

**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 :

APPLICATION OF PPL ELECTRIC UTILITIES CORPORATION

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) herein files, pursuant to 52 Pa. Code § 57.72, this Application requesting Pennsylvania Public Utility Commission (“Commission”) approval to site and construct the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Lines in Lancaster County, Pennsylvania (the “North Lancaster-Honey Brook Project”). The proposed North Lancaster-Honey Brook Project is required to improve reliability of service for approximately 32,000 customers in Honey Brook and Caernarvon Townships in Chester, Berks, and Lancaster Counties. The North Lancaster-Honey Brook Project will bring a new alternate source of supply closer to the growing load centers and reduce the line length and loading on the existing 138/69 kV lines serving the area. The new transmission lines also will allow for improved operating flexibility to restore customer load more quickly after a facility outage.

The proposed North Lancaster-Honey Brook Project involves the construction of approximately 8 miles of new double-circuit 138/69 kV transmission line between the Lauschtown 500-230-69 kV Substation in Brecknock Township and the South Akron-

Morgantown #2 Transmission Line located in Caernarvon Township. PPL Electric herein seeks Commission approval to site and construct the 138/69 kV transmission lines associated with the North Lancaster-Honey Brook Project. Upon Commission approval, construction is scheduled to commence in January of 2015 to meet the in-service date of May 2016. In support of this Application, PPL Electric states as follows:

I. INTRODUCTION AND OVERVIEW

1. This Application is filed by PPL Electric, a public utility that provides electric distribution, transmission, and provider of last resort services in Pennsylvania subject to the regulatory jurisdiction of the Commission.

2. PPL Electric’s address is as follows:

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PPL Electric's attorneys are authorized to receive all notices and communications regarding this Application.

4. PPL Electric furnishes electric service to approximately 1.4 million customers throughout its certificated service territory, which includes all or portions of twenty-nine counties and encompasses approximately 10,000 square miles in eastern and central Pennsylvania. PPL Electric is a "public utility" and an "electric distribution company" as defined in Sections 102 and 2803 of the Pennsylvania Public Utility Code, 66 Pa.C.S. §§ 102, 2803.

5. PPL Electric owns approximately 5,000 miles of transmission lines operating at 69 kV (kilovolts) or higher, approximately 375 substations with a capacity of 10 MVA (megavolt amperes) or more, and approximately 43,000 miles of distribution lines operating at less than 69 kV.

6. Load growth in the in eastern Lancaster County, southwestern Berks County and western Chester County areas has been significant. The existing 138/69 kV transmission lines serving the customers in this region are long in length and each serve a significant number of customers who are exposed to long duration outages in the event of the loss of one of these transmission lines. Currently, there are no alternate electrical transmission sources within these areas of high population density, and the existing power supply is too distant to reliably and effectively serve the customer load.

7. The North Lancaster-Honey Brook Project is required to resolve planning and reliability violations and to reinforce the existing 138/69 kV systems serving the eastern Lancaster County, southwestern Berks County and western Chester County areas. The North Lancaster-Honey Brook Project will bring a new alternate source of supply closer to the growing

load centers and reduce the line length and loading on the existing 138/69 kV lines serving the area. The North Lancaster-Honey Brook Project will improve reliability and reduce the number of customers affected by a single facility outage, as well as the duration of the outage.

8. The proposed North Lancaster-Honey Brook Project involves the construction of approximately 8 miles of new double-circuit 138/69 kV transmission line. The proposed transmission line will extend approximately 4.2 miles between the Lauschtown 500-230-69 kV Substation in Brecknock Township and the Brecknock 69-12 kV Substation in Brecknock Township, and then proceed approximately 3.8 miles to the South Akron-Morgantown #2 Transmission Line located in Caernarvon Township.

9. The North Lancaster-Honey Brook Project has a scheduled construction start date of January of 2015 to meet the in-service date of May 2016.

10. Accompanying this Application in a separate three-ring binder are the following Attachments that provide additional detailed information regarding the North Lancaster-Honey Brook Project:

- Executive Summary
- Attachment 1 Commission Regulation Cross-Reference Matrix
- Attachment 2 Necessity Statement
- Attachment 3 Environmental Setting
- Attachment 4 Siting Analysis
- Attachment 5 Design and Engineering Description
- Attachment 6 List of Owners of Property within the Right of Way
- Attachment 7 Agency Permit Requirements
- Attachment 8 List of Involved Governmental Agencies, Municipalities, and other Public Entities Receiving the Application

- Attachment 9 List of Governmental Agencies, Municipalities, and other Public Entities Contacted
- Attachment 10 List of Public Locations where Application can be examined
- Attachment 11 PPL Electric Magnetic Field Management Plan
- Attachment 12 Vegetation Management
- Attachment 13 PPL Design & Safety Rules and Guidance
- Attachment 14 Agency Coordination (PNDI/Wetlands)
- Attachment 15 Cultural Resource Report
- Attachment 16 Public Notice Requirements

11. Also accompanying this Application are the following written direct testimonies further explaining and supporting this Application:

- PPL Electric St. No. 1: Douglas J. Grossman, Senior Siting Specialist for PPL Electric – 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, Senior Engineer in the Asset Management Department for PPL Electric – 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 D. Swartzentruber, Transmission Design Group for PPL Electric – 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, Senior Right of Way Specialist 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.

12. This Application, including the accompanying Attachments and Statements, which are incorporated herein by reference, contains all of the information required by 52 Pa. Code §§ 57.72(c), 69.1101, 69.3102 – 69.3107.

II. NEED FOR THE PROJECT

A. TRANSMISSION PLANNING

13. System Planning is the process which assures that transmission systems can supply electricity to all customer loads reliably and economically. The reliable and economical operation of transmission systems requires planning criteria for system expansion and reinforcement. The PPL Electric reliability and planning criteria are outlined in PPL Electric's Reliability Principles and Practices ("RP&P"), which was developed to ensure adequate and appropriate levels of electric service to its customers consistent with good utility practice.

14. In accordance with the RP&P criteria, PPL Electric's transmission system is planned so that it can be operated at all projected load levels and during normal scheduled outages to withstand specific unscheduled contingencies without exceeding the equipment capability, causing system instability or cascade tripping, or exceeding voltage tolerances. The transmission system is required to have adequate capability so that it can be operated normally and can withstand unscheduled contingencies and other system conditions. A further description of PPL Electric's system planning process is provided in Attachment 2 to this Application.

15. PJM Interconnection, L.L.C. (“PJM”) is a Federal Energy Regulatory Commission (“FERC”) approved Regional Transmission Organization charged with ensuring the reliability of the electric transmission system under its functional control and coordinating the movement of electricity in all or parts of thirteen states and the District of Columbia, including most of Pennsylvania. PPL Electric, an owner of transmission facilities in Pennsylvania, is a member of PJM and actively participates in the PJM transmission planning process.

16. In order to ensure reliable transmission service, PJM prepares an annual Regional Transmission Expansion Plan (“RTEP”) to ensure power continues to flow reliably to customers. The North American Electric Reliability Corporation (“NERC”), PJM, and transmission owner reliability criteria are used by PJM and the transmission owners to analyze the system and determine if specific transmission upgrade projects are needed to ensure long-term reliable electric service to customers.

17. For non-bulk electric system (“non-BES”) reliability violations, the local transmission operator, in this case PPL Electric, is responsible for identifying the reliability violations and correcting any violations to meet its own reliability and planning guidelines.

18. PPL Electric undertakes an independent analysis of both its bulk electric system (“BES”) transmission facilities, which include transmission facilities operated at voltages of 100 kV or higher, and its non-BES transmission system facilities to ensure that these facilities meet the planning guidelines set forth in the RP&P. Based upon this analysis, PPL Electric determined that the proposed North Lancaster-Honey Brook Project is necessary to resolve violations of PPL Electric’s local planning criteria on the 138/69 kV systems serving approximately 32,000 customers in Honey Brook and Caernarvon Townships in Chester, Berks, and Lancaster Counties.

19. The North Lancaster-Honey Brook Project was presented before stakeholders at the Mid-Atlantic Sub-Regional RTEP meetings, approved by the PJM Board, and included in the 2011 RTEP Report as a series of baseline projects.

20. Attachment 2 to this Application contains a detailed description of PJM's RTEP transmission planning process and PPL Electric's transmission planning process. Attachment 2 also contains the analysis supporting the determination that the North Lancaster-Honey Brook Project is necessary to resolve projected violations of PPL Electric's RP&P criteria and reinforce the 138/69 kV systems in eastern Lancaster County, southwestern Berks County and western Chester County areas by bringing a new source of supply source closer to the growing load centers.

B. EXISTING SYSTEM

21. All of the local transmission lines that serve the approximately 32,000 customers in Honey Brook and Caernarvon Townships in Chester, Berks, and Lancaster Counties are currently operated at 69 kV. The current configuration of PPL Electric's transmission system in the area consists of long transmission line lengths between regional substations.

22. The source of electric power to the eastern Lancaster County, southwestern Berks County and western Chester County areas currently is provided by a non-BES transmission substation, the South Akron 230-69 kV Substation.

23. The existing South Akron-Morgantown #1, #2, and #3 69 kV Transmission Lines are supplied from the South Akron 230-69 kV Substation and collectively serve approximately 20,600 customers in the Chester, Berks and Lancaster Counties.

24. The existing South Akron-Morgantown #1 69 kV Transmission Line is a single-circuit that extends for approximately 21.5 miles from the South Akron 230-69 kV Substation to the Twin Valley 69-12 kV Substation.

25. The existing South Akron-Morgantown #2 and #3 69 kV circuits are supported by common double-circuit structures for approximately 1.2 miles from the South Akron 230-69 kV Substation to a point near the Earl 69-12 kV Distribution Substation. The South Akron-Morgantown #3 69 kV line terminates at the Earl 69-12 kV Substation.

26. The South Akron-Morgantown #2 line continues east from the Earl 69-12 kV Distribution Substation as a single-circuit line for approximately 11.5 miles to the Morgantown 69-12 kV Substation.

27. An area map of the existing transmission facilities in the eastern Lancaster County, southwestern Berks County and western Chester County areas is provided in Figure 2-1 of Attachment 2 to this Siting Application. A one-line diagram of the existing facilities is provided in Figure 2-3 of Attachment 2 to this Siting Application.

C. DEFINITION OF THE PROBLEM

28. Currently, the eastern Lancaster County, southwestern Berks County and western Chester County areas are supplied by the South Akron-Morgantown #1, #2 & #3 69 kV Transmission Lines. The circuits are long and heavily loaded, and there are no other alternate sources of supply to the distribution system serving this region. In addition, PPL Electric planning studies project that by the winter of 2015-2016 certain outages would result in violations of the system planning and reliability criteria set forth in the RP&P if the system serving the eastern Lancaster County, southwestern Berks County, and western Chester County areas is not reinforced.

1. The Existing Circuits are Long and Heavily Loaded

29. Load growth in the in eastern Lancaster County, southwestern Berks County and western Chester County areas has been significant. The South Akron-Morgantown #1, #2 & #3 69 kV circuits serving customers in this region have experienced a 1.4% average annual increase

in electric peak demand over the past 10 years, which is a significant increase in electric peak demand. In addition, this region also is experiencing significant industrial development that could result in an acceleration of load growth and demand on the electrical system serving the area.

30. Load growth in this region is expected to continue. PJM projects a 1.3% annual future summer growth rate of peak demand for the overall PPL zone for the next 10 years (2013-2023), including the eastern Lancaster County, southwestern Berks County and western Chester County areas.

31. The long, heavily loaded South Akron-Morgantown #1, #2 & #3 69 kV circuits have experienced eighteen interruptions over the past twenty years. These interruptions resulted in extended outages for the customers served from these circuits. For each of these events, service to customers could have been restored more quickly if an alternative transmission supply line had been available.

32. In addition, the long, heavily loaded South Akron-Morgantown #1, #2 & #3 69 kV circuits experience load transfer limitations during certain peak winter loading periods. When service on a long, heavily-loaded transmission line is interrupted, the ability to restore the interrupted load from an alternate source is limited due to unacceptable low voltages that occur at the interconnected distribution substations when the load on one line is transferred to an adjacent line. As a result, it is not practical under emergency situations to restore interrupted load through line transfers between the transmission lines in the eastern Lancaster County, southwestern Berks County, and western Chester County.

2. Planning and Reliability Criteria Violations

33. In addition, using the system planning process described above, PPL Electric projects that by the winter of 2015-2016 a double-circuit outage of the South Akron-

Morgantown #2 & #3 69 kV circuits would result in a violation of the system planning and reliability criteria set forth in the RP&P if the system serving the eastern Lancaster County, southwestern Berks County, and western Chester County areas is not reinforced.

34. As explained above, the South Akron-Morgantown #2 & #3 69 kV circuits are built on double-circuit 69 kV structures from the South Akron 230-69 kV Substation to a point near the Earl 69-12 kV Distribution Substation. The South Akron-Morgantown #2 & #3 69 kV circuits are heavily loaded.

35. Under peak winter conditions, PPL Electric projects that, by the winter of 2015-2016, a double-circuit outage of the South Akron-Morgantown #2 & #3 69 kV circuits would initially interrupt approximately 114 MW of load (approximately 16,200 customers, including large industrial loads).

36. The ability to restore any portion of this interrupted load using manual sectionalizing is limited.¹ This limitation is due to the unacceptable low voltage levels (below 62 kV) that would occur at certain distribution substations interconnected with the South Akron-Morgantown #2 & #3 69 kV circuits.

37. After all possible manual sectionalizing moves are made to restore customer load, approximately 56 MW of load (approximately 8,400 customers) would remain interrupted for an extended period of time until repairs could be completed.² This would violate PPL Electric's

¹ 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 line is "normally operated" with the switch either closed or open.

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

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

38. This violation is expected because the existing transmission system in the region does not have sufficient capacity to restore load interrupted under contingency situations within acceptable limits as specified within the RP&P criteria. The underlying reasons for the identified planning and reliability criteria violations are the long, heavily loaded transmission lines and the lack of an alternate transmission source of supply serving this area. Because there currently is no alternate electrical transmission source within the areas of high population density, the existing power supply is too distant to reliably and effectively serve that customer load.

39. Given the experienced and expected load growth in the region, PPL Electric anticipates that the severity of each violation will continue to increase each year if the transmission system serving the eastern Lancaster County, southwestern Berks County, and western Chester County areas is not reinforced.

3. Summary of the Need for the Project

40. The only sources of supply to the eastern Lancaster County, southwestern Berks County, and western Chester County areas are provided by 69 kV transmission lines. There has been substantial load growth in this area, which is expected to continue. The existing 69 kV transmission lines serving the region are quite long and serve a significant number of customers who are and have been exposed to long duration outages in the event of the loss of one transmission line.

41. PPL Electric's system studies of the area revealed that outages of certain facilities would result in a violation of PPL Electric's RP&P criteria. PPL Electric projects that each of this violation, and the amount of load lost as a result thereof, will increase in magnitude due to the forecasted load growth in the area. This violation is evidence that the existing 69 kV systems

serving the eastern Lancaster County, southwestern Berks County, and western Chester County areas need to be reinforced.

42. The North Lancaster-Honey Brook Project is required to reinforce the 69 kV systems serving the region and resolve the identified reliability criteria violation by bringing a new 138 kV supply source closer to the growing load centers. The North Lancaster-Honey Brook Project will reduce the number of customers affected by a single facility outage, as well as the duration of the outage.

III. DESCRIPTION OF THE PROPOSED TRANSMISSION LINE

A. OVERVIEW OF THE PROPOSED PROJECT

43. The North Lancaster-Honey Brook Project is required to resolve the above-described violation of the RP&P criteria and to reinforce the 69 kV systems serving the eastern Lancaster County, southwestern Berks County, and western Chester County areas by bringing a new 138 kV supply source closer to the growing load centers.

44. To accomplish this, PPL Electric proposes to construct approximately 8 miles of new double-circuit 138/69 kV transmission line between the planned Lauschtown 500-230-69 kV Substation in Brecknock Township and the South Akron-Morgantown #2 Transmission Line located in Caernarvon Township.

45. The planned Lauschtown 500-230-69 kV Substation will provide a new source of supply to the eastern Lancaster County, southwestern Berks County, and western Chester County areas. The Lauschtown 500-230-69 kV Substation is being planned to be constructed as part of a separate project required by and approved by PJM to resolve separate violations of the

mandatory federally-approved NERC reliability standards.³ The Lauschtown 500-230-69 kV Substation will be located at the intersection of an existing 500 kV transmission line and three existing 230 kV lines, which will be interconnected with and supplied by the Substation.

46. The planned Lauschtown 500-230-69 kV Substation will have sufficient capacity and room to accommodate a new 138/69 kV switchyard to interconnect the proposed North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line with the existing transmission system. As explained above, the Lauschtown 500-230-69 kV Substation will interconnect and receive supply from the existing 500 and 230 kV systems, which, in turn, will be interconnected with the new 138/69 kV switchyard to supply the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission. Use of the planned Lauschtown 500-230-69 kV Substation as the source of supply for the proposed North Lancaster-Honey Brook Project avoids the need to locate and construct a separate new substation where one does not presently exist.

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

48. From the Brecknock 69-12 kV Substation in Brecknock Township, the proposed North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line will proceed approximately 3.8 miles southeast to the South Akron-Morgantown #2 Transmission circuit

³ 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.

located in Caernarvon Township. This segment of the line will be constructed as a double-circuit 138 kV transmission line, but initially will operate as a single-circuit 69 kV transmission line until load growth in the area makes it appropriate to increase the operating voltage and add the second circuit.

49. An area map and a one-line diagram of the proposed 138/69 kV transmission lines are provided in Figures 2-2 and 2-4 of Attachment 2 to this Application.

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

51. Further, the proposed North Lancaster-Honey Brook Project will resolve the underlying causes of the RP&P transmission violation, *i.e.*, the long, heavily-loaded lines and no alternate source of electric supply to the area. The proposed transmission line will interconnect with a new regional substation, Lauschtown 500-230-69 kV Substation, and will serve as an alternate source to the customers in the eastern Lancaster County, southwestern Berks County, and western Chester County areas. The proposed North Lancaster-Honey Brook Project also will reduce the line length and loading on the existing South Akron-Morgantown 69 kV transmission lines. This arrangement will result in fewer customers being interrupted for a particular facility outage. In addition, more load will be able to be restored more quickly after an

outage is experienced by transferring load from the failed facility to the new North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Lines.

B. ENGINEERING DESCRIPTION OF THE PROPOSED TRANSMISSION LINE

52. The new North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line will require the installation of approximately 74 structures with an average height of approximately 105 feet. The spans between the structures will be approximately 590 feet.

53. The North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line will consist of approximately 30 self-weathering tubular steel tangent structures installed on concrete caisson foundations. There will be approximately 44 angle structures, which will consist of two-pole and/or guyed steel structures. Use of guy wires will be avoided in areas of farming and other agricultural activities.

54. The 138/69 kV double-circuit design will utilize six power conductors and two overhead ground wires. The power conductors will be 556.5 kcmil,⁴ 24/7 ACSR⁵ conductors. The overhead ground wires will be 48 count, 0.752-inch diameter fiber optical ground wires and will provide lightning protection and communication between circuit breakers that remove the line from service should a fault in the line be detected.

55. The new North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line will be designed to meet, and generally exceed, the National Electrical Safety Code (“NESC”) minimum standards. Design specifications and safety rules practiced by PPL Electric are included in Attachment 13 to this Application.

⁴ Kcmil stands for thousand circular mils. Kcmil wire size is the equivalent cross sectional area in thousands of circular mils. A circular mil is the area of a circle with a diameter of one thousandth (0.001) of an inch.

⁵ ACSR stands for aluminum conductor steel reinforced.

56. The minimum conductor-to-ground clearance for the proposed 138/69 kV connecting lines will be 30 feet, which occurs at a maximum conductor temperature of 125 degrees Celsius. The designed minimum conductor-to-ground clearances and conductor thermal ratings are set forth in Tables 5-1 and 5-2 of Attachment 5 to this Application.

57. The engineering description of the proposed North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Line is further explained in Attachment 5 to this Application.

IV. SITING ANALYSIS

A. SUMMARY OF THE SITING ANALYSIS

58. The goal of PPL Electric's siting analysis for the proposed North Lancaster-Honey Brook Project was to determine the most suitable route to interconnect the proposed transmission line with the existing system, while minimizing the impact to the natural and human environments, avoiding unreasonable and circuitous routes, and avoiding extreme costs and non-standard design requirements.

59. In accordance with the Commission's regulations at 52 Pa. Code § 57.72(c), PPL Electric conducted an extensive, multi-faceted analysis to determine the preferred route for the North Lancaster-Honey Brook Project. This analysis included the designation of a "Study Area," compilation of an environmental inventory, identification of alternative routes, analysis of the alternative routes, and selection of the proposed line route. This process enables PPL Electric to select routes for the proposed transmission lines that appropriately balance functional requirements, environmental factors, social factors, and cost considerations.

60. The Study Area is the territory in which line route alternatives can be sited to feasibly meet the project's functional requirements and, at the same time, minimize

environmental and social impacts and project costs. The process used by PPL Electric to identify the Study Area is further explained in Attachment 4 of this Application.

61. PPL Electric identified a Study Area for the North Lancaster-Honey Brook Project that encompasses approximately 23 square miles (14,582 acres) within Lancaster County, Pennsylvania. Detailed maps of the Study Area for this Project are provided in Attachment 4 to this Application.

62. In order to identify the preferred route for the North Lancaster-Honey Brook Project, PPL Electric identified objectives it would consider, to the extent practical, in selecting the preferred routes. These objectives included the following:

- (a) Minimize impacts to the natural and human environment.
- (b) Minimize route length and cost.
- (c) Use general line design parameters specified by PPL Electric.
- (d) Maximize the use of or paralleling of existing rights-of-way or easements.
- (e) Avoid densely populated areas.
- (f) Maximize distance from residences, schools, cemeteries, historical resources, recreation areas, and other important cultural sites.
- (g) Minimize new crossings of designated natural resource lands such as state forests, national and state parks, wildlife management areas, designated game lands and wildlife areas, and conservation areas.

63. Another step in the route selection process was the identification of routing constraints. The constraints were defined as specific areas that should be avoided to the extent feasible during the route selection process. The constraints within the Study Area were divided into large and small area constraints. Possible routes were identified to avoid large area

constraints to the extent possible. These routes were then adjusted, to the extent practical, to avoid small area constraints. Although complete avoidance of all constraints is not feasible, PPL Electric sought to identify alternative routes that would minimize intrusions into constrained areas.

64. In order to identify constraints, PPL Electric compiled a detailed environmental inventory of the Study Area. Many sources of information were employed to develop data for the environmental inventory, including the following:

- (a) Aerial photography from the National Agricultural Inventory Project and the PAMAP Program.
- (b) Maps from the United States Geological Survey, various state and county road maps, transmission line map information, and land ownership maps.
- (c) Geographic Information System (“GIS”) data.
- (d) Field Inspections.
- (e) Other agencies.

65. Using the information summarized above, PPL Electric began identification of potential routes for the North Lancaster-Honey Brook Project. The process for identifying potential transmission line routes produced a network of links that could be considered to interconnect the proposed transmission line with the existing system and meet the functional requirements of the North Lancaster-Honey Brook Project. Those links were combined into a number of initial potential routes for the North Lancaster-Honey Brook Project.

66. Because one circuit must terminate at the existing Brecknock 69-12 kV Substation, where it will tie into the South Akron-Morgantown #1 69 kV circuit, while the second circuit will continue south to tie into the South Akron-Morgantown #2 69 kV circuit,

potential routes were separately developed in the “northern” portion of the Study Area (between the proposed Lauschtown 500-230-69 kV Substation and the Brecknock 69-12 kV Substation) and in the “southern” portion of the Study Area (between the Brecknock 69-12 kV Substation and the existing South Akron – Morgantown #2 69 kV circuit).

67. After the initial potential routes were identified, key members of the Siting Team conducted field inspections of the routes. These inspections involved the visual examination of the potential and alternative routes from road crossings and other points of public access. The field investigations resulted in changes to the potential route alignments to reduce impacts on constrained areas. As a result, some potential routes were eliminated from further consideration.

68. PPL Electric conducted an extensive public outreach program, which included: telephone calls and e-mails to Government officials and agencies; letters to residents within 500 feet of the potential routes; open houses that gave attendees the opportunity to ask questions and provide input and information to PPL Electric; and an interactive public website. Feedback provided by landowners within the proposed alignments and from adjacent properties resulted in adjustments to the routes for the North Lancaster-Honey Brook Project. A detailed explanation of PPL Electric’s public outreach efforts is provided in Attachment 4 to this Application.

69. After carefully analyzing and evaluating the potential routes, PPL Electric selected alternative routes for detailed examination. Two alternative routes were identified within the “northern” portion of the Study Area, Alternative Route A and Alternative Route B. Two alternative routes were also identified within the “southern” portion of the Study Area, Alternative Route C and Alternative Route D. A detailed description of the alternative routes is provided in Attachment 4 to this Application.

70. A quantitative and qualitative assessment was conducted to compare the alternative routes. The alternative routes were compared and preferred routes were selected based upon a detailed analysis and balance of societal concerns, environmental impacts, engineering considerations, and costs. A detailed explanation of the qualitative and quantitative analysis and comparison of the alternatives routes is provided in Attachment 4 to this Application.

71. Based on these evaluation processes, the Siting Team chose preferred routes for the proposed 138/69 kV transmission line. For the “northern” portion of the Study Area, the Siting Team selected Alternative B. For the “southern” portion of the Study Area, the Siting Team selected Alternative D. Overall, the preferred routes will have less impact on the natural and built environments, land use, and citizens in Lancaster County. A detailed explanation of the selection of the preferred routes is provided in Attachment 4 to this Application.

B. LAND USE, ENVIRONMENTAL, AND CULTURAL RESOURCES

72. During the siting process, PPL Electric made efforts to minimize impacts on existing and future land uses, as well as avoid sensitive natural resources such as wetlands and streams. Attachments 3, 4, and 15 to this Application provide a detailed evaluation of the potential impacts to land use, natural environment, and cultural resources.

1. Land Use

73. The Preferred Routes will have some impact on existing and future land use, including clearing of forest areas and reducing potential areas for agricultural use and residential and commercial development. PPL Electric has worked with property owners to locate the right-of-way across their land to minimize the impact on existing and future land uses.

74. The Preferred Routes (Routes B and D) traverse fewer total parcels.

75. Agriculture is the most prevalent land use within the Study Area. A few farms located within the Study Area are part designated Agricultural Security Areas; however, the Preferred Routes do not traverse any existing agricultural easement areas. Electric transmission lines are permitted in agricultural security and/or easement areas and do not have a significant impact on the use of the property as agricultural land. Current and future farming and grazing activities will continue to be permitted within the right-of-way. Permanent impacts to agricultural areas are anticipated to be minimal due to the use of the monopole tower structures for this Project. PPL Electric will work with the owners of agricultural properties and will minimize the impacts that the tower structures may have to the greatest extent practicable.

76. In an effort to minimize impacts to existing and future land use, PPL Electric coordinated with the landowners to determine the best alignment across the affected lands. Input from these meetings has been incorporated into the Preferred Routes.

77. Community features, which include schools, day care centers, local public parks, churches, and cemeteries, were identified and effectively avoided during the route selection process. As such, none of these features are located within the right-of-way for the Preferred Routes and no impacts to these features are anticipated.

2. Natural Environment

78. Vegetation clearing is required to ensure the safe and reliable operation of the Preferred Routes. Vegetation clearing processes and measures are provided in PPL Electric's "Specifications for Initial Clearing and Control of Vegetation On or Adjacent to Electric Line Right-of-Way through Use of Herbicides, Mechanical, and Hand Clearing Techniques," which is included as Attachment 12 to this Application. These processes will preserve compatible species of low growing trees, shrubs, and grasses where practicable. Herbicides used within the right-of-

way will be Environmental Protection Agency (“EPA”) approved and will be applied selectively in accordance with all label instructions.

79. There are approximately 61 National Wetland Inventory palustrine wetlands scattered throughout the Study Area; however, none of the Alternative Routes cross National Wetland Inventory wetlands. Between January and December 2013, field wetland delineations were conducted along the Preferred Routes using Pennsylvania Department of Environmental Protection (“DEP”) and United States Army Corps of Engineers (“USACE”) approved methodologies. PPL Electric will design the Preferred Routes so that the placement of transmission structures will avoid or minimize impacts to any wetlands identified by the delineations. All required permits for any unavoidable wetland impacts will be obtained from the DEP and the USACE prior to construction.

80. The entire Study Area is located within the Lower Susquehanna watershed within the Susquehanna River Basin. The streams located within the Study Area include the Conestoga River, Little Conestoga River, Muddy Creek, Black Creek, and unnamed tributaries to these major rivers. For the “northern” portion of the Study Area, the Preferred Route B will cross three High Quality (“HQ”) designated streams, while the rejected Alternative Route A would cross five HQ designated streams. For the “southern” portion of the Study Area, the Preferred Route D and the rejected Alternative Route C both cross one HQ designated stream. Due to the water quality level in these watersheds, an Individual Pollutant Discharge Elimination System (“NPDES”) permit will be required to mitigate any potential short-term impacts of erosion and sedimentation during construction.

81. Federal Emergency Management Agency (“FEMA”) and state-identified floodplains are found adjacent to watercourses and identify the areas that routinely flood during

heavy rain events. All four Alternative Routes would traverse approximately 0.1 mile of 100-year floodplain associated with the various stream crossings. Where practicable, transmission structures will be constructed outside the floodplain areas. Due to the steep, narrow valleys associated with many of the waterways along the Preferred Routes, many of the floodplains and floodways will be relatively narrow and can be spanned by the transmission lines. For those locations where the floodplains are not avoidable, additional analysis of the proposed structures may be required by DEP to confirm that the activity will not create flooding conditions in the local area. No structures will be located in the floodway of any stream.

82. None of the Alternative Routes traverse any Natural Area Inventory (“NAI”) areas. Although the Preferred Route is located within 0.5 mile of State Game Land 52, the Preferred Route does not traverse the State Game Land 52 NAI, and there will be a significant tree buffer between the route and the closest point of the NAI area.

83. Coordination with state and federal agencies regarding potential rare, threatened and endangered species along the Preferred Routes was initiated in April 2012. PPL Electric submitted a Large Project Review Pennsylvania Natural Diversity Inventory (“PNDI”) request to the three agencies responsible for the protection of rare wildlife species in Pennsylvania: U.S. Fish & Wildlife Service (“USFWS”), Pennsylvania Game Commission (“PGC”), and Pennsylvania Fish and Boat Commission (“PFBC”).

84. The USFWS indicated that the Project is located within the range of the federally-threatened bog turtle (*Clemmys muhlenbergii*). Phase I habitat studies were conducted by a qualified surveyor who identified seven wetlands within the Project area. Six of these wetlands were subsequently subjected to a Phase II presence/absence analysis, which concluded that bog turtles are not present in the wetlands. The USFWS concurred with this conclusion in a letter

dated February 4, 2014.⁶ PPL Electric will adhere to any resulting USFWS Phase II or III surveying or permitting requirements.

85. PGC indicated that the Project is located in the vicinity of a state bat species of special concern, the northern myotis (*Myotis septentrionalis*). PGC suggests that, in these portions of these routes, clearing of trees greater than 5-inch diameter at breast height be conducted between November 1 and March 31.

86. PPL Electric sent an initial letter to the Pennsylvania Department of Conservation and Natural Resources (“DCNR”) on April 27, 2012, requesting current information on state, and rare plant species that may occur in proximity to the Study Area. DCNR identified two state plant species of special concern: nodding trillium (*Trillium cernuum*), which is proposed as a state threatened species, and puttyroot (*Aplectrum hyemale*), which is currently designated as rare. The areas identified by DCNR where potential impacts to these species or their habitat could occur along the rejected Alternative Route A and in the vicinity of the Brecknock 69-12 kV Substation. An online PNDI review was subsequently conducted for the Preferred Routes (Routes B and D). Based on this review, no potential impacts to plant species of concern were identified. However, PPL Electric will attempt to avoid disturbance to any identified habitat and will continue to coordinate with DCNR.

3. Cultural Resources

87. All four Alternative Routes traverse within one mile of a similar number of National Register of Historic Places (“NRHP”) listed or eligible resources. None of the previously identified historic archeological resources have been determined to be NRHP-listed or eligible.

⁶ PPL Electric will retain a qualified surveyor to conduct Phase II presence/absence surveys in the remaining wetland, which was identified in December 2013.

88. PPL Electric submitted an initial consultation letter to the Pennsylvania Historical and Museum Commission (“PHMC”) on February 21, 2013. PHMC’s March 15, 2013 response indicated that National Register-listed or eligible historic architectural resources are located within the Project Area, and that there may be additional resources in the vicinity. Therefore, the PHMC recommends surveys to identify these resources. The PHMC response also indicated that known archaeological resources are located within the Project Area. Therefore, the PHMC recommends a Phase I archaeological survey of the Project Area to verify the extent of known sites and to locate any other potentially significant archeological resources that may exist.

89. PPL Electric will continue to consult with the PHMC throughout the planning, design, and construction process and conduct field work and surveys as necessary during the project permitting process to minimize potential impacts to cultural resources. All reasonable efforts will be made to avoid affecting archaeological resources. Where practical, archaeological resources identified in the transmission line corridor, in the direct path of any needed access roads, or at the locations of proposed work areas will be avoided by spanning any such resources or, if necessary, shifting tower positions, rerouting roads, and reconfiguring or relocating work areas as deemed necessary.

V. RIGHTS-OF-WAY

90. PPL Electric’s current standard right-of-way width for a double-circuit 138 kV transmission line is 100 feet. The right-of-way is determined by the structure type, design tensions, span length, and conductor “blowout” (the distance the wires are moved by a crosswind).

91. There are a total of 33 different owners of 42 deeded properties along the transmission line route selected for the North Lancaster-Honey Brook Project. At the time of this filing, new rights-of-way and easements are needed from only 3 property owners.

92. Although negotiations continue with the remaining three property owners, PPL Electric is separately filing condemnation applications, pursuant to 15 Pa.C.S. §1511(c), for a finding and determination that the service to be furnished through its proposed exercise of the power of eminent domain to acquire the tracts of land for the proposed North Lancaster-Honey Brook Project is necessary or proper for the service, accommodation, convenience, or safety of the public.

VI. HEALTH AND SAFETY

93. The proposed North Lancaster-Honey Brook Project will not create any unreasonable risk of danger to the public health or safety. The above-described transmission work for the North Lancaster-Honey Brook Project will be designed, constructed, operated, and maintained in a manner that meets or surpasses all applicable NESC minimum standards and all applicable legal requirements. Descriptions of the NESC standards, PPL Electric's design criteria, and PPL Electric's safety practices are provided in Attachment 13 to this Application.

94. Attachment 11 accompanying this Application explains PPL Electric's standards for Magnetic Field Management. As explained therein, PPL Electric will construct the proposed 138/69 kV transmission lines for conductor-to-ground clearances that are a minimum of nine feet higher than the required NESC minimum conductor-to-ground clearance for 138/69 kV lines. The implementation of additional modifications will be considered, provided those modifications can be made at low or no cost.

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

96. From the Brecknock 69-12 kV Substation to the South Akron-Morgantown #2 Transmission circuit, the proposed transmission line will operate as a single-circuit transmission line until load growth in the area makes it appropriate to add the second circuit. Since this segment of the proposed transmission line initially will operate as a single-circuit, reverse phasing is not feasible at this time. Where it is feasible to do so at low or no cost, PPL Electric will select a phasing arrangement for this segment of the proposed transmission line that lowers the magnetic field. In the future, when a second circuit is added, PPL Electric will select the best circuit/phase arrangement to reduce the potential exposure to electric magnetic fields where it is feasible to do so at low or no cost.

97. No communication towers, pipelines, or other utilities will be affected by the proposed North Lancaster-Honey Brook Project.

98. Several major roadways, including the Pennsylvania Turnpike, will be spanned by the various segments of the Project. Pennsylvania Department of Transportation (“PennDOT”) Highway Occupancy Permits or equivalent type permits will be acquired by PPL Electric for these major highways and all other state roads prior to construction.

99. Aviation coordination will be conducted through the Federal Aviation Association (“FAA”). PPL Electric will assure that that the pole locations and heights are properly recorded

by the FAA. PPL Electric will comply with any additional lighting or other visual aids that may be required by these agencies to assure aviation safety in the region.

VII. COST AND COMPLETION DATE

100. The estimated cost to design and construct the North Lancaster-Honey Brook Project using the Preferred Route is approximately \$18 million.

101. 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 filed 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.

102. The North Lancaster-Honey Brook Project has a scheduled construction start date of January 2015 to meet an in-service date of May 2016.

VIII. NOTICE AND SERVICE

103. PPL Electric has undertaken significant public outreach activities to provide information and seek input on the North Lancaster-Honey Brook Project from the public and government officials, including: calls, E-mails and meetings with Government Officials; informational letters to residents and businesses within the Project Study Area; information letters to residents within the 500-foot corridor for the alternative routes and to open house attendees after the proposed transmission line routes were defined; a fact sheet was developed to provide the public with an overview of the Project and a detailed description of the line routes; Project-specific Web Site; news releases to a wide range of news media throughout the Project area; and one-on-one meetings with interested residents and businesses near the Project area.

104. In addition, PPL Electric placed advertisements in local newspapers to announce a series of open houses. In April, August, and October 2012, PPL Electric conducted three separate public open houses at several locations within the Project Study Area. The intent of the open houses was to provide information and seek community input on the Project. The open houses provided detailed information about the project and gave attendees the opportunity to ask questions and provide input and information to PPL Electric.

105. Prior to and subsequent to the open houses, PPL Electric received and responded to additional comments from interested residents. The Company will continue responding to comments and inquiries, and provide periodic written updates to residents and other interested parties. PPL Electric will continue its commitment of open communications and, where practical, will be responsive to input regarding the project from local residents and other interested parties.

106. PPL Electric's public outreach efforts for the North Lancaster-Honey Brook Project are explained in Attachment 4 to this Application.

107. PPL Electric has provided public notices in accordance with Section 69.3102 of the Commission's Interim Siting Guidelines, 52 Pa. Code § 69.3102. The public notices for this project are provided in Attachment 16 to this Application.

108. Copies of this Application and the Notice of Filing are being served in accordance with the provisions of Section 57.74 of the Commission's regulations, 52 Pa. Code § 57.74.

109. As soon as practicable after the filing of this Application, PPL Electric will publish notice of the filing in two newspapers of general circulation in the area of the North Lancaster-Honey Brook Project. This notice will: (a) note the filing with the Commission; (b) provide brief description of the project and its location; (c) provide area locations where the

complete application may be reviewed by the public; and (d) provide any additional information as directed by the Commission.

110. PPL Electric also requests that the Commission publish notice of this Application in the Pennsylvania Bulletin.

IX. RELATED PROCEEDINGS

111. Contemporaneously with the filing of this Application, PPL Electric is separately filing three Condemnation Applications, pursuant to 15 Pa.C.S. § 1511(c), for a finding and determination that the service to be furnished through its proposed exercise of the power of eminent domain to acquire certain tracts of land for the proposed North Lancaster-Honey Brook Project is necessary or proper for the service, accommodation, convenience, or safety of the public. Issues relating to the need for these Condemnation Applications are interrelated with this Application.

112. In addition, following the announcement of the proposed North Lancaster-Honey Brook Project, PPL Electric was served with the following complaints related to the siting and construction of the North Lancaster-Honey Brook #1 & #2 138/69 kV Transmission Lines:⁷

- Scott Klemas v. PPL Electric Utilities Corporation, Docket No. C-2012-2300834 (Served via Secretarial Letter dated Apr. 27, 2012)
- Phares Hurst v. PPL Electric Utilities Corporation, Docket No. C-2012-2301873 (Served via Secretarial Letter dated May 2, 2012)
- Merle and Sharon Eberly v. PPL Electric Utilities Corporation, Docket No. C-2012-2304738 (Served via Secretarial Letter dated May 17, 2012)

⁷ PPL Electric filed motions in each of the complaint proceedings requesting that the complaints be held in abeyance pending the submission by PPL Electric of an appropriate filing seeking approval of the siting and construction of the North Lancaster-Honey Brook Project so that the related proceedings can be consolidated and considered together, and so that the proceedings can be adjudicated in an efficient manner on a complete record and with consistent results.

- Audrey Imhoff v. PPL Electric Utilities Corporation, Docket No. C-2013-2343022 (Served via Secretarial Letter dated Jan. 14, 2013)
- Randolph and Terri Kring v. PPL Electric Utilities Corporation, Docket No. C-2013-2343256 (Served via Secretarial Letter dated Jan. 15, 2013)

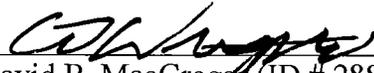
113. Pursuant to 52 Pa. Code § 57.75(i)(1), PPL Electric requests that these related proceedings be consolidated for purposes of hearings, if necessary, and decision. PPL Electric will file an appropriate motion to consolidate these proceedings once all docket numbers have been assigned.

XI. CONCLUSION

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission: (1) consolidate this Siting Application with the three Condemnation Applications contemporaneously filed herewith; (2) consolidate this Siting Application with the five complaints pending at Docket Nos. C-2012-2300834, C-2012-2301873, C-2012-2304738, C-2013-2343022, and C-2013-2343256; and (3) approve the siting and constructing of transmission lines associated with the North Lancaster-Honey Brook Project in portions of Lancaster County, Pennsylvania as explained above and in the Attachments and to this Application.

Respectfully submitted,

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Date: June 27, 2014

Attorneys for PPL Electric Utilities Corporation

VERIFICATION

I, Matthew B. Green, being the Director - Engineering at PPL Electric Utilities Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: 6/25/14

Matthew B. Green