 line and related work (the "Project"). In my testimony I:

- 8 • Provide an overview of the Project;
- 9 • Detail the Company's compliance with the notice requirements for this
10 proceeding; and
- 11 • Address the financial aspects of the Project.

IV. OVERVIEW OF PROJECT

A. The Eastern Kentucky Transmission Program.

12 **Q: IN AUGUST OF THIS YEAR KENTUCKY POWER ANNOUNCED THE**
13 **EASTERN KENTUCKY TRANSMISSION PROGRAM. PLEASE DESCRIBE**
14 **THE PROGRAM AND THE RELATION OF THE PROJECT TO IT.**

15 A. The Eastern Kentucky Transmission Program is a Company initiative to strengthen and
16 upgrade the Kentucky Power's transmission system in Bell, Clay, Knox, Leslie, and
17 Perry counties. Kentucky Power currently is evaluating opportunities to replace,
18 revitalize, and upgrade aging facilities to improve system reliability. The Eastern
19 Kentucky Transmission Program will permit Kentucky Power to continue to provide

1 adequate and reliable transmission service to the area, while improving the Company's
2 ability to meet future load demand. The Project is the first step in this initiative.

3 **Q. DOES THE COMPANY HAVE AN ANTICIPATED DATE OF COMPLETION**
4 **FOR THE EASTERN KENTUCKY TRANSMISSION PROGRAM?**

5 A. Yes. Kentucky Power anticipates that upon receipt of required regulatory approvals the
6 Eastern Kentucky Transmission Program will be completed within five to seven years.

B. The Project.

7 **Q: MOVING FROM THE EAST KENTUCKY TRANSMISSION PROGRAM TO**
8 **THE PROPOSED REBUILD OF HAZARD-WOOTON 161 KV LINE, PLEASE**
9 **DESCRIBE THE PROJECT.**

10 A: Kentucky Power is seeking authority to rebuild its existing 6.5 mile 161 kV Hazard-
11 Wooton Transmission Line in Perry and Leslie counties, Kentucky. The rebuilt line will
12 be approximately 6.6 miles in length, and will connect the Company's Hazard Substation
13 in the City of Hazard, Perry County, Kentucky, to its Wooton Substation located in
14 northeast Leslie County, Kentucky (the "Proposed Rebuild"). The Project also will
15 include associated improvements at the Wooton Substation, as well as work to upgrade,
16 replace, and install equipment at the Hazard Substation. Finally, the Hazard-Jackson
17 69 kV Reconfiguration is associated with the Project.

1. The Transmission Line.

18 **Q. PLEASE DESCRIBE THE EXISTING HAZARD-WOOTON 161 KV**
19 **TRANSMISSION LINE.**

20 A. The existing 161 kV transmission line is approximately 6.5 miles in length and connects
21 Kentucky Power's Hazard Substation in Perry County and its Wooton Substation in

1 Leslie County. The current right-of-way is approximately 100 feet (50 feet in either
2 direction from the centerline) in width.

3 **Q. WHAT IS THE COMPANY'S PROPOSAL FOR REBUILDING THE HAZARD-**
4 **WOOTON 161 KV TRANSMISSION LINE?**

5 A. Kentucky Power proposes rebuilding 5.4 miles of the transmission line within or near
6 existing Kentucky Power right-of-way. Approximately 1.2 miles of the Proposed
7 Rebuild will deviate from the existing right-of-way and constitute "greenfield"
8 construction. In addition, Kentucky Power proposes to combine portions of the existing
9 Hazard-Jackson 69 kV Transmission Line and the Hazard-Wooton 161 kV Transmission
10 Line onto double-circuit structures as part of the Proposed Rebuild.

2. Transmission Line Structures And Conductor.

11 **Q. WHEN WAS THE EXISTING HAZARD-WOOTON 161 KV TRANSMISSION**
12 **LINE BUILT?**

13 A. With a few minor exceptions, the existing line is almost 75 years old. The existing
14 transmission line was built in the 1940s and is at the end of its useful life. Due to the
15 deteriorated wooden poles and the age of the transmission line, it needs to be rebuilt to
16 modern standards to ensure reliability and safety.

17 **Q. PLEASE DESCRIBE THE TRANSMISSION LINE STRUCTURES AND**
18 **CONDUCTOR TO BE USED IN THE REBUILT LINE.**

19 A. Preliminary design indicates approximately 53 existing wooden transmission line
20 structures will be removed (forty-five 161 kV structures and eight 69 kV structures) and
21 approximately 35 new steel transmission line structures will be installed (the final design
22 could vary slightly). In addition, the conductor will be upgraded. Company Witness

1 Lasslo provides more detail in his testimony concerning the condition of the existing
2 structures, the associated conductor, and the need to replace both.

3 **Q: IF THE CERTIFICATE IS GRANTED WHEN DOES KENTUCKY POWER**
4 **PROPOSE TO BUILD THE LINE AND ASSOCIATED FACILITIES?**

5 A: The Company anticipates beginning construction in the summer 2018 and completing all
6 work (including restoration) in the spring or summer of 2020.

3. Right-Of-Way.

a. Width.

7 **Q. WHAT IS THE RIGHT-OF-WAY WIDTH FOR THE PROPOSED LINE?**

8 A. The right-of-way for much of the Proposed Rebuild will measure 60 feet on each side of
9 the centerline for a total width of 120 feet. One hundred twenty feet is the current
10 standard right-of-way width for 161 kV transmission lines. The existing right-of-way is
11 approximately 100 feet in width.

12 **Q. WILL THE PROPOSED LINE'S RIGHT-OF-WAY EXCEED 120 FEET IN**
13 **SOME CIRCUMSTANCES?**

14 A. Yes. An expanded right-of-way may be required in some circumstances due to
15 conductor clearances and to accommodate the required guy wires.

16 **Q. IN WHAT CIRCUMSTANCES WILL A RIGHT-OF-WAY GREATER THAN 120**
17 **FEET IN WIDTH BE REQUIRED?**

18 A. A further widened right-of-way may be required in connection with certain long spans to
19 permit additional clearing to prevent the conductors from coming in contact with trees
20 during higher wind conditions. Additional right-of-way also may also be required on the
21 up-hill side of the line to prevent trees from falling downhill into the conductors and

1 structures. Also, in certain limited locations, the right-of-way may be greater than 120
2 feet wide as necessary to accommodate guy wires that extend more than 60 feet from the
3 Proposed Rebuild centerline.

4 **Q. WHAT WILL BE THE REQUIRED WIDTH OF THE RIGHT-OF-WAY FOR**
5 **LONG SPANS AND THE UP-HILL SIDE OF THE LINE WHEN LOCATED IN**
6 **STEEP TERRAIN?**

7 A. The right-of-way in these locations typically would not exceed 150 feet, except as
8 required in limited instances to accommodate unusually steep terrain and very long
9 spans. In those instances the total width could be expanded up to 350 to 400 feet.

10 **Q. HAS KENTUCKY POWER IDENTIFIED THE LOCATION OF THE**
11 **EXPANDED RIGHT-OF-WAY?**

12 A. No. The areas where the additional right-of-way will be required will be determined
13 during the detailed engineering design phase of the Project and as part of negotiations
14 with landowners.

b. Minor Deviations From The Existing Right-Of-Way.

15 **Q. YOU INDICATE ABOVE THAT ALTHOUGH APPROXIMATELY 5.4 MILES**
16 **OF THE REBUILT LINE WILL BE LOCATED WITHIN OR NEAR TO THE**
17 **EXISTING RIGHT-OF-WAY, SOME PORTION OF THE LINE WILL DEVIATE**
18 **FROM THE EXISTING RIGHT-OF-WAY AND CONSTITUTE GREENFIELD**
19 **CONSTRUCTION. PLEASE DESCRIBE THESE DEVIATIONS.**

20 A. In two locations, the Company will construct a total of approximately 1.2 miles of the
21 new transmission line outside of existing rights-of-way. These deviations from the
22 existing right-of-way are minor and lie in the vicinity of Hazard High School and

1 northeast of the Wooton Substation. The deviations are required to address engineering
2 and constructability issues. The general location and path of both deviations are
3 illustrated on EXHIBITS 1 AND 2 to the application. Context photographs of the proposed
4 deviations are included as Attachment 4 to the Rebuild Study (EXHIBIT 16 to the
5 application).

6 **Q. PLEASE DESCRIBE THE DEVIATION FROM THE EXISTING RIGHTS-OF-**
7 **WAY NEAR HAZARD HIGH SCHOOL.**

8 A. The deviation from existing rights-of-way in the vicinity of Hazard High School is
9 approximately 3,200 feet in length. It is located west of Kentucky Route 15 and lies
10 north of the Hazard High School ball fields.

11 **Q. WHAT IS THE PURPOSE OF THE HAZARD HIGH SCHOOL DEVIATION?**

12 A. The deviation is required to re-locate the exiting centerline, currently located on a steep
13 slope above the existing Hazard High School ball fields, to a more suitable and stable
14 terrain. The slope previously has experienced slides. The deviation moves the centerline
15 farther north of the ball fields onto the top of the ridgeline. Doing so limits the risk of
16 further slides and will aid construction and maintenance of the line.

17 **Q. PLEASE DESCRIBE THE DEVIATION NORTHEAST OF THE WOOTON**
18 **SUBSTATION.**

19 A. Kentucky Power proposes an approximate 3,000 foot deviation beginning one mile
20 northeast of the Wooton Substation.

21 **Q. WHAT IS THE PURPOSE OF THIS SECOND DEVIATION?**

22 A. The deviation is required due to the inaccessibility of an existing structure located atop a
23 steep rock outcropping. The Proposed Rebuild was relocated to the adjacent ridge

1 southeast of the existing centerline to provide improved access and constructability.

c. Double-Circuit Portion Of The Proposed Rebuild.

2 **Q. IS KENTUCKY POWER PROPOSING ANY OTHER CHANGES TO THE**
3 **CENTERLINE OF THE EXISTING HAZARD-WOOTON 161 KV**
4 **TRANSMISSION LINE?**

5 A. Yes. The existing Hazard-Jackson 69 kV transmission line and the existing Hazard-
6 Wooton 161 kV transmission line lie are parallel to each other from the Hazard
7 Substation to in an area north of the Hazard High School ball fields (EXHIBIT 7 to the
8 application is a photograph of the existing rights-of-way). Because of the steep
9 topography of the area, and the location of nearby residences, Kentucky Power proposes
10 to combine portions of the existing Hazard-Jackson 69 kV line and the existing Hazard-
11 Wooton 161 kV line onto approximately seven double-circuit structures generally in or
12 near existing rights-of-way. The double-circuit portion of the Hazard-Jackson 69 kV
13 transmission line and the existing Hazard-Wooton 161 kV transmission line will measure
14 approximately 1.15 miles.

15 **Q. WHERE WILL THE DOUBLE-CIRCUIT PORTION OF THE RIGHT-OF WAY**
16 **BE LOCATED?**

17 A. The double-circuit portion of the Proposed Rebuild will be constructed from the Hazard
18 Substation to the western side of the Kentucky Route 15 at a point north of the Hazard
19 High School ball fields. Kentucky Power proposes to combine the existing Hazard-
20 Jackson 69 kV right-of-way and the Hazard-Wooton 161 kV right-of-way into an
21 approximate 120 foot right-of-way, and to move the double circuit portion of the
22 Proposed Rebuild slightly south and within or near the combined rights-of-way.

1 **Q. WILL THE DOUBLE-CIRCUIT PORTION OF THE REBUILT LINE BE**
 2 **LOCATED WITHIN THE EXISTING HAZARD-JACKSON OR HAZARD-**
 3 **WOOTON RIGHTS OF WAY?**

4 A. Yes, for the most part. In limited areas the Company may be required to obtain small
 5 additional tracts of right-of-way adjacent to or near the existing right-of-way.

6 **Q. WILL ANY ADDITIONAL WORK BE UNDERTAKEN IN CONNECTION**
 7 **WITH THE DOUBLE-CIRCUIT PORTION OF THE PROPOSED REBUILD?**

8 A. Yes. A nearby 34.5 kV line will be partially underbuilt on or adjacent to the double-
 9 circuit portion of the Proposed Rebuild.

4. Requested Authority To Relocate The Indicated Centerline.

10 **Q: KENTUCKY POWER FILED MAPS ILLUSTRATING THE CENTERLINE OF**
 11 **THE PROPOSED REBUILD AS EXHIBITS 1 AND 2 TO ITS APPLICATION.**
 12 **COULD THAT CENTERLINE CHANGE?**

13 A. Yes. Constructability, access requirements, and conditions that are not evident until final
 14 engineering and landowner negotiations are complete, may result in Kentucky Power
 15 modifying the Proposed Rebuild centerline. To ensure the ability to address potential
 16 issues that may emerge after ground surveys, final engineering, and during right-of-way
 17 negotiations, Kentucky Power is seeking authority to move the illustrated centerline (and
 18 right-of-way), and to expand the right-of-way within the Filing Corridor illustrated on
 19 **EXHIBIT 2**. The Filing Corridor is defined as (a) 150 feet in either direction (300-foot
 20 corridor) in the portion of the Proposed Rebuild from the Hazard Substation to Kentucky
 21 Route 15; (b) 250 feet in either direction (500-foot corridor) in the portion of the
 22 Proposed Rebuild from Kentucky Route 15 to the Wooton Substation; and (c) 250 feet in

1 either direction (500-foot corridor) on the Hazard-Jackson 69 kV Reconfiguration
2 described below.

3 **Q: IS KENTUCKY POWER SEEKING UNLIMITED DISCRETION TO LOCATE**
4 **THE LINE AND RIGHT-OF-WAY WITHIN THE PROPOSED CORRIDOR?**

5 A: No. There are two limitations. First, neither the line nor its right-of-way will be moved
6 onto the property of a landowner who was not sent a notice of this proceeding in
7 accordance with the applicable regulation. Second, the landowner onto whose property
8 the line will be moved must consent in writing to the relocation.

9 **Q: HAS THE COMMISSION GRANTED KENTUCKY POWER SIMILAR**
10 **AUTHORITY IN OTHER CASES?**

11 A: Yes. By Order dated August 3, 2007, in Case No. 2007-00155,² the Commission granted
12 Kentucky Power authority similar to that requested here. The authority granted in the
13 Case differed from that being sought here in two respects. First, the Commission's order
14 in Case No. 2007-00155 permitted Kentucky Power to move the line and right-of-way
15 500 feet (a total width of 1,000 feet) in either direction from the centerline indicated in
16 the application. Kentucky Power is seeking more limited authority in this proceeding to
17 move the line within a corridor measuring either 300 feet or 500 feet. Second, in Case
18 No. 2007-00155 Kentucky Power was limited to placing the line on the property of those
19 owners the line originally was projected to cross.

20 More recently, by Order dated the January 26, 2012 in Case No. 2011-00295,³
21 the Commission authorized the Company to locate the line within a 500 foot corridor,

² *In the Matter of: The Application Of Kentucky Power Company For A Certificate Of Public Convenience And Necessity To Construct A 138 KV Transmission Line In Floyd County, Kentucky.*

³ *In the Matter of: The 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 Breathitt, Knott and Perry Counties, Kentucky (Bonnyman-Soft Shell Line).*

1 including parcels not owned by the persons over whose property the proposed line
2 initially was anticipated to cross. That authority is similar to the authority sought here.

3 **Q: WILL THE COMMISSION BE INFORMED OF THE FINAL LOCATION OF**
4 **THE LINE AND THE ADJACENT RIGHTS-OF-WAY?**

5 A: Yes. After construction is completed, Kentucky Power will file with the Commission a
6 revised plan showing the final location of the Proposed Rebuild and structures.

5. Substation Work.

7 **Q. IS KENTUCKY POWER SEEKING AUTHORITY TO PERFORM WORK AT**
8 **THE HAZARD AND WOOTON SUBSTATIONS?**

9 A. Yes. Kentucky Power proposes to implement 46 improvements at the Hazard Substation.
10 **EXHIBIT 10** to the application provides a list of the projects at the Hazard Substation.

11 **Q. WHAT WORK IS KENTUCKY POWER PROPOSING FOR THE WOOTON**
12 **SUBSTATION?**

13 A. The Company is proposing five improvements at the Wooton substation:

- 14 (a) Installation of station class surge arresters attached to the upper beam of
15 the existing 161kV box bay structure on the 161kV Hazard Line position;
- 16 (b) Replacement of devices for line protection and circuit breaker control
17 associated with the 161kV Hazard line position;
- 18 (c) Installation of two coupling capacitor voltage transformers on Phase 2 and
19 Phase 3 of the 161kV bus;
- 20 (d) Replacement of devices for 161kV bus protection; and
- 21 (e) Installation of telecommunication fiber equipment.

22 **Q. ARE YOU PROVIDING ENGINEERING OR OTHER TECHNICAL**
23 **INFORMATION REGARDING THE IMPROVEMENTS TO THE HAZARD**
24 **SUBSTATION AND WOOTON SUBSTATION?**

1 A. No. The purpose of my testimony concerning the substation improvements is to provide
2 the Commission with an overview of the planned work. Company Witness Lasslo
3 provides more detailed engineering and other technical information concerning the
4 improvements in his testimony.

5 **Q. WILL THESE IMPROVEMENTS TO THE HAZARD SUBSTATION AND THE**
6 **WOOTON SUBSTATION REQUIRE THE EXPANSION OF THE FOOTPRINTS**
7 **OF EITHER SUBSTATION?**

8 A. No. All substation improvements will be made within the footprints of the existing
9 Wooton and Hazard substations. A photograph and drawing illustrating the Hazard
10 Substation improvement plan is attached as **EXHIBIT 10** to the application. The same
11 information is provided for the Wooton Substation as **EXHIBIT 11** to the application.

C. The Hazard-Jackson 69 kV Reconfiguration.

12 **Q. WHAT IS THE HAZARD-JACKSON 69 KV RECONFIGURATION?**

13 A. An approximately 1,900 foot section of the existing Hazard-Jackson 69 kV line will be
14 reconfigured in connection with tying the double-circuit portion of the Proposed Rebuild
15 into the existing Hazard-Jackson 69 kV line. The reconfiguration will involve the
16 removal of an existing 69 kV structure and the erection of a new 69 kV structure (built to
17 138 kV standards) to a position higher on the slope. The location of the new 69 kV
18 structure permits optimized line design, will decrease outage duration during
19 construction, and is expected to reduce the likelihood of slides during construction. An
20 approximately 1,900 foot section of the Hazard-Jackson 69 kV line will be reconfigured
21 slightly to the northeast between the last double circuit 161/69 kV structure, the new 69
22 kV structure (built to 138 kV standards), and the next structure of the existing Hazard-

1 Jackson 69 kV line.

2 **Q. WILL ANY ADDITIONAL RIGHT OF WAY BE ACQUIRED AS PART OF THE**
3 **HAZARD-JACKSON 69 KV RECONFIGURATION?**

4 A. Yes. Reconfiguring the 69 kV line to the northeast will require some additional right-of-
5 way along the 1,900 foot section. The new right-of-way will vary in width from
6 approximately 100 feet in width at the new 69 kV structure (built to 138 kV standards) to
7 zero feet in width where the Hazard-Jackson 69 kV Reconfiguration rejoins the existing
8 Hazard-Jackson 69 kV centerline.

9 **Q. IS THE HAZARD-JACKSON 69 KV RECONFIGURATION PART OF THE**
10 **PROJECT?**

11 A. The Hazard-Jackson 69 kV Reconfiguration is required to relocate a Hazard-Jackson 69
12 kV structure where the two circuits comprising the double-circuit portion of Proposed
13 Rebuild split. The Company is providing this information regarding the Hazard-Jackson
14 69 kV Reconfiguration to aid the Commission in better understanding the work that will
15 be taking place in the vicinity of the Proposed Rebuild, and to seek authority for the
16 Hazard-Jackson 69 kV Reconfiguration to the extent required.

V. NOTICES

17 **Q: DID KENTUCKY POWER COMPLY WITH THE REQUIREMENTS OF 807**
18 **KAR 5:120, SECTION 2(3) BY PROVIDING NOTICE TO ADJOINING**
19 **LANDOWNERS WHOSE PROPERTY MIGHT BE AFFECTED BY THE**
20 **PROPOSED REBUILD?**

21 A: Yes. Kentucky Power notified all landowners whose property may be affected by the
22 Proposed Rebuild. This includes those landowners whose property lies within the Filing

1 Corridor for the Proposed Rebuild. The initial notice was mailed October 30, 2017. A
2 supplemental notice was mailed November 13, 2017 to all persons whose property might
3 be crossed by the Proposed Rebuild or Hazard-Jackson 69 kV Reconfiguration. This
4 included all landowners with the Filing Corridor for both. The landowners notified in
5 connection with the Proposed Rebuild and the Hazard-Jackson 69 kV Reconfiguration
6 were identified from the records of the Leslie County and Perry County Property
7 Valuation Administrators. The list of landowners within the Filing Corridor for the
8 Proposed Rebuild and the Hazard-Jackson 69 kV Reconfiguration is attached as **EXHIBIT**
9 **12** to the application. Also included in **EXHIBIT 12** to the application is the required
10 verification.

11 **Q. WHY WAS A SUPPLEMENTAL NOTICE MAILED?**

12 A. The supplemental notice amended the original notice to provide a description of the
13 Hazard-Jackson 69 kV Reconfiguration. An amended map illustrating the
14 reconfiguration also was included as part of the supplemental notice.

15 **Q. DID THE ORIGINAL NOTICE AND SUPPLEMENTAL NOTICE CONTAIN**
16 **THE INFORMATION REQUIRED BY 807 KAR 5:120, SECTION 2(3)(A)-(E)?**

17 A. Yes. Copies of the form of the original notice and the supplemental notice are attached
18 to the application as **EXHIBIT 13**.

19 **Q. DID KENTUCKY POWER PUBLISH THE REQUIRED NOTICES IN THE**
20 **LESLIE COUNT AND PERRY COUNTY NEWSPAPERS?**

21 A. Yes. The required notice of the Company's intent to construct the Proposed Rebuild, the
22 Hazard-Jackson 69 kV Reconfiguration, and of this proceeding was published in the
23 newspapers of record for Perry and Leslie Counties on November 9, 2017. The

1 published notice contained all information required by 807 KAR 5:120, Section 2(5). A
2 copy of the published notice is attached as **EXHIBIT 14** to the application. Also attached
3 as **EXHIBIT 14** to the application is an affidavit of publication.

VI. FINANCIAL ASPECTS OF THE PROJECT

4 **Q: WHAT IS THE PROJECTED COST OF THE PROJECT?**

5 A: The total estimated cost of the Project is \$44.5 million. That sum comprises: (a)
6 approximately \$16.5 million for transmission line work including right-of-way
7 acquisition; and (b) approximately \$28 million for improvements to the Hazard and
8 Wooton substations.

9 **Q. DOES KENTUCKY POWER PARTICIPATE IN AN INTERNAL COMPANY**
10 **PROCESS TO REVIEW PROPOSED TRANSMISSION PROJECTS?**

11 A. Yes. Kentucky Power, in conjunction AEPSC personnel, participates in a capital
12 allocation process for reviewing and approving capital projects. The process requires that
13 projects demonstrate that the proposed scope of work is appropriate for providing
14 adequate service to customers and that the estimated costs are reasonable.

15 **Q. THE AUGUST 14, 2017 PRESS RELEASE ISSUED BY KENTUCKY POWER**
16 **INDICATED THAT THE COST FOR THE HAZARD-WOOTON LINE WOULD**
17 **BE APPROXIMATELY \$30 MILLION. WHY HAS THE COST INCREASED BY**
18 **NEARLY 50% TO APPROXIMATELY \$44.5 MILLION THREE MONTHS**
19 **LATER.**

20 A. The cost of the Proposed Rebuild has not increased fifty percent. The \$44.5 million
21 reflects the inclusion of additional improvements at the Hazard and Wooton substations.
22 Kentucky Power is identifying these additional improvements, and their cost, in this

1 application in the interest of fully disclosing to the Commission and the parties the full
2 scope of the work to be performed at the substations even if the work is not directly
3 required by the Proposed Rebuild. Absent this additional station work the cost of the
4 rebuild would be approximately \$31.5 million: (a) approximately \$16.5 million for
5 transmission line work including right-of-way acquisition; and (b) approximately \$15
6 million for required improvements to the Hazard and Wooton substations.

7 **Q: DO THE \$44.5 MILLION AND \$31.5 MILLION COST ESTIMATES**
8 **DESCRIBED ABOVE AND SET OUT IN THE APPLICATION REPRESENT**
9 **THE FINAL COST?**

10 A: These estimates represent the best engineering estimates of the costs as of the date of this
11 application. The exact cost will not be known until the Project is complete.

12 **Q: HOW WILL THE COST BE FUNDED?**

13 A: Kentucky Power anticipates funding the cost of the line and related facilities through its
14 operating cash flow and other internally generated funds. Prior to beginning
15 construction, Kentucky Power does not anticipate issuing debt to finance the Project.
16 The Company's pending application to adjust its rates is unrelated to the costs associated
17 with the construction of the Project. The Company will include, as appropriate, the costs
18 associated with the Project in its next general rate case and may re-finance the cost of the
19 Project as part of its next debt offering.

20 **Q: WILL THE COST OF THE PROJECT AFFECT MATERIALLY THE**
21 **FINANCIAL CONDITION OF KENTUCKY POWER COMPANY?**

22 A: No. Kentucky Power's assets, net of regulatory assets and deferred charges, as of
23 February 28, 2017, totaled \$1,860 million. The cost of this project thus represents an

1 increase of approximately 1.69% in those assets. Kentucky Power will not need to secure
2 any additional financing to complete this project nor will it affect the completion of any
3 other current capital project.

4 **Q: WHAT IS THE PROJECTED COST OF OPERATION OF THE PROPOSED**
5 **FACILITIES AFTER THEY ARE COMPLETED?**

6 A: Kentucky Power projects the annual operating cost will be approximately \$16,000 for
7 general maintenance and inspection. The projected annual additional ad valorem taxes
8 resulting from the project are expected to total approximately \$229,000.

9 **Q: DOES THIS CONCLUDE YOUR TESTIMONY?**

10 A: Yes.

**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 161 kV) Case No. 2017-00328
Transmission Line In Perry And Leslie Counties,)
Kentucky And Associated Facilities)
(Hazard-Wooton Line))

DIRECT TESTIMONY OF

**EMILY S. LARSON
POWER ENGINEERS, INC.**

ON BEHALF OF KENTUCKY POWER COMPANY

November 17, 2017

**DIRECT TESTIMONY OF
EMILY S. LARSON, ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

CASE NO. 2017-00328

TABLE OF CONTENTS

I.	Introduction	1
II.	Background	1
III.	Purpose of Testimony	2
IV.	Rebuild Study Methodology.....	3
V.	Rebuild Study Conclusions.....	7
VI.	Permitting.....	10

DIRECT TESTIMONY OF
EMILY S. LARSON, POWER ENGINEERS, INC.
ON BEHALF OF
KENTUCKY POWER COMPANY

I. INTRODUCTION

1 **Q: PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

2 A: My name is Emily S. Larson. I am employed by POWER Engineers, Inc. (POWER) and
3 located at 2920 West Broad Street Richmond, Virginia 23230 as a Project Manager in the
4 environmental division.

II. BACKGROUND

5 **Q: PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**
6 **BUSINESS EXPERIENCE.**

7 A: I hold a Bachelor of Science in Environmental Science from Towson University and have
8 completed graduate coursework at George Washington University. I have been associated
9 with POWER since 2015. I have more than ten years of experience in siting and
10 permitting of electric transmission lines. I routinely oversee the POWER technical staff
11 which is responsible for the siting and environmental permitting aspects of transmission
12 line projects with a focus in Kentucky, West Virginia, and Virginia.

13 **Q: PLEASE DETAIL POWER'S EXPERIENCE IN ROUTING, SITING AND**
14 **PERMITTING FOR ELECTRIC TRANSMISSION LINES.**

15 A: POWER specializes in routing, siting and permitting services for transmission line
16 projects throughout the country, and has been completing these types of projects for over

1 40 years. POWER has successfully sited and permitted over 400 transmission line
2 projects covering thousands of miles of high voltage transmission lines and associated
3 facilities. POWER's senior environmental specialists and transmission line engineers
4 coordinate closely to evaluate alternative routes, prudently weighing all aspects of the
5 project based on need, project specific criteria, agency and public concerns, resource
6 studies, and project technical specifications.

7 **Q: HAVE YOU PREVIOUSLY BEEN INVOLVED IN ELECTRIC TRANSMISSION**
8 **LINE SITING STUDIES?**

9 A: Yes. I have served as Project Manager or otherwise supervised routing, siting, planning and
10 permitting for large interstate transmission line projects in more than ten states, over the
11 past ten years, including Kentucky, Virginia, West Virginia, New Jersey, Pennsylvania,
12 Kansas, Missouri, Illinois, Indiana, Florida, and Idaho.

13 **Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION ON**
14 **BEHALF OF KENTUCKY POWER?**

15 A: No. I have however served as Project Manager and testified on behalf of Appalachian
16 Power Company before the Virginia State Corporation Commission for the Abingdon 138
17 kV Extension Project (Case Number PUE-2016-00011).

III. PURPOSE OF TESTIMONY

18 **Q: WHAT WAS YOUR ROLE ON THE CURRENT PROJECT?**

19 A: I coordinated and oversaw the siting, routing, and environmental analysis (the "Rebuild
20 Study") completed for the proposed Hazard-Wooton 161 kV transmission line rebuild and
21 related work (the "Project").

1 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

2 A: I am testifying in support of Kentucky Power Company's ("Kentucky Power" or
3 "Company") application for a Certificate of Public Convenience and Necessity to construct
4 the proposed Project; specifically, I am sponsoring the Rebuild Study (**Exhibit 16**). In my
5 testimony I will describe the Rebuild Study methodology employed by POWER and the
6 Company to identify and evaluate the rebuild of the existing transmission line. The rebuilt
7 line will be approximately 6.6 miles in length, and will connect the Company's Hazard
8 Substation in the City of Hazard, Perry County, Kentucky, to its Wooton Substation located
9 in northeast Leslie County, Kentucky (the "Proposed Rebuild"). I also will summarize the
10 Rebuild Study results and conclusions.

IV. REBUILD STUDY METHODOLOGY

11 **Q: PLEASE DESCRIBE THE GOAL OF THE REBUILD STUDY.**

12 A: Kentucky Power retained the services of POWER Engineers, Inc. ("POWER"), located in
13 Richmond, Virginia and Ft. Mill, South Carolina, to assess the suitability of using the
14 existing Hazard-Wooton 161 kV right-of-way, develop deviations, where necessary, and
15 to ensure the Project reasonably avoids or minimizes impacts on people and
16 environmental resources. The goal of the Rebuild Study is to gain an understanding of the
17 opportunities and constraints in the Study Area and to develop and evaluate the location
18 for the Proposed Rebuild centerline. If during the Rebuild Study process it was determined
19 that a route in or near the existing centerline was not possible (e.g., due to existing or
20 future land uses), an alternative route study would have been developed.

21 The route proposed by Kentucky Power for the Proposed Rebuild is the route that: (1)
22 reasonably minimizes adverse impacts on area land uses and the natural and cultural
23 environment; (2) minimizes special design requirements and unreasonable costs; and (3)

1 can be constructed and operated in a timely, safe, and reliable manner. The resulting
2 Rebuild Study details the methodology and evaluation behind the determination of the
3 Proposed Rebuild.

4 **Q: WHAT METHODOLOGY WAS EMPLOYED BY POWER IN DEVELOPING THE**
5 **REBUILD STUDY?**

6 A. The Rebuild Study was conducted in several steps:

- 7 • Developed an initial Project Study Area and gathered readily available environmental,
8 land use, and engineering data.
- 9 • Completed a desktop review of Study Area constraints based on readily available data.
- 10 • Held a Siting Team kick-off meeting and field review with American Electric Power
11 Service Corporation representatives.
- 12 • Developed and evaluated the Proposed Rebuild and any deviations.
- 13 • Initiated public outreach process and met with stakeholders.
- 14 • Held a public open house.
- 15 • Finalized the Proposed Rebuild

16 The methodology employed by POWER is described in more detail the Rebuild Study.

17 **Q: IS THIS METHODOLOGY SIMILAR TO THAT EMPLOYED BY POWER IN**
18 **OTHER SUCH STUDIES?**

19 A: Yes. This is a traditional, accepted, and robust methodology employed by siting and
20 environmental consultants to evaluate rebuilding existing transmission lines.

1 **Q: PLEASE DESCRIBE IN MORE DETAIL THE FIRST STEPS OF THE**
2 **METHODOLOGY?**

3 A: The Study Area was defined by POWER as a two-mile buffer around the existing
4 centerline and encompasses approximately 24,600 acres (38.4 square miles) in Perry and
5 Leslie counties, Kentucky (see **EXHIBIT 16** (Attachment 1; Map 1) to the application). The
6 existing Wooton Substation is the southern terminus of the Project and the existing Hazard
7 Substation is the northern terminus of the Project. Constraints in the Study Area include
8 community development around the existing Hazard Substation and engineering or
9 constructability challenges. Existing linear features are generally considered
10 “opportunities” to parallel or use for routing transmission lines. The existing Hazard –
11 Wooton 161 kV transmission line and Hazard – Jackson 69 kV transmission line rights-of-
12 way are the primary linear features used for routing the Project, as using existing right-of-
13 way is a preferred approach.

14 **Q: BRIEFLY DESCRIBE YOUR DATA COLLECTION PROCESS AND**
15 **CONSTRAINTS MAPPING.**

16 A: A list of publically available data collected is included as Attachment 3 to the Rebuild
17 Study. In general, publically available data was collected regarding land use, cultural
18 resources, and environmental resources. In addition to the collection of publically available
19 data, site visits and discussions with landowners and local stakeholders, including local
20 elected officials and the Principal of the Hazard High School, were conducted to better
21 understand the Project area. An open house was held to give the general public the
22 opportunity to offer comment and input on the Project and to gather additional information.
23 The siting team also completed field reviews of the existing Hazard-Wooton 161 kV

1 Transmission Line right-of-way from publically accessible areas and collected data.
2 Furthermore, LiDAR (airborne laser photography) was also performed on April 2, 2017
3 and provided detailed data on non-publically accessible areas.

4 **Q: WHAT WAS THE NEXT STEP?**

5 A: POWER and the Company developed the Proposed Rebuild based on the opportunities and
6 constraints within the Study Area. The primary routing criteria was to maximize the use of
7 the existing transmission line right-of-way and rebuild the transmission line back on
8 centerline where possible. Using the existing right-of-way limits the additional cost that
9 would be required to acquire new right-of-way compared with a greenfield route. It also
10 minimizes viewshed impacts, as there is an existing transmission line and visual impact on
11 the landscape.

12 **Q: WHAT WAS THE FINAL STEP IN THE PROCESS?**

13 A: The final step was to analyze and finalize the Proposed Rebuild. The Proposed Rebuild
14 maximized the use of existing right-of-way while avoiding constraint areas and minimizing
15 constructability concerns.

16 **Q: WHY WAS THE ELECTRIC POWER RESEARCH INSTITUTE/GEORGIA**
17 **TRANSMISSION CORPORATION'S (EPRI) "OVERHEAD ELECTRIC**
18 **TRANSMISSION LINE SITING METHODOLOGY" AND THE "KENTUCKY**
19 **TRANSMISSION LINE SITING METHODOLOGY" NOT USED?**

20 A: The Rebuild Study concluded that construction of the Proposed Rebuild on the existing
21 general alignment is reasonable. Abandoning the existing right-of-way, an existing linear
22 feature in the landscape, for a new greenfield route is neither practical nor necessary in
23 this instance, and would impose new impacts on people and the environment. Therefore,
24 full alternative routes were not developed and the use of the Kentucky EPRI Methodology

1 to develop alternative routes was not necessary. If during the Rebuild Study it was
2 determined that a route in or near the existing centerline was not possible (e.g., due to
3 existing or future land uses), an alternative route study would have been developed.

V. REBUILD STUDY CONCLUSIONS

4 **Q: PLEASE DESCRIBE POWER'S CONCLUSIONS REGARDING THE PROPOSED**
5 **REBUILD ROUTE.**

6 A: POWER concluded that the Proposed Rebuild is the best option as it maximizes the use of
7 existing right-of-way and is largely located on the existing centerline (**Exhibit 16**,
8 Attachment 1, Maps 2 and 3). Abandoning the existing right-of-way, an existing linear
9 feature in the landscape, for a new greenfield route is neither practical nor necessary. A
10 greenfield route would impose new impacts on people and the environment. Based on the
11 Rebuild Study, the Company concluded that construction of the Proposed Rebuild on the
12 existing general alignment is reasonable, the best route, and consistent with public
13 preferences and general siting guidelines for paralleling or using existing right-of-ways for
14 new or rebuilt transmission facilities.

15 **Q. PLEASE DESCRIBE THE PROPOSED REBUILD ROUTE.**

16 A. The Proposed Rebuild connects the existing Hazard Substation, located within the City of
17 Hazard and northeast of Kentucky Route 15, and the existing Wooton Substation, located
18 near the community of Wooton in Leslie County. Approximately 5.4 miles of the 6.6 mile
19 Proposed Rebuild is within or near existing Kentucky Power rights-of-way. Two minor
20 diversions, totaling approximately 1.2 miles of the Proposed Rebuild, lie outside of the
21 existing Hazard-Wooton 161 kV right-of-way (see Application **EXHIBITS 1, 2, and 16**). The

1 two diversions accommodate constructability concerns and issues. All other portions of the
2 Proposed Rebuild are located within or near existing right-of-way.

3 **Q. AN APPROXIMATELY 1.15 MILE PORTION OF THE PROPOSED REBUILD**
4 **WILL BE CONSTRUCTED AS A DOUBLE-CIRCUIT 161 KV/69 KV LINE.**
5 **WHERE WILL IT BE LOCATED?**

6 A. The double-circuit portion of the Proposed Rebuild begins at the Hazard Substation and
7 runs to the first structure north of the North Fork of the Kentucky River. The new double
8 circuit 161/69 kV transmission line is then shifted slightly south within the combined
9 right-of-ways and located farther from the adjacent residences. Doing so removes an
10 existing encroachment from the right-of-way. The Proposed Rebuild, continuing as a
11 double circuit 161/69 kV transmission line, crosses South Main Street/Kentucky Route
12 15 and shifts north of the existing Hazard-Wooton 161 kV Transmission Line and south
13 of the existing Hazard-Jackson 69 kV Transmission Line. From a point north and west of
14 Hazard High School, the 161 and 69 kV circuits split and the 69 kV circuit reconnects
15 with the existing 69 kV transmission line via a short spur of new transmission line
16 (approximately 1,900 feet long).

17 **Q: EXPLAIN THE BASIS FOR THE 1.15 MILE DOUBLE-CIRCUIT PORTION OF**
18 **THE LINE.**

19 A: The line in the area of double-circuit is located along the backside of several residences
20 west of the Hazard Substation. In this same area, the existing Hazard-Wooton 161 kV
21 Transmission Line is located immediately adjacent to the existing Hazard-Jackson 69 kV
22 Transmission Line and a 34.5 kV distribution line. The three lines lie within adjacent
23 and/or overlapping right-of-way. In order to avoid an encroaching outbuilding, maximize

1 the distance from the residential area, avoid conflicts with the parallel infrastructure
2 during construction, and avoid constructability issues related to the steep terrain, an
3 option to double circuit the Hazard-Wooton 161 kV transmission line and Hazard-
4 Jackson 69 kV transmission line, while also underbuilding the 34.5 kV distribution line
5 was reviewed. The Proposed Rebuild proposes to double circuit the two existing
6 transmission lines within a combined 120-foot right-of-way, with the 34.5 kV distribution
7 line underbuilt to a point north of the North Fork of the Kentucky River.

8 **Q. YOU INDICATE ABOVE THAT THE PROPOSED REBUILD WILL DIVERT**
9 **FROM THE EXISTING RIGHT-OF-WAY IN TWO PLACES. WHERE IS THE**
10 **FIRST OF THESE DIVERSIONS?**

11 A. The first diversion, not in or near existing right-of-way, is located north of Hazard High
12 School and is approximately 3,200 feet in length. A portion of this diversion comprises
13 of the western portion of the double-circuit portion of the Proposed Rebuild. This
14 diversion is required to re-locate the exiting centerline, currently located on a steep slope
15 above the existing Hazard High School ball fields, to more suitable and stable terrain.

16 **Q. WHAT IS THE PROPOSED 69 KV RECONFIGURATION SHOWN ON**
17 **EXHIBITS 1 AND 2 TO THE APPLICATION?**

18 A. After the 161 kV and 69 kV circuits split from double circuit the first Hazard-Jackson 69
19 kV structure will be removed and replaced. A new 69 kV structure will be located on
20 higher and more accessible terrain to the northeast of the existing structure. As a result,
21 this first 69 kV structure (designed to 138 kV standards) will be slightly offset from the
22 existing Hazard-Jackson centerline. This slight reconfiguration provides for a better
23 optimized line design, decreases the outage duration, and reduces the likelihood of slips

1 and slides during construction. The conductors from the proposed 69 kV structure will
2 then reconnect to the next existing 69 kV transmission line structure located northwest
3 and downhill. Due to the relocation of the one 69 kV structure, the right-of-way will shift
4 slightly and additional right-of-way varying from 0 to 100 feet will be necessary for the
5 approximately 1,900 foot Hazard-Jackson 69 kV Reconfiguration.

6 **Q. WHERE DOES THE HAZARD-WOOTON 161 KV CIRCUIT PROCEED?**

7 A. Beginning at the point where the double-circuit portion of the Proposed Rebuild ends, the
8 161 kV circuit will continue in new right-of-way for approximately 1,800 feet before
9 rejoining the existing 161 kV centerline. The existing Hazard-Wooton 161 kV
10 transmission line would then be rebuilt on the existing centerline for approximately 3.7
11 miles until a point approximately one mile northeast of the Wooton Substation.

12 **Q. WHAT OCCURS HERE?**

13 A. At this point, the second diversion from existing right-of-way is proposed to address the
14 inaccessibility of an existing structure (see Attachment 4 of Rebuild Study). This second
15 diversion is approximately 3,000 feet in length. After the diversion, the Proposed Rebuild
16 returns to the existing centerline and into the Wooton Substation.

VI. PERMITTING

17 **Q: WHAT ENVIRONMENTAL PERMITTING AND SURVEYS ARE ANTICIPATED**
18 **FOR THIS PROJECT?**

19 A: Several studies are either underway or completed for the Project. First, a wetland and
20 stream field delineation has been completed for the Proposed Rebuild, access roads,
21 construction pads, and a laydown yard. A Pre-Construction Notification (PCN) to the
22 United States Army Corp of Engineers (USACE) is not expected to be required for the

1 Project, and all impacts to wetlands and streams can be avoided or minimized in a way that
2 does not require a PCN application. It is expected, however, that the Project will be
3 covered under the USACE Nationwide Permit 12, non-reporting for the installation of
4 temporary culverts.

5 **Q. ARE ANY WETLAND, STREAM, OR STORMWATER PERMITS REQUIRED?**

6 A. Construction activities that take place in or along a wetland or a stream channel (if the
7 watershed is one square mile or more in size) and stream relocations in the 100-year
8 floodplain will require a Kentucky Division of Water (KDOW) Stream Construction
9 Permit. Stream crossing activities requiring a USACE permit (e.g., culverts) are exempt;
10 however, aerial stream crossings and floodplain impacts are not exempt. The work around
11 the Hazard Substation is located within a 100-year floodplain and will require state and
12 local level floodplain permitting. In addition, because the disturbance will be greater than
13 an acre a construction stormwater permit will be required. A Kentucky Pollutant Discharge
14 Elimination System (KPDES) Stormwater Pollution Prevention Plan (SWPPP) will be
15 developed for the transmission lines, including access roads, construction pads or pulling
16 stations, and one laydown yard.

17 **Q. WERE ANY SENSITIVE SPECIES OR CULTURAL STUDIES PERFORMED?**

18 A. Yes. As part of the Rebuild Study for this Project, sensitive species information was
19 reviewed based on the United States Fish and Wildlife Service (USFWS) Information for
20 Planning and Consultation (IPaC). Four aquatic species and three species of bat were
21 identified as potentially being present in the Project area. All instream work in waters
22 suitable to support clam and fish species will be avoided and no surveys are required. Bat
23 mist net surveys for the Indiana bat and the Northern long-eared bat and portal searches for

1 the Gray bat have been completed and coordination conducted with the USFWS. No
2 federally listed bats were captured during the mist net survey. Five portals were identified
3 during the mist net survey; swarm surveys were completed on September 27 and 28, 2017
4 and October 16 and 17, 2017. No federally listed bats were caught during the swarm
5 surveys. A report summarizing the survey results will be submitted to the USFWS before
6 the end of 2017. In addition, an informational request from the Kentucky State Nature
7 Preserves Commission (KSNPC) was also received. No state listed species coordination is
8 required.

9 A Phase 1 cultural survey and coordination with the Kentucky Heritage Council (KHC)
10 was completed. A field review for Phase 1 cultural surveys addressed both archaeological
11 and architectural resources for the Proposed Rebuild, including access roads, construction
12 pads, and the laydown yard. No significant archeological material was recovered and no
13 new architectural resources were identified which are eligible for listing with the National
14 Register of Historic Places (NRHP). No existing NRHP eligible architectural resources will
15 be affected by the Project.

16 **Q: ARE THERE OTHER NON-ENVIRONMENTAL PERMITTING**
17 **REQUIREMENTS FOR THE PROJECT?**

18 A: Yes. Based on preliminary engineering, it is anticipated that approximately eight aerial
19 road crossing permits will be required from the Kentucky Transportation Cabinet (KYTC)
20 or local county or city engineering offices. Construction entrance permits are typically
21 required for construction access road entrances onto state or county roads. The construction
22 entrance permits will be filed with the KYTC or with the local county or city engineering
23 office, depending on jurisdiction. One aerial railroad crossing permit is anticipated for a

1 CSX railroad tunnel crossing just north of the North Fork of the Kentucky River. Based on
2 preliminary engineering, it is anticipated that approximately ten (10) spans of wire will
3 range between 200 feet and 500 feet above ground level and may require FAA (Federal
4 Aviation Administration) marking. The Company will file each location with the FAA and
5 KYTC to determine the marking requirements, if any, for the transmission line. Typically,
6 36-inch spherical marker balls spaced at approximately 200 feet would be installed on the
7 top most wires (ground wires) in the section of any span that exceeds 200 feet above
8 ground (i.e. over a valley).

9 The engineering related permits (road, railroad and FAA) will be filed with the appropriate
10 agencies or companies once the transmission line design is completed. No construction
11 work associated with these permits (i.e. wire installation) will begin until approval is
12 received.

13 **Q: WHEN DO YOU ANTICIPATE ALL PERMITS WILL BE ACQUIRED?**

14 A: The Company anticipates all environmental surveys and permitting work will be completed
15 by the summer of 2018, prior to the start of any land disturbing activity. Other engineering
16 permits, including permits such as aerial highway or railroad crossing permits may be
17 received after access road construction has started, but before any structures are erected or
18 wires strung. Copies of all permits (environmental and otherwise) will be provided to the
19 Commission prior to the start of construction or once received.

20 **Q: DOES THIS CONCLUDE YOUR TESTIMONY?**

21 A: Yes.

VERIFICATION

The undersigned, Emily Larson, being duly sworn, deposes and says she is Project Manager with Power Engineers, Inc., that she has personal knowledge of the matters set forth in the forgoing testimony and the information contained therein is true and correct to the best of her information, knowledge and belief

Emily Larson
Emily Larson

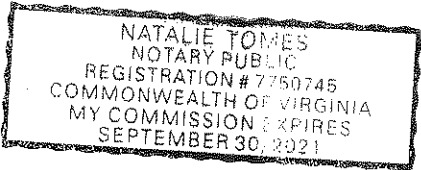
INSERT STATE)
INSERT COUNTY OF) Case No. 2017-00328)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Emily Larson, this the 13th day of November, 2017.

Natalie Tones
Notary Public

Notary ID Number: 745 0445

My Commission Expires: 9.30, 2021



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 161 kV) Case No. 2017-00328
Transmission Line In Perry And Leslie Counties,)
Kentucky And Associated Facilities)
(Hazard-Wooton Line))

DIRECT TESTIMONY OF
MICHAEL G. LASSLO
ON BEHALF OF KENTUCKY POWER COMPANY

November 17, 2017

**DIRECT TESTIMONY OF
MICHAEL G. LASSLO, ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

CASE NO. 2017-00328

TABLE OF CONTENTS

I.	Introduction	1
II.	Background	1
III.	Purpose of Testimony	3
IV.	Existing Line and Proposal	4
V.	Need for Proposed Rebuild.....	10
VI.	Benefits of the Projects	14

DIRECT TESTIMONY OF

MICHAEL G. LASSLO

ON BEHALF OF KENTUCKY POWER COMPANY

I. INTRODUCTION

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

A: My name is Michael G. Lasslo. My position is Reliability Manager for Kentucky Power Company. My business address is 1400 E. Main Street, Hazard, Kentucky.

II. BACKGROUND

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A: I have a Bachelor of Science Degree in Electrical Engineering from the University of Kentucky. I have 40 years of experience with Kentucky Power Company. My work experience includes: engineering and design for new and upgraded electrical service to residential, commercial, and industrial customers; preparation of detailed studies to evaluate the existing distribution infrastructure and to plan for future system improvements; transmission/sub-transmission construction, operation and maintenance; substation construction, operation, and maintenance; power quality studies and customer complaint resolution; budgeting for capital, operation and maintenance expenditures; implementation and monitoring of safety programs and performance, accident/incident investigation; marketing of electro-technologies; customer service; and various supervisory and management positions.

1 **Q: WHAT ARE YOUR RESPONSIBILITIES AS RELIABILITY MANAGER FOR**
2 **KENTUCKY POWER COMPANY?**

3 A: My role is to lead the activities of the Kentucky Power Reliability Team to provide safe,
4 efficient, and reliable electric service to over 168,000 residential, commercial and
5 industrial customers. I manage talented professionals who are organized into the
6 functions of distribution engineering; project management; risk management; customer
7 service; distribution right-of-way acquisition; technical design; and power quality. My
8 responsibilities include: customer service; restoration of service interruptions (including
9 major storms); provision of new and upgraded service to distribution customers from
10 120V single phase through 34.5 kV three phase; provision of new and upgraded service
11 to transmission customers from 46kV through 138kV; evaluation of employee
12 performance, monitoring of work practices for compliance with codes of conduct, safety
13 rules and procedures, and environmental regulations; public safety; budgeting and
14 expenditures; working with various state and local agencies to promote economic
15 development of the service area; developing and maintaining good working relationships
16 with local and state elected officials, community leaders, civic groups, and the media.

17 **Q. DO YOUR DUTIES INCLUDE OTHER RESPONSIBILITIES?**

18 A. Yes. I also assist Company management and the other districts as needed to accomplish
19 the goals of Kentucky Power and American Electric Power Company, Inc. (“AEP”). My
20 other responsibilities include participation in the planning activities of the AEP
21 transmission and distribution assets planning groups regarding overall system
22 performance; recommendation and evaluation of large system improvements; and new
23 service to large commercial and industrial customers.

1 **Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?**

2 A: Yes. I filed written testimony in Case No. 2011-00295¹ in support of the Company's
3 application seeking a certificate of public convenience and necessity to construct the
4 approximately 20-mile Bonnyman-Soft Shell 138 kV transmission line in Breathitt,
5 Knott, and Perry counties in eastern Kentucky. The Commission granted the Company's
6 application by Order dated January 26, 2012. The Bonnyman-Soft Shell Transmission
7 line was placed in service in late 2014.

III. PURPOSE OF TESTIMONY

8 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

9 A: I am testifying in support of Kentucky Power's application for a Certificate of Public
10 Convenience and Necessity to construct the proposed Hazard-Wooton 161 kV
11 transmission line and work at the Hazard and Wooton substations (the "Project"). I also
12 discuss work to be performed in connection with the reconfiguration of a 1,900 foot
13 section of the Hazard-Jackson 69 kV line. I describe in my testimony:

- 14 • The Hazard-Wooton 161 kV transmission line and the Company's proposal to
15 rebuild the line ("Proposed Rebuild");
- 16 • Describe the work to be performed at the Hazard Substation and the Wooton
17 Substation;
- 18 • Describe the engineering and other factors driving the need to rebuild the existing
19 line; and
- 20 • Describe other benefits from and considerations regarding the Project.

¹ *In the Matter of: Application Of Kentucky Power Company For A Certificate Of Public Convenience And Necessity To Construct A 138 kV Transmission Line And Associated Facilities In Breathitt, Knott, And Perry Counties, Kentucky (Bonnyman-Soft Shell Line).*

**IV. THE EXISTING LINE AND THE COMPANY'S
PROPOSAL TO REBUILD THE LINE AND ASSOCIATED WORK**

A. The Hazard Area Transmission System

1 **Q. THE BONNYMAN-SOFT SHELL 138 KV TRANSMISSION LINE YOU**
2 **MENTION ABOVE IS PART OF THE HAZARD AREA TRANSMISSION**
3 **SYSTEM. IS THE HAZARD-WOOTON 161 KV LINE LIKEWISE PART OF**
4 **THE HAZARD AREA TRANSMISSION SYSTEM?**

5 A: Yes. The Hazard Area Transmission System consists of the transmission and sub-
6 transmission facilities that provide service in those portions of the Company's service
7 territory lying in six counties: Breathitt, Knott, Leslie, Letcher, Morgan, and Perry. The
8 Hazard Area Transmission System is illustrated in **EXHIBIT 15** attached to the
9 application. The principal source into the area is the Hazard - Wooton 161 kV
10 transmission line through interconnections with the Tennessee Valley Authority and
11 Kentucky Utilities Company. In addition, the Beaver Creek - Hazard and Bonnyman -
12 Softshell 138 kV lines provide support to the area. Two 69 kV sub-transmission loops
13 serve the majority of the local distribution substations.

14 **Q. PLEASE DESCRIBE THE HAZARD AREA LOAD.**

15 A. The Hazard Area load is approximately 300 MW and is winter peaking. The area load
16 consists primarily of residential load with some commercial and industrial customers.
17 The industrial load comprises mainly small coal mines. The commercial load is
18 concentrated around the cities of Hazard (Perry County) and Jackson (Breathitt County).

B. The Existing 161 kV Hazard-Wooton Transmission Line

1 **Q. PLEASE DESCRIBE GENERALLY THE EXISTING HAZARD-WOOTON 161**
2 **KV TRANSMISSION LINE.**

3 A: The existing Hazard-Wooton line is a 161 kV transmission line that stretches
4 approximately 6.5 miles in length. The line was constructed prior to 1945. The line
5 connects the Company's Hazard Substation in Perry County with its Wooton Substation
6 in Leslie County. The Hazard Substation is located east of Highway 15 in the City of
7 Hazard, Kentucky. The Wooton Substation is located near the community of Wooton in
8 northeast Leslie County, Kentucky. The Proposed Rebuild Route and the location of the
9 substations are illustrated on EXHIBITS 1 AND 2 to the application.

10 **Q. WHAT STRUCTURES COMPRISE THE EXISTING LINE?**

11 A. The existing Hazard-Wooton 161 kV transmission line consists of 45 structures: 43 of the
12 structures are wooden; 42 of the wooden structures were constructed in the 1940's; the
13 forty-third wooden structure was erected in 1999; and the two remaining structures are
14 steel and were erected in 2006. Photographs of the existing structures are attached as
15 EXHIBIT 3 to the application. The average height above ground level of the existing
16 structures is 56 feet.

17 **Q. PLEASE DESCRIBE THE CONDUCTOR CURRENTLY USED ON THE**
18 **HAZARD-WOOTON 161 KV TRANSMISSION LINE.**

19 A. Approximately 5.51 miles of the conductor on the 6.5 mile existing line is 500,000 CM
20 copper conductor that dates back to 1942. An additional 0.04 miles of 500,000 CM
21 copper conductor was manufactured in 1943. Another 0.9 miles of line is 795,000 CM

1 ACSR 45/7 conductor and dates to 1974. The remaining 0.07 miles of line is 795,000
2 CM ACSR 26/7 conductor and is of 2006 vintage.

3 **Q: WHAT IS THE CONDITION OF THE EXISTING STRUCTURES AND**
4 **CONDUCTOR?**

5 A: The existing line is approximately 75-years old and is deteriorating. Fifty-two “category
6 “A” open conditions have been identified in connection with the existing line. These
7 include damaged or rotted poles and cross-arms, as well as damaged conductor.

8 **Q. PLEASE DESCRIBE GENERALLY WHAT CONSTITUTES A “CATEGORY ‘A’**
9 **OPEN CONDITION.”**

10 A. A category ‘A’ open condition is a physical defect identified during scheduled
11 inspections that has the possibility of negatively affecting the structural or electrical
12 integrity of the transmission line asset. Conditions are prioritized based upon their
13 severity and include, but are not limited to, damaged or rotted poles, guy wires, shield
14 wires, conductor, insulators and cross-arms.

C. The Proposed Rebuild

15 **Q. PLEASE DESCRIBE THE STRUCTURES TO BE USED IN CONNECTION**
16 **WITH THE PROPOSED REBUILT LINE.**

17 A. Approximately 5.45 miles of the approximately 6.6 mile Proposed Rebuild will consist of
18 a single circuit configuration. The primary single circuit structure used will be a
19 galvanized tubular steel pole H-frame structure. Single circuit galvanized tubular steel
20 three-pole and galvanized lattice steel towers structures will also be used as needed. The
21 average above ground height of the proposed single circuit structures will be
22 approximately 80 feet. These steel structures, as well as those the Company proposes to

1 use in connection with the double-circuit portion of the rebuilt line, are less prone to
2 deterioration than the existing wooden structures and require less maintenance. Sketches
3 and images of the proposed typical single circuit steel pole H-frame, steel three-pole, and
4 single circuit lattice tower structures are attached to the application as **EXHIBITS 4, 5,**
5 **AND 6.**

6 **Q. WHAT STRUCTURES WILL BE USED TO SUPPORT THE DOUBLE-CIRCUIT**
7 **PORTION OF THE LINE?**

8 A. Approximately six double circuit steel monopole structures and one self-supporting
9 double circuit steel lattice tower will be used to support the new double circuit
10 configuration. The average height of the new double circuit monopole structures will be
11 approximately 110 feet; the height of the new double circuit lattice tower will be
12 approximately 120 feet. Sketches and images of typical double circuit steel monopole
13 structures and double circuit steel lattice tower structure are shown in **EXHIBITS 8 AND 9.**

14 **Q. PLEASE DESCRIBE THE CONDUCTOR THE COMPANY PROPOSES TO USE**
15 **IN CONNECTION WITH THE PROPOSED REBUILD.**

16 A. The rebuilt line will use a single conductor per phase and two overhead groundwires.
17 The rebuilt line will be 795 kcm ACSR; the overhead groundwires will consist of one
18 alumoweld wire and one fiber optic overhead groundwire, which will be used for relaying
19 communications between substations. The proposed conductor to be used with the
20 rebuilt line will have adequate thermal capability to serve the area load under various
21 operating conditions. These include viable single and double contingencies such as N-1
22 and N-1-1 scenarios.

D. Substation Improvements

1 **Q. WHAT WORK AT THE WOOTON SUBSTATION IS KENTUCKY POWER**
2 **SEEKING AUTHORITY TO PERFORM?**

3 A. The Company is proposing five improvements at the Wooton Substation:

- 4 (a) Installation of station class surge arresters attached to the upper beam of
5 the existing 161kV box bay structure on the 161kV Hazard Line position;
- 6 (b) Replacement of devices for line protection and circuit breaker control
7 associated with the 161kV Hazard line position;
- 8 (c) Installation of two coupling capacitor voltage transformers on Phase 2 and
9 Phase 3 of the 161kV bus;
- 10 (d) Replacement of devices for 161kV bus protection; and
- 11 (e) Installation of telecommunication fiber equipment.

12 The proposed layout drawing and location map for the Wooton Substation are included as
13 **EXHIBIT 11** to the application.

14 **Q. WHAT IS THE PURPOSE OF THESE FIVE IMPROVEMENTS?**

15 A. The proposed work at the Wooton Substation will allow for the termination of the rebuilt
16 Hazard-Wooton 161 kV line. In addition, legacy station and protection and control
17 elements associated with the line will be upgraded to current design standards.

18 **Q. ARE EACH OF THESE WOOTON SUBSTATION IMPROVEMENTS**
19 **REQUIRED BY THE REBUILD OF THE HAZARD-WOOTON 161 KV**
20 **TRANSMISSION LINE?**

21 A. No. Upgrading the legacy engineering elements to current design standards is not directly
22 required by, or associated with, the transmission line rebuild. Much of this work,
23 however, will be performed in conjunction with, or at the same time as, the work required
24 for the transmission line rebuild. It is included in this application in the interest of fully

1 disclosing to the Commission and the parties the full scope of the work to be performed
2 at the substation even if not directly associated with the transmission line rebuild.

3 **Q. PLEASE DESCRIBE THE WORK THE COMPANY PROPOSES FOR THE**
4 **HAZARD SUBSTATION.**

5 A. The work to be undertaken at the Hazard Substation is much more extensive than that
6 planned for the Wooton Substation. It consists of the 46 improvements listed on **EXHIBIT**
7 **10** to the application. The proposed layout drawing and location map for the Hazard
8 Substation are included as **EXHIBIT 10** to the application.

9 **Q. WHAT PURPOSES ARE SERVED BY THE HAZARD SUBSTATION**
10 **PROJECTS?**

11 A. Work at the Hazard Substation will allow for the termination of the rebuilt Hazard-
12 Wooton 161 kV line. Work also will be completed to address PJM-identified thermal
13 violations, physically deteriorated and aging infrastructure concerns, and to upgrade
14 existing legacy engineering elements to current design standards.

15 **Q. DESCRIBE GENERALLY THE HAZARD SUBSTATION IMPROVEMENTS**
16 **THAT ARE DIRECTLY RELATED OR REQUIRED BY TRANSMISSION LINE**
17 **REBUILD?**

18 A. Work associated with the replacement of the existing 161/138 kV single phase
19 transformer with a new three phase 161/138 kV transformer, like the transmission line
20 rebuild, addresses PJM identified thermal violations and is directly related to or required
21 by the Proposed Rebuild.

22 **Q. ARE THOSE HAZARD AND WOOTON SUBSTATION IMPROVEMENTS NOT**
23 **DIRECTLY REQUIRED BY OR ASSOCIATED WITH THE TRANSMISSION**

1 **LINE REBUILD UNNECESSARY?**

2 A. No. Kentucky Power would perform the work associated with these proposed
3 improvements even in the absence of the Proposed Rebuild.

4 **Q. ARE THERE ANY EFFICIENCIES OR OTHER ADVANTAGES ASSOCIATED**
5 **WITH PERFORMING THESE PROJECTS AT THE SAME TIME AS THE**
6 **REQUIRED SUBSTATION WORK?**

7 A. Yes. By performing these projects at the same time Kentucky Power is able to more
8 efficiently utilize planned outage windows and more efficiently deploy associated
9 construction and engineering resources.

V. NEED FOR PROPOSED REBUILD AND OTHER WORK

10 **Q. HOW DID KENTUCKY POWER IDENTIFY THE NEED FOR THE PROJECT?**

11 A: Thermal violations on the Hazard-Wooton 161 kV line and 161/138 kV transformer were
12 identified as part of PJM's annual Regional Transmission Expansion Plan (RTEP)
13 process.

14 **Q. BEFORE DESCRIBING THE COMPANY'S ANALYSIS, PLEASE GENERALLY**
15 **DESCRIBE THE PJM RTEP PROCESS.**

16 A. Kentucky Power and the other AEP-East operating companies are members of the PJM
17 Interconnection, LLC. Annually, PJM conducts regional transmission planning studies to
18 identify and verify reliability, market efficiency, operational performance, and public
19 policy needs. PJM then undertakes efforts to identify and select projects to address those
20 needs for recommendation to the PJM Board for approval. A more complete description
21 of the PJM process may be found at: [http://www.pjm.com/-/media/library/reports-
notices/2017-rtep/20170731-rtep-input-assumptions-and-scope-whitepaper.ashx?la=en](http://www.pjm.com/-/media/library/reports-
22 notices/2017-rtep/20170731-rtep-input-assumptions-and-scope-whitepaper.ashx?la=en)

1 **Q. PLEASE DESCRIBE KENTUCKY POWER'S HAZARD-WOOTON 161 KV**
2 **TRANSMISSION LINE ANALYSIS, SUBMISSION TO PJM, AND THE**
3 **OUTCOME OF THE ANALYSIS.**

4 A. Thermal violations on the Hazard-Wooton 161 kV line and Hazard 161/138 kV
5 transformer were identified by PJM under a generation deliverability analysis as part of
6 the 2016 RTEP study. After validating the results, Kentucky Power evaluated different
7 solutions to the problem statement posted by PJM. Kentucky Power submitted multiple
8 project proposals to PJM to address the thermal criteria violations identified on the
9 existing line. One proposal included involved replacing the 161/138 kV transformer and
10 rebuilding the Hazard-Wooton 161 kV line. The second proposal involved replacing the
11 161/138 kV transformer and performing a sag remediation study of the existing line to
12 increase the thermal operating temperature on the existing 500,000 CM copper
13 conductors (185 MVA rating).

14 **Q. WHAT DID THE SAG REMEDIATION STUDY INDICATE?**

15 A. The study indicated that 22 of the 45 existing transmission line structures would need to
16 be replaced to address sag clearance issues.

17 **Q. WHY DID KENTUCKY POWER DECIDE TO REBUILD THE LINE IN ITS**
18 **ENTIRETY?**

19 A. The 22 transmission line structures the Company would be required to replace to address
20 sag clearance issues are not contiguous and instead distributed throughout the length of
21 the existing line. Addressing only these 22 transmission structures would involve a
22 significant undertaking. In addition, replacing only one-half of the existing structures
23 would not address the deterioration and other issues inherent in the remaining nearly

1 75-year old structures and conductor. Therefore, replacing the 161/138 kV transformer
2 and rebuilding the Hazard-Wooton 161 kV line is the best holistic solution.

3 **Q. HAS THE HAZARD-WOOTON PROJECT BEEN ASSIGNED A PJM RTEP**
4 **NUMBER?**

5 A. Yes. The identifier B2761 was formally assigned to the Hazard-Wooton Project at the
6 November Transmission Expansion Advisory Committee (TEAC) meeting. Kentucky
7 Power further anticipates the Project will be formally approved at the December 2017
8 PJM Board meeting. As indicated by the B in the identifier, the majority of the Project
9 (the 161 kV line rebuild and the 161/138 kV Hazard Substation transformer in particular)
10 is considered Baseline. Additionally, many of the structures are approximately 75 years
11 old and their deteriorating condition would be a major factor in the need for the rebuild
12 even in the absence of the PJM-identified Baseline determination. Some of the other
13 substation work is designated as Supplemental.

14 **Q. PLEASE DESCRIBE THE BASELINE AND SUPPLEMENTAL PROJECTS**
15 **THAT RESULT FROM THE RTEP PROCESS.**

16 A. AEP Transmission, on behalf of Kentucky Power, participates in the PJM planning
17 process which is guided by PJM and AEP planning criteria. These criteria are available
18 on the PJM website at:

19 <http://www.pjm.com/planning/planning-criteria/pjm-planning-criteria.aspx>

20 <http://www.pjm.com/-/media/planning/planning-criteria/aep-planning-criteria.ashx?la=en>

21 <http://pjm.com/-/media/committees-groups/committees/srrtep-w/20170105/20170105->
22 [aep-guidelines-for-transmission-owner-identified-needs.ashx](http://pjm.com/-/media/committees-groups/committees/srrtep-w/20170105/20170105-aep-guidelines-for-transmission-owner-identified-needs.ashx)

23 Using these criteria and guidelines, PJM and Kentucky Power, in conjunction

1 with AEP, identify needs that must be addressed by Baseline projects; Kentucky Power,
2 in conjunction with AEP, identifies needs that must be addressed by Supplemental
3 projects. Baseline projects include transmission expansions or enhancements that are
4 required to achieve compliance with respect to PJM's system reliability, operational
5 performance, or market efficiency requirements as determined by PJM's Office of the
6 Interconnection, as well as projects that are needed to meet Transmission Owners' local
7 transmission planning criteria. Supplemental upgrades include projects needed to
8 maintain the existing grid as designed, to meet regulatory requirements, and RTO and
9 industry standards. Examples of Supplemental upgrades include interconnection of new
10 retail demand, modification to existing delivery points, replacing failed equipment,
11 proactive replacement of deteriorating assets, modernization of the grid, and installation
12 and expansion of supervisory control and data acquisition.

13 **Q. ARE BOTH BASELINE AND SUPPLEMENTAL PROJECTS SUBJECT TO THE**
14 **PJM STAKEHOLDER PROCESS?**

15 A. Yes. All of AEP's projects affecting the topology of the grid, both Baseline and
16 Supplemental, are subject to the stakeholder process within PJM. Baseline projects are
17 identified and selected to address PJM transmission planning criteria, reviewed with
18 stakeholders through the activities of the TEAC and Sub-Regional RTEP Committees,
19 and recommended to the PJM Board for approval and inclusion in the RTEP.
20 Supplemental projects are identified and selected to address AEP transmission needs that
21 are not covered by the PJM transmission planning criteria, are submitted to PJM to
22 conduct a no-harm review, and are vetted with stakeholders through the TEAC and Sub-
23 Regional RTEP Committees prior to being included in the RTEP. To ensure that the

1 Supplemental project needs are clearly understood by stakeholders, they also are vetted
2 with stakeholders through both PJM and AEP-hosted stakeholder meetings. This
3 transparent planning and vetting process ensures that the Baseline and Supplemental
4 projects that are incorporated into the RTEP are the appropriate, most efficient, and cost-
5 effective solutions to the planning criteria and system needs that have been identified and
6 should be addressed for the benefit of customers.

VI. BENEFITS OF THE PROJECT

7 **Q. WILL THE PROJECT BENEFIT KENTUCKY POWER AND ITS**
8 **CUSTOMERS?**

9 A. Yes. The Project will replace and upgrade a nearly 75-year old deteriorating portion of
10 the Company's transmission infrastructure. By rebuilding this portion of the existing
11 Hazard Area Transmission System, the Project will reduce risks to the Company's
12 provision of reliable transmission service for approximately 300 MW of load in the
13 Hazard area. In addition, the Project addresses the fact that the existing Hazard-Wooton
14 161 kV line has reached its capacity for reliable operation during certain electrical
15 contingencies. Finally, the Project will permit the Company to serve new and future load
16 in the Hazard area.

17 **Q. YOU INDICATE THE EXISTING LINE HAS REACHED CAPACITY DURING**
18 **CERTAIN ELECTRICAL CONTINGENCIES. WHAT IS AN ELECTRICAL**
19 **CONTINGENCY?**

20 A. A contingency is defined by NERC as the unexpected failure or outage of a system
21 component, such as a generator, transmission line, circuit breaker, switch, or other
22 electrical element. In accordance with NERC Standard TPL-001-4 and AEP's FERC

1 FORM 715, as a transmission owner, Kentucky Power is required to comply with a set of
2 system planning performance requirements to ensure the reliable operation of the
3 transmission system over a broad spectrum of system conditions and under a wide range
4 of probable contingencies.

5 **Q. WHAT DO YOU MEAN WHEN YOU STATE THAT THE EXISTING LINE HAS**
6 **REACHED ITS CAPACITY FOR RELIABLE OPERATION UNDER CERTAIN**
7 **CONTINGENCIES?**

8 A. A line is deemed to have reached its capacity upon exceeding its thermal rating after a
9 contingency event under a specific system condition.

10 **Q. HAS KENTUCKY POWER PREPARED A REPORT ADDRESSING THE NEED**
11 **FOR AND BENEFITS TO BE PROVIDED BY THE PROJECT?**

12 A. Yes. The Hazard-Wooton 161 kV Area Improvement Plan, attached to the application as
13 **EXHIBIT 15**, provides additional information concerning the benefits resulting from, and
14 need for, the Project. In summary, the Project will:

- 15 • Alleviate the bulk electric system violations identified by PJM, including PJM
16 identified thermal overloads during common mode contingency outage
17 conditions.
- 18 • Address infrastructure concerns associated with the existing Hazard- Wooton
19 161 kV line and associated substation equipment.
- 20 • Enhance operational performance and improve reliability of service for
21 approximately 300 MW of load.
- 22 • Provide Kentucky Power increased capacity to serve future load.
- 23 • Provide the necessary flexibility to allow for routine maintenance of
24 transmission and sub-transmission facilities.

25 **Q: WILL THE PROPOSED PROJECT RESULT IN WASTEFUL DUPLICATION?**

26 A: No. The existing Hazard-Wooton 161 kV line, which serves as the primary source to the

1 Hazard Area Transmission System, is being replaced as part of the Proposed Rebuild.

2 **Q: COULD IMPROVEMENTS TO OTHER COMPANIES' TRANSMISSION**
3 **SYSTEMS ADDRESS THESE ISSUES ON KENTUCKY POWER'S SYSTEM AT**
4 **A LESSER COST?**

5 A: No. The damaged or deteriorated transmission line structures and conductors exist on
6 Kentucky Power's system and can only be addressed through improvements to the
7 Hazard-Wooton line. The thermal overloading conditions that were identified during the
8 generation deliverability analysis performed as part of the 2016 PJM RTEP study cannot
9 be remedied by improvements to other utilities' systems in a cost effective manner.

10 **Q: DOES THIS CONCLUDE YOUR TESTIMONY?**

11 A: Yes.

12

VERIFICATION

The undersigned, Michael G. Lasslo, being duly sworn, deposes and says he is the Reliability Manager for Kentucky Power Company that he has personal knowledge of the matters set forth in the forgoing testimony and the information contained therein is true and correct to the best of his information, knowledge and belief



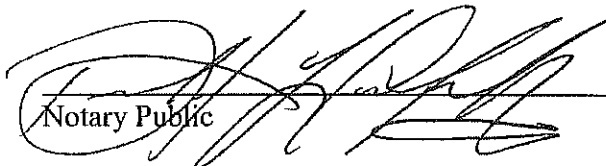
Michael G. Lasslo

COMMONWEALTH OF KENTUCKY)

) Case No. 2017-00328

COUNTY OF PERRY)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Michael G. Lasslo, this the 14th day of November, 2017.


Notary Public

Notary ID Number: 530778

My Commission Expires: 4-5-2019