

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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Application of PPL Electric Utilities Corporation  
filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G,  
for Approval of the Siting and Construction of the  
North Lancaster-Honey Brook #1 & #2 138/69 kV  
Transmission Lines in Lancaster County, Pennsylvania

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**DIRECT TESTIMONY**

Statement No. 1	Douglas J. Grossman
Statement No. 2	Joseph J. Canterino
Statement No. 3	Peter Sparhawk
Statement No. 4	Kyle D. Swartzentruber
Statement No. 5	JoMarie Jenkins

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PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of PPL Electric Utilities :  
Corporation filed Pursuant to 52 Pa. Code :  
Chapter 57, Subchapter G, for Approval of the :  
Siting and Construction of the North : Docket No. A-2014-\_\_\_\_\_  
Lancaster-Honey Brook #1 & #2 138/69 kV :  
Transmission Lines in Lancaster County, :  
Pennsylvania :

**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 1**

**TESTIMONY OF DOUGLAS J. GROSSMAN, P.E.**

1 Q. Please state your name and business address.

2 A. My name is Douglas J. Grossman. My business address is Two North Ninth Street,  
3 Allentown, PA 18101.

4  
5 Q. By whom are you employed and in what capacity?

6 A. I am employed by PPL Electric Utilities Corporation (“PPL Electric”) as a Senior Siting  
7 Specialist. In that position, I am responsible for identifying and selecting high voltage  
8 transmission line routes and substation locations. I am also responsible for preparing  
9 Applications and Attachments for approval by the Pennsylvania Public Utility  
10 Commission (“Commission”).

11  
12 Q. What is your educational background?

13 A. I have a Bachelor of Science degree in Civil Engineering from Clarkson University.

14  
15 Q. Do you hold any professional licenses?

16 A. Yes. I have been a Licensed Professional Engineer in the Commonwealth of  
17 Pennsylvania since 2001. My License Number is PE-055803E.

18  
19 Q. Describe your experience and employment history with PPL Electric.

20 A. I have been employed by PPL Electric as a Senior Siting Specialist for 3 years. In this  
21 position, I am responsible for identifying and selecting high voltage transmission line  
22 routes and substation locations. I also am responsible for preparing Applications and  
23 Exhibits for Approval by the Pennsylvania Public Utility Commission.

1 Q. Have you participated in other transmission line siting projects for PPL Electric?

2 A. Yes. I have worked on more than 19 projects involving transmission lines.

3

4 Q. What are your responsibilities in connection with the proposed North Lancaster-Honey  
5 Brook Project?

6 A. My responsibilities are to provide overall management direction for the siting of the  
7 North Lancaster-Honey Brook Project. In this capacity, I have led the formation of a  
8 siting team, supervised the acquisition of contract resources, public outreach, line route  
9 selection, and support of right-of-way negotiations.

10

11 Q. What is the purpose of your direct testimony in this proceeding?

12 A. My testimony addresses several subjects. First, I will provide a digest of the testimony  
13 and exhibits filed by PPL Electric in support of the Siting Application for the North  
14 Lancaster-Honey Brook Project. Second, I will provide a brief overview of the Project.  
15 Third, I will describe the process employed by PPL Electric in developing, preparing and  
16 filing the Siting Application. Fourth, I will provide an overview of the siting process  
17 used for this Project. Fifth, I will summarize the decision making process within PPL  
18 Electric for selecting the transmission line route. Sixth, I will explain PPL Electric's  
19 corporate policy on measures to mitigate the impacts of transmission lines. Finally, I will  
20 describe the public outreach program employed by PPL Electric for this Project.

21

22 I. **DIGEST TO THE TESTIMONY AND EXHIBITS**

23 Q. Please describe the Siting Application filed by PPL Electric in this proceeding.

1 A. The Siting Application provides, among other things, an overview of the North  
2 Lancaster-Honey Brook Project, an explanation of the need for the Project, a summary of  
3 the process of selecting the routes for the transmission lines associated with the Project  
4 and a description of the design of the Transmission Line.

5  
6 Q. Please describe the Attachments filed with the Siting Application.

7 A. Accompanying the Siting Application is a series of Attachments, which include aerial  
8 photographs that collectively show the transmission line route selected by PPL Electric  
9 for the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line. The Siting  
10 Application, together with the accompanying Attachments, is identified as PPL Electric  
11 Exhibit Number 1. The Attachments to the Siting Application include the following:

12 Executive Summary

13 Attachment 1 - PUC Regulation Cross-Reference Matrix

14 Attachment 2 - Necessity Statement

15 Attachment 3 - Environmental Setting

16 Attachment 4 - Siting Analysis

17 Attachment 5 - Design and Engineering Description

18 Attachment 6 – List of Owners of Property Within the Right-of-way

19 Attachment 7 – Agency Permit Requirements

20 Attachment 8 - List of Governmental Agencies, Municipalities and Other  
21 Public Entities Receiving the Application

22 Attachment 9 - List of Government Agencies, Municipalities and Other  
23 Public Entities Contacted

24 Attachment 10 - List of Public Locations where Application can be  
25 Examined

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- Attachment 11 – PPL Electric Magnetic Field Management Program
- Attachment 12 - Vegetation Management
- Attachment 13 – PPL Design Criteria and Safety Practices
- Attachment 14 - Agency Coordination (PNDI/Wetlands)
- Attachment 15 - Cultural Resource Report
- Attachment 16 - Public Notice Requirements

Q. Are you responsible for the oversight and preparation of any of the attachments or exhibits filed with the Siting Application?

A. Yes. I am responsible for portions of the following attachments to the Siting Application:

- Executive Summary
- Attachment 1 – PUC Regulation Cross-Reference Matrix
- Attachment 3 – Environmental Setting
- Attachment 4 – Siting Analysis
- Attachment 6 – List of Owners of Property Within the Right-of-Way
- Attachment 7 – Agency Permit Requirements
- Attachment 8 – List of Governmental Agencies, Municipalities and Other Public Entities Receiving the Application
- Attachment 9 – List of Government Agencies, Municipalities and Other Public Entities Contacted
- Attachment 10 – List of Public Locations where Application can be Examined
- Attachment 12 – Vegetation Management
- Attachment 14 – Agency Coordination (PNDI/Wetlands)
- Attachment 15 - Cultural Resources Report
- Attachment 16 - Public Notice Requirements

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Q. Please describe the testimony submitted with the Siting Application.

A. PPL Electric is submitting a total of five statements, including this one, in support of the Siting Application. These Statements provide additional explanation of the matters addressed in the Siting Application and identify the witness who is sponsoring each portion of the Siting Application.

PPL Electric St. No. 1: Douglas J. Grossman, Senior Siting Specialist – provides an overview of the Project; describes the process employed by PPL Electric in developing, preparing and filing this Siting Application; provides an overview of the siting process used for this Project; explains the decision making process within PPL Electric for selecting the transmission line route; explains PPL Electric’s corporate policy on measures to mitigate the impact of a transmission line; and describes the public outreach program employed by PPL Electric for this Project.

PPL Electric St. No. 2: Joseph J. Canterino – explains the need for the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line; describes PPL Electric’s system planning process; explains the role of PJM, Interconnection, LLC; and explains that the proposed Project will solve identified problems and improve the reliability of service in the area.

PPL Electric St. No. 3: Peter Sparhawk, Director Transmission Services for the Louis Berger Group – explains the environmental assessment and selection of the route for the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line.

PPL Electric St. No. 4: Kyle Swartzentruber – explains the design features of the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line; describes the safety features that will be incorporated into the design of the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line; and explains PPL Electric’s Magnetic Field Management Program and how it has been incorporated into the design of the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line.

PPL Electric St. No. 5: JoMarie Jenkins for PPL Electric – explains the process that PPL Electric used to acquire the rights-of-way and easements necessary for the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line.

Contemporaneously with the filing of the Siting Application, PPL Electric also filed three separate Condemnation Applications, pursuant to 15 Pa.C.S. § 1511(c), for a finding and

1 determination that the service to be furnished through its proposed exercise of the power  
2 of eminent domain to acquire easements over certain tracts of land for the proposed North  
3 Lancaster-Honey Brook Project is necessary or proper for the service, accommodation,  
4 convenience, or safety of the public. With each of those Condemnation Applications,  
5 PPL Electric is separately submitting the testimony of JoMarie Jenkins and supporting  
6 exhibits. This testimony and exhibits described the proposed North Lancaster-Honey  
7 Brook Project, summarizes the need for the Project, and describes the property over  
8 which PPL Electric seeks a right-of-way and easement for a portion of the North  
9 Lancaster-Honey Brook Project #1 & #2 138/69 kV Transmission Line.

10  
11 **II. SUMMARY OF THE PROJECT**

12 Q. Please summarize the Project.

13 A. The North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line Project is  
14 needed to improve reliability of service for approximately 32,000 customers in Honey  
15 Brook and Caernarvon Townships in Chester, Berks, and Lancaster Counties by bringing  
16 a new alternate source of supply closer to the growing load centers and reducing the line  
17 length and loading on the existing 138/69 kV lines serving the area. The new  
18 transmission lines also will allow for improved operating flexibility to restore customer  
19 load more quickly after a facility outage. The need for the Project is further explained in  
20 Attachment 2 to the Siting Application and PPL Electric Statement No. 2.

21 To reinforce the 138/69 kV system, PPL Electric is proposing to build a new  
22 approximately 8-mile long new double-circuit 138/69 kV transmission line between the  
23 Laushtown 500-230-69 kV Substation in Brecknock Township and the South Akron-

1 Morgantown #2 Transmission Line located in Caernarvon Township. The selection of  
2 the proposed transmission line route for the Project is further explained in Attachments 3  
3 and 4 to the Siting Application and PPL Electric Statement No. 3.

4 The total estimated cost of this Project is approximately \$18 million.<sup>1</sup> The  
5 scheduled in-service date is May 2016. Construction is scheduled as soon as practical  
6 following Commission approval. The engineering and design of the Project are further  
7 explained in Attachment 5 to the Siting Application and PPL Electric Statement No. 4.

8  
9 Q. Please describe the major tasks PPL Electric must undertake to construct this Project.

10 A. There are many tasks that must be organized and completed before construction can  
11 begin. Chief among these are resource acquisition, contract management, cost and  
12 schedule management, line route evaluation, public outreach, design, right-of-way  
13 acquisition, material procurement, permitting, and regulatory approvals.

14 Line route evaluation was performed in accordance with the process described  
15 below and is fully discussed in the direct testimony of Mr. Sparhawk, a Louis Berger  
16 employee. Louis Berger was hired due to their extensive expertise in siting large linear  
17 projects in Pennsylvania and elsewhere. Louis Berger provides comprehensive, life cycle  
18 services for transmission and distribution (T&D) projects, from alternative route  
19 analyses, licensing and permitting, conceptual engineering, right-of way services, and  
20 public involvement to detailed engineering and design, geotechnical engineering and

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<sup>1</sup> The estimated cost for the proposed Project is an order-of-magnitude estimate developed using averages of recent costs for similar projects and without an in-depth analysis of field investigation. The estimated cost is subject to change as the constructability of the project, sequence of construction, and other factors that may affect cost are identified and analyzed as the project progresses.

1 subsurface investigation, site preparation, construction management, environmental  
2 assessment, and regulatory compliance. Line route evaluation involves selecting an  
3 appropriate route that minimizes the impact of the transmission line on the natural and  
4 human environment, while avoiding unreasonable routes, high or unnecessary costs, and  
5 non-standard design requirements to the extent practical.

6 With regard to Public Outreach, from the very beginning of this project, we have  
7 recognized that incorporating public input in our work would be among the most  
8 important tasks we would undertake. Approximately 240 letters were sent to residents  
9 within the study area announcing the project and inviting the public to provide input to  
10 the siting team. We realized, of course, that there is no perfect route and that public  
11 concerns about many of the decisions we would need to make during the course of the  
12 project were inevitable. We have, however, listened, attempted to understand and, where  
13 practical, made changes in our approach in response to input received from the public. I  
14 will provide more detail about our public outreach process later in my testimony.

15 Project design is undertaken in increasing levels of complexity, starting with a  
16 magnitude design and ending with a detailed design that incorporates soil conditions and  
17 other field elements such as topography and access roads. Design for the Project was  
18 completed internally by PPL Electric.

19 With regard to right-of-way acquisition, there are a total of 33 different owners of  
20 42 parcels of land along the transmission line routes selected for the Project. PPL  
21 Electric has secured rights-of-way and easements from 30 property owners. At the time  
22 PPL Electric filed its Siting Application, rights-of-way and easements are still needed  
23 from only 3 property owners.

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Q. Please summarize the principal permits and approvals required for this project.

A. Attachment 7 lists the local, state and federal agency requirements for permits, approvals or documentation. At the local level, they include approvals from the Lancaster County Conservation District. At the state level, cultural resource investigation approvals, waters/wetland encroachment permits, and state threatened and endangered species consultation and approvals. Also at the state level, PPL Electric must receive Commission approval for the line. At the federal level, bog turtle screening and reporting and compliance with the Endangered Species Act are required as part of federal permitting. These requirements are discussed more fully in Attachments 3 and 7 to the Siting Application. Prior to construction, PPL Electric will obtain all permits necessary and will comply with all conditions placed on those permits.

**III. PREPARATION OF THE SITING APPLICATION**

Q. Please describe the process employed by PPL Electric in preparing this Application.

A. The Application, in its broadest sense, is designed to show that this project is needed to provide reliable service to customers, and that PPL Electric has chosen a reasonable route upon which to build the proposed transmission line. The need for the project is summarized above and explained more fully in Attachment 2 to the Siting Application and PPL Electric Statement No. 2. The PPL Electric siting process and environmental assessment and mitigation are described Attachments 3 and 4 to the Siting Application and PPL Electric Statement No. 3.

1           The process to prepare this Application recognized the successful format that has  
2           been used by PPL Electric in previous filings before the Commission. Four attachments  
3           for the Siting Application were envisioned early on: Necessity Statement, Siting  
4           Analysis Route Development, Environmental Assessment and Analysis, and Engineering  
5           Description. Teams of experts were assigned responsibility for developing the necessary  
6           material to support each attachment.

7           PPL Electric has maintained close involvement in all aspects of this project  
8           throughout the period prior to the filing of this Siting Application, and it will continue to  
9           do so through engineering, construction, and project commissioning. Where outside  
10          assistance is used, one or more PPL Electric employees are assigned for oversight and  
11          decision making purposes.

12  
13 **IV. OVERVIEW OF THE SITING PROCESS**

14 Q. Please summarize PPL Electric's experience and expertise in planning and constructing  
15 high voltage transmission line projects.

16 A. PPL Electric's experience and expertise in planning and constructing high voltage  
17 transmission line projects goes back many decades. During the 1920s, PPL Electric was  
18 one of three utilities that formed the PA-NJ interconnection by linking 230 kV  
19 transmission systems together and establishing an economic generation dispatch protocol  
20 among the companies. In the 1960s, the Company entered a joint venture with partner  
21 utilities that were members of the PJM power pool to construct mine-mouth generation  
22 units in western Pennsylvania and transmit that generation to Maryland, Delaware and  
23 eastern Pennsylvania and New Jersey through more than 600 miles of 500 kV

1 transmission lines. In the early 1980s, PPL Electric reinforced its backbone transmission  
2 system by establishing over 100 miles of new 500 kV transmission facilities and three  
3 new 500 kV Substations and significantly upgrading three existing 500 kV Substations.  
4 Today, PPL Electric owns and maintains about 300 miles of 500 kV and 1,000 miles of  
5 230 kV high voltage transmission line.

6 PPL Electric has extensive experience and, through the combination of internal  
7 and contract resources, the expertise to plan, design, and construct high voltage  
8 transmission line projects. The Company maintains a staff of planning and design  
9 engineers for high voltage transmission projects and, from time to time, supplements that  
10 staff with contract resources. PPL Electric has in-house construction resources capable  
11 of building high voltage projects. For very large projects, such as the project proposed  
12 here, PPL Electric uses a combination of internal PPL Electric resources as well as  
13 contract resources to build facilities in an efficient and timely manner.

14 PPL Electric has extensive experience with high voltage transmission line  
15 projects. Some of these projects include: the Susquehanna-Roseland Project, which  
16 involved the siting and construction of approximately 100 miles of 500 kV transmission  
17 line in Pennsylvania and a new 500-230 kV substation; the Coopersburg Project, which  
18 involved the siting and construction of approximately 7 miles of 138/69 kV transmission  
19 line and a new 230-69 kV Substation; the Brunner Island Project, which required the  
20 reconstruction of approximately 16 miles of single-circuit 230 kV transmission Line for  
21 double-circuit 230 kV operation; the South Akron-Berks Project, which required  
22 reconstruction of 19.2 miles of 230 kV line and reconfiguration of existing 230 kV lines  
23 and a 230 kV substation in the Lancaster area; and the Northeast-Pocono Reliability

1 Project recently approved by the Commission, which involved the construction of two  
2 new substations, approximately 58 miles of new 230 kV transmission line, and  
3 approximately 11.3 miles of new 138/69 kV transmission lines.

4  
5 Q. Please summarize the goals of the siting process.

6 A. The ultimate goal of the siting process is to achieve a reasonable balance of many  
7 competing factors in selecting a transmission line route. Factors include minimizing  
8 impacts on the environment, avoiding population centers, minimizing cost, avoiding  
9 historic and cultural sites, using existing linear features, public and employee safety,  
10 minimizing impacts on land use, minimizing impacts on scenic areas, avoiding scenic  
11 rivers, and others. Although PPL Electric strives to achieve all these goals, doing so is  
12 often impossible. Indeed, some of the goals are mutually exclusive. For example, PPL  
13 Electric often cannot build transmission lines in residential areas without obtaining  
14 homeowners' permission due to constraints on the power of eminent domain. That forces  
15 PPL Electric to construct transmission lines primarily in less populated areas where  
16 impacts on the environment may be greater. If and when this occurs, PPL Electric  
17 undertakes all reasonable efforts to mitigate environmental impacts, including  
18 compliance with all permits, procedures, and requirements of those agencies that have  
19 jurisdiction and responsibility for the applicable environmental impacts. All high voltage  
20 transmission line routes have impacts; no route is perfect. Our goal is to fairly consider  
21 and balance all of these competing interests and to select a reasonable route for each  
22 transmission line.

1 Q. Please provide an overview of the siting process.

2 A. The goal of PPL Electric's siting analysis was to determine the most suitable route for a  
3 new North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line to bring a new  
4 alternate source of supply closer to the growing load centers, and reduce the line length  
5 and loading on the existing 138/69 kV lines serving the area.

6 PPL Electric first identified a study area. The Project Study Area for the North  
7 Lancaster-Honey Brook Transmission Line encompassed an area of approximately 23  
8 square miles within Lancaster County. The Study Area is that territory in which line  
9 route alternatives can be sited to feasibly meet the project's functional requirements and,  
10 at the same time, minimize environmental and social impacts and project costs.

11 A wide variety of data were compiled and mapped to assist the siting team in  
12 identifying the most reasonable alternative route for the Project. Examples of the  
13 information collected include geology and soils, surface waters, wetlands, vegetation,  
14 wildlife, land use, recreation lands, cultural resources, and PPL Electric and other utility  
15 rights-of-way and transmission line corridors. This information was further interpreted to  
16 identify major obstacles to, and opportunities for, transmission line construction.

17 Next, using the above information, PPL Electric began identification of potential  
18 routes. The process for identifying potential transmission line routes produced a network  
19 of links that could be considered to connect the two substations and the South Akron-  
20 Morgantown #2 Transmission Line. Those links were combined into initial Potential  
21 Routes for the Project.

22 After the initial Potential Routes were identified, members of the Routing Team  
23 conducted field inspections of the routes. These inspections involved the visual

1 examination of the Potential Routes from road crossings and other points of public  
2 access. The field investigations resulted in changes to the Potential Route Network. As a  
3 result, some potential route links were eliminated from further consideration. The  
4 remaining links were assembled into Potential Routes and presented to the public for  
5 comment during an open house meeting held in April 2012.

6 PPL Electric conducted an extensive public outreach program, which resulted in  
7 adjustments to the Potential Routes. After carefully analyzing and evaluating the  
8 remaining Potential Routes, PPL Electric refined the more preferable links to establish  
9 alternative routes for detailed examination. Two alternative routes were identified within  
10 the “northern” portion of the Study Area, Alternative Route A and Alternative Route B.  
11 Two alternative routes were also identified within the “southern” portion of the Study  
12 Area, Alternative Route C and Alternative Route D. A detailed description of the  
13 Alternative Routes is provided in Attachment 4 of the Siting Application and in PPL  
14 Electric Statement No. 3.

15 The siting team reviewed in detail the advantages and disadvantages of each  
16 Alternative Route. Based on these evaluation processes, the Siting Team chose a  
17 preferred routes for the proposed 138/69 kV transmission line. For the “northern” portion  
18 of the Study Area, the Siting Team selected Alternative B. For the “southern” portion of  
19 the Study Area, the Siting Team selected Alternative D. The Routing Team believes that  
20 the Preferred Route will have less social, environmental and financial impacts than the  
21 alternatives. A detailed description of PPL Electric’s siting analysis is provided in  
22 Attachment 4 to the Siting Application and PPL Electric St. No. 4.  
23

1 V. **DECISION MAKING PROCESS**

2 Q. How does PPL Electric select a specific route for transmission line projects such as the  
3 North Lancaster-Honey Brook Transmission Line?

4 A. A multidisciplinary team is assembled consisting of experts from the functional groups  
5 that have a stake in the design and construction of the project. The functional groups  
6 frequently involved in transmission line siting projects include siting, various engineering  
7 disciplines, real estate, system planning, environmental experts, public relations, legal,  
8 system operations and construction. Information about the characteristics of the Study  
9 Area is gathered and mapped. This information includes, but may not be limited to: land  
10 use, zoning, natural features, geology and soils, water resources, cultural and  
11 archaeological resources, and threatened and endangered species habitat.  
12 Simultaneously, a communications plan is developed to ensure that external stakeholders  
13 such as local, county and state governments, special interest groups and the public are  
14 kept informed about the Project.

15 Next, routing constraints and opportunities are identified. From this information,  
16 Potential Routes are developed that minimize impacts on constraints and maximize  
17 routing opportunities giving consideration for the design, construction and maintenance  
18 challenges and issues identified by siting team members. Public meetings are held to  
19 gather public input and comments. After consideration of all input and a qualitative and  
20 quantitative analysis of all information, the siting team recommends a Preferred Route  
21 that strives to balance environmental, social, and technical considerations as well as  
22 project cost.

23

1 Q. How are decisions made by the siting team?

2 A. The siting team strives for consensus on important decisions. In my experience, upon  
3 completion of the siting analysis, one of the routes under consideration usually emerges  
4 as the clearly superior choice and the siting team is able to achieve a consensus on the  
5 selection of the route. A detailed explanation of the process to select the Preferred Route  
6 for the proposed North Lancaster-Honey Brook Transmission Line is provided in  
7 Attachment 4 to the Siting Application and explained in PPL Electric Statement No. 3.

8  
9 Q. What was your role on the siting team?

10 A. My principal responsibility was to lead the siting team, including providing oversight for  
11 the public outreach undertaken on this project, including meeting with local and elected  
12 officials, provide guidance to the Real Estate team and met with individual property  
13 owners as requested and work with engineering on pole placements so to avoid as much  
14 wetlands and environmentally sensitive areas as possible.

15  
16 **VI. MEASURES TO MITIGATE THE IMPACTS OF TRANSMISSION LINES**

17 Q, Please explain how PPL Electric will oversee the construction of the proposed North  
18 Lancaster-Honey Brook Transmission Line, if approved by the Commission.

19 A. We plan to assemble a team of experts in design and construction of overhead  
20 transmission lines and substations. The Project's success will be defined in terms of  
21 compliance to schedule, economy in cost, and adherence to quality. Construction  
22 sequences will be established to assure assets can be placed in service as soon as possible.  
23 Outages will be coordinated, planned and scheduled to maintain system integrity during

1 the construction phase. PPL Electric understands the impact of construction activity on  
2 the local community and significant efforts will be made to keep local area residents and  
3 their representatives aware of Project activities.

4  
5 Q. Please explain PPL Electric's corporate policy on measures to mitigate the impacts of  
6 transmission lines.

7 A. PPL Electric strives to minimize the impacts of transmission lines upon property owners  
8 and the environment. Mitigation efforts actually begin in the siting stage where sensitive  
9 areas are avoided to the extent practical. When avoidance is not practical, PPL Electric  
10 will implement mitigation strategies as explained in more detail below.

11 PPL Electric's vegetation management program is outlined in the "Specification  
12 for Transmission Vegetation Management." A copy of this vegetation management  
13 program is provided as Attachment 12 to the Siting Application. In summary, for the  
14 initial clearing of a new right-of-way, PPL Electric initially removes all vegetation except  
15 for grasses and herbaceous or non-woody plants within the right-of-way. After the initial  
16 clearing of the right-of-way, compatible species are then allowed to grow back through  
17 selective application of herbicides. PPL Electric then maintains the right-of-way by  
18 selectively removing only non-compatible species. Selective clearing allows compatible  
19 species of vegetation that would not grow tall enough to threaten the reliable operation of  
20 the transmission line to remain within the right-of-way.

21 Additionally, PPL Electric does not use any aerial herbicide application  
22 techniques. Herbicides are applied at ground level by trained professionals. Only those  
23 species that require control are treated. PPL Electric will not apply herbicides in the

1 following areas or situations: pastures within 50 feet of any body of water, except that  
2 PPL Electric will use herbicides approved for watershed/aquatic use for stump  
3 treatments; within any actively maintained orchard or cultivated planting; near  
4 susceptible crops or other non-target vegetation where drift, runoff, or vapors can cause  
5 injury; where weather conditions create excessive drift; on rights-of-way under  
6 jurisdiction of the Pennsylvania Department of Conservation and Natural Resources,  
7 Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, and the  
8 National Park Service unless prior approval is granted by the Department or Commission;  
9 on watershed properties, or in the vicinity of springs, irrigation ditches, or other potable  
10 water sources, unless prior approval is granted by the property owner for use of a  
11 watershed/aquatic approved herbicide; or in gullies or ravines where tree clearing is  
12 minimal. Finally, all herbicides used by PPL Electric have been approved by the United  
13 States Environmental Protection Agency.

14  
15 Q. What is PPL Electric's approach to mitigation of impacts on bodies of water and  
16 wetlands?

17 A Impacts from soil erosion and sedimentation and crossings of jurisdictional waters and  
18 wetlands are mitigated through the acquisition of and compliance with all required  
19 permits and plans. Initially, all wetlands and waters are identified, delineated, surveyed  
20 and added to construction plans. Structure and access road locations are located outside  
21 these sensitive areas as much as practical. In locations where avoidance is not practical,  
22 all required permits are obtained and PPL Electric adheres to their terms and conditions  
23 during construction. The placement of conditions on a permit by the U.S. Army Corps of

1 Engineers, the Department of Environmental Protection or similar agencies is a principal  
2 tool for protecting the environment. The placement of conditions on a permit indicates  
3 that the agency has thoroughly reviewed the permit application and that, so long as  
4 conditions are followed, there will be no harm to the environment that is unlawful under  
5 the applicable statutes.

6  
7 Q. What is PPL Electric's policy regarding electric and magnetic fields?

8 A. PPL Electric has instituted a Magnetic Field Management Program for new and rebuilt  
9 transmission lines. The implementation of this policy with respect to the proposed North  
10 Lancaster-Honey Brook Project is discussed in PPL Electric Statement No. 4.

11  
12 Q. Does PPL Electric consider impacts on individual property owners?

13 A. Yes. In areas where new right-of-way is required, PPL Electric works with property  
14 owners to locate the line to minimize the impact on their existing and future land use  
15 plans wherever practical. The right-of-way for the proposed transmission line will  
16 preclude certain uses such as locating buildings or swimming pools within the easement.  
17 However, PPL Electric made certain modifications to the proposed route to accommodate  
18 concerns of property owners, and property owners will be compensated for this right-of-  
19 way. Additionally, PPL Electric's Encroachment Policy allows for compatible land uses  
20 on transmission line easements.

1 **VII. PUBLIC OUTREACH**

2 Q. Please summarize PPL Electric’s public outreach activities for the North Lancaster-  
3 Honey Brook Transmission Line.

4 A. The Routing Team presented Potential Routes to the public for comment at an open  
5 house meeting on April 19, 2012. A second public open house meeting was held on  
6 August 1, 2012, to gather public input on revisions to the Potential Routes. A third open  
7 house was held on October 18, 2012, to announce the Preferred Route and answer  
8 additional questions from the public.

9

10 Q. Was the public notified of the open houses?

11 A. Yes. Prior to conducting public open house meetings, PPL Electric’s regional  
12 community relations director contacted local officials to discuss the Project. On April 3  
13 2012, PPL Electric mailed public notices to all property owners located within 500 feet of  
14 the Potential Route Network to notify them about the April 19<sup>th</sup> open house meeting.  
15 During this same time, PPL Electric published a Project website to provide information  
16 regarding the Project need, the siting process, frequently asked questions and an  
17 interactive public input map depicting the potential routes. On April 10, 2012, PPL  
18 Electric placed an advertisement in the Lancaster Intelligencer/New Era and Reading  
19 Eagle newspapers to notify the public of the open house.

20 Around October 8, 2012, PPL Electric mailed public notices to all property  
21 owners located within 500 feet of the Preferred and Alternate routes, as well as other  
22 property owners that were mailed letters during the April mailing or that attended the  
23 April open house, to notify them about the October 18<sup>th</sup> open house to announce the

1 Preferred Route. PPL Electric also notified local officials of the announcement and open  
2 house meeting via email. On October 8, 2012, PPL Electric placed an advertisement in  
3 the Lancaster Intelligencer/New Era and Reading Eagle newspapers to notify the public  
4 of the scheduled open house.  
5

6 Q. Please describe the open houses.

7 A. A public meeting was held on April 19, 2012, to present the Potential Route Network and  
8 provide information about the North Lancaster-Honey Brook Project. At the meeting,  
9 attendees received a Project fact sheet, information on the PUC Process, comment cards,  
10 a siting input survey, and Project Area map. The public information meetings provided  
11 an opportunity for residents and other interested parties to review Project information  
12 displays and discuss the Project with PPL Electric its representatives. The fact sheet  
13 contained a brief statement on Project need, a description of the siting process, and a  
14 preliminary Project timeline. The public meeting was organized in an open house format  
15 and consisted of several stations that identified the Project processes. These stations  
16 included the following:

- 17 1. Welcome station located at the entrance for attendees to sign-in;
- 18 2. Project Need station providing an overall summary and explaining the planning  
19 process;
- 20 3. Project Summary station providing information about several ongoing projects  
21 located in the North Lancaster Region;
- 22 4. Route Selection station detailing the siting process and including aerial maps  
23 showing the potential route network and parcel boundaries;

- 1           5. Participating in the Siting Process station explaining how PPL Electric uses public
- 2           input in the routing process;
- 3           6. Engineering station detailing the specifications for the new transmission line;
- 4           7. Right-of-Way station explaining the easement process;
- 5           8. Next Steps station explaining the Project schedule and how to stay informed; and,
- 6           9. The Big Picture station explaining reliability and PPL Electric's commitment to
- 7           safe, dependable service.

8           About 106 people attended the April open house. During this meeting, comment  
9           cards and siting input surveys<sup>2</sup> were completed by the attendees. Comments received at  
10          the meeting and provided on the comment cards varied, but generally fell into one of the  
11          following categories: comments about or opposing specific routes, suggested new  
12          alignments, or comments about the routing process; impacts to forested land, wildlife,  
13          habitat, and water resources; impacts to property value, operating business and property  
14          use; visual impacts; impacts to farm operation; health and safety; vegetation  
15          management; trespassing and security; or identification of new features. Based on the  
16          surveys and comments received, the landowners identified residential areas as the most  
17          important areas to avoid during siting. Existing infrastructure and rights-of-way and  
18          industrial and commercial areas were identified as the least important areas to avoid.

19          PPL Electric reviewed these comments and followed up with the commenters as  
20          appropriate to answer any outstanding questions. In addition, PPL Electric provided the

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<sup>2</sup> The siting survey asked attendees to rank from 1 to 10 (with 1 being the factor most important to avoid when building a power line, and 10 being the least important factor to avoid) the importance of avoiding different factors considered during project siting.

1 commenters with the Project website and a phone number for them to obtain additional  
2 information about the Project or provide additional comments:

3 Following the April open house, PPL Electric siting and real estate representatives  
4 held in-person meetings with numerous property owners located along the  
5 Potential/Alternate Routes. The Routing Team used information from these meetings  
6 along with online comments and comments from the April public open house to refine  
7 the potential routes and to selecte the Alternate Routes.

8 Approximately 86 people attended the second open house on August 1, 2012.  
9 Comments during the August open house meeting were similar to those collected during  
10 the April open house meeting. Landowners expressed differing opinions on the Potential  
11 Routes, concerns or questions about impacts to residential properties, farmland and  
12 forested land. Based on comments received throughout the duration of the public  
13 outreach process, residents were generally split over preferring a route between the  
14 Lauschtown and Brecknock Substations that primarily traverses agricultural land versus  
15 preferring a route that traverses less agricultural land.

16 After the Routing Team identified the Preferred Route, a third open house  
17 meeting was held on October 18, 2012 to present information on the Preferred Route.  
18 About 40 people attended the October open house meeting. Comments during the  
19 October open house primarily focused on the right-of-way acquisition process and  
20 routing adjustments. The Routing Team slightly modified and finalized the Preferred  
21 Route alignment based on this information and additional meetings with property owners.  
22

1 Q. Were there other communications with the public about the proposed North Lancaster-  
2 Honey Brook Project?

3 A. Yes. Prior to and subsequent to the open houses, PPL Electric received and responded to  
4 additional comments from interested residents. The Company will continue responding  
5 to comments and inquiries, and provide periodic written updates to residents and other  
6 interested parties. PPL Electric will continue its commitment to open and honest  
7 communications and, where practical, will be responsive to input regarding the Project  
8 from local residents and other interested parties.

9

10 Q. Does this conclude your testimony at this time?

11 A. Yes, it does.

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of PPL Electric Utilities :  
Corporation filed Pursuant to 52 Pa. Code :  
Chapter 57, Subchapter G, for Approval of the :  
Siting and Construction of the North : Docket No. A-2014-\_\_\_\_\_  
Lancaster-Honey Brook #1 & #2 138/69 kV :  
Transmission Lines in Lancaster County, :  
Pennsylvania :

**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 2**

**TESTIMONY OF JOSEPH J. CANTERINO**

1 Q. Please state your full name and business address.

2 A. My name Joseph J. Canterino. My business address is Two North Ninth Street,  
3 Allentown, Pennsylvania 18101.

4  
5 Q. By whom are you employed and in what capacity?

6 A. I am employed by PPL Electric Utilities Corporation (“PPL Electric”) as the Senior  
7 Engineer in the Asset Management Department.

8  
9 Q. What is your educational background?

10 A. I received a Bachelor’s degree in Electrical Engineering from Rensselaer Polytechnic  
11 Institute in 2003.

12  
13 Q. Do you hold any professional licenses?

14 A. Yes, I have been a Licensed Professional Engineer in the Commonwealth of  
15 Pennsylvania since January 2013. My License No. is PE-080596.

16  
17 Q. Please summarize your background and employment history with PPL Electric.

18 A. I have worked for PPL Electric for more than 8 years. Presently, I am a Senior Engineer  
19 in the Asset Management Department. I have 6 years of Regional Asset Management  
20 experience. Prior to my current position, I had experience as the Transmission Outage  
21 Planner at PPL Electric Utilities.

1 Q. Have you participated in other transmission line siting projects for PPL Electric?

2 A. Yes. I have been directly involved with five Pennsylvania Public Utility Commission  
3 (“PUC” or “Commission”) filings for transmission lines varying in voltage levels from 69  
4 kV to 230 kV.  
5

6 Q. What are the subjects of your testimony?

7 A. I will explain PPL Electric’s system planning process and the role of PJM  
8 Interconnection, LLC (“PJM”) in that process. I will summarize the existing system  
9 serving the area of Honey Brook and Caernarvon Townships in Chester, Berks, and  
10 Lancaster Counties. I will explain the need to reinforce the transmission system in this  
11 area and the need for the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission  
12 Lines in Lancaster County, Pennsylvania (the “North Lancaster-Honey Brook Project”)  
13 and how it will improve the reliability of service in the area.  
14

15 Q. Are you responsible for the preparation of any of the Attachments or exhibits filed with  
16 the above captioned Application for Commission approval of the siting and construction  
17 of the North Lancaster-Honey Brook Project(Siting Application)?

18 A. Yes. I am responsible for Attachment 2, the Necessity Statement.  
19

20 Q. Was Attachment 2 to the Siting Application prepared by you or under your direct  
21 supervision?

22 A. Yes.  
23

1 Q. What is the overall purpose of the North Lancaster-Honey Brook Transmission Line?

2 A. The overall purpose is to improve reliability of service for approximately 32,000  
3 customers in Honey Brook and Caernarvon Townships in Chester, Berks, and Lancaster  
4 Counties. The North Lancaster-Honey Brook Project will resolve a violation of PPL  
5 Electric's planning criteria that are set forth in PPL Electric's Reliability Principles and  
6 Practices ("RP&P"). The North Lancaster-Honey Brook Project will bring a new  
7 alternate source of supply closer to the growing load centers and reduce the line length  
8 and loading on the existing 138/69 kV lines serving the area. The new transmission lines  
9 also will allow for improved operating flexibility to restore customer load more quickly  
10 after a facility outage.

11  
12 Q. Briefly summarize the transmission planning process.

13 A. Transmission planning, in its broadest sense, is the process which assures that the electric  
14 transmission system can supply electricity to all customer loads in a reliable and  
15 economically acceptable manner. The process of planning the transmission system  
16 requires PPL Electric to look into the future to develop a reinforcement plan far enough  
17 in advance to be able to complete a project when it is needed.

18  
19 Q. Please explain PPL Electric's system planning process.

20 A. The reliable and economical operation of PPL Electric's transmission system requires  
21 planning criteria for system expansion and reinforcement. The PPL Electric planning  
22 criteria are outlined in the RP&P, which was developed to ensure adequate and  
23 appropriate levels of electric service to its customers consistent with good utility practice.

1 The fundamental purpose of the RP&P is to provide PPL Electric planning engineers  
2 with a comprehensive set of planning criteria that enable them to plan for a reliable  
3 transmission and distribution system for PPL Electric's customers. PPL Electric's RP&P  
4 is consistent with good utility practices and with the reliability criteria and standards used  
5 by similarly situated distribution and transmission utilities.

6 Using the RP&P, PPL Electric's transmission system is planned so that it can be  
7 operated at all projected load levels and during normal scheduled outages. The system is  
8 also planned to withstand specific unscheduled contingencies without exceeding the  
9 equipment capability, causing system instability or cascade tripping, exceeding voltage  
10 tolerances, or causing large-scale, long term or frequent interruptions to customers. The  
11 planning process begins with the development of a computer model of the future system.  
12 Once the system model is complete, comprehensive power flow simulations are  
13 performed to determine the ability of the system to comply with the PPL Electric  
14 transmission planning and reliability criteria set forth in PPL Electric's RP&P. All  
15 conditions where the system is not in conformance with the RP&P reliability criteria are  
16 identified, and system reinforcement alternatives are added to bring the system into  
17 compliance. Also identified are estimated costs and lead times to implement the  
18 reinforcements under consideration. Computer simulations of the system with the  
19 identified reinforcement alternatives are completed to identify the best overall  
20 reinforcement that will meet the needs of the area in a reliable and economical manner.

1 Q. Please briefly describe PJM.

2 A. PJM is a Federal Energy Regulatory Commission (“FERC”) approved Regional  
3 Transmission Organization charged with ensuring the reliability of the electric  
4 transmission system under its functional control and coordinating the movement of  
5 electricity in all or parts of thirteen states and the District of Columbia, including most of  
6 Pennsylvania. In order to ensure reliable transmission service, PJM prepares an annual  
7 Regional Transmission Expansion Plan (“RTEP”) to identify system reinforcements that  
8 are required to, among other things, meet the North American Electric Reliability  
9 Corporation (“NERC”) Reliability Standards, PJM reliability planning criteria, and  
10 transmission owner reliability criteria. The RTEP is a FERC-approved transmission  
11 planning process that results from a comprehensive analysis to identify existing and  
12 forecasted violations of the NERC Reliability Standards on the transmission systems  
13 within PJM’s service territory. The RTEP process is further explained in Attachment 2 to  
14 the Siting Application.

15 In conjunction with transmission owners, PJM conducts RTEP studies of the bulk  
16 electric system (BES), which includes transmission facilities operated at voltages of 100  
17 kV or higher, and applies NERC or PJM reliability criteria to specific conditions on the  
18 transmission system. When the studies show an inability of the transmission system to  
19 meet a specific reliability standard under these conditions, solutions such as construction  
20 of one or more new transmission lines or one or more upgrades to existing transmission  
21 facilities may be necessary.

22 For non-bulk electrical system (“non-BES”), which includes transmission  
23 facilities operated at voltages less than 100 kV, system reliability violations, the local

1 transmission operator is responsible for identifying the reliability violations and  
2 correcting any violations to meet its own local transmission planning criteria.  
3 Transmission owners submit their lower voltage reliability projects to PJM so that they  
4 can be presented before the PJM stakeholders at the Sub-Regional RTEP Committee  
5 meetings.

6 The PJM Sub-Regional RTEP Committee review includes, but is not limited to,  
7 the review of the transmission owner criteria, assumptions and models used to identify  
8 reliability criteria violations and proposed solutions prior to finalizing the Local Plan.  
9 The Committee members are provided an opportunity to review and provide written  
10 comments to the transmission owners on the criteria, assumptions, and models used in  
11 local planning activities prior to finalizing the lower voltage reliability projects. Once the  
12 Local Plan is finalized the PJM Sub-Regional RTEP Committee is provided an  
13 opportunity to review and provide written comments on the Local Plans. The Local  
14 Plans that were reviewed and endorsed by the Committee are then included in the final  
15 version of the RTEP, which is sent to the PJM Board for approval. Once the PJM Board  
16 approves the RTEP that includes the transmission owner lower voltage baseline  
17 reliability projects, the transmission owners then move forward to implement the RTEP  
18 BES transmission and the Non-BES facilities as they are obligated to do under the PJM  
19 Tariff and Operating Agreements. The inclusion of transmission owner lower voltage  
20 reliability projects as RTEP baseline projects is further explained in Attachment 2 to the  
21 Siting Application.

1 Q. What is PJM's role in this Project?

2 A. The proposed North Lancaster-Honey Brook Project Transmission Line will resolve  
3 reliability criteria violations of PPL Electric's RP&P, its local planning criteria on the  
4 non-BES 69 kV transmission system serving Honey Brook and Caernarvon Townships in  
5 Chester, Berks, and Lancaster Counties. PPL Electric submitted the proposed Project to  
6 PJM for review and inclusion in the RTEP in November 2010. The Project was  
7 presented before stakeholders at the Mid-Atlantic Sub-Regional RTEP meeting on March  
8 2, 2011, approved by the PJM Board, and included in the 2011 RTEP Report as a  
9 baseline project b1527.1.

10

11 Q. Please summarize the existing system serving the area of Honey Brook and Caernarvon  
12 Townships in Chester, Berks, and Lancaster Counties.

13 A. Presently, approximately 20,600 customers in eastern Lancaster County, southwestern  
14 Berks County and western Chester County areas are served by the South Akron-  
15 Morgantown #1, #2, and #3 69 kV Transmission Lines. The current configuration of  
16 PPL Electric's transmission system in the area consists of long transmission line lengths  
17 between regional substations.

18 The existing South Akron-Morgantown #1, #2, and #3 69 kV Transmission Lines  
19 are supplied from the South Akron 230-69 kV Substation. The existing South Akron-  
20 Morgantown #1 69 kV Transmission Line is a single-circuit that extends for  
21 approximately 21.5 miles from the South Akron 230-69 kV Substation to the Twin  
22 Valley 69-12 kV Substation. The existing South Akron-Morgantown #2 and #3 69 kV  
23 circuits are supported by common double-circuit structures for approximately 1.2 miles

1 from the South Akron 230-69 kV Substation to a point near the Earl 69-12 kV  
2 Distribution Substation. The South Akron-Morgantown #3 69 kV line terminates at the  
3 Earl 69-12 kV Substation, which in turn supplies approximately 5,000 customers. The  
4 South Akron-Morgantown #2 line continues east from the Earl 69-12 kV Distribution  
5 Substation as a single-circuit line for approximately 11.5 miles to the Morgantown 69-12  
6 kV Substation, which in turn supplies approximately 2,000 customers.

7 A map depicting and a one-line diagram the existing facilities are included in  
8 Attachment 2 to the Siting Application.

9  
10 Q. Please explain the reliability issues that PPL Electric proposes to resolve by constructing  
11 the North Lancaster-Honey Brook Transmission Line.

12 A. The proposed Project is required to improve reliability of service for approximately  
13 32,000 customers in Honey Brook and Caernarvon Townships in Chester, Berks, and  
14 Lancaster Counties. Customers in the eastern Lancaster County, southwestern Berks  
15 County and western Chester County areas are supplied by the South Akron-Morgantown  
16 #1, #2 & #3 69 kV Transmission Lines. The circuits are long and heavily loaded. There  
17 are no other alternate sources of supply to the distribution system serving this region.

18 Load growth in the area has been significant. The South Akron-Morgantown #1,  
19 #2 & #3 69 kV circuits serving customers in this region have experienced a 1.4% average  
20 annual increase in electric peak demand over the past 10 years. PJM projects a 1.3%  
21 annual future summer demand growth rate for the overall PPL Electric zone for future  
22 years. In addition, this area is experiencing significant industrial development that is  
23 accelerating load growth. Due to increasing customer demand load growth,

1 improvements to the local transmission facilities are required to maintain reliable  
2 electrical service both today and in the future.

3 In addition, the long, heavily loaded South Akron-Morgantown #1, #2 & #3 69  
4 kV circuits have a history of outages. These interruptions resulted in extended outages  
5 for the customers served from these circuits. For each of these events, service to  
6 customers could have been restored more quickly if an alternative transmission supply  
7 line had been available.

8 Further, PPL Electric planning studies have identified violations of PPL Electric's  
9 RP&P criteria. PPL Electric's RP&P identifies the maximum allowable load loss for  
10 various lengths of time as a result of equipment failures. The maximum allowable load  
11 loss for a contingency is derived from the emergency rating of the conductor. (MW  
12 refers to customer load and MVA refers to equipment loading capability.) The maximum  
13 allowable load loss for a contingency is also influenced by the duration of the  
14 interruption. In this case, PPL Electric's transmission planning studies project that, by  
15 the winter of 2015-2016, a double-circuit outage of the South Akron-Morgantown #2 &  
16 #3 69 kV circuits would violate the system planning and reliability criteria set forth in the  
17 RP&P if the system serving the eastern Lancaster County, southwestern Berks County  
18 and western Chester County areas is not reinforced. This violation is evidence that the  
19 existing 69 kV transmission system serving the area needs to be reinforced. I further  
20 explain this violation below.

21

1 Q. Please explain the violation for the double-circuit outage of the South Akron-  
2 Morgantown #2 & #3 69 kV circuits.

3 A. As I previously explained, the South Akron-Morgantown #2 & #3 69 kV circuits are built  
4 on double-circuit 69 kV structures from the South Akron 230-69 kV Substation to a point  
5 near the Earl 69-12 kV Distribution Substation. The South Akron-Morgantown #2 & #3  
6 69 kV circuits are heavily loaded. Under peak winter conditions, PPL Electric’s planning  
7 studies project that, by the winter of 2015-2016, a double-circuit outage of the South  
8 Akron-Morgantown #2 & #3 69 kV circuits would initially interrupt approximately 114  
9 MW of load (approximately 16,200 customers, including large industrial loads).

10 The ability to restore this interrupted load using manual sectionalizing is limited.<sup>1</sup>  
11 This limitation is due to the unacceptable low bus voltage levels (below 62 kV) that  
12 would occur at certain distribution substations interconnected with the South Akron-  
13 Morgantown #2 & #3 69 kV circuits. As a result, only approximately 58 MW of the 114  
14 MW of interrupted load could be restored using manual sectionalizing of the South  
15 Akron-Morgantown #2 & #3 69 kV circuits while maintaining acceptable voltage levels  
16 at the local 69 kV distribution substation buses. Therefore, approximately 56 MW of  
17 load (approximately 8,400 customers) would remain interrupted for an extended period of  
18 time until repairs could be completed.<sup>2</sup> This would violate PPL Electric’s RP&P

---

<sup>1</sup> Transmission and distribution lines are “sectionalized” with electrical switches. When the switch is “closed,” the electric current flows across the switch and the line operates as a single line. When the switch is “open,” the electric current is disrupted and the line is sectionalized at the open point. A sectionalized transmission or distribution lines is “normally operated” with the switch either closed or open

<sup>2</sup> In general, the amount of time required to repair a damaged overhead transmission line might last for an extended work day or longer.

1 guideline for maximum allowable load loss for a double-circuit line outage, which only  
2 allows 45 MW or less to be interrupted until overhead line repairs can be completed.

3  
4 Q. Is the identified reliability issue projected to become worse over time?

5 A. Yes. Given the experienced and projected load and demand growth on the existing  
6 system serving the eastern Lancaster County, southwestern Berks County and western  
7 Chester County areas, PPL Electric projects that the reliability issue, and the amount of  
8 load lost as a result therefrom, will increase in magnitude due to the forecasted load  
9 growth in the area. This reliability violation is evidence that the existing 69 kV systems  
10 serving the eastern Lancaster County, southwestern Berks County and western Chester  
11 County areas need to be reinforced.

12  
13 Q. How does PPL Electric propose to resolve these service reliability issues?

14 A. To resolve the reliability issues described above, PPL Electric, following approval from  
15 the Commission, plans to construct approximately 8.0 miles of new double-circuit 138/69  
16 kV transmission line between the Lauschtown 500-230-69 kV Substation in Brecknock  
17 Township and the South Akron-Morgantown #2 Transmission Line located in  
18 Caernarvon Township. The Lauschtown 500-230-69 kV Substation will provide a new  
19 source of supply to the growing load centers in the eastern Lancaster County,  
20 southwestern Berks County and western Chester County areas. The North Lancaster-  
21 Honey Brook Project will reduce the number of customers affected by a single facility  
22 outage, as well as the duration of the outage.

1           The proposed North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission  
2 Line will extend approximately 4.2 miles southeast from the Lauschtown 500-230-69 kV  
3 Substation in Brecknock Township to the existing Brecknock 69-12 kV Substation in  
4 Brecknock Township, where it will interconnect with the existing South Akron –  
5 Morgantown #1 69 kV circuit. This segment of the line will be constructed as a double-  
6 circuit 138 kV transmission line that initially will operate at 69 kV until load growth in  
7 the area makes it appropriate to increase the operating voltage to 138 kV.

8           From the Brecknock 69-12 kV Substation in Brecknock Township, the proposed  
9 North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line will proceed  
10 approximately 3.8 miles southeast to the South Akron-Morgantown #2 Transmission  
11 circuit located in Caernarvon Township. This segment of the line will be constructed as a  
12 double-circuit 138 kV transmission line, but initially will operate as a single-circuit 69  
13 kV transmission line until load growth in the area makes it appropriate to increase the  
14 operating voltage to 138 kV and add the second circuit.

15           Figure 2-2 in Attachment 2 to the Siting Application provides an area map of the  
16 proposed 138/69 kV transmission lines. Figure 2-4 in Attachment 2 to the Siting  
17 Application provides a one-line diagram of the proposed 138/69 kV transmission lines.  
18

19 Q.    Please explain why PPL Electric selected the Lauschtown 500-230-69 kV Substation in  
20 Brecknock Township as the new source of supply for the Project.

21 A.    The Lauschtown 500-230-69 kV Substation is a new 500 kV substation that is being  
22 constructed as part of a separate project required by and approved by PJM to resolve

1 violations of the mandatory federally-approved NERC reliability violations.<sup>3</sup> The  
2 Lauschtown Substation is located at the intersection of an existing 500 kV transmission  
3 line, which will supply the Substation, and three existing 230 kV lines, which will be  
4 interconnected with and supplied by the Substation. The planned Lauschtown Substation  
5 has sufficient capacity and room to accommodate a new 138/69 kV switchyard to  
6 interconnect and supply the proposed North Lancaster-Honey Brook #1 & #2 138/69 kV  
7 Transmission Line with the existing transmission system.

8 Use of the new Lauschtown 500-230-69 kV Substation as the source of supply for  
9 the proposed North Lancaster-Honey Brook Project meets the functional requirements of  
10 the Project while avoiding the need to locate and construct a separate new substation  
11 elsewhere. Further, because the Lauschtown 500-230-69 kV Substation is located at the  
12 intersection of existing 500 and 230 kV systems, use of the new Lauschtown 500-230-69  
13 kV Substation provides a source of supply to the new North Lancaster-Honey Brook #1  
14 & #2 138/69 kV Transmission Line without the need to construct new, long tie lines to  
15 interconnect the Transmission Line to the existing system.

16  
17 Q. Will the proposed North Lancaster-Honey Brook 138/69 kV Transmission Line address  
18 the identified reliability concerns?

19 A. Yes. As explained above, the proposed North Lancaster-Honey Brook 138/69 kV  
20 Transmission Line is required to resolve violations of the RP&P, accommodate the  
21 experienced and projected demand load growth in the area, and to maintain reliable  
22 electrical service. Using the transmission system planning studies described above, PPL

---

<sup>3</sup> The Lauschtown 500-230-69 kV Substation and associated transmission lines are the subject of a separate filing that will be filed with the Commission in the near future.

1 Electric determined that the proposed North Lancaster-Honey Brook Project will provide  
2 the load transfer capability necessary to resolve the two RP&P transmission violations  
3 identified on the 69 kV systems serving the eastern Lancaster County, southwestern  
4 Berks County and western Chester County area. After this reinforcement Project is  
5 constructed and in service, service to customer load will be able to be restored through  
6 load sectionalizing moves within acceptable RP&P criteria limits in the event of an  
7 outage of the double-circuit South Akron – Morgantown #2 and #3 69 kV lines.

8 In addition, the proposed North Lancaster-Honey Brook Project will resolve the  
9 underlying causes of the RP&P transmission violation, *i.e.*, the long, heavily-loaded lines  
10 and no alternate source of electric supply to the area. The proposed transmission line will  
11 interconnect with a new regional substation, the Lauschtown 500-230-69 kV Substation,  
12 and will serve as an alternate source to the customers in the eastern Lancaster County,  
13 southwestern Berks County and western Chester County area. The proposed North  
14 Lancaster-Honey Brook Project also will reduce the line length and loading on the  
15 existing South Akron-Morgantown 69 kV transmission lines. This arrangement will  
16 result in fewer customers being interrupted for a particular facility outage. In addition,  
17 more load will be able to be restored more quickly after an outage is experienced by  
18 transferring load from the failed facility to the new North Lancaster-Honey Brook #1 &  
19 #2 138/69 kV Transmission Lines. Overall, the proposed Project will improve reliability  
20 of service for approximately 32,000 customers in Honey Brook and Caernarvon  
21 Townships in Chester, Berks, and Lancaster Counties.

1 Q. What is the cost of the proposed North Lancaster-Honey Brook 138/69 kV Transmission  
2 Line?

3 A. The total estimated cost for the proposed transmission line work is approximately \$18  
4 million. I note, however, that the estimated cost for the proposed Project is an order-of-  
5 magnitude estimate developed using averages of recent costs for similar projects and  
6 without an in-depth analysis of field investigation. The estimated cost is subject to  
7 change as the constructability of the project, sequence of construction, and other factors  
8 that may affect cost are identified and analyzed as the project progresses.

9

10 Q. What is the in-service date for this Project?

11 A. The scheduled in-service date is May 2016. PPL Electric anticipates that it will  
12 commence construction as soon as practical after the Project is approved.

13

14 Q. Does this complete your testimony at this time?

15 A. Yes, it does.

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of PPL Electric Utilities :  
Corporation filed Pursuant to 52 Pa. Code :  
Chapter 57, Subchapter G, for Approval of the : Docket No. A-2014-\_\_\_\_\_  
Siting and Construction of the North :  
Lancaster-Honey Brook #1 & #2 138/69 kV :  
Transmission Lines in Lancaster County, :  
Pennsylvania :

**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 3**

**DIRECT TESTIMONY OF PETER SPARHAWK**

1 **I. INTRODUCTION**

2 Q. Please state your name and business address.

3 A. My name is Peter Sparhawk. My business address is 350 Eagleview Boulevard, Suite  
4 250, Exton, PA 19341.

5

6 Q. By whom are you employed and in what capacity?

7 A. I am employed by The Louis Berger Group, Inc. (“Louis Berger”) and serve as Director –  
8 Transmission Services in Louis Berger’s Energy Services Division.

9

10 Q. What are your principal responsibilities in that position?

11 A. My responsibilities include managing, coordinating, and conducting a variety of  
12 environmental assessment and compliance projects and tasks for electric transmission  
13 projects and other energy projects. These projects include leading and participating in  
14 siting and routing studies, feasibility studies, compliance with state and federal regulatory  
15 processes, state filings before public utility commissions, environmental permitting  
16 projects, and similar environmental assignments.

17

18 Q. Please provide a summary of your education and professional work experience.

19 A. I graduated from Cornell University in Ithaca, New York in 1985 with a Bachelor of Arts  
20 degree in History. I also completed a Certificate Program for the Environmental  
21 Manager in 1996 at the University of Washington. I have over 23 years of experience in  
22 preparing, coordinating, and managing environmental, infrastructure, and energy  
23 projects, including federal and state environmental impact statements and assessments,

1 environmental compliance and permitting efforts, and state certification applications for  
2 transmission line projects. My experience with energy projects includes licensing and  
3 permitting for electric transmission lines, gas-fired generation, wind power, and  
4 hydroelectric facilities. I have conducted and overseen numerous environmental analyses  
5 and coordinated license applications to state energy agencies and siting boards for power  
6 facilities and infrastructure in various states throughout the United States, including  
7 Pennsylvania. Specifically, my electric transmission line experience includes routing and  
8 siting, licensing, permitting, consultation with resource agencies, expert witness  
9 testimony before the Pennsylvania Public Utility Commission (PUC), and everyday  
10 coordination with Louis Berger's utility clients. I have been responsible for helping PPL  
11 Electric Utilities Corporation's (PPL Electric) prepare various attachments and analyses  
12 for inclusion in full siting applications or letters of notification to the PUC for 16 electric  
13 transmission line projects since 2008.

14  
15 Q. What is the purpose of your direct testimony in this proceeding?

16 A. My testimony explains the selection of the route for the proposed North Lancaster-Honey  
17 Brook #1 & #2 138/69 kV Transmission Lines in Lancaster County, Pennsylvania (the  
18 "North Lancaster-Honey Brook Project").

19  
20 Q. Were any portions of the siting application prepared by you or under your supervision?

21 A. Yes. I am sponsoring certain attachments to PPL Electric's Siting Application, PPL  
22 Electric Exhibit No. 1. Specifically, I am responsible for portions of the following  
23 attachments to the Siting Application:

- 1           • Summary
- 2           • Attachment 1    PUC Regulation Cross-Reference Matrix
- 3           • Attachment 3    Environmental Setting
- 4           • Attachment 4    Siting Analysis
- 5           • Attachment 6    List of Owners of Property Within the Right-of-Way
- 6           • Attachment 7    Agency Permit Requirements
- 7           • Attachment 8    List of Government Agencies, Municipalities and Other
- 8                           Public Entities Receiving the Application
- 9           • Attachment 9    List of Government Agencies, Municipalities, and Other
- 10                          Public Entities Contacted
- 11          • Attachment 10   List of Public Locations Where Application can be
- 12                           Examined
- 13          • Attachment 14   Agency Coordination (PNDI/Wetlands)
- 14          • Attachment 15   Cultural Resources Report

15           I was integrally involved in preparing these attachments to the Siting Application or  
 16           otherwise provided oversight to Louis Berger technical staff who prepared them. I also  
 17           provided review for the complete Siting Application prior to assembly and submission to  
 18           the Commission.

19

20   Q.    What are your responsibilities in connection with the North Lancaster-Honey Brook  
 21           Transmission Line?

22   A.    I serve as Louis Berger’s Project Manager, on behalf of PPL Electric, for the routing  
 23           component of the North Lancaster-Honey Brook Transmission Line. I also serve as the  
 24           Project Manager for the preliminary environmental consultation component of the  
 25           project. My responsibilities on the Project began in November 2010 and have included  
 26           day-to-day oversight of the Louis Berger team routing efforts, including the identification

1 of initial potential routes, alternative routes (Routes A, B, C and D), and the Preferred  
2 Routes (Routes B and D) that are presented for Commission approval. I oversee the  
3 scientists, biologists, planners, cultural resource specialists, mapping and Geographic  
4 Information Systems (GIS) analysts, and other technical specialists that have helped  
5 define the routes considered for the proposed transmission line. I attend in-person  
6 meetings at PPL Electric's offices in Allentown, PA as well as numerous teleconferences  
7 and field visits that take place concerning project-related routing, permitting, and public  
8 outreach efforts.

9 For project environmental consultation, I coordinate the initial agency  
10 consultation and survey efforts on behalf of PPL Electric. These include submission of a  
11 Pennsylvania Natural Diversity Inventory (PNDI) large project review to the U.S. Fish  
12 and Wildlife Service (USFWS), Pennsylvania Department of Conservation and Natural  
13 Resources (DCNR), Pennsylvania Game Commission (PGC), and Pennsylvania Fish and  
14 Boat Commission (PFBC); initial consultation with the Pennsylvania Historic and  
15 Museum Commission (PHMC); and wetland delineation activities along the Preferred  
16 Route right-of-way (ROW).

## 17 18 **II. OVERVIEW OF THE SITING PROCESS**

19 Q. Please explain how the study area was determined and the development of potential and  
20 alternative routes.

21 A. The PPL Electric routing team conducted a detailed siting analysis to determine a  
22 location for the North Lancaster-Honey Brook Transmission Line that best balances  
23 environmental, social, engineering and economic considerations. That analysis included

1 the determination of a Study Area, the compilation of an environmental inventory,  
2 identification and analysis of alternative line routes and, finally, selection of a preferred  
3 route. The Study Area is that territory in which line route alternatives could be sited to  
4 feasibly meet the Project's functional requirements and, at the same time, minimize  
5 environmental impacts and Project costs.

6 The boundaries of the Study Area were determined by the geographic area  
7 encompassing the two end points (the Lauschtown Substation to the north and the South  
8 Akron – Morgantown #2 circuit to the south), and the Project mid-point (the Brecknock  
9 Substation). The goal of the Project is to provide an alternate source of supply to  
10 reinforce the region's transmission system and provide a second source of power to the  
11 distribution substations that service homes and businesses in Brecknock and Caernarvon  
12 townships. The Study Area was intended to encompass all reasonable Potential Routes  
13 between these connection points.

14 Given these considerations, the Routing Team identified a Study Area  
15 encompassing approximately 14,582 acres (23 square miles) in Lancaster County. The  
16 project Study Area is bounded generally by the intersection of Routes 222 and 568 to the  
17 north; State Game Land No. 52 and Interstate 176 to the east; the intersection of Routes  
18 322 and 10 to the south; and the intersection of Dry Tavern Road and Black Creek to the  
19 west.

20  
21 Q. Explain the methodology employed to develop alternative routes for the North Lancaster-  
22 Honey Brook Transmission Line.

1 A. The ultimate goal of the North Lancaster-Honey Brook Project siting study was to  
2 identify an overhead electric transmission line route that minimizes the impact to the built  
3 and natural environments to the maximum extent practicable, while still maintaining the  
4 technical and economic viability of the Project. The siting analysis was used to  
5 determine the most suitable routes from the Lauschtown Substation to the South Akron-  
6 Morgantown #2 circuit. Because one circuit must terminate at the existing Brecknock  
7 69-12 kV Substation, where it will tie into the South Akron-Morgantown #1 69 kV  
8 circuit, while the second circuit will continue south to tie into the South Akron-  
9 Morgantown #2 69 kV circuit, potential routes were separately developed in the  
10 “northern” portion of the Study Area (between the proposed Lauschtown 500-230-69 kV  
11 Substation and the Brecknock 69-12 kV Substation) and in the “southern” portion of the  
12 Study Area (between the Brecknock 69-12 kV Substation and the existing South Akron –  
13 Morgantown #2 69 kV circuit).

14 The methodology employed to develop alternative routes from the proposed  
15 North Lancaster-Honey Brook Project involves five fundamental phases:

16 (1) Identify Route Selection Criteria – Once the Study Area is identified, the  
17 routing team develops basic route selection criteria that would be used to  
18 select and analyze potential Alternative Routes. The route selection  
19 criteria established and considered in the routing process includes  
20 minimizing impacts to the natural and human environment; minimizing  
21 route length and cost; using general line design parameters specified by  
22 PPL Electric; maximizing the use of or paralleling of existing rights-of-  
23 way or easements; maximizing the distance from residences, schools,

1 cemeteries, historical resources, recreation areas, and other important  
2 cultural sites; and minimizing new crossings of designated natural  
3 resource lands such as state forests, national and state parks, wildlife  
4 management areas, designated game lands and wildlife areas, and  
5 conservation areas.

6 (2) Consider Routing Constraints and Routing Opportunities – Potential  
7 Routes are identified to avoid large area constraints<sup>1</sup> to the extent  
8 practical, and maximize the distance from small area constraints.<sup>2</sup>  
9 Although complete avoidance of all constraints is not feasible, PPL  
10 Electric seeks routes that would minimize intrusions into constrained  
11 areas. Potential Routes also are identified to take advantage of routing  
12 opportunities. Practical routing opportunities considered in the Study  
13 Area include sharing and/or paralleling existing rights-of-way and linear  
14 features, including 69 and 138 kV transmission circuits, gas pipelines,  
15 railroads and major roads.

16 (3) Generate Potential Routes – Potential Routes are an early iteration of the  
17 routing process that involves the development of conceptually based

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<sup>1</sup> The constraints covering large areas including urban areas; National Register Historic Districts and adjacent areas; large recreational sites; large wetlands; critical habitat areas; large water bodies; State Forests, State Parks, and State Game Lands; Wildlife Management Areas and other natural and conservation areas; Natural Lands Trust Preserves; large mining areas; and wind energy facilities or farms.

<sup>2</sup> These small area constraints included individual residences; barns, garages, and other outbuildings; commercial and industrial buildings; recorded, designated historic buildings and sites, including any specified buffer zone around each site; recorded threatened, endangered, and other rare species sites or unique natural areas, including any specified buffer zone around each site; small wetlands and water bodies, including transition areas/buffer zones; small recreational sites or facilities; communication towers; windmills; designated scenic areas; tree farms, orchards, and vineyards.

1 routes and general consideration of these routes with respect to constraints  
2 and opportunity features in the Study Area. Once the initial Potential  
3 Route network is developed, the Routing Team reviews each route in the  
4 field. The field investigations result in changes to the potential route  
5 alignments to reduce impacts on constrained areas. As a result, some  
6 potential routes are eliminated from further consideration. The refined  
7 Potential Route network is presented to the public for comment.

8 (4) Generate Alternative Routes – After carefully analyzing and evaluating  
9 the Potential Routes, PPL Electric selects Alternative Routes for detailed  
10 examination. A qualitative and quantitative screening process is employed  
11 to eliminate or modify route links from the Potential Route network that  
12 are not considered suitable for additional study to narrow down the  
13 network and focus on refining the more preferable links to establish  
14 Alternative Routes.

15 (5) Select Preferred Route – The Siting Team undertakes a quantitative and  
16 qualitative assessment to compare the Alternative Routes. The Alternative  
17 Routes are compared and preferred routes are selected based upon a  
18 detailed analysis and balance of environmental impacts, societal concerns,  
19 engineering considerations, and costs. Based on these evaluation  
20 processes, the Siting Team selects a Preferred Route for the proposed  
21 transmission line.

22 Each of these phases of the siting process for the proposed North Lancaster-Honey Brook  
23 Project is fully explained in Attachment 4 to the Siting Application.

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Q. What sources of information did the routing team use for the siting study and development of Potential Routes?

A. Many sources of information were employed to develop the siting study and Potential Routes. Aerial photography was an important data source for the study. The following sources for aerial photography were used:

- Imagery from the National Agricultural Inventory Project (NAIP) was obtained from the United States Department of Agriculture that covered the entire Study Area in Pennsylvania (dated 2011)
- Environmental Systems Research Institute (ESRI) imagery, which is provided through Aerials Express (dated 2011)
- Imagery from the PAMAP Program was obtained for the entire Study Area (dated 2008). The PAMAP program is a statewide Department of Conservation and Natural Resources program run by the Bureau of Topographic and Geologic Survey.
- Bing Maps imagery, which ranges in date depending on location.

The PAMAP photography was formatted electronically at a scale of 1 inch to 500 feet as a set of 22-inch by 34-inch map sheets covering the Study Area. Updated information such as the location of residences and other buildings was annotated on the photography or electronically as database notes, as discovered and verified during field inspections.

Extensive use was made during the Route Selection Study of GIS data. This information was obtained from many sources, including federal, state, and county

1 governments. Much of this information was obtained through official agency GIS data  
2 access websites, some was provided directly by government agencies, and some was  
3 created by the Routing Team by either digitizing information from paper-based maps or  
4 through aerial photo interpretation.

5 GIS data allows for the consideration and efficient use of a wide variety of  
6 information that would otherwise be unavailable or impractical to consider for a planning  
7 effort of this scope. GIS information is a highly effective tool when utilized for broad  
8 level planning studies, identifying and characterizing landscape level constraints and  
9 features, and developing environmental inventory information useful for comparisons  
10 between planning alternatives.

11 Maps reviewed for the Route Selection Study include U.S. Geological Survey  
12 (USGS) 7.5-minute topographic quadrangle maps, existing County-level and park-level  
13 natural resource maps, state and county road maps, transmission line map information  
14 and land ownership maps.

15 Routing Team members conducted field inspections throughout the Study Area.  
16 The team members examined potential routes from points of public access and correlated  
17 observed features to information shown on aerial photography, USGS 7.5 minute  
18 topographic maps, road maps, locally available development sketch maps, and other  
19 information. Relevant features were viewed, verified, and recorded on laptop computers  
20 displaying aerial photography using GIS software supported by real-time Global  
21 Positioning System (GPS) tracking for positional information in each vehicle.

22  
23 Q. Was public outreach part of the routing process?

1 A. Yes. Agency and public outreach is a significant component of the siting process. PPL  
2 Electric conducted extensive public outreach throughout the siting process, including  
3 regulatory agency consultation, public notification and open house meetings, and  
4 meetings with property owners. Mr. Grossman explained the public outreach in PPL  
5 Electric Statement No. 1. We also engaged in substantial consultations with various  
6 federal, state, and local agencies to inform them of the Project and request data used in  
7 the route planning process. Feedback provided by landowners and agencies resulted in  
8 adjustments to the routes for the North Lancaster-Honey Brook Project. Additional  
9 details regarding PPL Electric's agency and public outreach efforts are provided in  
10 Attachments 3 and 4 to the Siting Application.

11  
12 Q. Did PPL Electric consider local comprehensive plans and zoning in selecting the  
13 preferred routes for the North Lancaster-Honey Brook Transmission Line?

14 A. Yes. As required by the PUC's guidelines found at 52 Pa. Code, § 69.1101 (2)(3) and §  
15 69.3104 (1), local zoning ordinances and comprehensive land use plans were reviewed by  
16 PPL Electric to evaluate the impact of the proposed North Lancaster-Honey Brook  
17 Project on these local ordinances and plans. PPL Electric evaluated the Project's  
18 consistency with the zoning ordinances and comprehensive plans of the government  
19 entities through which the Selected Route would pass. PPL Electric has reviewed the  
20 Project with Lancaster County, Caernarvon Township, and Brecknock Townships  
21 officials, and none have provided any objection to the Project. A discussion of PPL  
22 Electric's review of the local zoning ordinances and land use comprehensive plans is  
23 provided in Attachment 3 to the Siting Application.

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**III. SELECTION OF THE PREFERRED ROUTES**

Q. Please explain the process to select the Preferred Route.

A. The Alternative Routes were evaluated and compared against each other to determine a Preferred Route for the northern segment and a Preferred Route for the southern segment. The evaluation of the Alternate Routes included a quantitative and qualitative analysis of potential impacts to the natural environment, built environment and engineering and constructability.

Natural environment impacts include potential impacts to vegetation and habitat, surface waters, and conservation and recreation lands. Potential impacts are evaluated based on publically available maps and data as well as consultation with federal and state agencies.

Built environment impacts include direct and indirect impacts to residential, commercial and industrial development, institutional uses, cultural resources, and land use. Construction of a new transmission line can result in changes in land use and aesthetic impacts to residents, commuters and travelers, employees, and recreational uses.

Potential engineering challenges or difficulties are important to consider. Sharp angles, excessive road and stream crossings, narrow ROW alignments, steep topography, and unnecessary length are all elements that could ultimately require extensive engineering and can lead to increases in overall cost. For example, every turn in the line requires a different, and often more expensive, type of structure. Avoiding circuitous routes can reduce later challenges in the engineering and environmental permitting phases of the Project.

1           The Alternate Routes were reviewed in detail and compared using a combination  
2 of information collected in the field, GIS data sources, public input, supporting  
3 documents, and the collective knowledge and experience of the Routing Team. Because  
4 one circuit must terminate at the existing Brecknock 69-12 kV Substation, where it will  
5 tie into the South Akron-Morgantown #1 69 kV circuit, while the second circuit will  
6 continue south to tie into the South Akron-Morgantown #2 69 kV circuit, Alternative  
7 Routes were separately developed in the “northern” portion of the Study Area (between  
8 the proposed Lauschtown 500-230-69 kV Substation and the Brecknock 69-12 kV  
9 Substation) and in the “southern” portion of the Study Area (between the Brecknock 69-  
10 12 kV Substation and the existing South Akron – Morgantown #2 69 kV circuit). I will  
11 summarize each of the Alternative Routes below. Additional detail on each of the  
12 Alternative Routes is provided in Attachment 4 to the Siting Application.

13  
14       **A.   LAUSCHTOWN SUBSTATION TO THE BRECKNOCK SUBSTATION**  
15       **(NORTHERN STUDY AREA)**

16   Q.   Please explain the Alternative Routes for the northern portion of the Study Area.

17   A.   Analysis of the northern portion of the Study Area resulted in two Alternative Routes,  
18   Alternative Route A and Alternative Route B.

19           **ALTERNATIVE ROUTE A**

20           Route A would exit the Lauschtown Substation and proceed southeast for 2,100  
21 feet crossing Boulder Hill Road (SR 10) near its intersection with Oaklyn Drive. At a  
22 point approximately 600 feet south of its crossing of Boulder Hill Road, the line turns  
23 southeast then immediately south for approximately 1,100 feet to parallel existing  
24 property lines. From here the route turns east and parallels existing property lines before

1 turning sharply southeast and crossing Hill Top Road. Approximately 450 feet south of  
2 Hill Top Road, the line turns south and crosses East Maple Grove Road. After  
3 approximately 3,000 feet, the route turns slightly south and parallels existing property  
4 lines, crossing Yellow Hill Road. At this point the route turns southeast towards Silver  
5 Hill Quarry and makes several short turns to avoid constraints and generally follow  
6 property lines until the route crosses the Pennsylvania Turnpike. After crossing the  
7 Turnpike, the route proceeds south and enters the Brecknock Substation to the west.

8 **ALTERNATIVE ROUTE B (PREFERRED ROUTE)**

9 Route B would exit the Lauschtown Substation along the same path as Route A,  
10 crossing Boulder Hill Road (SR 10) near its intersection with Oaklyn Drive. At a point  
11 1,600 feet southeast of its crossing with Boulder Hill Road, the line would turn to the  
12 south and proceed for 4,800 feet roughly parallel to Oaklyn Road crossing Maple Grove  
13 Road and Oaklyn Drive. At a point 500 feet south of its intersection with Oaklyn Drive,  
14 the route would turn to the southeast and parallel I-76 (i.e., the Pennsylvania Turnpike)  
15 for 2,200 feet. The route would then turn sharply to the southwest for 500 feet to cross I-  
16 76 and then turn to the southeast and parallel I-76 for an additional 1,200 feet to Oaklyn  
17 Drive. From here, the route turns to the southeast for 3,700 feet crossing Laurel Road.  
18 From Laurel Road, the route would travel to the southeast for 5,100 feet to the Brecknock  
19 Substation, crossing Black Creek Road along the way.

20  
21 Q. Did the routing team consider impacts of Alternative Routes A and B on the natural  
22 environment?

1 A. Yes. The Routing Team concluded that Route B is preferred over Route A as the northern  
2 route from a natural environment perspective. Route B would result in fewer impacts to  
3 vegetation and associated forest habitat and wildlife, including potential impacts to two  
4 plant species of concern. The PADEP has stated a preference for Route B based on the  
5 substantially larger amount of tree clearing that would be required with Route A. Route  
6 B is also located farther away from State Game Land #52 and the associated biological  
7 diversity area (BDA).

8

9 Q. Did the routing team evaluate the impacts of Alternative Routes A and B on the built  
10 environment?

11 A. Yes. The Routing Team concluded that neither route stands out as being noticeably  
12 better or worse with respect to the built environment; both routes have advantages and  
13 disadvantages. Both northern routes would traverse within 500 feet of a similar number  
14 of residences. Route B, which predominately traverses agricultural land, is expected to  
15 result in greater visual impacts, while Route A, which predominately traverses forested  
16 land, is expected to result in greater land use impacts (i.e., conversion of forested land  
17 within the 100-foot-wide ROW). Route B would also cross four fewer properties than  
18 Route A.

19

20 Q. Did the routing team consider the impacts of Alternative Routes A and B to aesthetics  
21 and recreation areas?

1 A. Yes. Route B is expected to result in greater visual impacts because the route traverses  
2 agricultural land, making the transmission line visible for a greater distance. Neither  
3 route is expected to result in significant impacts to recreation areas.

4  
5 Q. Did the routing team consider the impacts of Alternative Routes A and B to cultural  
6 resources?

7 A. Yes. Route B is generally closer to known historic or cultural resources compared to  
8 Route A, which is primarily forested.

9  
10 Q. Did the routing team reach a conclusion regarding the engineering and constructability of  
11 Alternative Routes A and B?

12 A. Yes. From an engineering and constructability perspective, Route B is preferred over  
13 Route A. Route B is shorter, crosses fewer parcels, has fewer areas of steep slope and  
14 would require fewer angled structures. The shorter length and less severe terrain will  
15 result in less ROW acquisition and vegetation clearing (including ongoing periodic tree  
16 trimming) and earth disturbance, thereby reducing the overall Project cost and  
17 environmental impact.

18  
19 Q. Did the routing team reach a conclusion with respect to Alternative Routes A and B?

20 A. Yes. Based on a qualitative and quantitative review of information obtained from GIS  
21 data, existing easements, field reconnaissance, and extensive public outreach as well as  
22 engineering and financial estimates for this Project, the Routing Team selected  
23 Alternative Route B as the Preferred Route. Alternative Route B would produce fewer

1 impacts compared to Alternative Route A and would be less challenging to construct.  
2 Route B is the shorter of the two northern routes and, therefore, requires fewer acres of  
3 ROW. From an environmental perspective Route B will require substantially less tree  
4 clearing and earth disturbance, and therefore, will result in fewer impacts to vegetation  
5 and wildlife. Although Route B is generally anticipated to be visible for a longer distance  
6 compared to Route A, construction of Route B will result in minimal changes to land use,  
7 as farming can continue within the transmission ROW. Route B will also result in fewer  
8 impacts during construction and operation of the transmission line, as the route crosses  
9 fewer areas of steep slope, is more accessible compared to Route A, and will require less  
10 vegetation maintenance during operation of the line.

11 After announcing the selection of the Preferred Route in October 2012, PPL  
12 Electric initiated real estate discussions with property owners. Based on these meetings,  
13 several property owners requested route alignment modifications through their property.  
14 Where the re-alignment requests did not result in impacts to other property owners, PPL  
15 Electric accommodated individual property owners' requests to the maximum extent  
16 practical. In cases where a re-alignment would impact adjacent property owners, PPL  
17 Electric considered accommodating the request if reasonable and mutually agreed upon  
18 by all affected parties. These discussions resulted in a number of minor changes to the  
19 final Preferred Route. The resulting changes are reflected in all figures and calculations  
20 included in Attachment 4.

21  
22 **B. BRECKNOCK SUBSTATION TO SOUTH AKRON-MORGANTOWN #2**  
23 **(SOUTHERN STUDY AREA)**

24 Q. Please explain the Alternative Routes for the southern portion of the Study Area.

1 A. Analysis of the southern portion of the Study Area resulted in two Alternative Routes,  
2 Alternative Route C and Alternative Route D.

3 **ALTERNATIVE ROUTE C**

4 From the Brecknock Substation, the route would head south roughly parallel to  
5 Lambert Road for 2,000 feet. At this point, the route would continue south adjacent to  
6 property lines before turning southwest and crossing Lambert Road. Approximately 700  
7 feet after crossing Lambert Road the route turns south, crossing Smoketown School  
8 Road. Just north of Little Conestoga Creek the route turns southwest, crossing North  
9 Churchtown Road and Mill Road. Approximately 750 feet west of Mill Road the route  
10 turns south and parallels the Caernarvon-East Earl township border for 5,800 feet,  
11 crossing Main Street (SR 23) and connecting to the South Akron – Morgantown #2  
12 transmission line west of Churchtown.

13 **ALTERNATIVE ROUTE D (PREFERRED ROUTE)**

14 From the Brecknock Substation, the route would head south roughly parallel to  
15 Lambert Road for 2,000 feet along the same alignment as Route C. At this point, the  
16 route would turn to the east crossing Lambert Road and continue for 2,000 feet. From this  
17 point, the route would turn to the south for 5,700 feet crossing Turkey Hill Road. The  
18 route would head to the southeast for 1,500 feet and then turn east for 4,300 feet, crossing  
19 Hammertown Road and Water Street, to a point 2,500 feet east of its crossing with Water  
20 Street. From this point, the route would turn to the southeast for 2,750 feet to a point 500  
21 feet northwest of Main Street (SR 23). From here, the route would turn to the south for  
22 1,900 feet and cross Main Street and connect with the South Akron-Morgantown #2  
23 transmission line east of Churchtown.

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Q. Did the routing team consider impacts of Alternative Routes C and D on the natural environment?

A. Yes. The Routing Team concluded that Route C and Route D would have similar impacts from a natural environment perspective. Both southern routes would traverse the same amount of area with steep slopes and traverse a similar percentage of potential wetland areas based on soil type. Portions of both routes were identified by DCNR as containing potential habitat for two plant species of concern. However, an online PNDI review conducted for Route D did not identify any plant species as a potential concern. Both Routes C and D would require minimal vegetation clearing (0.4 miles and 0.9 miles, respectively).

Q. Did the routing team evaluate the impacts of Alternative Routes C and D on the built environment?

A. Yes. The Routing Team concluded that Route D is slightly preferred over Route C. Route D would cross eleven fewer parcels and within 250 feet of two fewer residences compared to Route C. Route D would also avoid traversing any existing agricultural easements. Although Route D would result in a few additional acres of forest clearing, land use impacts would generally be similar to Route C.

Q. Did the routing team consider the impacts of Alternative Routes C and D to aesthetics and recreation areas?

1 A. Yes. The Routing Team concluded that aesthetic impacts are anticipated to be similar for  
2 both southern routes, as they both primarily traverse agricultural land. Neither route is  
3 anticipated to significantly impact recreational areas.

4  
5 Q. Did the routing team consider the impacts of Alternative Routes C and D to cultural  
6 resources?

7 A. Yes. The Routing Team concluded that potential cultural resource impacts are  
8 anticipated to be similar for both southern routes.

9  
10 Q. Did the routing team reach a conclusion regarding the engineering and constructability of  
11 Alternative Routes C and D?

12 A. Yes. The Routing Team concluded that Route D is slightly preferred over Route C from  
13 an engineering and constructability perspective. Route D is slightly shorter and crosses  
14 eleven fewer parcels compared to Route C.

15  
16 Q. Did the routing team reach a conclusion with respect to Alternative Routes C and D?

17 A. Yes. Based on a qualitative and quantitative review of information obtained from GIS  
18 data, existing easements, field reconnaissance, and extensive public outreach as well as  
19 engineering and financial estimates for this Project, the routing team selected Alternative  
20 Route D as the Preferred Route. Alternative Route D would produce fewer impacts than  
21 Alternative Route C and be less challenging to construct. Route D is only slightly shorter  
22 than Route C, but crosses eleven fewer properties and crosses within 250 feet of fewer

1 residences. Both southern alternatives would cross about the same amount of agricultural  
2 security land, but Route D avoids crossing land in the agricultural easement program.

3 After announcing the selection of the Preferred Route in October 2012, PPL  
4 Electric initiated real estate discussions with property owners. Based on these meetings,  
5 several property owners requested route alignment modifications through their property.  
6 Where the re-alignment requests did not result in impacts to other property owners, PPL  
7 Electric accommodated individual property owners' requests to the maximum extent  
8 practical. In cases where a re-alignment would impact adjacent property owners, PPL  
9 Electric considered accommodating the request if reasonable and mutually agreed upon  
10 by all affected parties. These discussions resulted in a number of minor changes to the  
11 final Preferred Route. The resulting changes are reflected in all figures and calculations  
12 included in Attachment 4.

13  
14 **IV. COMPLIANCE WITH POTENTIAL PERMIT AND MITIGATION**  
15 **REQUIREMENTS**

16 Q. Please summarize PPL Electric's efforts to minimize the anticipated impacts and  
17 potential permit and mitigation requirements of the proposed North Lancaster-Honey  
18 Brook Project.

19 A. PPL Electric is working diligently with property owners to secure the necessary rights-of-  
20 way and easements along each of the proposed segments to minimize the impact on  
21 existing and future land use. Efforts were made during the transmission line siting  
22 process to minimize impacts on existing and future land uses, as well as avoid sensitive  
23 natural resources such as wetlands and streams. Where potential impacts are  
24 unavoidable, best management practices will be employed and PPL Electric will obtain

1 and comply with any necessary permits. As part of the permitting process, any required  
2 waterway or floodplain encroachment permits will be obtained from PADEP and USACE  
3 prior to construction and PPL Electric will comply with all special conditions placed on  
4 the permits. In addition, to address water quality standards within the EV-designated and  
5 HQ-designated watersheds along the Project corridor, PPL Electric will comply with the  
6 regulations of the National Pollutant Discharge Elimination System (NPDES) permit  
7 program, obtain the required soil erosion and sedimentation control permits, and follow  
8 the specified conditions required for the permit.

9 A detailed discussion of the Company's efforts to minimize the anticipated  
10 impacts and potential permit and mitigation requirements of the proposed North  
11 Lancaster-Honey Brook Project is provided in Attachments 3, 4, and 7 to the Siting  
12 Application, including potential impacts to: land use; natural features; rare, threatened,  
13 and endangered species; cultural resources; community features and conserved lands; and  
14 agency requirements and permits.

15  
16 Q. Does this conclude your testimony at this time?

17 A. Yes, it does. I reserve the right to supplement my testimony as additional issues arise  
18 during the course of this proceeding.

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of PPL Electric Utilities :  
Corporation filed Pursuant to 52 Pa. Code :  
Chapter 57, Subchapter G, for Approval of the :  
Siting and Construction of the North : Docket No. A-2013-2392102  
Lancaster-Honey Brook #1 & #2 138/69 kV :  
Transmission Lines in Lancaster County, :  
Pennsylvania :

**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 4**

**TESTIMONY OF KYLE D. SWARTZENTRUBER**

1 Q. Please state your name and business address.

2 A. My name is Kyle D. Swartzentruber, and my business address is Two North Ninth Street,  
3 Allentown, Pennsylvania 18101.

4  
5 Q. By whom are you employed?

6 A. I am employed by PPL Electric Utilities Corporation (“PPL Electric”).

7  
8 Q. Please provide a summary of your education and professional work experience.

9 A. In 2008, I received a Bachelor of Science degree in Mechanical Engineering Technology  
10 from The Pennsylvania State University in Harrisburg, Pennsylvania. My first  
11 professional occupation was at Mack Trucks Inc. in Allentown, Pennsylvania, where I  
12 worked as a test engineer in the durability group from April 2008 to May 2010. My  
13 second professional occupation was at East Penn Manufacturing in Lyons Station  
14 Pennsylvania, where I worked as a mechanical draftsmen in the stationary battery  
15 division from May 2010 to November 2010. My third professional occupation was at  
16 Ingersoll Rand in West Chester Pennsylvania, where I worked as a design engineer in  
17 their air dryer division from November 2010 to May 2011. My fourth and current  
18 occupation is with PPL Electric in Allentown, Pennsylvania. I have been working in the  
19 Transmission Design group with PPL Electric since May of 2011.

20  
21 Q. What is your present position with PPL Electric?

22 A. Presently, I am a Support Engineer in PPL Electric’s Transmission Design group. I  
23 perform the design of transmission projects throughout PPL Electric’s service territory.

1 In addition, I oversee the design of transmission projects that are engineered by PPL  
2 Electric's engineering contractors.

3

4 Q. What are your responsibilities in connection with the proposed North Lancaster-Honey  
5 Brook #1 & #2 138/69 kV Transmission Line?

6 A. In my role as a Support Engineer, I am responsible for the transmission design and  
7 engineering portion of the North Lancaster-Honey Brook #1 & #2 138/69 kV  
8 Transmission Line ("North Lancaster-Honey Brook Project").

9

10 Q. What is the purpose of your direct testimony in this proceeding?

11 A. My testimony addresses several issues. First, I will explain the major design features of  
12 the North Lancaster-Honey Brook Project. Second, I will explain the safety features  
13 incorporated into the design of the North Lancaster-Honey Brook Project. Third, I will  
14 explain PPL Electric's Magnetic Field Management Program and how it has been  
15 incorporated into the design of the North Lancaster-Honey Brook Project.

16

17 Q. Please describe the portions of the Siting Application that you are sponsoring.

18 A. I am sponsoring Attachment 5, the Engineering Description, Attachment 11, PPL  
19 Electric's Magnetic Field Management Program, and Attachment 13, PPL Electric's  
20 Design and Safety Practices.

21

1 Q. Please provide an overview of the North Lancaster-Honey Brook Project.

2 A. As explained in PPL Electric Statement No. 2, the purpose of the North Lancaster-Honey  
3 Brook Project is necessary to resolve reliability criteria violations and to strengthen the  
4 electrical delivery system and improve reliability of service to approximately 32,000  
5 customers in Honey Brook and Caernarvon Townships in Chester, Berks, and Lancaster  
6 Counties. The proposed Project involves the construction of approximately 8.0 miles of  
7 new double-circuit 138/69 kV transmission line. The proposed transmission line will  
8 extend approximately 4.2 miles between the Lauschtown 230-69 kV Substation in  
9 Brecknock Township and the Brecknock 69-12 kV Substation in Brecknock Township,  
10 and then proceed approximately 3.8 miles to the South Akron-Morgantown #2  
11 Transmission Line located in Caernarvon Township.

12 From the Lauschtown 500-230-69 kV Substation to the existing Brecknock 69-12  
13 kV Substation, the 138/69 kV transmission line will be constructed as a double-circuit  
14 138 kV transmission line that initially will operate at 69 kV until load growth in the area  
15 makes it appropriate to increase the operating voltage. From the Brecknock 69-12 kV  
16 Substation to the South Akron-Morgantown #2 circuit, the 138/69 kV transmission line  
17 will be constructed as a double-circuit 138 kV transmission line, but initially will operate  
18 as a single-circuit 69 kV transmission line until load growth in the area makes it  
19 appropriate to increase the operating voltage and add the second circuit.

20 The proposed new double-circuit 138/69 kV transmission line will utilize six  
21 power conductors and two overhead ground wires. The power conductors for the

1 proposed North Lancaster-Honey Brook Transmission Line will be 556.5 kcmil,<sup>1</sup> 24/7  
2 stranding, aluminum conductor steel reinforced. The two overhead ground wires for the  
3 proposed North Lancaster-Honey Brook Transmission Line will each be 48 count, 0.752-  
4 inch diameter fiber optical ground wires, that will provide lightning protection and  
5 communication between circuit breakers that remove the line from service should a fault  
6 in the line be detected.

7  
8 Q. Please describe the principal types of structures that will be used for the proposed North  
9 Lancaster-Honey Brook Transmission Line.

10 The transmission line will be installed on new single-shaft steel poles. The tangent  
11 structures<sup>2</sup> for the proposed new transmission line will be equipped with steel arms.  
12 Angle structures will be single-pole or two-pole steel structures, depending on the  
13 severity of the line angle. The majority of poles will be direct embedded. However,  
14 some poles will be installed on concrete foundations in agricultural areas to avoid  
15 installing guy wires that could interfere with farming operations, as well as in other areas  
16 based on geotechnical considerations or structure tension. In addition, some direct  
17 embedded angled structures may be guyed instead of concrete foundations due to  
18 accessibility and terrain.

19 Based on preliminary engineering, this Project requires the installation of  
20 approximately 74 structures, ranging from 75 to 120 feet in height. The average pole  
21 height will be approximately 105 feet. The average span length will be approximately

---

<sup>1</sup> A circular mil is the cross-sectional area of a wire one mil in diameter, where 1 kcmil = 0.5067 mm<sup>2</sup>.

<sup>2</sup> A tangent structure is a pole with no line angle.

1 590 feet. Diagrams of structures similar to the ones that will be installed for this  
2 proposed Project are included at the end of Attachment 5 to the Siting Application.

3  
4 Q. Please explain the safety features incorporated into the design of the North Lancaster-  
5 Honey Brook Transmission Line.

6 A. The North Lancaster-Honey Brook Transmission Line will be designed and built to meet  
7 or exceed all applicable National Electrical Safety Code (“NESC”) minimum standards.  
8 The NESC is a set of rules to safeguard people during the installation, operation, and  
9 maintenance of electric power lines. The NESC contains the basic provisions considered  
10 necessary for the safety of employees and the public.

11 In addition to the safety features incorporated by designing the line in accordance  
12 with the NESC; PPL Electric has additional more stringent design standards. PPL  
13 Electric’s design loading conditions for structures, wires, and clearances exceed NESC  
14 standards. Relay protection systems are also employed to automatically de-energize the  
15 line in the unlikely event of a failure on the line in which the line contacts the ground or a  
16 grounded object. The line is also designed for conductor-to-conductor clearances and  
17 conductor-to-ground clearances which support live-line maintenance and inspections.  
18 Work procedures and tooling have been developed to allow work to be performed in a  
19 safe manner on energized facilities. Personnel are furnished with appropriate Personal  
20 Protective Equipment for the performance of construction or maintenance activities in a  
21 safe manner.

1 Q. Please explain PPL Electric’s Magnetic Field Management Program and how it will be  
2 incorporated into the design of the North Lancaster-Honey Brook Transmission Line.

3 A. Before describing PPL Electric’s Magnetic Field Management Program, I note that, in  
4 conjunction with seeking Commission approval for the siting and construction of the  
5 Susquehanna-Roseland 500 kV Transmission Line, Docket Number A-2009-2082652,  
6 PPL Electric presented extensive independent expert testimony on Electric and Magnetic  
7 Field (“EMF”) issues. Based on this extensive evidence, the Commission adopted the  
8 Administrative Law Judge’s finding that there is no reliable scientific basis to conclude  
9 that exposure to EMFs from electric power lines causes or contributes to adverse health  
10 effects in people. *See Application of PPL Electric Utilities Corporation Filed Pursuant*  
11 *to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of*  
12 *the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500-kV Transmission*  
13 *Line in Portions of Lackawanna, Luzerne, Monroe, Pike and Wayne Counties,*  
14 *Pennsylvania*, Docket Number A-2009-2082652, 2010 Pa. PUC LEXIS 434 at \*167-80  
15 (February 12, 2010), *affirmed sub nom., Environmental Conservation Council v. Public*  
16 *Utility Commission*, 25 A.3d 440 (Pa. Cmwlth. 2011).

17 Notwithstanding the foregoing, PPL Electric has adopted a program to mitigate  
18 the potential impacts from EMFs. PPL Electric’s Magnetic Field Management Program  
19 was first developed in the early 1990s to implement a policy decision to design new and  
20 rebuilt transmission lines to reduce magnetic fields when that can be done at no or low  
21 additional cost and is consistent with meeting the functional requirements of the line. A  
22 copy of the current PPL Electric’s Magnetic Field Management Program is found as  
23 Attachment 11 to the Siting Application.

1 PPL Electric's Magnetic Field Management Program is applied to new and  
2 reconstructed transmission line projects. In order to lower magnetic field exposures, the  
3 program generally prescribes the use of a line design that provides ground clearances of  
4 five feet higher than the required minimum NESC ground clearance and reverses phasing  
5 of new double circuit lines where it is feasible to do so at low or no cost. The  
6 implementation of additional modifications will be considered, provided those  
7 modifications can be made at low or no cost and will not interfere with the operation of  
8 the line.

9 Consistent with its Magnetic Field Management Program, PPL Electric will  
10 construct the North Lancaster-Honey Brook Transmission Line for ground clearances that  
11 are a minimum of nine feet higher than the required NESC minimum ground clearances  
12 for 138/69 kV lines.

13 As I explained above, the segment of the proposed transmission line extending  
14 between the Lauschtown 500-230-69 kV Substation and Brecknock 69-12 kV Substation  
15 will be constructed as a double-circuit transmission line. PPL Electric will reverse phase  
16 this segment of the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line  
17 to minimize the potential for exposure to electric and magnetic fields.

18 From the Brecknock 69-12 kV Substation to the South Akron-Morgantown #2  
19 Transmission circuit, the proposed transmission line will operate as a single-circuit  
20 transmission line until load growth in the area makes it appropriate to add the second  
21 circuit. Since this segment of the proposed transmission line initially will operate as a  
22 single-circuit, reverse phasing is not feasible at this time. Where it is feasible to do so at  
23 low or no cost, PPL Electric will select a phasing arrangement for this segment of the

1 proposed transmission line that lowers the magnetic field. In the future, when a second  
2 circuit is added, PPL Electric will select the best circuit/phase arrangement to reduce the  
3 potential exposure to electric magnetic fields where it is feasible to do so at low or no  
4 cost.

5

6 Q. Does this complete your direct testimony?

7 A. Yes, it does

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of PPL Electric Utilities :  
Corporation filed Pursuant to 52 Pa. Code :  
Chapter 57, Subchapter G, for Approval of the :  
Siting and Construction of the North : Docket No. A-2014-\_\_\_\_\_

Lancaster-Honey Brook #1 & #2 138/69 kV :  
Transmission Lines in Lancaster County, :  
Pennsylvania :

**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 5**

**TESTIMONY OF JOMARIE JENKINS**

1 Q. Please state your name and business address.

2 A. My name is JoMarie Jenkins. My business address is 501 North Reading Road, Ephrata,  
3 Pennsylvania 17522.

4  
5 Q. By whom are you employed and in what capacity?

6 A. I am employed by PPL Electric Utilities Corporation (“PPL Electric”) as Senior Right of  
7 Way Specialist. In that position, I am responsible for handling all of the Transmission  
8 Right of Way assets for the Lancaster – Harrisburg region for PPL Electric.

9  
10 Q. What is your educational background?

11 A. I graduated from Hempfield High School in Landisville, Pennsylvania in 1990. I  
12 currently am pursuing a degree in Business Management from Alvernia University in  
13 Reading, Pennsylvania.

14  
15 Q. Are you a member of any professional organizations?

16 A. Yes. I am a member of the International Right of Way Association and I am working to  
17 acquire my Senior Right-of-Way Professional Designation (SR/WA).

18  
19 Q. Please summarize your employment history.

20 A. I have been employed by PPL Electric Utilities in my current position for approximately  
21 two years. Prior to my employment with PPL Electric, I was employed by Buckeye  
22 Partners, L.P., in Breinigsville, Pennsylvania, first as a Senior Right-of-Way Specialist  
23 and then in 2011 as Manager, Right-of-Way, Permits and One Call. In this position, I

1 managed a staff of 13. This group was responsible for system-wide right-of-way  
2 activities, vegetation maintenance, aerial patrol, engineering/encroachment review and  
3 the One Call Department for 25 states, Puerto Rico and the Bahamas. The system  
4 included 10,000 miles of pipeline, more than 100 refined petroleum products terminals,  
5 and a natural gas storage facility. In addition, we performed acquisition due diligence  
6 examinations for 1,000 miles of pipelines and three terminals acquired from  
7 ConocoPhillips in 2009, a petroleum products terminal in Puerto Rico acquired from  
8 Shell, 650 miles of pipeline and 33 terminals acquired from BP North America in 2011,  
9 and approximately 200 miles of pipelines and two terminals acquired from ExxonMobile  
10 in 2011.

11 From 2008 through most of 2011, I was employed by Buckeye Partners, L.P., as a  
12 Senior Right-of-Way Specialist. There, I was responsible for corporate right-of-way  
13 responsibilities including right-of-way acquisitions, leasing, permitting, and acquisitions  
14 in a five state area.

15 From 1989 to 2008, I was the One Call Supervisor for Sunoco Logistics, L.P.  
16 (SLLP) in Sinking Springs, Pennsylvania. There, I managed the One Call screening  
17 department covering approximately 6,200 miles of pipeline in 19 states while supervising  
18 a staff of 5. In this roll I also participated on the Board of Directors for the Pennsylvania  
19 One Call Systems, Inc. In addition, I was responsible for SLLP's third-party  
20 encroachment program.

21  
22 Q. What are your responsibilities in connection with the proposed North Lancaster-Honey  
23 Brook #1 & #2 138/69 kV Transmission Lines?

1 A. My colleagues and I are responsible for identifying all owners of property in the proposed  
2 right-of-way for the route selected for the transmission line. We review and identify any  
3 areas where PPL Electric will require new or enhanced rights-of-way for the preferred  
4 route. For this Project, PPL Electric is proposing to construct a new transmission line  
5 where one does not presently exist today. Therefore, PPL Electric needed to acquire new  
6 right-of-way for the entire length of the route proposed for the North Lancaster-Honey  
7 Brook #1 & #2 138/69 kV Transmission Lines.

8 In areas where PPL Electric needs to acquire new transmission line rights-of-way,  
9 we attempt to negotiate with the landowners to acquire the needed land rights through  
10 voluntary transactions. We also deliver to all property owners affected by the Preferred  
11 Route, literature including, but not limited to, an electromagnetic field (EMF) brochure,  
12 compatible right-of-way uses, existing right-of-way documentation, pictures of typical  
13 transmission line structures, and other information to help them fully understand the  
14 project.

15  
16 Q. Do you meet with property owners?

17 A. Yes. The Right-of-Way Agents meet with property owners to answer questions, address  
18 concerns, and/or to resolve issues. The Right-of-Way Agent provides the property  
19 owners with information on how they can contact PPL Electric at any time, answer  
20 questions or address any issues or concerns. The Right-of-Way Agent is a direct link for  
21 the property owner to communicate with PPL Electric.

22

1 Q. What is the purpose of your direct testimony in this proceeding?

2 A. First, I will identify the portions of the above-captioned Siting Application that I am  
3 sponsoring. Second, I will explain the process we utilized to attempt to acquire rights-of-  
4 way and easements for the North Lancaster-Honey Brook #1 & #2 138/69 kV  
5 Transmission Lines. Third, I will explain PPL Electric's policy regarding the land  
6 owner's use of the right-of-way area and provide examples of situations in which PPL  
7 Electric worked with land owners to mitigate the effects of the transmission line on the  
8 present and future use of their properties. Fourth, I will explain the status of our attempts  
9 to acquire the rights-of-way and easements needed for the proposed North Lancaster-  
10 Honey Brook #1 & #2 138/69 kV Transmission Lines.

11  
12 Q. Please describe the portions of the Siting Application that you are sponsoring.

13 A. I am responsible for Attachment 6, which provides a list of the owners of property that  
14 will be traversed by the proposed North Lancaster-Honey Brook #1 & #2 138/69 kV  
15 Transmission Lines. I also am responsible for Attachment 16, which provides the  
16 packets of information that PPL Electric delivered to owners of land that will be subject  
17 to or along the right-of-way and easement for the proposed North Lancaster-Honey  
18 Brook #1 & #2 138/69 kV Transmission Lines.

19  
20 Q. Please explain PPL Electric's policy regarding dealings with owners of land over which  
21 PPL Electric needs to construct electric utility facilities.

22 A. PPL Electric has adopted Internal Practices for Dealing with the Public on Power Line  
23 Projects, which is included in Attachment 16 to the Siting Application. PPL Corporation

1 has a long-standing commitment to conducting business in an honest and ethical manner.  
2 Consistent with the expectations laid out in the PPL Standards of Conduct and Integrity,  
3 and in the Standards of Conduct and Integrity for Suppliers, PPL Electric's employees,  
4 contractors and agents who interact with members of the public in activities such as  
5 planning, real estate transactions, and construction of power lines and other facilities are  
6 required, among other things, to act with honesty and integrity and treat people  
7 courteously and in a professional manner at all times.

8  
9 Q. Did PPL Electric provide information to owners of land that may be subject to a right-of-  
10 way or easement agreement?

11 A. Yes. Prior to attempting to contact landowners, PPL Electric provided packets of  
12 information to fully notify landowners that PPL Electric plans to negotiate to acquire  
13 rights-of-way and easements across their land. This packet of information discloses to  
14 the owner information concerning the name of the proposed Project, the number of  
15 circuits to be initially installed and the kilovolts at which it will operate, and informs  
16 them of their legal rights and PPL Electric's legal rights with regard to this Project. This  
17 information includes the two notices which are required by the Pennsylvania Public  
18 Utility Commission ("Commission") in its regulations at 52 Pa. Code § 57.91. The first  
19 notice references PPL Electric's power of eminent domain, that is, the power to condemn  
20 land rights in order to construct facilities necessary for providing electric utility services  
21 to the public. The second notice provides information related to the right-of-way  
22 maintenance practices for the North Lancaster-Honey Brook #1 & #2 138/69 kV

1 Transmission Lines. The information and notices are included in Attachment 16 to the  
2 Siting Application.

3 We also provide information which pertains to electric and magnetic fields, a  
4 glossary of commonly used real estate terms, a listing of the trees and shrubs that are  
5 considered a permitted use within the easement area by PPL Electric, and a picture of a  
6 typical pole or structure that PPL Electric plans to utilize for the transmission project.

7  
8 Q. What does PPL Electric do after providing the information and notices to landowners?

9 A. Pursuant to 52 Pa. Code § 57.91(a), PPL Electric waits at least fifteen days after the  
10 landowner receives the notices provided in Attachment 16 to the Siting Application. We  
11 then contact the property owner(s) via telephone or in person to schedule a convenient  
12 time to meet so that we may explain the details of the Project and answer any questions  
13 the property owner(s) may have. In addition, we usually make a monetary offer to the  
14 property owner(s) at the meeting. The amount of the offer is based on the fair market  
15 value of the interests in the real estate which PPL Electric wishes to acquire.

16  
17 Q. When negotiating with landowners, how do you determine the value of the land rights  
18 which PPL Electric proposes to acquire?

19 A. When determining fair compensation to the property owner for the rights which PPL  
20 Electric proposes to acquire, we follow a process. First, we hire an outside appraiser to  
21 conduct a market study of recent, nearby comparable land sales and current listings. This  
22 information is used as a basis for determining the value of land on a per acre basis in the  
23 transmission line project area. These comparable values are reviewed and analyzed with

1 special attention given to the acreage amounts, type of land, zoning classification, and  
2 other price determining factors such as topography, views, on-site utilities, etc. The  
3 current use and potential future use of the parcel along with the location of the proposed  
4 easement area on the property are also important factors in determining the amount of  
5 monetary compensation for the right-of-way.

6  
7 Q. Please explain PPL Electric's policy regarding the land owner's use of the right-of-way  
8 area.

9 A. In the mid-1990s PPL Electric established an encroachment policy which clearly defined  
10 permitted and non-permitted uses of its existing rights-of-way. In the most general terms,  
11 no building, structure, or explosive material may occupy PPL Electric's rights-of-way.  
12 There are, however, numerous compatible uses of these rights-of-way that do not  
13 interfere with the safe and reliable operation and maintenance of our facilities. Uses such  
14 as farming and gardening, or other passive uses, require no review or approvals by PPL  
15 Electric. Development of properties which includes extensive grading and installation of  
16 parking, utilities, roadways and other infrastructure, requires review and approval by PPL  
17 Electric. These development changes are usually compatible, provided the design and  
18 work performed in the area does not interfere with the safe and reliable operation and  
19 maintenance of our facilities.

20  
21 Q. Can you provide an example of situations where PPL Electric worked with property  
22 owners along the routes selected for the North Lancaster-Honey Brook #1 & #2 138/69

1 kV Transmission Lines to mitigate the effects of the transmission line on their present  
2 and future land use?

3 A. Yes. On numerous occasions throughout the siting process, the location of the easement  
4 was adjusted across particular parcels to accommodate for agricultural uses and  
5 landowner preferences. Pole locations also were modified to accommodate landowner  
6 requests.

7  
8 Q. Please explain the status of PPL Electric's attempts to acquire rights-of-way and  
9 easements for the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Lines.

10 A. PPL Electric's current standard right-of-way width for a double-circuit 138/69 kV  
11 transmission line is 100 feet. There are a total of 42 deeded properties along the  
12 transmission line route selected for the North Lancaster-Honey Brook #1 & #2 138/69 kV  
13 Transmission Lines. There are a total of 33 property owners. As of the date I prepared  
14 this direct testimony, formal easement and right-of-way agreements have been executed  
15 by 30 of the 33 property owners. Although negotiations continue with the remaining  
16 three property owners, PPL Electric is separately filing for approval of the condemnation  
17 of rights-of-way and easements across a certain portion of the lands owned by these two  
18 property owners pursuant to Section 1511(c) of the Business Corporation Law of 1988,  
19 15 Pa.C.S. § 1511(c).

20  
21 Q. Does this complete your direct testimony?

22 A. Yes, it does