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File #: 149701

May 15, 2012



BY HAND

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
P.O. Box 3265
Harrisburg, PA 17105-3265

**RE: 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 Blooming Grove - Jackson and Peckville - Jackson 138/69 kV Transmission Line in Monroe County, Pennsylvania - Docket No. A-2012-**

Dear Secretary Chiavetta:

Enclosed for filing, are the original and six (6) copies of the 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 Blooming Grove - Jackson and Peckville - Jackson 138/69 kV Transmission Line in Monroe County, Pennsylvania, together with seven (7) copies of the accompanying exhibits and appendices which are contained in a separately-bound volume. Also enclosed is an original and six (6) copies of the Notice of Filing. A CD containing copies of the above-referenced documents is enclosed. Also enclosed is a check in the amount of $350 to cover the filing fee.

Copies of the above-referenced documents have been provided to the persons as indicated on the Certificate of Service.

Respectfully Submitted,

John H. Isom

JHI/jl
Enclosures

cc: Certificate of Service
Robert F. Young
Paul T. Diskin
Nicholas Okoro
Kimberly Hafner

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

| | | |
|---|---|---|
| **Re: 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 Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line In Monroe County, Pennsylvania** | : | **Docket No. A-2012-_____** |

## NOTICE OF FILING

The above-captioned Application will be filed with the Pennsylvania Public Utility Commission ("Commission") on May 14, 2012. PPL Electric Utilities Corporation ("PPL Electric") is seeking Commission approval to site and construct a new 3.8 mile long double-circuit transmission line located in Jackson and Pocono Townships, Monroe County in order to reduce the electrical load on the existing Blooming Grove – Jackson 138/69 kV circuit ("the Project").

PPL Electric proposes to reduce the electrical load on the existing Blooming Grove – Jackson 138/69 kV circuit and provide operating flexibility and improved reliability for customers in Jackson, Pocono, and Tobyhanna Townships in Monroe County. In its current configuration, the transmission and distribution systems in the area violate the reliability guidelines established in PPL Electric's Reliability Principles and Practices ("RP&P"). To resolve the identified RP&P violations, PPL Electric, with approval from the Commission, plans to construct a new double-circuit 138/69 kV line from the 138-69 kV Jackson Substation ("Jackson Substation"), north to the Lake Naomi Tap pole, a distance of approximately 3.8 miles. PPL Electric will design the new line to current 138 kV standards, but operate the line at 69 kV initially. In addition, in the Jackson Substation 69 kV Yard, PPL Electric will install a new line terminal, breaker bay, and circuit breaker.

The proposed Line will begin at PPL Electric's Jackson Substation in Jackson Township, Monroe County and will extend north to the Lake Naomi Tap pole in Pocono Township, Monroe County. The preferred route for the new double-circuit line will travel, in general, along the edge of the existing right-of-way of the existing double-circuit Blooming Grove - Jackson and Peckville - Jackson 138/69 kV Transmission Line through Jackson and Pocono Townships in Monroe County. The existing line will be renamed the Jackson-Wagners #1 & #2 138/69 kV Line as a result of this Project.

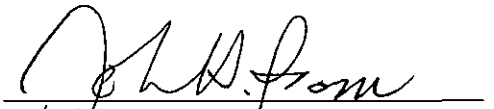
A complete copy of the above-captioned Application, including all Attachments, is available for public inspection weekdays during normal business hours at the following locations:

Jackson Township Board of Supervisors
2162 Route 715
PO Box 213
Reeders, Pennsylvania 18352

Pocono Township Municipal Building
112 Township Road
Tannersville, PA 18372

Pursuant to the Commission's Siting Regulations, 52 Pa. Code §§ 57.71 *et seq.*, we have enclosed a map showing the Route of the Project across your property. You are not required to appear or participate in this matter, but you may request Commission permission to intervene.

Sincerely,



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Of Counsel:

Post & Schell, P.C.

Date: May 15, 2012

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

| | | |
|---|---|---|
| **Re: 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 Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line In Monroe County, Pennsylvania** | : | **Docket No. A-2012-_____** |

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**APPLICATION OF PPL ELECTRIC UTILITES CORPORATION**

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**TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:**

PPL Electric Utilities Corporation ("PPL Electric") hereby files, pursuant to 52 Pa. Code § 57.72, this Application requesting Pennsylvania Public Utility Commission ("Commission") approval to site and construct a new 3.8 mile long double-circuit transmission line located in Jackson and Pocono Townships, Monroe County. As more fully explained below; this Project is required to reduce the electrical load on the existing Blooming Grove – Jackson 138/69 kV circuit and provide operating flexibility and improved reliability for customers in Jackson, Pocono, and Tobyhanna Townships in Monroe County. In support of this Application, PPL Electric states as follows:

## I. INTRODUCTION

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:

PPL Electric Utilities Corporation
Two North Ninth Street
Allentown, Pennsylvania 18101

3. PPL Electric's attorneys are:

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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. Accompanying this Application in a separate binder are the following Attachments that provide additional detailed information regarding the Project:

- Attachment 1 - Cross Reference Matrix
- Attachment 2 - Necessity Statement
- Attachment 3 - Environmental Setting
- Attachment 4 - Alternatives and Siting Analysis
- Attachment 5 - Engineering Description
- Attachment 6 - Vegetation Management
- Attachment 7 - List of Governmental Agencies, Municipalities, and Other Public Entities Contacted
- Attachment 8 - List of Property Owners Within and Adjacent to the Right-of-Way
- Attachment 9 - List of Governmental Agencies, Municipalities, and Other Public Entities Receiving a Copy of this Application
- Attachment 10 - PPL Design Criteria and Safety Practices
- Attachment 11 - Magnetic Field Management
- Attachment 12 - Agency Coordination
- Attachment 13 - Public Notice Requirements
- Attachment 14 - Agency Permit Requirements

7. This Application, including the accompanying Attachments, which are incorporated herein by reference, contains all of the information required by 52 Pa. Code §§ 57.71-57.77, 69.3102 – 69.3107. In the near future, PPL Electric will file written direct testimony further explaining and supporting this Application.

## II. DESCRIPTION OF THE PROPOSED TRANSMISSION LINE

8. PPL Electric proposes to reduce the electrical load on the existing Blooming Grove – Jackson 138/69 kV circuit and provide operating flexibility and improved reliability for customers in Jackson, Pocono, and Tobyhanna Townships in Monroe County. In its current configuration, the transmission and distribution systems in the area violate the reliability guidelines established in PPL Electric's Reliability Principles and Practices ("RP&P").

9. To resolve the identified RP&P violations, which are explained in Section III, below, PPL Electric, with approval from the Commission, plans to construct a new double-circuit 138/69 kV line from the 138-69 kV Jackson Substation ("Jackson Substation"), north to the Lake Naomi Tap pole, a distance of approximately 3.8 miles. PPL Electric will design the new line to current 138 kV standards, but operate the line at 69 kV initially. In addition, in the Jackson Substation 69 kV Yard, PPL Electric will install a new line terminal, breaker bay, and circuit breaker.

10. The total estimated cost to site, design, and construct this Project is approximately $6.12 million. This cost includes the proposed overhead transmission line and substation modifications at Jackson Substation. The overhead transmission portion is estimated to cost approximately $5.21 million, and the modifications to the Jackson Substation are estimated to cost approximately $905,000.

11. The required in-service date, which is defined as the date that the proposed facility must be placed in service to prevent overloads that could potentially damage equipment and result in service interruptions to customers, is November 2013. In order to meet that in-service date, subject to the Commission's approval, construction is scheduled to commence in January 2013.

12. PPL Electric reviewed the Project with Jackson and Pocono Townships and Monroe County, and they have no objection to it.

13. The existing Lake Naomi 138/69 kV Tap is currently supplied by the Blooming Grove – Jackson 138/69 kV Transmission Line. As a result of the proposed Project, the Blooming Grove – Jackson and Peckville – Jackson Lines will create an independent power source for the Lake Naomi and Wagners substations, which would normally be supplied by the Lake Naomi Tap.

14. The proposed Line will begin at PPL Electric's Jackson Substation in Jackson Township, Monroe County and will extend north to the Lake Naomi Tap pole in Pocono Township, Monroe County. The preferred route for the new double-circuit line will travel, in general, along the edge of the existing right-of-way of the existing double-circuit Blooming Grove - Jackson and Peckville - Jackson 138/69 kV Transmission Line through Jackson and Pocono Townships in Monroe County. The existing line will be renamed the Jackson-Wagners #1 & #2 138/69 kV Line as a result of this Project.

15. The Project involves the installation of a new double-circuit 138/69 kV transmission line on new structures. The tangent structures[1] for the proposed new double-circuit line will consist of single-shaft steel poles equipped with steel upswept arms. Angle structures will be single-pole or two-pole steel structures, depending on the severity of the line angle. Some poles will be installed on concrete foundations, while the majority of poles will be direct embedded. Some angle structures may be guyed. Altogether, this Project requires the installation of approximately 35 structures, ranging from 80-100 feet in height. The average span length will be approximately 650 feet.

[1] A tangent structure is a pole with no line angle.

16. Photographs and sketches showing proposed structure types are located at the end of Attachment 5 to this Application. A functional one-line diagram of the existing facilities in the area is provided in Figure 2-1 of Attachment 2 to this Application. A functional one-line diagram of the existing facilities together with the proposed Project is provided in Figure 2-2 of Attachment 2 to this Application.

17. The line will consist of six power conductors and one overhead ground wire. Each conductor will consist of 556.5 kcmil,[2] 24/7 stranding ACSR.[3] The overhead ground wire will be a 48 fiber 0.567-inch-diameter Optical Ground Wire. The overhead ground wire will provide lightning protection for the proposed tie line. A full discussion of the design of the proposed Project is provided in Attachment 5 to this Application.

18. The proposed new double-circuit line described above will be designed and constructed to meet, and generally surpass, all National Electrical Safety Code ("NESC") minimum standards. The engineering description of the proposed new double-circuit line is provided in Attachment 5 to this Application, which contains a discussion of PPL Electric's compliance with NESC standards. Design specifications and safety rules practiced by PPL Electric are included in Attachment 10 to this Application.

19. The Project will be designed and constructed in accordance with PPL Electric's Magnetic Field Management Program and Electric and Magnetic Fields Policy. That policy is explained in Attachment 11 to this Application.

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[2] A circular mil is the cross-sectional area of a wire one mil in diameter, where 1 kcmil = 0.5067 $mm^2$.

[3] Aluminum conductor steel reinforced.

## III. NEED FOR THE PROJECT

20. This Project will ensure long-term reliability of service to customers in portions of Monroe County by reinforcing the transmission system in order to avoid overloading certain transmission facilities and to resolve transmission reliability criteria violations on PPL Electric's 138/69 kV circuits in northeast Pennsylvania. This Project is required to avoid exceeding the normal thermal loading limit on the existing Blooming Grove – Jackson 138/69 kV circuit under peak winter conditions and to reduce the electrical loading on the existing Blooming Grove – Jackson 138/69 kV single-circuit line below the loading limit, in order to comply with PPL Electric's RP&P. The Project is also required to prevent overloading of the existing transmission line, which could occur if the existing line at Jackson Substation were out of service.

21. Through its System Planning process, PPL Electric has identified excessive loading and multiple violations of its RP&P guidelines on its 138/69 kV circuits in northeast Pennsylvania beginning in 2013. Specifically, as explained in Attachment 2, PPL Electric's Transmission Planning Department has identified thermal overloads, excessive loads on a single-circuit, and excessive load interruptions under several contingencies. To resolve the identified violations, PPL Electric proposes to construct the new, approximately 3.8-mile, Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Line.

22. System Planning is the process which assures that PPL Electric's electric transmission system can supply electricity to all customer loads in a manner that is reliable and economic. This process assures that PPL Electric's electric transmission system is planned and constructed so that it can sustain probable contingencies and disturbances with minimal interruptions to customer service. In addition, system planning guarantees that PPL Electric can adequately serve each customer's needs with regard to capacity, voltage and reliability for all load levels throughout the daily load cycle; and is in conformance with PPL Electric's RP&P.

23. The reliable and economical operation of PPL Electric's 138/69 kV transmission system requires planning guidelines for system expansion and reinforcement. The principles upon which these planning guidelines are based recognize that the system expansion should be coordinated to achieve the most economical balance of construction and operating expenditures. It should also maintain a proper balance between the degree of risk, amount and type of load interrupted, and the cost of providing the needed expansion. System reliability should be maintained to prevent large scale, long term, or frequent service interruptions to avoid adverse effects and hazards to the public.

24. In accordance with these guidelines and PPL Electric's Reliability Criteria, PPL Electric's transmission system is planned so that normal operation of the system will not load any electric facility beyond its normal continuous rating and so that the loss of any single transmission line, generating unit, power transformer, substation bus, circuit breaker, or double-circuit line will not result in any system electric facility being operated beyond its applicable emergency rating.

25. The system is planned so that no customer load should remain interrupted for routine maintenance of transmission facilities and so that the loss of any single facility should not result in a voltage drop of more than five percent on the 138/69 kV transmission system. These principles are incorporated in the PPL Electric Utilities Transmission Planning RP&P document.

26. PPL Electric's planning process begins with the development of a computer model of the future system. A specific study year is chosen, and the future system model is developed using the existing system plus any planned modifications to the transmission system scheduled to be completed prior to the study year. Load levels used in the system model are

based on the latest forecast prepared annually by PPL Electric, based on recent summer and winter peak load forecasts which take into account ambient temperatures and humidity indices.

27. Once the system model is complete, comprehensive power flow simulations are performed to determine the ability of the system to comply with the PPL Electric transmission planning reliability criteria. This is accomplished by simulating an outage of each transmission and bulk electric facility. All conditions where the system is not in conformance with the reliability criteria are identified and system reinforcements are added to bring the system into conformance. Also identified are estimated costs and lead-times to implement the required reinforcements. Computer simulations of the system with the identified reinforcement alternatives are completed to identify the best overall reinforcement that will meet the needs of the region in a reliable and economic manner.

28. Transmission planning studies project that, due to increasing load growth in the area for 2013 and beyond, the existing Blooming Grove-Jackson 138/69 kV circuit will be loaded to 115 Mega Volt Amperes (MVA) during peak winter conditions. The Blooming Grove-Jackson 138/69 kV circuit has a normal winter rating of 111 MVA, and loading the circuit to 115 MVA would violate PPL Electric's RP&P guidelines. Operating the circuit in an overloaded condition, i.e., above its normal rating, would initially damage the conductor and ultimately cause a failure resulting in customer outages. In the event of an outage, service to approximately 16,300 customers would be interrupted. This violation can be attributed to recent additional commercial/industrial loading which greatly exceeded the normal projected load growth for this area.

29. The RP&P guidelines also recommend that loading on a single-circuit should not exceed 60 Megawatts (MW), so that for the loss of one circuit, the load from the out of service

circuit can be transferred to the remaining in-service circuit which can still operate within its emergency ampacity rating. The load on the Blooming Grove – Jackson 138/69 kV circuit will also violate this criteria.

30. By winter 2013, the loss of the Blooming Grove – Jackson 138/69 kV Line would interrupt 115 MVA of load because the load cannot be transferred. Transferring load from the Jackson to the Blooming Grove Substations would cause low voltage at the end of the Blooming Grove – Jackson circuit. In such an outage, customer load served by distribution substations at Wagners and Lake Naomi, as well as the customer-owned Sanofi substation, would be interrupted to restore 69 kV voltages along the line to the acceptable lower limit.

31. The RP&P guideline for maximum allowable load loss is 30 MW for a single-circuit line outage. If an outage were to occur on the Blooming Grove – Jackson circuit in its current configuration, approximately 68 MW would remain interrupted for an extended period of time until the outage could be located and switching moves could be made to re-sectionalize the line. This outage would exceed the RP&P guideline for maximum allowable load loss for a single-circuit line outage.

32. After these violations were identified, PPL Electric explored various electrical solutions to address the violations. After extensive analysis, the Company concluded that the preferred solution was to construct the proposed Project. The proposed Project is a long-term transmission upgrade that will eliminate two of the identified RP&P violations and will maintain reliable electrical service to customers in Monroe County.

33. The new line will reduce loading on the current Blooming Grove – Jackson 138/69 kV circuit, by providing another double circuit line that ties directly into the Jackson substation. The load on the existing Lake Naomi Tap will be transferred to the Jackson-Wagners

#1 circuit and terminated separately into Jackson substation. After completion of the proposed project, the Blooming Grove-Jackson 69 kV single circuit line will be loaded to 59 MW during peak winter conditions, which is within RP&P guidelines.

34. Transferring load between Blooming Grove and Jackson Substations will continue to be limited because of the low voltage levels that result at the end of the abnormally sectionalized Blooming Grove-Jackson 69 kV line. For an outage near the Jackson Substation on the single-circuit Blooming Grove-Jackson 69 kV line, approximately 32 MW would remain interrupted for an extended period of time. This situation still violates the RP&P guideline for maximum allowable load loss for a single-circuit line outage, which is 30 MW, however the amount of load remaining interrupted will be greatly reduced. The remaining violation will be resolved with another project that will be filed with the Commission in the future.

35. Attachment 2 to this Application contains a detailed description of PPL Electric's transmission planning process. Attachment 2 also explains that the proposed Project is the best electrical alternative to resolve the identified RP&P violations and to improve reliability of service.

## IV. SITING ANALYSIS

36. In accordance with the Commission's regulations at 52 Pa. Code §§ 57.71-57.77, PPL Electric conducted an extensive, multi-faceted analysis to determine the preferred route for the Project. This analysis included the designation of a General Area of Study for the compilation of an environmental inventory, the designation of a Project Study Area within the General Area of Study, identification of alternative routes, analysis of the alternative routes, and selection of the proposed line route. This process enables PPL Electric to select a route for the

proposed transmission line that appropriately balances functional requirements, environmental factors, social factors, and cost.

A. *General Area of Study*

37. Detailed maps of the General Area of Study and the Project Study Area for the Project are provided at the end of Attachments 3 and 4, respectively, to this Application. The General Area of Study is the area from which the environmental inventories are gathered while the Project Study Area, which is a subset of the General Area of Study, 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 impacts and project costs. PPL Electric identified a General Area of Study for the Project that encompasses approximately 30-square miles (19,200 acres) within Monroe County, Pennsylvania. The General Area of Study is defined to the south by the Jackson Substation, beyond which a new route extending north to the desired tap location would not be reasonable. Landscape features define the remaining boundaries and include dense residential areas to the west and north, and compacted residential and commercial districts along Interstate ("I")-80 and State Route 611 to the east The General Area of Study is shown in Figure 3-1 of Attachment 3 to this Application.

38. The General Area of Study contains streams. Major lakes located in the General Area of Study include Crescent Lake and Sand Spring Lake, as well as others. Wetlands have also been identified in the General Area of Study, and an official delineation of the wetlands within the Selected Route has been completed to aid in determining the environmental permits necessary for construction of the Project.

39. The General Area of Study contains native plant and wildlife habitats. Many of these natural areas are preserved for their ecological benefit, as well as for their social

recreational value. Typical wildlife species found within the General Area of Study include those found in wetlands, forested habitats, and scrub-shrub habitats. Wetlands in the area provide habitat for frogs, snakes, birds, and raccoon. Forests and scrub-shrub habitats are home to species such as white-tailed deer, gray squirrel, wild turkey, box turtle, striped skunk, opossum, and a variety of small mammals and songbirds.

40. As a result of a search of the Pennsylvania Natural Diversity Inventory ("PNDI") database, administered by the Pennsylvania Natural Heritage Program ("PNHP"), and follow-up consultations with state and federal agencies, PPL Electric has identified the following federal and/or state rare, threatened, or endangered species as potentially occurring within the General Area of Study: bog turtles, Indiana bats, timber rattlesnakes, variable sedge, and pitch pine-heath woodland. Habitat assessments for these species may be required by the jurisdictional agencies as part of the environmental permitting and approval process for the Selected Route.

41. Special use areas are places recognized by regulatory agencies or local governments as providing unique habitat characteristics or wildlife management opportunities that indicate a need for preservation. Examples include scenic areas, wilderness areas, wild and scenic rivers, state game lands, and priority natural areas. The only designated scenic area in the General Area of Study is the Big Pocono Overlook, located within Big Pocono State Park. There are no designated wilderness areas, wild and scenic rivers, or Heritage Geology Sites designated by the PNHP in the General Area of Study. A large portion of the 4,000 acre State Game Land #38 is located within the General Area of Study, as well as a portion of State Game Land #318. There are three Priority Natural Areas located in the General Area of Study: Long Pond Macrosite, Camelback Mountain, and Sand Spring Run/Wolf Swamp Run.

42. There are many development types and patterns in Monroe County. The main land use in the General Area of Study is Residential, and is composed primarily of single-family residences and vacation rental homes or condominium complexes. Much of the residential development has occurred within the past 30 years. These residential areas range from widespread 200-home development complexes to modest 20-30 home developments. Relatively few sections of the General Area of Study are used for agricultural purposes. All of the land dedicated to agriculture is privately owned. The primary agricultural use involves row crops such as hay, corn, and soybeans. Other agricultural uses include horse pastures and dairy farms, but these are limited compared to row crops. There are no industrial land uses within the General Area of Study. However, there are several large tracts of land located north of Sullivan Trail Road that are owned by mining companies. A full discussion of the Human Environment of the General Area of Study is provided in Attachment 3.1.

43. There are no active railroads or airports within the General Area of Study. The closest airport is Pocono Mountain Municipal Airport, which is located approximately 2.15 miles north of the General Area of Study. A portion of the southwestern corner of the General Area of Study is identified by Monroe County as having a utility land use, but it is actually part of a large forest tract owned by the Bethlehem Water Authority for the protection of its water sources in the area. Similarly, a 20-acre parcel near the intersection of I-80 and I-380 is identified as having a services land use, but is actually a series of four communication towers. PPL Electric does not anticipate that any of these utility features will be impacted by the proposed Project, due to the distance between the features and the Project.

44. PPL Electric conducted a desktop survey of the historic architectural resources within the General Area of Study. The desktop survey consisted of accessing the Pennsylvania

Historical and Museum Commission's ("PHMC") Bureau of Historic Preservation's Cultural Resources Geographic Information System ("CRGIS") to review available information on previously recorded historic architectural sites in the General Area of Study. A windshield survey was also conducted in October 2010 that provided information about the built environment and the types of historic architectural resources. Areas of potential concern were identified during the windshield survey and used in defining constraints during the analysis used to determine the Selected Route for the Project.

45. No National Register of Historic Places ("NRHP")-listed or -eligible historic structures or districts were identified in the General Area of Study. One undetermined above ground resource, identified as the Transue School (PHMC Key No. 039537), is an 1870's building located within the General Area of Study. This building is located on Sullivan Trail Road, north of I-80, in Pocono Township. An undetermined status means that although this resource has been brought to the attention of PHMC, no determination of eligibility has been made. No archeological sites have been documented in the General Area of Study, however the area possesses at least a moderate potential for pre-contact (Native American) archaeological resources. Information regarding the Project was provided to PHMC in June 2011. On July 12, 2011, PHMC issued a response letter stating that based on their review there are no NRHP-eligible or -listed historic or archaeological properties in the area of the proposed Project.

B. *Alternative Routes*

46. Below, PPL Electric explains the methodology used to define the alternative routes and to select the proposed transmission line route for this Project. The siting study uses quantitative and qualitative evaluations to compare alternative transmission routes for the Project. The methodology used for the siting study provided a framework from which to select

the route most suited for an overhead electric transmission line while satisfying the regulatory filing requirements for such a Project. The ultimate goal was to select a route that avoids or minimizes adverse impacts to natural, cultural and social environments to the maximum extent practicable, while maintaining the economic viability and technical feasibility of the Project.

47. Data used in the analysis fall into three broad categories – ecological, land use/cultural, and technical/engineering. Data were obtained from a wide variety of sources, including state and local GIS databases, field reconnoissance surveys, information supplied by public agencies, published documents, and publically available electronic information.

48. The methodology utilized was adapted from a protocol developed by the Electric Power Research Institute ("EPRI") and the Georgia Transmission Corporation. This method incorporates Geographic Information System ("GIS") technology, statistical evaluation and professional judgment into the decision-making process. The methodology formalizes many of the methods and principles used in the industry to site transmission lines. It was developed over many years with collaboration and feedback from utility companies, federal, state and local government agencies and other key stakeholders such as private landowners. The process was tested and calibrated against existing transmission line siting projects that had been successfully completed.

49. The siting method consists of four principal steps:

a. Generate Macro Corridors. These macro corridors define the outer edges of the Project Study Area.

b. Generate Alternative Corridors. Alternative corridors most suitable for the transmission line are generated from three primary perspectives:
   i. Protection of the natural environment;
   ii. Protection of the built environment; and
   iii. Engineering requirements.

c. Identify alternative routes within the alternative corridors.

d. Select the preferred route.

50. The siting methodology used for determining the preferred route for the Project uses a series of grid cells on aerial photographs or maps, that are assigned a value indicating whether an area in a cell is suitable for a transmission line, *i.e.*, is an opportunity, or is less suitable, *i.e.*, a constraint. This process is repeated several times with cells of decreasing size and progressively more detailed and precise data.

51. The quantitative analysis performed by PPL Electric uses a series of grid cells across the General Area of Study. Values are assigned to each cell depending upon its primary use. A value is assigned representing, for example, an opportunity area such as open land or a constraint area such as a residential neighborhood. A "least impact" corridor or path can be determined by the mathematical addition of the value numbers from the value assigned to each cell between the start and end points. Opportunity areas are assigned low numbers, and constraint areas are assigned a high number. Therefore, the corridor or path with the lowest value or "least impact" is the corridor or path with the least adverse impacts.

52. Macro corridor analysis begins after the start and end points of the new transmission lines have been established. The first step in macro corridor development is to develop a land use/land cover GIS database that identifies the key opportunity and constraint areas that are traditionally reviewed in a siting study.

53. A GIS map of the General Area of Study is created using land use and land cover data and other feature data that include roads, rail, and existing transmission lines. From the GIS map, a Composite Suitability Surface Map, composed of grid cells, is created. The features of each cell are identified and the features are ranked from one (most suitable) to nine (least

suitable). Corridors with the cells having the lowest values have the highest overall suitability for a transmission line.

54. This composite suitability surface is used to produce a series of potential broad corridor areas for the following three scenarios:

a. Opportunities to rebuild or parallel existing transmission lines.
b. Opportunities to parallel existing road right-of-ways.
c. Opportunities to cross undeveloped land.

55. These corridors represent preferred opportunity areas for developing a new transmission line. This process determines the corridor across the suitability surface that minimizes the sum of the values within that corridor. Corridors with the lowest sums have the higher overall suitability. Corridors with a larger suitability sum would be considered less optimal.

56. The results of the macro corridor analysis are shown in Figure 4-1 to Attachment 4. The macro corridor includes all areas determined to be most suitable from all of the three perspectives. The outer boundary of this Macro Corridor area also effectively defines the Project Study Area. The Project Study Area is a subset of the larger General Area of Study discussed previously.

57. The next step in the process is to identify alternative corridors. In order to identify alternative corridors, additional and more detailed data are gathered. The starting point of the assignment of values was the EPRI-GTC Methodology, which assigned values through a collaborative outreach involving stakeholders from federal, state and local governments, environmental and engineering experts, homeowner associations and other groups. The values obtained from EPRI-GTC were then reviewed by PPL Electric's siting team. Values for certain land uses and land covers were refined to reflect circumstances presented in the Project Study

Area. These refinements were made by PPL Electric and URS technical experts in environmental, engineering, and public outreach disciplines to better represent conditions within Pennsylvania, such as the inclusion of stream classifications to offer enhanced protection of this key resource within the natural environment perspective.

58. Alternative Corridors are created from three different perspectives – the Built Environment, the Natural Environment and Engineering Requirements.

i. The "Built Environment" refers to protecting human and cultural areas by reducing potential conflicts with existing residential neighborhoods and other community-valued buildings or historic sites.

ii. The "Natural Environment" refers to protecting plants, animals and aquatic resources by minimizing the impact to ecological resources and natural habitat.

iii. The "Engineering Requirements" refer to maximizing co-location and minimizing cost and schedule challenges by seeking the shortest path or utilizing existing rights-of-way, while avoiding areas that pose significant construction obstacles such steep slopes or unique agricultural practices.

59. The same fundamental data sets are used in determining the alternative corridors for each of the above perspectives, *e.g.*, slope data and wetlands data are used in developing alternative corridors in all perspectives. For each perspective, however, weighting of data is based on the perspective. For example, a Built Environment assessment applies higher weight into features related to proximity and density of buildings in the Project Study Area. The Natural Environment assessment applies a higher weight to flood plain and wildlife habitat. The Engineering Assessment seeks to avoid construction obstacles such as slopes and utilize linear infrastructure features. By selecting the corridor that is optimal from each of the three perspectives, PPL Electric was able to compare environmental, social, and financial costs and benefits of each of the corridors.

60. Based on the foregoing analysis, PPL Electric determined the alternative corridors for the Project – one from each of the three perspectives. Each of the alternative corridors is shown on Figure 4-3 to Attachment 4.

61. The next phase of the process was route development, *i.e.*, determining the alternate routes within the alternative corridors. The alternative transmission line route development utilized a least impact tool similar to the one used to identify alternative corridors. The alternative route analysis, however, focuses on a single alignment rather than a broad corridor area. The alternative route analysis minimizes the least preferred areas that are crossed along a route connecting the starting and ending locations. Again, routes are selected from each of the three perspectives.

62. To assess the advantages and disadvantages of alternative routes, specific features, such as the number of residences or streams crossed per route, were considered. The quantitative feature metrics are normalized, assigned relative weights, and organized within the three perspectives — the Built Environment, the Natural Environment and Engineering Requirements. The overall score for each alternative route was then calculated. As before, lower scores indicated less difficulty or potential impacts of the route.

63. Using the above methodology, PPL Electric selected six Alternative Routes for detailed examination. The six Alternative Routes are summarized as follows:

- Route A begins at the Jackson Substation and travels northwest for 2.26 miles through State Game Land #38 and crosses to the north side of I-80. Route A then turns to the northeast for 0.21 miles. Turning to the north, Route A proceeds for 0.51 miles along the eastern edge of the Crescent Lake residential development. The route turns to the west for 0.19 miles crossing over Crescent Lake Road and through a proposed residential development area. Turning to the northwest, Route A travels another 0.19 miles then turns north for 0.45 miles. After crossing Sullivan Trail Road, Route A intersects with the existing Lake Naomi 138/69 kV Tap Line at the western edge of the Project Study Area and closest to the Lake Naomi Substation. The total distance of Route A is 3.81 miles.

- Route B starts at the Jackson Substation and travels northwest for 2.26 miles, mirroring Route A to the north side of I-80. After crossing I-80, Route B turns sharply to the northeast and proceeds for 0.23 miles. Route B then turns north and travels 0.51 miles along open forest land bordering a wetland complex. Turning to the northeast, Route B proceeds 0.19 miles, then turns north and travels 0.49 miles and crosses Crescent Lake Road, Sullivan Trail Road, and sections of open forest, before intersecting the existing Lake Naomi 138/69 kV Tap Line east of Route A. Route B is 3.68 miles long.

- Route C starts at the Jackson Substation and travels north for 2.14 miles. After crossing to the north side of I-80, Route C turns to the northeast and travels 0.32 miles. Route C then turns north for 0.72 miles, passing along the back edges of existing and proposed residential lots and then crossing over Dry Sawmill Run. Turning to the northeast, Route C travels 0.47 miles, crossing over Sullivan Trail Road and over open forest land before intersecting with the existing Lake Naomi 138/69 kV Tap Line in the center of the Project Study Area. Route C is 3.65 miles long.

- Route D starts at the Jackson Substation and travels northeast for 0.53 miles, paralleling the eastern edge of the existing transmission line right-of-way. After cresting the top of Camelback Mountain, Route D turns to the north for 1.37 miles to a point just south of I-80, where it shifts to the west of the existing transmission line right-of-way to avoid a cluster of residential properties. To accomplish this shift, the existing line would be transferred to new poles constructed in a new right-of-way on the western side of the existing right-of-way. The new line would then be transferred to the existing poles in the existing right-of-way. From the base of the south side of I-80, Route D turns to the east for 0.27 miles, then turns sharply north for 0.15 miles and crosses to the north side of I-80. Turning to the northwest, Route D then proceeds 0.19 miles over open forest to a point just within the borders of State Game Land #38. Route D turns to the north for 0.61 miles through open forest and parallel with a private dirt road that provides access to several homes located along the existing transmission line right-of-way. Prior to reaching the homes, Route D shifts back to the east side of the existing transmission line right-of-way. This shift would be accomplished by moving the proposed transmission line to the new poles in the new right-of-way created on the east side of the existing right-of-way. The existing transmission lines would then be transferred back to the existing poles in the existing right-of-way. Paralleling the eastern edge of the existing transmission line right-of-way, Route D then turns to the northeast for 0.64 miles and crosses over Sullivan Trail Road, Transue Run, and traverses through open forest before intersecting with the existing Lake Naomi 138/69 kV Tap Line right-of-way in the eastern end of the Project Study Area. Route D is 3.76 miles long.

- Route D-1 starts at Jackson Substation and mirrors Route D for 2.51 miles. After switching to the east side of the existing transmission line right-of-way on the north of I-80, Route D-1 departs from the existing right-of-way and proceeds northeast for 0.17 miles and then turns north for 0.33 miles. In this section, Route

D-1 traverses an area of open forest that bypasses several residential properties, but through an area identified as a proposed residential development. Upon intersecting with the existing transmission line right-of-way, Route D-1 then turns to the northeast and travels 0.57 miles before intersecting with the existing Lake Naomi 138/69 kV Tap Line right-of-way in the eastern end of the Project Study Area.

- Route E starts at Jackson Substation and travels northeast for 1.12 miles. Route E parallels the eastern edge of the existing transmission line right-of-way to the crest of Camelback Mountain, at which point it crosses the access road for Big Pocono State Park and parallels the eastern edge of the road down to the northern base of the mountain. Route E then turns to the east for 0.34 miles paralleling the south side of the access road. Near PPL Electric's existing Camelback Substation, Route E turns to the northeast for 0.44 miles and immediately crosses the access road and the existing Camelback Tap 69 kV transmission line. Route E then traverses an open parking lot and a wooded area bordering the northwestern edge of the Camelback Ski Resort. Route E turns north for 0.56 miles, then northwest for 0.85 miles. Route E crosses I-80, an unnamed tributary to Transue Run and traverses areas of open forest that are a proposed residential development site. At this point, Route E turns north for 0.51 miles. Route E then intersects with the existing transmission line right-of-way and turns to the northeast for 0.28 miles paralleling the eastern edge of the right-of-way, before intersecting with the existing Lake Naomi 138/69 kV Tap Line right-of-way in the eastern portion of the Project Study Area.

64. The quantitative assessment required calculating the evaluation metrics of the routes and summarizing them in tabular form organized within the three perspectives – Built, Natural and Engineering. The metrics used are defined in Table 4-2 to Attachment 4. The results of quantitative analysis are shown in Tables 4-3 and 4-4 to Attachment 4, which shows the raw metric and corresponding normalized values for each of the four alternative routes.

65. The quantitative analysis was then further refined by applying appropriate weights to each of the metrics. The weighting ensures that the features requiring the most "protection" are assigned a higher relative influence in the final ranking. The weighted metrics and weighted totals are shown in Table 4-3 to Attachment 4.

66. PPL Electric identified the three worst scoring alternatives, and excluded them from further consideration.[4] PPL Electric identified that Routes A, C, and E were not suitable for the Project. Route A scored the worst due to its impacts on the natural environment. Route E had the highest impacts on the built environment and engineering impacts. Route C had the second highest impact on the natural environment and engineering impacts.

67. In the quantitative analysis, Routes B, D, and D-1 scored the best. Route D-1 had the lowest cumulative value of the six Alternative Routes considered. Route B had a low cumulative value due to limited built environment and engineering impacts. Route D also had a low cumulative value, despite having the highest built environment impact.

68. After excluding Routes A, C, and E, the remaining routes were then qualitatively assessed based on less tangible criteria using team based expert judgment. The qualitative assessment was performed by applying expert judgment to rank the alternative routes. PPL Electric's siting team qualitatively ranked the preferred routes based on several important considerations such as visual concerns, community concerns, schedule delay risk, special permit issues, and construction and maintenance accessibility. The goal of the qualitative expert judgment was to select a preferred route from the three routes through the Project Study Area.

69. In conducting its qualitative assessment, PPL Electric considered the following five qualitative criteria for each alternative:

a. Visual concerns;
b. Community concerns;
c. Special permit issues;
d. Construction, maintenance, and accessibility; and
e. Schedule delay risk.

[4] In the quantitative analysis, a lower score indicated a better performance.

70. In analyzing the visual impact of the three alternatives the Siting Team noted that Routes D and D-1 would basically parallel the existing transmission line right-of-way. Although widening of the right-of-way and adding new poles and conductors would generate a visual impact for the surrounding communities, that impact would be primarily limited to a few landowners whose properties are located adjacent to the existing right-of-way and along the residential access road on the south side of Sullivan Trail Road. Paralleling the existing right-of-way would have less visual impact than Route B, which would require a new corridor through an area without existing transmission lines. While Route B's visibility would be low where it crossed State Game Land #38, it would be higher in the new right-of-way over Camelback Mountain and across I-80. The Siting Team concluded that a new overhead alignment through an area without an existing transmission line right-of-way would result in a more negative visual impact on the landscape than a transmission line located parallel to an existing right-of-way. This conclusion gave Route B the greatest visual impact of the three alternatives. Route D had the second greatest impact, because it bisected several properties within close proximity to four residential structures. Route D-1 had the lowest visual impact, because it would run parallel to the back edge of the same four properties.

71. The Siting Team next evaluated community concerns. All three alternatives cross through generally rural or isolated areas where construction and maintenance activities would not seriously impact the daily functioning of the local residents. Route B includes a new transmission line right-of-way corridor over the crest of Camelback Mountain and crosses sections of forest associated with State Game Land #38 that are not fragmented, and passes adjacent to a cluster of residential properties near Crescent Lake and Sullivan Trail Road. It is anticipated that this alternative would generate negative reactions from community leaders and

groups due to its visual and social impacts, as well as from state and regional conservation groups due to its environmental impacts. Route B would have long-term social ramifications on the local community, and acquisition of the necessary state-owned and private property might be strongly contested. It therefore received the highest value, i.e., worst score for Community Concerns.

72. Routes D and D-1 both create some Community Concerns. Due to the increased activity and noise during construction, some minor Community Concern could be realized by persons living adjacent to the rights-of-way. Community Concerns related to Route D would be elevated since it parallels the existing residential access road and is in close proximity to existing residential homes. Although Route D-1 crosses through portions of a proposed development, the Community Concerns with this route would be relatively minor since the corridor bypasses the existing residential section. Route D-1, therefore, received the lowest, i.e., most favorable value for Community Concerns.

73. Various types of permits may be required for developing a new transmission line or when rebuilding transmission lines within existing rights-of-way. Each of the three alternatives would cross a similar number of local roads and I-80, thus coordination with the Pennsylvania Department of Transportation for roadway occupancy permits is required for all Routes and would be basically identical. The three Routes all cross environmentally sensitive lands within State Game Land #38. Development of any of the Routes would involve some wetland impacts, stream crossings, and potential species habitat encroachment. The extent of the permits required, however, will vary based on the condition of the natural resources and degree of anticipated impact.

74. The Siting Team next addressed special permit issues. By paralleling and overlapping onto the existing transmission line right-of-way, Routes D and D-1 would impact less forest area, cross fewer streams and wetlands, and have a relatively limited effect on potential habitats. Route D would impact relatively more wetland areas than Route D-1, whereas Route D-1 would impact more forest areas than Route D. In terms of special permit requirements, these impacts are comparable and would not result in potential permit process delays for either route. Routes D and D-1 were assigned the same moderately low special permit value.

75. Route B would cross significantly more forest area, streams, and wetland habitats than Route D and Route D-1. Route B bisects several presently undisturbed portions of open forest and fragments interior forest areas. The evaluation of the impacts to the forest community, associated streams and wetland areas, and potential habitats could be extensive. The permit expectations for Route B would involve a larger area and require more engineering to incorporate the expectations into the plans. Route B, therefore, had the highest special permit value.

76. The Siting Team considered the variables involved in constructing transmission lines, conducting mandatory routine maintenance of the facilities, and providing appropriate access to all the required areas. Construction related issues for Route B would involve clearing vegetation and other obstructions within a new 100-foot wide right-of-way, developing new access roads, building new pole foundations, installing the poles, and installing the new 138/69 kV conductoring network. The rocky terrain, steep slopes, and dense forest growth would hinder access and development of Route B. Once completed, however, access for routine maintenance would not be problematic.

77. Although Routes D and D-1 would involve similar footer and pole construction processes, other aspects would be less difficult for these routes compared to Route B. Vegetation clearing work would be limited to widening the existing right-of-way by 50 feet in most areas. Similarly, construction of these two routes would further benefit from the existing access road network along the existing right-of-way. On the other hand, since these routes involve switching sides of the rights-of-way shared with other transmission lines, both Route D and D-1 would involve a higher level of complexity and coordination that may require special pole placements, structure modifications, and temporary planned power outages. Because creating new transmission line rights-of-way would result in more construction, maintenance, and access issues compared with paralleling existing rights-of-way, therefore Route B was given a moderately high construction, maintenance, and accessibility issue value. Routes D and D-1 were assigned the same moderate construction, maintenance, and accessibility issue value below that of Route B.

78. The Siting Team next evaluated the risk of schedule delay. Such risks are directly related to the other qualitative criteria evaluated by the Siting Team. For example, negative community reaction, complicated right-of-way acquisition, required additional field studies for environmental permit clearance, and construction complexity can result in schedule delays. Route B would raise considerably more community concern relative to Routes D and D-1. Schedule delays for Route B would be expected as a result of community opposition to the acquisition of new rights-of-way areas adjacent to the residential cluster near Crescent Lake and Sullivan Trail Road. Other factors that could further delay the schedule for Route B include: potential state opposition to the acquisition of un-fragmented sections of State Game Land #38; opposition from local environmental groups over the potential impact to a Priority Natural Area;

permit requirements and the need for additional environmental studies to address environmental permit requirements; mitigation expectations associated with anticipated impacts to wetland, forest, streams, and habitat; and construction complexity due to the rugged terrain. Cumulatively, these factors could significantly delay the schedule of Route B.

79. Route D and Route D-1 would not require the same level of coordination with the community or various agencies. Being located adjacent to the existing transmission line right-of-way, these proposed alignments would generate relatively minor community issues regarding visibility, and right-of-way acquisition processes would be limited to landowners currently living along the existing right-of-way. Similarly, permit requirements are anticipated to be a time consuming procedure, however, the process should be less cumbersome than for Route B due to the relatively limited area of potential impact. Route D would be subject to more community-oriented schedule delays than Route D-1 since it is closer to several existing residential structures and would involve more landowners. Route D-1 would avoid these potential delays by passing around opposition areas and involving fewer landowners. As a result, Route D-1 was assigned the lowest schedule delay risk value, followed by Route D and then Route B.

80. The results of the *qualitative assessment* of the three Alternative Routes indicated that Route D-1 had the lowest weighted scores for visual concerns, community concerns, and schedule delay risk. This route also scored favorably with regard to special permit issues and construction issues. Route D-1 had the lowest cumulative total in the qualitative assessment, and was therefore determined to be the Preferred Route for this Project.

81. Overall, Route D-1 will have substantially less impact on the natural and built environment, land use, and citizens in Monroe County than the other Routes considered. A detailed explanation of the qualitative and quantitative analyses and comparison of the

Alternatives Routes, and the decision to use Route D-1 for the Project, are provided in Attachment 4 of this Application.

82. The preferred route, Route D-1, was communicated to the public and to municipal, state, and federal agencies for further feedback and adjustments, where appropriate.

83. PPL Electric conducted a public outreach program which included: telephone calls and e-mails to Government Officials; letters to all property owners within a 1,000-foot corridor of the transmission line; a fact sheet distributed to property owners in the 1,000-foot corridor; and an open house that gave attendees the opportunity to ask questions and provide input and information to PPL Electric.

84. A detailed description of the Project Study Area is provided in Attachment 4, and Route Development is also provided in Attachment 4 of this Application.

## V. RIGHTS-OF-WAY

85. PPL Electric proposes to construct the approximately 3.8-mile long Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line along preferred Route D-1. The line will begin at PPL Electric's Jackson 138-69 kV Substation and will terminate near the Lake Naomi 138/69 kV Tap point. The preferred route for the new double-circuit line will travel, in general, along the edge of the existing right-of-way of the existing double-circuit Blooming Grove - Jackson and Peckville - Jackson 138/69 kV Transmission Line through Jackson and Pocono Townships in Monroe County.

86. PPL Electric's current standard right-of-way width for a double-circuit 138/69 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). A cross section of PPL Electric's current standard right-of-way for a double-circuit 138/69 kV line is illustrated in Figure 5-3.

87. As a result of the selected route, where the proposed Project runs along the right-of-way of the existing line, PPL Electric requires less additional right-of-way than were it to build an entirely new line which did not parallel any existing transmission line right-of-way. The proposed line will be constructed parallel to the existing transmission line right-of-way for a total of approximately 3.2 miles. For approximately 2.8 of the 3.2 miles, PPL Electric will be acquiring an additional 50 foot wide section of right-of-way. For the remaining approximately 0.4 mile parallel section, PPL Electric will be acquiring an addition 25 foot wide section of right-of-way, due to the fact that the existing right-of-way is wider in this section. In addition to the parallel sections for which PPL Electric will be acquiring either 25 or 50 feet of additional right-of-way, PPL Electric will be acquiring a completely new 100 foot wide right-of-way for approximately 0.5 miles. The remaining approximately 0.1 mile long section of the proposed line will be constructed on property owned in fee by PPL Electric. Therefore no additional land rights are required for this section. PPL Electric must obtain the additional rights-of-way from six (6) property owners to accommodate the proposed Project.

88. PPL Electric has attempted to negotiate new easements with the six (6) property owners. To date, agreements have been reached with 2 property owners. The Pennsylvania Game Commission ("PGC") is one of the four remaining property owners. PPL Electric has been working with the PGC in order to acquire the necessary easement. PPL Electric has attempted to negotiate voluntary easement agreements with the remaining three private property owners, but has thus far been unsuccessful in reaching an agreement with those property owners. As a result, PPL Electric is filing, concurrently with this Siting Application, the necessary

Condemnation Applications to secure the additional private rights-of-way required for this Project.

## VI. COST AND COMPLETION DATE

89. The estimated cost to design and construct this Project using Route D-1 is approximately $6.12 million, which includes transmission line and substation work.

90. Subject to Commission approval, this Project has a scheduled construction start date of January 2013 in order to meet a required in service date of November 2013.

## VII. NOTICE AND SERVICE

91. PPL Electric announced an open house in an advertisement that ran in the local newspaper, the Pocono Record, on May 4, 2011. In addition, PPL Electric sent mailings to all property owners within a 1,000-foot corridor of the proposed transmission line. The mailings included a project fact sheet which provided information about the planned open house. PPL Electric held a public open house on Monday, May 16, 2011 at the Northampton Community College Monroe Campus in Tannersville, Monroe County. The intent of the open house was to provide information and seek community input on the Project. The open house provided detailed information about the Project and gave attendees the opportunity to ask questions and provide input and information to representatives of PPL Electric.

92. Prior to and subsequent to the open house, 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 property owners 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.

93. In accordance with Section 69.3102 of the Commission's Interim Siting Guidelines, 52 Pa. Code § 69.3102, PPL Electric has provided public notice to all landowners with whom PPL Electric plans to negotiate to acquire, where practical, additional right-of-way to expand the existing right-of-way to meet PPL Electric's 138/69 kV double circuit standard. Additionally, PPL Electric has provided public notice to all other landowners within or adjacent to the existing right-of-way that PPL Electric is not attempting to acquire additional right-of-way. The public notices for this Project are provided in Attachment 13 to this Application.

94. Copies of this Application are being served in accordance with the provisions of Section 57.74 of the Commission's regulations, 52 Pa. Code 57.74.

95. 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 line. This notice will: (a) note the date of filing with the Commission; (b) provide a brief description of the Project and its location; (c) provide locations where the complete Application may be reviewed by the public; (d) provide the date, time, and location of the Initial Prehearing Conference in this proceeding; (e) provide an instruction that interested parties should contact Secretary Rosemary Chiavetta, at the Commission's Harrisburg address, and (e) provide any additional information as directed by the Commission.

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

## VIII. CONCLUSION

For these reasons, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission approve the siting and construction of the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Line as explained above and in the Attachments to this Application.

Respectfully submitted,


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Date: May 15, 2012

## VERIFICATION

I, Gregory N. Dudkin, being the Senior Vice President Operations 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 that 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: 2/17/12

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

| | | |
|---|---|---|
| **Re: 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 Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line In Monroe County, Pennsylvania** | : | **Docket No. A-2012-_____** |

**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 1**

**DIRECT TESTIMONY OF JUSTIN B. WEHR**

**May 15, 2012**

Q. Please state your name and business address.

A. My name is Justin B. Wehr. My business address is Two North Ninth Street, Allentown, PA 18101.

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

A. I am employed by PPL Electric Utilities Corporation ("PPL Electric"). My position with PPL Electric is as Siting Coordinator in the Transmission Operations Department. In that position, I am responsible for identifying and selecting high voltage transmission line routes and substation locations. I am also responsible for preparing Applications and Exhibits for approval by the Pennsylvania Public Utility Commission.

Q. What is your educational background?

A. I received a Bachelor of Science Degree in Environmental Science/Geology with a minor in Geography from Kutztown University of Pennsylvania in 2002. My additional continuing education relevant to my current position includes the following courses and programs:

- Richard Chinn Environmental Training Inc., ACOE Wetland Delineation /Regional Supplemental Training (2003)
- Halfmoon LLC, Pennsylvania Land Use and Environmental Issues (2009)
- Burns & McDonnell, Routing and Permitting on the NEEWS Project (2010)
- Burns & McDonnell, Transmission Line Routing Workshop 2011

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

A. I have been employed by PPL Electric for 3 years. I have been in my current position, as Siting Coordinator, since November of 2008. My previous professional experience includes employment at Lehigh Engineering Associates, Inc., from June 2002 until August of 2008. I served in the capacities of Environmental Technician, Environmental Project Manager, and Project Manager. In those roles, I was responsible for environmental permitting, grading and drainage calculations, and overall Project management.

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

A. Yes. I have worked on more than 10 projects involving transmission lines.

Q. What are your responsibilities in connection with the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line?

A. I am responsible for leading the Siting Team and establishing the General Area of Study, compilation of environmental inventories, Alternative Route evaluation and the selection of a preferred route for the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line ("the Project"). In addition, I am responsible for coordinating the preparation and submission of the Siting Application and Attachments to the Siting Application.

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

A. My testimony addresses several issues. I will provide a digest to the testimony and exhibits filed by PPL Electric in support of this Application. I will provide a brief overview of the Project. I will describe the process employed by PPL Electric in developing, preparing and filing this Application. I will provide an overview of the siting process used for the Project, and the decision making process within PPL Electric for selecting transmission line routes. I will explain PPL Electric's corporate policy on measures to mitigate the impact of a transmission line. I will describe the public outreach program employed by PPL Electric for this Project. Finally, I will summarize the benefits of this Project for PPL Electric and its customers.

Q. Please describe the testimony and attachments presented by the Company in this proceeding.

A. The Application ("Siting Application") initiating this proceeding was filed with the Pennsylvania Public Utility Commission ("Commission") in May, 2012. The Siting Application included the pleading which provided an overview of the Project, a description of the proposed transmission line, an explanation of the need for the transmission line, a summary of the process of selecting the route for the transmission line, a description of the necessary rights-of-way and a summary of the estimated cost of the transmission line and the scheduled in-service date.

Accompanying the Siting Application was a notebook containing Attachments to the Siting Application.

The notebook contains:

- Attachment 1 - Cross Reference Matrix
- Attachment 2 - Necessity Statement
- Attachment 3 - Environmental Setting
- Attachment 4 - Alternatives and Siting Analysis
- Attachment 5 - Engineering Description
- Attachment 6 - Vegetation Management
- Attachment 7 - List of Governmental Agencies, Municipalities, and Other Public Entities Contacted
- Attachment 8 - List of Property Owners Within and Adjacent to the Right-of-Way
- Attachment 9 - List of Governmental Agencies, Municipalities, and Other Public Entities Receiving a Copy of this Application
- Attachment 10 - PPL Design Criteria and Safety Practices
- Attachment 11 - Magnetic Field Management
- Attachment 12 - Agency Coordination
- Attachment 13 - Public Notice Requirements
- Attachment 14 - Agency Permit Requirements

PPL Electric is also 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: Justin B. Wehr – providing an overview of the Project; describing the process employed by PPL Electric in developing, preparing, and filing the Siting Application; providing an overview of the siting process; explaining PPL Electric's use of outside consultants; explaining

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| | the decision making process for selecting transmission line routes; explaining PPL Electric's policies to mitigate the impact of a transmission line, and summarizing the benefits of the Project. |
| PPL Electric St. No. 2: | Barry Baker – explaining the siting methodology for the Project. |
| PPL Electric St. No. 3: | Alexander Lousos – addressing the need for the Project; describing PPL Electric's system planning process; explaining that the proposed system will solve identified problems; and explaining the benefits of the Project. |
| PPL Electric St. No. 4: | Danny S. Jarrah – explaining the design features of the Project; describing the safety features that will be incorporated into the design of the Project; and explaining PPL Electric's Magnetic Field Management Program and how it has been incorporated into the design of the Project. |
| PPL Electric St. No. 5: | Diane Williams – explaining the process that PPL Electric used to attempt to acquire the rights-of-way and easements necessary for the Project. |

Q. Please provide a brief summary of the Project.

A. PPL Electric proposes to reduce the electrical load on the existing Blooming Grove – Jackson 138/69 kV circuit and provide operating flexibility and improved reliability for customers in Jackson, Pocono, and Tobyhanna Townships in Monroe County. In its current configuration, the transmission and distribution systems in the area violate the reliability guidelines established in PPL Electric's Reliability Principles and Practices ("RP&P"). The RP&P violations and reliability guidelines will be discussed in greater detail by Mr. Lousos in his testimony.

To resolve the identified RP&P violations, PPL Electric, with approval from the Commission, plans to construct a new double-circuit 138/69 kV line from the 138-69 kV Jackson Substation ("Jackson Substation"), north to the Lake Naomi Tap pole, a distance of approximately 3.8 miles. PPL Electric will design the new line to current 138 kV standards but will operate the line at 69 kV initially. In addition, in the Jackson Substation 69 kV Yard, PPL Electric will install a new line terminal, breaker bay, and circuit breaker.

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

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

Line route evaluation was performed in accordance with the process summarized later in my testimony and the methodology discussed in the direct testimony of Barry Baker, a URS employee. URS was hired due to their extensive expertise in siting projects in Pennsylvania. Line route evaluation involves selecting an appropriate route that minimizes the impact of the transmission line on all factors of the natural and human environment, while avoiding unreasonable routes, high or unnecessary costs, and non-standard design requirements to the extent practical. To accomplish this task, a General Area of Study of approximately 30 square miles (19,200 acres) in Monroe County was analyzed.

With regard to Public Outreach, from the very beginning of this Project, we have recognized that incorporating public input in our work would be an important task. We have attempted to listen, to understand and, where practical, to make changes in our approach in response to input received from the public. I will provide more detail about our public outreach process later in my testimony.

With regard to right-of-way acquisition, new or expanded right-of-way from six property owners will be necessary. A full discussion of the right-of-way acquisition process is provided in the testimony of Ms. Williams.

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 line.

PPL Electric has maintained close involvement in all aspects of this Project throughout the period prior to the filing of this Application and will continue to do so through final engineering, construction and Project completion. In each case where outside assistance is used, a PPL Electric employee or employees is assigned for oversight and decision making purposes.

Q. Who is URS?

A. URS is a multidisciplinary company which PPL Electric retained to assist with the preparation of environmental inventories, alternative route identification, and preferred route selection. In close consultation with PPL Electric, primarily myself as Siting Coordinator, URS performed much of the detailed analysis of the area that was presented to the Siting Team for evaluation and decision-making.

Q. Why did PPL Electric retain the services of URS to assist in the selection of the route for the Project?

A. Due to the large number of transmission line projects currently being sited by PPL Electric, it does not have the manpower to handle all the work.

Q. How does PPL Electric select a route for a transmission line project?

A. A multidisciplinary team ("Siting Team") is assembled consisting of experts from the functional groups that have a stake in the design and construction of the project. The functional groups frequently involved in transmission line siting projects are: siting, various engineering disciplines, real estate, system planning, environmental experts, public relations, legal, system operations and construction. Information about the characteristics of the area are gathered and mapped. This information includes, but may not be limited to: Land Use, Zoning, Natural Features, Geology, Water Resources, Cultural and Archaeological Resources, and Threatened and Endangered Species Habitat. Simultaneously, a communications plan is developed to ensure that external stakeholders such as local, county and state governments, special interest groups and the public are kept informed about the project.

Next, routing constraints and opportunities are identified. From this information, alternative line routes are developed that minimize impacts on constraints and maximize routing opportunities giving consideration for the design, construction and maintenance challenges and issues identified by siting team members. After consideration of all input and a qualitative and quantitative analysis of all information, the siting team selects a preferred line route that strives to balance environmental, social, and technical considerations as well as project cost.

Q. How are decisions made by the siting team?

A. The team strives for consensus on important decisions. In my experience, upon completion of the siting analysis, one of the routes under consideration usually emerges as the clearly superior choice and the siting team is able to achieve a consensus on the selection of the route.

Q. What is the goal of the siting process?

A. The goal is to achieve the optimal balance of many competing factors in selecting a transmission line route. Factors include minimizing impacts on the environment, avoiding population centers, minimizing cost, avoiding historic and cultural sites, using existing linear features, promoting public and employee safety, minimizing impacts on land use, minimizing impacts on scenic areas, and avoiding scenic rivers. Although PPL Electric strives to achieve all of these goals, doing so is often impossible. Indeed, some of the goals are mutually exclusive. For example, PPL Electric cannot build transmission

lines in residential areas without obtaining homeowners' permission due to constraints on the power of eminent domain. That forces PPL Electric to construct transmission lines primarily in less populated areas where impacts on the environment may be greater. All routes have impacts; no route is perfect. Our goal is to fairly consider and balance all of these competing interests and to select a reasonable route for each transmission line.

Q. Please summarize the major steps in the siting process and the Company's ultimate selection of the line route.

A. PPL Electric and URS undertook a program to identify potential routes for the Project. This program involved extensive analysis through reviewing maps, Geographic Information Systems ("GIS") data sets, and aerial photography; conducting field analysis and subsequently identifying six Alternative Routes for further evaluation. The steps leading up to identifying the six Alternative Routes included delineation of the General Area of Study, environmental and land use data collection, identifying a more focused Project Study Area, and analysis of potential routes.

The six routes selected represented the routing team's best efforts at identifying viable route alternatives that met the stated Project purpose, goals, and objectives in the most environmentally, socially, and economically responsible manner. Where practical, the routes followed the path of existing power lines. However, all six routes require the Company to acquire some amount of new right-of-way.

The Company ultimately selected Route D-1 due to its many advantages over the other routes. Its primary advantage is that it makes the best use of existing rights-of-way, which will minimize environmental impacts, social impacts and cost.

Q. Please provide an overview of the siting process.

A. First PPL Electric determined the General Area of Study. The General Area of Study for the Project encompasses an area of approximately 30 square miles in Monroe County. The General Area of Study is that territory for which the environmental inventories were compiled. The boundaries of the General Area of Study were determined by the potential supply and destination service points with consideration for man-made and natural boundaries, as well as other limitations, which made other line routing alternatives unfeasible.

A wide variety of data were compiled and mapped to assist the siting team in identifying the most reasonable alternative route for construction of the Project. Examples of the information collected are: Geology and Soils; Surface Waters and Aquatic Species/Habitats; Wetlands; Vegetation; Wildlife; Land Use; Recreation Lands and Cultural Resources; and other linear features such as utility rights-of-way and transmission lines. This information was further interpreted to identify major obstacles to, and opportunities for, transmission line construction.

PPL Electric determined that a subset of the General Area of Study was appropriate for line route alternatives, where the alternatives could be sited to feasibly meet the Project's

functional requirements and, at the same time, minimize environmental and social impacts and project costs. This area is called the Project Study Area. PPL Electric determined six alternative routes for this line in the Project Study Area, identified as Routes A, B, C, D, D-1 and E.

The selection of Route D-1 as the preferred alternative was made after a quantitative and qualitative review of the alternatives taking into consideration impacts on the Built Environment, Natural Environment and Engineering Requirements of all six alternative routes. This process is discussed in detail in Attachments 3 and 4 to the Application for approval of the siting and construction of the Project that were filed with the Commission in May, 2012. This process enabled PPL Electric to select a route for the proposed transmission line that appropriately balances functional requirements, environmental factors, social factors, and cost.

Q. Please explain how the General Area of Study was determined.

A. PPL Electric conducted a detailed siting analysis to determine a location for the Project that best balances social, environmental, engineering and economic considerations. This analysis included the designation of a General Area of Study for the compilation of an environmental inventory, followed by the designation of a Project Study Area within the General Area of Study. Within the Project Study Area, PPL Electric identified alternative routes, analyzed the alternative routes, and selected the proposed line route. PPL Electric identified a General Area of Study for the Project that encompasses approximately 30-square miles (19,200 acres) within Monroe County, Pennsylvania. The

General Area of Study is defined to the south by the Jackson Substation, beyond which a new route extending north to the desired tap location would not be reasonable. Landscape features define the remaining boundaries and include dense residential areas to the west and north, and densely populated residential and commercial districts along Interstate ("I")-80 and State Route 611 to the east. Using this established General Area of Study, the routing team began its efforts to determine potential routes for the line.

Q. Please describe the difference between the General Area of Study and the Project Study Area.

A. The General Area of Study is the area for which the environmental inventories are gathered while the Project Study Area, which is a subset of the General Area of Study, 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 impacts and project costs. The Project Study Area encompasses approximately 14-square miles within the General Area of Study.

Q. Did the siting process described above consider the environment?

A. Yes. The General Area of Study contains native plant and wildlife habitats in natural areas. These natural areas are preserved for their ecological benefit, as well as for their social recreational value. Typical wildlife species found within the General Area of Study include those found in wetlands, forested habitats, and scrub-shrub habitats. Wetlands in the area provide habitat for frogs, snakes, birds, and raccoons. Forests and scrub-shrub habitats are home to species such as white-tailed deer, gray squirrel, wild

turkey, box turtle, striped skunk, opossum, and a variety of small mammals and songbirds.

As a result of a search of the Pennsylvania Natural Diversity Inventory ("PNDI") database, administered by the Pennsylvania Natural Heritage Program ("PNHP"), and follow-up consultations with state and federal agencies, PPL Electric has identified the following federal and/or state rare, threatened, or endangered species as potentially occurring within the General Area of Study: bog turtles, Indiana bats, timber rattlesnakes, variable sedge, and pitch pine-heath woodland. Habitat assessments for these species may be required by the jurisdictional agencies as part of the environmental permitting and approval process for the Selected Route.

Q. Have any areas in the General Area of Study been given special designations by the state or federal government?

A. Yes. Special use areas are places recognized by regulatory agencies or local governments as providing unique habitat characteristics or wildlife management opportunities that indicate a need for preservation. Examples include scenic areas, wilderness areas, wild and scenic rivers, state game lands, and priority natural areas. The only designated scenic area in the General Area of Study is the Big Pocono Overlook, located within Big Pocono State Park. No designated wilderness areas, wild and scenic rivers, or Heritage Geology Sites designated by the PNHP are located in the General Area of Study. A large portion of the 4,000 acre State Game Land #38 is located within the General Area of Study, as well as a portion of State Game Land #318. There are three Priority Natural Areas

located in the General Area of Study: Long Pond Macrosite, Camelback Mountain, and Sand Spring Run/Wolf Swamp Run.

PPL Electric conducted a desktop survey of the historic architectural resources within the General Area of Study. The desktop survey consisted of accessing the Pennsylvania Historical and Museum Commission's ("PHMC") Bureau of Historic Preservation's Cultural Resources Geographic Information System ("CRGIS") to review available information on previously recorded historic architectural sites in the General Area of Study. A windshield survey, conducted in October 2010, provided information about the built environment and the types of historic architectural resources. Areas of potential concern were identified during the windshield survey and used in defining constraints used to determine the Selected Route for the Project.

No National Register of Historic Places ("NRHP")-listed or -eligible historic structures or districts were identified in the General Area of Study. One undetermined above ground resource, identified as the Transue School (PHMC Key No. 039537), is an 1870's building located within the General Area of Study. This building is located on Sullivan Trail Road, north of I-80, in Pocono Township. An undetermined status means that, although this resource has been brought to the attention of PHMC, no determination of eligibility has been made. No archeological sites have been documented in the General Area of Study. Information regarding the Project was provided to PHMC in June 2011. On July 12, 2011, PHMC issued a response letter stating that based on their review there

are no NRHP- eligible or -listed historic or archaeological properties in the area of the proposed Project.

Q. What development patterns are present in the General Area of Study?

A. There are many development types and patterns in Monroe County. The main land use in the General Area of Study is Residential and is composed primarily of single-family residences and vacation rental homes or condominium complexes. Much of the residential development has occurred within the past 30 years. These residential areas range from widespread 200-home development complexes to modest 20-30 home developments. Relatively few sections of the General Area of Study are used for agricultural purposes. All of the land dedicated to agriculture is privately owned. The primary agricultural use involves row crops such as hay, corn, and soybeans. Other agricultural uses include horse pastures and dairy farms, but these are limited compared to row crops. There are no industrial land uses within the General Area of Study. However, several large tracts of land located north of Sullivan Trail Road are owned by mining companies.

Q. Are other utility facilities present in the General Area of Study?

A. There are no active railroads or airports within the General Area of Study. The closest airport is Pocono Mountain Municipal Airport, which is located approximately 2.15 miles north of the General Area of Study. A portion of the southwestern corner of the General Area of Study is identified by Monroe County as having a utility land use, but it is actually part of a large forest tract owned by the Bethlehem Water Authority for the

protection of its water sources in the area. Similarly, a 20-acre parcel near the intersection of I-80 and I-380 is identified as having a services land use but is actually a series of four communication towers. PPL Electric does not anticipate that any of these utility features will be impacted by the proposed Project, due to the distance between the features and the Project.

Q. Please describe how you determined the Project Study Area and the six Alternative Routes that were considered in this Project.

A. PPL Electric and URS worked together utilizing Geographic Information System ("GIS") technology in developing the Project Study Area. The development of the Project Study Area, as well as the development of the six Alternative Routes, is discussed in greater detail by Mr. Baker in his testimony.

Q. Please explain the analysis of the Alternative Routes.

A. The six routes selected (identified as Routes A, B, C, D, D-1, and E) represent the routing team's best efforts at identifying viable route alternatives that meet the stated Project purpose, goals, and objectives in the most environmental, socially, and economically responsible manner. The six routes are as follows:

- Route A begins at the Jackson Substation and travels northwest for 2.26 miles through State Game Land #38 and crosses to the north side of I-80. Route A then turns to the northeast for 0.21 miles. Turning to the north, Route A proceeds for 0.51 miles along the eastern edge of the Crescent Lake residential development. The route turns to the west for 0.19 miles crossing over Crescent Lake Road and through a proposed residential development area. Turning to the northwest, Route A travels another 0.19 miles then turns north for 0.45 miles. After crossing Sullivan Trail Road, Route A intersects with the existing Lake Naomi 138/69 kV Tap Line at the western edge of the Project Study Area and closest to the Lake Naomi Substation. The total distance of Route A is 3.81 miles.

- Route B starts at the Jackson Substation and travels northwest for 2.26 miles, mirroring Route A to the north side of I-80. After crossing I-80, Route B turns sharply to the northeast and proceeds for 0.23 miles. Route B then turns north and travels 0.51 miles along open forest land bordering a wetland complex. Turning to the northeast, Route B proceeds 0.19 miles, then turns north and travels 0.49 miles and crosses Crescent Lake Road, Sullivan Trail Road, and sections of open forest, before intersecting the existing Lake Naomi 138/69 kV Tap Line east of Route A. Route B is 3.68 miles long.

- Route C starts at the Jackson Substation and travels north for 2.14 miles. After crossing to the north side of I-80, Route C turns to the northeast and travels 0.32 miles. Route C then turns north for 0.72 miles, passing along the back edges of existing and proposed residential lots and then crossing over Dry Sawmill Run. Turning to the northeast, Route C travels 0.47 miles, crossing over Sullivan Trail Road and over open forest land before intersecting with the existing Lake Naomi 138/69 kV Tap Line in the center of the Project Study Area. Route C is 3.65 miles long.

- Route D starts at the Jackson Substation and travels northeast for 0.53 miles, paralleling the eastern edge of the existing transmission line right-of-way. After cresting the top of Camelback Mountain, Route D turns to the north for 1.37 miles to a point just south of I-80, where it shifts to the west of the existing transmission line right-of-way to avoid a cluster of residential properties. To accomplish this shift, the existing line would be transferred to new poles constructed in a new right-of-way on the western side of the existing right-of-way. The new line would then be transferred to the existing poles in the existing right-of-way. From the base of the south side of I-80, Route D turns to the east for 0.27 miles, then turns sharply north for 0.15 miles and crosses to the north side of I-80. Turning to the northwest, Route D then proceeds 0.19 miles over open forest to a point just within the borders of State Game Land #38. Route D turns to the north for 0.61 miles through open forest and parallel with a private dirt road that provides access to several homes located along the existing transmission line right-of-way. Prior to reaching the homes, Route D shifts back to the east side of the existing transmission line right-of-way. This shift would be accomplished by moving the proposed transmission line to the new poles in the new right-of-way created on the east side of the existing right-of-way. The existing transmission lines would then be transferred back to the existing poles in the existing right-of-way. Paralleling the eastern edge of the existing transmission line right-of-way, Route D then turns to the northeast for 0.64 miles and crosses over Sullivan Trail Road, Transue Run, and traverses through open forest before intersecting with the existing Lake Naomi 138/69 kV Tap Line right-of-way in the eastern end of the Project Study Area. Route D is 3.76 miles long.

- Route D-1 starts at Jackson Substation and mirrors Route D for 2.51 miles. After switching to the east side of the existing transmission line right-of-way on the north of I-80, Route D-1 departs from the existing right-of-way and proceeds northeast for 0.17 miles and then turns north for 0.33 miles. In this section, Route

D-1 traverses an area of open forest that bypasses several residential properties, but through an area identified as a proposed residential development. Upon intersecting with the existing transmission line right-of-way, Route D-1 then turns to the northeast and travels 0.57 miles before intersecting with the existing Lake Naomi 138/69 kV Tap Line right-of-way in the eastern end of the Project Study Area.

- Route E starts at Jackson Substation and travels northeast for 1.12 miles. Route E parallels the eastern edge of the existing transmission line right-of-way to the crest of Camelback Mountain, at which point it crosses the access road for Big Pocono State Park and parallels the eastern edge of the road down to the northern base of the mountain. Route E then turns to the east for 0.34 miles paralleling the south side of the access road. Near PPL Electric's existing Camelback Substation, Route E turns to the northeast for 0.44 miles and immediately crosses the access road and the existing Camelback Tap 69 kV transmission line. Route E then traverses an open parking lot and a wooded area bordering the northwestern edge of the Camelback Ski Resort. Route E turns north for 0.56 miles, then northwest for 0.85 miles. Route E crosses I-80, an unnamed tributary to Transue Run and traverses areas of open forest that are a proposed residential development site. At this point, Route E turns north for 0.51 miles. Route E then intersects with the existing transmission line right-of-way and turns to the northeast for 0.28 miles paralleling the eastern edge of the right-of-way, before intersecting with the existing Lake Naomi 138/69 kV Tap Line right-of-way in the eastern portion of the Project Study Area.

Once the Alternative Routes were identified, PPL Electric conducted a quantitative assessment of all six routes. The quantitative assessment required calculating the evaluation metrics of the routes and summarizing them in tabular form organized within the three perspectives – Built, Natural and Engineering. The metrics used are defined in Table 4-2 to Attachment 4. The raw metric results of the quantitative analysis are shown in Table 4-3 to Attachment 4. The quantitative analysis was then further refined by applying appropriate weights to each of the metrics. The weighting ensures that the features requiring the most "protection" are assigned a higher relative influence in the final ranking. The weighted metrics and weighted totals are shown in Table 4-4 to Attachment 4.

Q. What did the siting team do with the results of the quantitative analysis?

A. The siting team used the results of the quantitative analysis to identify the three worst scoring alternatives. In the quantitative analysis, a lower score indicated a better performance. The three worst scoring routes were then excluded from further consideration. PPL Electric identified that Routes A, C, and E were not suitable for the Project. Route A scored the worst due to its impacts on the natural environment. Route E had the highest impacts on the built environment and engineering impacts. Route C had the second highest impact on the natural environment and engineering impacts.

In the quantitative analysis, Routes B, D, and D-1 scored the best. Route D-1 had the lowest cumulative value of the six Alternative Routes considered. Route B had a low cumulative value due to limited built environment and engineering impacts. Route D also had a low cumulative value, despite having the highest built environment impact.

Q. What areas of impact did PPL Electric consider in its qualitative review of Routes B, D, and D-1?

A. PPL Electric considered the following areas of impact in its qualitative review of Routes B, D, and D-1: visual concerns; community concerns; special permit issues; construction, maintenance, and accessibility; and schedule delay risk.

Q. Please describe the conclusion of the qualitative assessment for visual concerns.

A. In analyzing the visual impact of the three alternatives the siting team noted that Routes D and D-1 would basically parallel the existing transmission line right-of-way. Although widening of the right-of-way and adding new poles and conductors would generate a visual impact for the surrounding communities, that impact would be primarily limited to a few landowners whose properties are located adjacent to the existing right-of-way and along the residential access road on the south side of Sullivan Trail Road. Paralleling the existing right-of-way would have less visual impact than Route B, which would require a new corridor through an area without existing transmission lines. While Route B's visibility would be low where it crossed State Game Land #38, it would be higher in the new right-of-way over Camelback Mountain and across I-80. The siting team concluded that a new overhead alignment through an area without an existing transmission line right-of-way would result in a more negative visual impact on the landscape than a transmission line located parallel to an existing right-of-way. This conclusion gave Route B the greatest visual impact of the three alternatives. Route D had the second greatest impact, because it bisected several properties within close proximity to four residential structures. Route D-1 had the lowest visual impact, because it would run parallel to the back edge of the same four properties.

Q. Please describe the conclusion of the qualitative assessment for community concerns.

A. All three alternatives cross through generally rural or isolated areas where construction and maintenance activities would not seriously impact the daily functioning of the local residents. Route B includes a new transmission line right-of-way corridor over Camelback Mountain and crosses sections of forest associated with State Game Land #38

that are not fragmented, and passes adjacent to a cluster of residential properties near Crescent Lake and Sullivan Trail Road. It is anticipated that this alternative would generate negative reactions from community leaders and groups due to its visual and social impacts, as well as from state and regional conservation groups due to its environmental impacts. Route B would have long-term social ramifications on the local community, and acquisition of the necessary state-owned and private property might be strongly contested. It, therefore, received the highest value, i.e., worst score for community concerns.

Routes D and D-1 both create some community concerns. Due to the increased activity and noise during construction, some community concern could be realized by persons living adjacent to the rights-of-way. Community concerns related to Route D would be elevated since it parallels the existing residential access road and is in close proximity to existing residential homes. Although Route D-1 crosses through portions of a proposed development, the community concerns with this route would be relatively minor since the corridor bypasses the existing residential section. Route D-1, therefore, received the lowest, i.e., most favorable value for community concerns.

Q. Please describe the conclusion of the qualitative assessment for special permit issues.

A. Various types of permits may be required for developing a new transmission line or when rebuilding transmission lines within existing rights-of-way. Each of the three alternatives would cross I-80 and a similar number of local roads, thus coordination with the Pennsylvania Department of Transportation for roadway occupancy permits is required

for all Routes and would be basically identical. The three Routes all cross environmentally sensitive lands within State Game Land #38. Development of any of the Routes would involve some wetland impacts, stream crossings, and potential species habitat encroachment. The extent of the permits required, however, will vary based on the condition of the natural resources and degree of anticipated impact.

By paralleling and overlapping onto the existing transmission line right-of-way, Routes D and D-1 would impact less forest area, cross fewer streams and wetlands, and have a relatively limited effect on potential habitats. Route D would impact relatively more wetland areas than Route D-1, whereas Route D-1 would impact more forest areas than Route D. In terms of special permit requirements, these impacts are comparable and would not result in potential permit process delays for either route. Routes D and D-1 were assigned the same moderately low special permit value.

Route B would cross significantly more forest area, streams, and wetland habitats than Route D and Route D-1. Route B bisects several presently undisturbed portions of open forest and fragments interior forest areas. The evaluation of the impacts to the forest community, associated streams and wetland areas, and potential habitats could be extensive. The permit expectations for Route B would involve a larger area and require more engineering to incorporate the expectations into the plans. Route B, therefore, had the highest special permit value.

Q. Please describe the conclusion of the qualitative assessment for construction, maintenance, and accessibility.

A. The siting team considered the variables involved in constructing transmission lines, conducting mandatory routine maintenance of the facilities, and providing appropriate access to all the required areas. Construction related issues for Route B would involve clearing vegetation and other obstructions within a new 100-foot wide right-of-way, developing new access roads, building new pole foundations, installing the poles, and installing the new 138/69 kV conductoring network. The rocky terrain, steep slopes, and dense forest growth would hinder access and development of Route B. Once completed, however, access for routine maintenance would not be problematic.

Although Routes D and D-1 would involve similar footer and pole construction processes, other aspects would be less difficult for these routes compared to Route B. Vegetation clearing work would be limited to widening the existing right-of-way by 50 feet in most areas. Similarly, construction of these two routes would further benefit from the existing access road network along the existing right-of-way. On the other hand, since these routes involve switching sides of the rights-of-way shared with other transmission lines, both Route D and D-1 would involve a higher level of complexity and coordination that may require special pole placements, structure modifications, and temporary planned power outages. Because creating new transmission line rights-of-way would result in more construction, maintenance, and access issues compared with paralleling existing rights-of-way, Route B was given a moderately high construction,

maintenance, and accessibility issue value. Routes D and D-1 were assigned the same moderate construction, maintenance, and accessibility issue value, below that of Route B.

Q. Please describe the conclusion of the qualitative assessment for schedule delay risk.

A. Schedule delay risks are directly related to the other qualitative criteria evaluated by the Siting Team. For example, negative community reaction, complicated right-of-way acquisition, required additional field studies for environmental permit clearance, and construction complexity can result in schedule delays. Route B would raise considerably more community concern relative to Routes D and D-1. Schedule delays for Route B would be expected as a result of community opposition to the acquisition of new rights-of-way adjacent to the residential cluster near Crescent Lake and Sullivan Trail Road. Other factors that could further delay the schedule for Route B include: potential state opposition to the acquisition of un-fragmented sections of State Game Land #38; opposition from local environmental groups over the potential impact to a Priority Natural Area; permit requirements and the need for additional environmental studies to address environmental permit requirements; mitigation expectations associated with anticipated impacts to wetland, forest, streams, and habitat; and construction complexity due to the rugged terrain. Cumulatively, these factors could significantly delay the schedule of Route B.

Route D and Route D-1 would not require the same level of coordination with the community or various agencies. Being located adjacent to the existing transmission line right-of-way, these proposed alignments would generate less community issues regarding

visibility, and right-of-way acquisition processes would be limited to landowners currently living along the existing right-of-way. Similarly, permit requirements are anticipated to be a time consuming procedure, however, the process should be less cumbersome than for Route B due to the relatively limited area of potential impact. Route D would be subject to more community-oriented schedule delays than Route D-1 since it is closer to several existing residential structures and would involve more landowners. Route D-1 would avoid these potential delays by passing around residential areas and involving fewer landowners. As a result, Route D-1 was assigned the lowest schedule delay risk value, followed by Route D and then Route B.

Q. Please summarize the conclusion reached by PPL Electric and URS regarding the route for the Project.

A. After evaluating all the factors considered during the routing process as documented in the Siting Application and summarized elsewhere in my testimony, PPL Electric and URS concluded that Route D-1 is the Preferred Route for the Project. The goal of the siting study was to select the most suitable route for the double-circuit 138/69 kV line. The most suitable route is considered the route that minimizes the effect of the transmission line on all factors of the natural and human environment, while minimizing overall project costs and avoiding unreasonable routes and non-standard design requirements to the extent practical.

The results of the qualitative assessment of the three Alternative Routes indicated that Route D-1 had the lowest weighted scores for visual concerns, community concerns, and

schedule delay risk. This route also scored favorably with regard to special permit issues and construction issues. Route D-1 had the lowest cumulative total in the qualitative assessment, and was therefore determined to be the Preferred Route for this Project. Route D-1 will have substantially less impact on the natural and built environment, land use, and citizens of Monroe County than the other Alternative Routes considered.

Q Does PPL Electric attempt to mitigate adverse impacts from the proposed line?

A. Yes. The siting process, is specifically designed to select a route that will mitigate adverse impacts. PPL Electric has used this process successfully many times in filings before the Commission. We have a long history of building power lines in a way that strikes a balance among maintaining reliable electric service, minimizing impact on property owners, protecting the environment and keeping costs down.

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

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

PPL Electric's vegetation management program is outlined in the "Specification for Initial Clearing and Control Maintenance of Vegetation on Or Adjacent to Electric Line Right-of-Way through Use of Herbicides, Mechanical and Hand-clearing Techniques."

A copy of this specification is provided as Attachment 6 to the Siting Application. In summary, this policy is designed to mitigate the impact of tree clearing on property crossed by PPL Electric rights-of-way. More specifically, selective clearing is utilized on certain PPL Electric easements. Selective clearing allows compatible species vegetation (vegetation that would not grow tall enough to threaten the reliable operation of the transmission line) to remain or grow back within the right-of-way. Restricted clearing is practiced in environmentally sensitive areas and, along with compatible species vegetation, allows some non-compatible species vegetation to remain until the understory vegetation redevelops.

Additionally, PPL Electric does not use any aerial herbicide application techniques. Herbicides are applied manually by trained professionals, each of whom applies the herbicide manually with a hand-held sprayer. Only those species that require control are treated. PPL Electric will not apply herbicides in the following areas or situations: pastures within 50 feet of any body of water; except that PPL Electric will use herbicides approved for watershed/aquatic use for stump treatments; within any actively maintained orchard or cultivated planting; near susceptible crops or other non-target vegetation where drift, runoff, or vapors can cause injury; where weather conditions create excessive drift; on rights-of-way under jurisdiction of the Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, and the U. S. Park Service unless prior approval is granted by the Department or Commission; on watershed properties, or in the vicinity of springs, irrigation ditches, or other potable water sources, unless prior approval is granted by the

property owner for use of a watershed/aquatic approved herbicide; in gullies or ravines where tree clearing is minimal. Finally, all herbicides used by PPL Electric have been approved by the United States Environmental Protection Agency.

Impacts from soil erosion and sedimentation and crossings of jurisdictional waters and wetlands are mitigated through the acquisition of and compliance with all required permits and plans. Initially, all wetlands and waters are identified, delineated, surveyed and added to construction plans. Structure and access road locations are located outside of these sensitive areas as much as practical. In locations where this is not practical, all required permits are obtained and the Company adheres to their terms and conditions during construction. I note that the placement of conditions on a permit by the Army Corps of Engineers, the Department of Environmental Protection or similar agencies is a principal tool for protecting the environment. The placement of conditions on a permit indicates that the agency has thoroughly reviewed the permit application and that, so long as conditions are followed, there will be no unlawful harm to the environment.

PPL Electric has instituted a Magnetic Field Management Program for new and rebuilt transmission lines. The implementation of this policy with respect to the proposed Project is discussed in the testimony of Mr. Jarrah.

In addition, the right-of-way for the proposed transmission line will preclude certain uses such as locating buildings or swimming pools within the easement. However, property owners will be compensated for this right-of-way when it is acquired.

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

A. Attachment 14 lists the anticipated local, state and federal agency requirements for permits, approvals or documentation. These permits and approvals include but are not limited to County Conservation District approval, Pennsylvania Department of Environmental Protection (PADEP) Chapter 105 permits, PADEP National Pollution Discharge Elimination System permit, and Pennsylvania Department of Transportation Highway Occupancy permits. PPL Electric must also receive approval from the Commission for the line siting and construction and for the condemnation applications. PPL Electric will obtain all necessary permits and approvals prior to construction and will comply with all conditions of the permits and approval.

Q. Please describe the right-of-way requirements for this project.

A. Right-of-way requirements are discussed more fully in Ms. Williams' testimony. To summarize, most of Route D-1 will be constructed adjacent to existing transmission facilities, and will therefore utilize existing rights-of-way. However, additional right-of-way is required from six property owners, including the Pennsylvania Game Commission ("PGC"). PPL Electric is attempting to obtain these additional rights-of-way voluntarily where possible. At this time, we have acquired easements from two of the property owners. Negotiations are ongoing with the other three property owners and the PGC.

Q. You previously mentioned public outreach in connection with the siting of the line. Please describe in more detail the public outreach program employed by PPL Electric in this process.

A. As I stated previously, we consider public outreach to be an important element throughout the Project. PPL Electric announced its intent to build the new, approximately 4-mile, Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Line in early May 2011. Since then, PPL Electric has undertaken activities to provide information on the project to the public and government officials and to collect input from those audiences. Activities that were undertaken to communicate the Project to the public included calls and e-mails to Government Officials, letters and project fact sheets mailed to property owners, news advertisements placed in a local newspaper, and a public open house meeting held on May 16, 2011. More detailed information on the outreach efforts is included in Attachment 4 to the Siting Application.

Q. Please summarize the benefits of the Project.

A. The benefits of the Project are discussed in the testimony of Mr. Lousos. In summary, the Project is needed to reinforce the transmission system in Monroe County in order to avoid overloading certain transmission facilities and to resolve transmission reliability criteria violations on PPL Electric's 138/69 kV circuits in the area beginning as early as 2013.

Q. Does this complete your direct testimony?

A. Yes, it does

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

| | | |
|---|---|---|
| **Re: 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 Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line In Monroe County, Pennsylvania** | : | **Docket No. A-2012-_____** |

**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 2**

**Direct Testimony of Barry Baker**

**DATE: May 15, 2012**

Q. Please state your full name and business address.

A. My name is Barry Alan Baker. My business address is 335 Commerce Drive, Suite 300, Fort Washington, PA 19034.

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

A. I am employed by URS Corporation (URS) as a Department Manager for Environmental Services. In this role I am a Certified Project Manager, a Principal Geographic Information Systems ("GIS") Specialist, and the Fort Washington office lead for transmission projects. PPL Electric retained URS as a consultant to assist in developing and evaluating alternatives for the Project.

Q. What is your educational background?

A. I received a Bachelors of Science with Honors degree in Environmental Science from the University of East Anglia in Norwich, England in 1996. A key focus was on the use of GIS and computer applications for environmental problem solving. My additional continuing education relevant to my current position included the following courses and programs:

- Approximately 50 URS Project Management Classes necessary for formal certification.
- Creating and Integrating Data for Natural Resource Applications (ESRI)
- Geoprocessing with ArcGIS Desktop (ESRI)
- Spatial Hydrology Using ArcView (ESRI)
- Introduction to ArcIMS (ESRI)
- System Architecture Design for GIS (ESRI)

Q. Please describe your professional background and employment history.

A. I have been employed by URS for the last six years in the role previously discussed. In this position I have been responsible for siting studies both as a Project Manager and as a technical lead for transmission line siting as well as new power development throughout the northeast region of the U.S. including, PA, NJ, MD, NY, CT, OH, and MA. I also manage the Fort Washington Office Environmental Services Department where I am responsible for a team of biologist, ecologists, and GIS specialists. Additionally I am the URS Fort Washington Office designed transmission lead for major transmission opportunities within the northeast. Prior to joining URS I held similar GIS and environmental development lead positions for other environmental and government consultants.

Q. What are your responsibilities in connection with the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line project?

A. PPL Electric retained URS to assist in developing and evaluating alternative routes for the Project. I led the team that conducted the siting study using the URS-adapted methodology of the siting process developed by the Electric Power Research Institute ("EPRI") and Georgia Transmission Corporation ("GTC"). The EPRI-GTC method incorporates GIS technology, statistical evaluation, site assessment and expert judgment into the decision-making process. The overall objective of the study was to select a transmission line route that would best minimize impacts to the communities and the natural environment while still being practicable to construct.

Q. What is the subject of your testimony in this proceeding?

A. My testimony explains the process PPL Electric used in the selection of the route for the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line ("the Project").

Q. Please explain the process that URS and PPL Electric used to site the Project.?

A. The siting methodology used for determining the preferred route for the Project uses a series of grid cells on aerial photographs or maps that are assigned a value indicating whether an area in a cell is suitable for a transmission line, *i.e.*, is an opportunity, or is less suitable, *i.e.*, is a constraint. This process is repeated several times with cells of decreasing size and progressively more detailed and precise data.

The methodology utilized was adapted from a protocol developed by the Electric Power Research Institute ("EPRI") and the Georgia Transmission Corporation. This method incorporates Geographic Information System ("GIS") technology, statistical evaluation and professional judgment into the decision-making process. The methodology formalizes many of the methods and principles used in the industry to site transmission lines. It was developed over many years with collaboration and feedback from utility companies, federal, state and local government agencies and other key stakeholders such as private landowners. The process was tested and calibrated against existing transmission line siting projects that had been successfully completed.

The siting method consists of four principal steps:

a) Generate Macro Corridors. These macro corridors define the outer edges of the Project Study Area.

b) Generate Alternative Corridors. Alternative corridors most suitable for the transmission line are generated from three primary perspectives:

   i. Protection of the natural environment;
   ii. Protection of the built environment; and
   iii. Engineering requirements.

c) Identify alternative routes within the alternative corridors.

d) Select the preferred route.

We relied on three broad categories of data for our analysis – ecological, land use/cultural, and technical/engineering. Data were obtained from a wide variety of sources, including state and local GIS databases, field reconnoissance surveys, information supplied by public agencies, published documents, and publically available electronic information.

The quantitative analysis performed by PPL Electric uses a series of grid cells across the General Area of Study. Values are assigned to each cell depending upon its primary use. A value is assigned representing, for example, an opportunity area such as open land or a constraint area such as a residential neighborhood. A "least impact" corridor or path can be determined by the mathematical addition of the value numbers from the value assigned to each cell between the start and end points. Opportunity areas are assigned low numbers, and constraint areas are assigned high numbers. Therefore, the corridor or path with the lowest value is the corridor or path with the least adverse impacts.

Macro corridor analysis begins after the start and end points of the new transmission lines have been established. The first step in macro corridor development is to develop a land use/land cover GIS database that identifies the key opportunity and constraint areas that are traditionally reviewed in a siting study.

A GIS map of the General Area of Study is created using land use and land cover data and other feature data that include roads, rail, and existing transmission lines. From the GIS map, a Composite Suitability Surface Map, composed of grid cells, is created. The features of each cell are identified and the features are ranked from one (most suitable) to nine (least suitable). Corridors with the cells having the lowest values have the highest overall suitability for a transmission line.

This composite suitability surface map is used to produce a series of potential broad corridor areas for the following three scenarios:

a) Opportunities to rebuild or parallel existing transmission lines.
b) Opportunities to parallel existing road right-of-ways.
c) Opportunities to cross undeveloped land.

These corridors represent preferred opportunity areas for developing a new transmission line. This process determines the corridor across the suitability surface that minimizes the sum of the values within that corridor. Corridors with the lowest sums have the higher overall suitability. Corridors with a larger suitability sum would be considered less optimal.

The macro corridor includes all areas determined to be most suitable from all of the three perspectives. The outer boundary of this Macro Corridor area also effectively defines the Project Study Area. The Project Study Area is a subset of the larger General Area of Study discussed previously.

The next step in the process is to identify alternative corridors. In order to identify alternative corridors, additional and more detailed data are gathered. The starting point of the assignment of values was the EPRI-GTC Methodology, which assigned values through a collaborative outreach involving stakeholders from federal, state and local governments, environmental and engineering experts, homeowner associations and other groups. The values obtained from EPRI-GTC were then reviewed by PPL Electric's siting team. Values for certain land uses and land covers were refined to reflect circumstances presented in the Project Study Area. These refinements were made by PPL Electric and URS technical experts in environmental, engineering, and public outreach disciplines to better represent conditions within Pennsylvania, such as the inclusion of stream classifications to offer enhanced protection to this key resource within the natural environment perspective.

Alternative corridors were created from three different perspectives – the Built Environment, the Natural Environment and Engineering Requirements. The "Built Environment" refers to protecting human and cultural areas by reducing potential conflicts with existing residential neighborhoods and other community-valued buildings or historic sites. The "Natural Environment" refers to protecting plants, animals and

aquatic resources by minimizing the impact to ecological resources and natural habitat. The "Engineering Requirements" refer to maximizing co-location and minimizing cost and schedule challenges by seeking the shortest path or utilizing existing rights-of-way, while avoiding areas that pose significant construction obstacles such as steep slopes or unique agricultural practices.

The same fundamental data sets are used in determining the alternative corridors for each of the above perspectives, *e.g.*, slope data and wetlands data are used in developing alternative corridors in all perspectives. For each perspective, however, weighting of data is based on the nature of the perspective. For example, a Built Environment assessment applies higher weight to features related to proximity and density of buildings in the Project Study Area. The Natural Environment assessment applies a higher weight to flood plain and wildlife habitat. The Engineering Assessment seeks to avoid construction obstacles such as slopes and utilize linear infrastructure features. By selecting the corridor that is optimal from each of the three perspectives, PPL Electric was able to compare environmental, social, and financial costs and benefits of each of the corridors.

The next phase of the process was route development, *i.e.*, determining the alternate routes within the alternative corridors. The alternative transmission line route development utilized a least impact tool similar to the one used to identify alternative corridors. The alternative route analysis, however, focuses on a single alignment rather than a broad corridor area. The alternative route analysis minimizes the least preferred

areas that are crossed along a route connecting the starting and ending locations. Again, routes are selected from each of the three perspectives.

To assess the advantages and disadvantages of alternative routes, specific features, such as the number of residences or streams crossed per route, were considered. The quantitative feature metrics are normalized, assigned relative weights, and organized within the three perspectives — the Built Environment, the Natural Environment and Engineering Requirements. The overall score for each alternative route was then calculated. As before, lower scores indicated less difficulty or potential impacts of the route. Using this methodology, PPL Electric selected six Alternative Routes for detailed examination. At the completion of the detailed examination of the six Alternative Routes, it was determined the three worst scoring routes would not be carried forward for further evaluation.

Q. What was the next step in the siting process?

A. The next step in the evaluation process was to qualitatively assess the remaining Alternative Routes based on less tangible criteria. The qualitative assessment was performed by applying expert judgment to rank the remaining alternative routes. PPL Electric's siting team qualitatively ranked the preferred routes based on several important considerations such as visual concerns, community concerns, schedule delay risk, special permit issues, and construction and maintenance accessibility. The goal of the qualitative expert judgment was to select a preferred route from the three remaining routes through the Project Study Area. This process is designed to encourage thorough discussion in

evaluating and selecting a final route in an objective, consistent, and comprehensive manner.

In conducting its qualitative assessment, PPL Electric considered the following five qualitative criteria for each alternative:

- Visual concerns;
- Community concerns;
- Special permit issues;
- Construction, maintenance, and accessibility; and
- Schedule delay risk.

Q. Were any of the Attachments to the Siting Application prepared by you or under your supervision?

A. Yes. I supervised the preparation of the following attachments: Attachment 1, the PUC Regulations Cross Reference Matrix; Attachment 3 that provides background information regarding the environmental setting of the General Area of Study; Attachment 4 that describes the methodology used by PPL Electric and URS to define alternative transmission routes (Alternative Routes) and to select the proposed transmission line route (Selected Route) for this project; Attachment 12 that reviews that status of the Agency coordination; and Attachment 14 that identifies the potential agency permit requirements.

Q. Does this complete your direct testimony?

A. Yes, it does.

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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| **Re: 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 Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line In Monroe County, Pennsylvania** | : | **Docket No. A-2012-_____** |

**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 3**

**DIRECT TESTIMONY OF ALEXANDROS LOUSOS**



**DATE: May 15, 2012**

Q. Please state your full name and business address.

A. My name is Alexandros Lousos. My business address is Two North Ninth Street, Allentown, Pennsylvania 18101.

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

A. I am employed by PPL Electric Utilities Corporation ("PPL Electric") as a Support Engineer in the Transmission Planning group.

Q. What is your educational background?

A. I received a Bachelor of Science degree in Electrical Engineering from Drexel University in 2008.

Q. Please describe your professional background and employment history with PPL Electric?

A. I have been employed by PPL Electric for more than three years. I have been in my current position since 2008. In this position, I am responsible for planning PPL Electric's transmission system for lines 69 kilo-Volts (kV) and greater in the Northeast Region.

Q. What is the purpose of your testimony?

A. My testimony will address the following issues: (1) the need for the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line ("the Project"); (2) a description of PPL Electric's system planning process; (3) an

explanation of the proposed project, which will solve the problems identified by the planning process and allow PPL Electric to provide reliable service to its customers.

Q. Please provide a brief overview of PPL Electric's Attachment 2 of the Siting Application and identify the portions for which you are responsible.

A. Attachment 2 of the Siting Application is the Necessity Statement that sets forth the reasons why the system requires reinforcement, explains the functional alternatives considered and describes the factors that led PPL Electric to determine that the Project is the best alternative to ensure reliable long-term electric service to customers. I am responsible for the Necessity Statement.

Q. Please briefly summarize the findings and conclusions set forth in the Necessity Statement.

A. This Project is required to resolve violations of PPL Electric's reliability criteria in Monroe County. The existing Lake Naomi 138/69 kV Tap is currently served by the Blooming Grove – Jackson 138/69 kV Transmission Line. As a result of the proposed new transmission project, a new Peckville – Jackson and Blooming Grove – Jackson double-circuit 138/69 kV line from the Jackson Substation, to the Lake Naomi Tap pole will be built. The existing Peckville – Jackson and Blooming Grove – Jackson 138/69 kV Line, heading north from the Jackson Substation, will become the new Jackson-Wagners #1 & #2 138/69 kV circuits, respectively. The Lake Naomi 138/69 kV Tap will become part of the circuit designated as the Jackson – Wagners #1 Line. The new transmission line will create an independent power

source for the Lake Naomi and Wagners substations. The Project will improve reliability for PPL Electric customers in Monroe County.

Q. Does PPL Electric have its own reliability criteria?

A. Yes. The PPL Electric planning guidelines are outlined in its Reliability Principles and Practices ("RP&P"). The RP&P was developed to ensure adequate and appropriate levels of electric service consistent with good utility practice.

Q. What are the criteria under the RP&P?

A. In accordance with the RP&P, the PPL Electric system is planned so that:

- Normal operation of the system will not load any electric facility beyond its normal continuous rating.
- The loss of any single transmission line, generating unit connected to the transmission system, power transformer, substation bus, circuit breaker, or double-circuit line due to the outage of a single tower or pole, does not result in any system electric facility being operated beyond its applicable emergency rating.
- No customer load should remain interrupted for routine maintenance of transmission facilities.

Q. How does PPL Electric conduct its planning process?

A. The PPL Electric planning process begins by developing a computer model of the future transmission system. A specific study year is chosen to define expected facility loadings. The future transmission system model is prepared using the existing transmission system plus any planned modifications to the transmission system that are scheduled to be in service prior to the study year. Load levels used in

the transmission system model are based on the latest forecast prepared by the PPL Electric Load Analysis Group.

Once PPL Electric's system model is complete, comprehensive power flow simulations are performed to determine the ability of the system to comply with the RP&P document. This is accomplished by simulating an outage of each single circuit line, double circuit line, transformer, bus, generator, or circuit breaker. All conditions where the future system does not meet the RP&P are identified.

Alternatives that can mitigate the reliability criteria violation are then developed and analyzed to ensure that the PPL Electric transmission system meets the reliability criteria in the RP&P. Estimated costs and lead-times to implement the reinforcements are prepared. Computer simulations of the system, considering the identified reinforcement alternatives, are completed to identify the best overall reinforcement plan that will meet the future needs of the region in a reliable and economic manner.

Q. Please describe the existing system.

A. From Jackson Substation to the Lake Naomi Tap pole, the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits are built on double-circuit 138/69 kV structures –that is, both circuits are installed on common structures. The circuits are constructed for future 138 kV operation, but are currently operated at 69 kV. Currently, the existing Lake Naomi 138/69 kV Tap is sourced by the Blooming

Grove-Jackson 138/69 kV circuit. The Lake Naomi Tap is built for future double-circuit 138/69 kV operation, but is currently operated as a single-circuit 69 kV line.

Q. What did the system planning process identify?

A. Due to increasing load growth in the area, transmission planning studies project, for 2013 and beyond, that the existing Blooming Grove-Jackson 138/69 kV circuit will be loaded to 115 Mega Volt Amperes ("MVA") during peak winter conditions. The Blooming Grove-Jackson 138/69 kV circuit has a normal winter rating of 111 MVA, and loading the circuit to 115 MVA would be a violation of PPL Electric's RP&P guidelines. Operating the circuit in an overloaded condition, above its normal rating, could initially damage the conductor and ultimately cause a failure resulting in customer outages. An outage would result in an interruption of service to approximately 16,300 customers. The RP&P guidelines also recommend that loading on a single-circuit should not exceed 60 Mega Watts ("MW"), so that for the loss of one circuit, the load from the out of service circuit can be transferred to the remaining in-service circuit, which can still operate within its emergency ampacity rating.

By 2012-2013 winter, the outage of the Blooming Grove – Jackson 138/69 kV line, with the outage occurring near Jackson substation would initially interrupt 115 MVA of load. Transferring load from the Jackson to the Blooming Grove Substations would be limited due to the resulting low voltage at the end of the Blooming Grove – Jackson circuit. In such an outage, the Power Dispatcher would be required to interrupt customer load served by distribution substations at Wagners and Lake Naomi, and the customer-owned Sanofi substation, to restore 69 kV voltages along

the line to an acceptable level. The RP&P guideline for maximum allowable load loss is 30 MW for a single-circuit line outage. If an outage were to occur on the Blooming Grove – Jackson circuit in its current configuration, approximately 68 MW would remain interrupted for an extended period of time until the outage could be located and switching moves could be made to re-sectionalize the line. This outage would exceed the RP&P guideline for maximum allowable load loss for a single-circuit line outage.

Q. How does PPL Electric intend to address the issues identified in the planning process?

A. To resolve the issues described above, PPL Electric, with approval from the Public Utility Commission ("Commission"), plans to construct the following:

- A new double-circuit 138/69 kV line from the Jackson Substation, north to the Lake Naomi Tap pole, a distance of approximately 3.8 miles. PPL Electric will design the new line to current 138 kV standards, but will operate the line at 69 kV initially.

- In the 69 kV Yard at the Jackson Substation, PPL Electric will install a new line terminal, breaker bay, and circuit breaker.

The existing Peckville – Jackson and Blooming Grove – Jackson 138/69 kV Line, heading north from the Jackson Substation, will become the new Jackson – Wagners #1 & #2 138/69 kV circuits, respectively. The Lake Naomi 138/69 kV Tap will become part of the circuit to be designated as the Jackson – Wagners #1 circuit. The Jackson – Wagners #2 circuit will have no load applied to it until the second 138/69 kV circuit is added to the Lake Naomi Tap in 2014. That project will be submitted to the Commission for review and approval at an appropriate time in the future. The

line proposed in this project will be named the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV line.

Q. What functional alternatives were identified?

A. No other reasonably economical functional alternatives were identified that would resolve the problem as outlined above.

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

A. Yes, it does.

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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**PPL ELECTRIC UTILITIES CORPORATION**

**STATEMENT NO. 4**

**DIRECT TESTIMONY OF DANNY S. JARRAH**

**DATE: May 15, 2012**

Q. Please state your name and business address.

A. My name is Danny S. Jarrah. My business address is Two North Ninth Street, Allentown, Pennsylvania 18101.

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

A. I am employed by PPL Electric Utilities Corporation ("PPL Electric") as a Supervising Engineer.

Q. What is your educational background?

A. I received a Bachelor of Science Degree in Electrical Engineering from Pennsylvania State University in 2005.

Q Do you hold any professional licenses?

A. I have been a licensed Professional Engineer in the Commonwealth of Pennsylvania since September 9, 2010 (# PE-078288).

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

A. I have been employed by PPL Electric for more than 6 years. I have been in my current position since January 2011. In this position, I am responsible for coordinating and supervising the daily activities of engineers and technicians in transmission engineering design. I am accountable for formal supervision, coaching, counseling, safety leadership, and technical guidance to assigned staff in support of producing high quality, timely, and cost-effective solutions to technical and business objectives. The position is also

accountable for the technical quality of the group's output and is expected to continuously improve capabilities in this area. I have held several positions of increasing responsibilities within the Company, as follows:

- 2005 – 2007: Engineer in Transmission Design Engineering
- 2007 – 2008: Support Engineer in Transmission Design Engineering
- 2009 – 2010: Support Engineer in Transmission Maintenance Engineering
- 2010 – 2011: Senior Engineer in Transmission Design Engineering
- 2011 – Present: Supervising Engineer in Transmission Design Engineering

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

A. Yes. I have worked on more than 10 projects involving transmission lines with voltages greater than 100 kV that have been approved under the Commission's siting regulations at 52 Pa. Code Ch. 57, Subchapter G.

Q. What are your responsibilities in connection with the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line project?

A. I am the responsible for overseeing the Transmission Line design activities. I am also responsible for reviewing and approving the final engineering design of the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line ("the Project").

Q. What are the subjects of your direct testimony in this proceeding?

A. My testimony addresses several subjects. First, I will explain the major design features of the Project. Second, I will explain the safety features incorporated into the design of

the Project. Third, I will explain PPL Electric's Magnetic Field Management Program and how it has been incorporated into the design of the Project.

Q. Please describe the major design features of the Project.

A. The National Electrical Safety Code ("NESC") is a set of rules to safeguard employees, contractors and the public during the installation, operation, and maintenance of electric power lines. Although it is not intended as a design specification, its provisions establish minimum design requirements.

For this Project, PPL Electric has developed design specifications and safety rules which meet or surpass all requirements specified by the NESC.

Q. Please describe the major design features that will be used in this Project.

A. The Project involves the installation of a new double-circuit 138/69 kV transmission line on new structures. The Project utilizes both tangent structures[1] and angle structures. The tangent structures for the proposed new double-circuit line will consist of single-shaft steel poles equipped with steel upswept arms. Angle structures will be single-pole or two-pole steel structures, depending on the severity of the line angle. Some poles will be installed on concrete foundations while the majority of poles will be direct embedded. Additionally, some angle structures may be guyed. Based on preliminary engineering, this Project requires the installation of approximately 35 structures, ranging from 80 to 100 feet in height. The average span length will be approximately 650 feet.

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[1] A tangent structure is a pole with no line angle.

The line will consist of six power conductors and one overhead ground wire. Each conductor will consist of 556.5 kcmil,[2] 24/7 stranding ACSR.[3] The overhead ground wire will be a 48 fiber 0.567-inch-diameter Optical Ground Wire ("OPGW"). The OPGW will provide lightning protection for the proposed line.

Q. Please explain PPL Electric's Magnetic Field Management Program as it applies to this Project.

A. PPL Electric's Magnetic Field Management Program is summarized in Attachment 11 and is applied to new and reconstructed line projects. The Company does not believe that current scientific evidence demonstrates that magnetic fields cause any adverse health effects or pose a health or safety danger to the public. Nevertheless, PPL Electric has determined, as a matter of policy, to design its new and rebuilt transmission lines to reduce magnetic fields when that can be done at low or no cost and consistent with functional requirements. PPL Electric's Magnetic Field Management Program has been developed to implement that policy decision. To reduce magnetic field exposures, the program generally prescribes the use of line design that provides five feet higher ground clearances and reverse phasing of new double-circuit lines where it is feasible to do so at low or no cost. The implementation of additional modifications will be considered, provided those modifications can be made at low or no cost.

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[2] A circular mil is the cross-sectional area of a wire one mil in diameter, where 1 kcmil = 0.5067 $mm^2$.

[3] Aluminum conductor steel reinforced.

Consistent with the program, PPL Electric will construct this Project for increased ground clearance to reduce magnetic field exposures. In addition, PPL Electric will reverse phase the two circuits, thus causing a further reduction of magnetic fields.

Q. Are you sponsoring any portions of the Siting Application?

A. Yes, I am sponsoring Attachment 5, which is the Engineering Description of the proposed Project. It describes the line design, conductor and proposed structure information and specific steps taken to reduce the magnetic fields on and along the rights-of-way.

I am also sponsoring Attachment 10 and 11. Attachment 10 is PPL Design Criteria and Safety Practices and describes the engineering standards and safety practices adhered to in the design of the Project. It explains PPL Electric's conformance with the NESC loading requirements and safety factors, as well as safety rules and work procedures incorporated for the safety of workers constructing and maintaining the line and the general public.

Attachment 11 explains what magnetic fields are, what causes them, and what magnetic field management means at PPL Electric. Even though no national or international health agency has determined that magnetic fields pose a health risk, PPL Electric is employing low cost measures such as those described previously in my testimony in order to reduce magnetic fields along its rights-of-ways for new and rebuilt transmission lines.

Q. Does this complete your direct testimony?

A. Yes, it does

**BEFORE THE**
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| **Re: 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 Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line In Monroe County, Pennsylvania** | : | **Docket No. A-2012-_____** |

# PPL ELECTRIC UTILITIES CORPORATION

## STATEMENT NO. 5

## DIRECT TESTIMONY OF DIANE WILLIAMS

**May 15, 2012**

Q. Please state your full name and business address.

A. My name is Diane T. Williams. My business address is 39 Industrial Park Road, Lake Ariel, Pennsylvania 18436.

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

A. I am employed by PPL Electric Utilities Corporation ("PPL Electric") as a Senior Real Estate Specialist. In that position, I am responsible for supporting the Real Estate needs of the various entities within PPL Electric.

Q. What is your educational background?

A. I received a Bachelors of Science in Forest Science from Pennsylvania State University in 1977. In addition, I have 136 Continuing Education credits from the International Right of Way Association (IRWA).

Q. Are you a member of any professional organizations?

A. Yes, I am a member of the IRWA.

Q. Please describe your professional background and employment history with PPL Electric?

A. I have been employed by either PPL Electric or PPL Services Corporation in various positions for the past 32 years. From 1980 until 2002 I was employed by PPL Electric as a Line Clearance Inspector in Honesdale, Pennsylvania. From 2002 until 2009, I held the position of Right of Way Agent with PPL Electric, in the Honesdale/Hamlin, Pennsylvania territory. From 2009 until 2010, I was a Senior Real Estate Specialist for

PPL Services Corporation, located in Hamlin, Pennsylvania. I have been in my current position with PPL Electric since 2010.

Q. What are your responsibilities in connection with the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line project?

A. It is my department's responsibility to identify all property owners along the Preferred Route. We review and determine the adequacy of easement rights in areas where we plan to use existing rights-of-way, and identify any area where we will require new or enhanced rights for the Preferred Route. For the area where we may need new or enhanced rights-of-way, we attempt to negotiate with the property owners for the appropriate land rights. For all property owners of land crossed by the Preferred Route, we also deliver literature including, but not limited to, a brochure on Electric Magnetic Fields ("EMFs"), compatible right-of-way uses, existing right-of-way documentation, pictures of typical transmission line structures, and other information to help them fully understand the Project. The Right-of-Way Agent will meet with property owners as necessary to answer questions, address concerns, and/or to resolve issues. The Right-of-Way Agent provides the property owner with information on how the Agent can be contacted, to answer questions or to address issues or concerns, should any arise. The Right-of-Way Agent is a direct link for the property owner to communicate with PPL Electric.

Q. What are the subjects of your direct testimony in this proceeding?

A. First, I will explain the process we utilize to attempt to acquire rights-of-way and easements for transmission lines. Second, I will explain PPL Electric's policy regarding the landowner's use of the right-of-way area. Third, I will explain the status of our attempts to acquire rights-of-way and easements for the Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line ("the Project"). Last, I will identify the portions of the Application that were prepared by me or under my supervision.

Q. Please explain the process PPL Electric uses to acquire rights-of-way and easements for transmission lines.

A. Prior to attempting to contact landowners, or their representatives, we provide to the owners, or their representatives, two notices which are required by the Pennsylvania Public Utility Commission ("Commission") in its regulations at 52 Pa. Code § 57.91. The notices are provided in Attachment 13. One notice discloses to the owner information concerning the name of the proposed Project, the number of circuits to be initially installed and the kilovolts at which it will operate, and informs them of their legal rights and PPL Electric's legal rights with regard to the Project. This notice explains PPL Electric's power of eminent domain, that is, the power to condemn land rights in order to construct facilities necessary for providing electric utility services to the public. The other notice provides information related to right-of-way maintenance practices for the proposed transmission line.

We also provide information which pertains to EMFs, a glossary of commonly used real estate terms, a listing of the trees and shrubs which are a permitted within the easement

area by PPL Electric and a picture of a typical pole or structure which PPL Electric plans to utilize for the transmission Project.

We wait at least fifteen days after the landowner receives the notices before making contact. We then contact the property owner(s) via telephone to request a convenient time to meet, so that we may explain the details of the Project, answer any questions the property owner(s) may have, and make a monetary offer which PPL Electric believes reflects the fair market value of the real estate interests which PPL Electric wishes to acquire.

Q. How does PPL Electric determine the fair market value of a property?

A. PPL Electric determines fair market value for a property by following a set process. First, recent, nearby land sale comparable data are gathered by an independent Real Estate Appraiser or by the Senior Real Estate Specialist. This information is used as a basis for determining the value of land on a per acre basis in the transmission line Project area. These comparables values are reviewed and analyzed with special attention given to the acreage amounts, type of land, zoning classification, and other price determining factors such as topography, views, on-site utilities, etc. The current use and potential future use of the parcel, along with the location of the proposed easement area on the property, are also important factors in determining the amount of monetary compensation for the right-of-way.

Q. Please explain PPL Electric's policy regarding the landowner's use of the right-of-way area.

A. PPL Electric's encroachment policy clearly defines permitted and non-permitted uses of its existing rights-of-way. In the most general terms, no building, structure, or explosive material may occupy PPL Electric's rights-of-way. There are, however, numerous compatible uses of these rights-of-way that do not interfere with the safe and reliable operation and maintenance of our facilities. Uses such as farming and gardening, or other passive uses, require no review or approvals by PPL Electric. Development of properties where extensive grading and installation of parking, utilities, roadways and other infrastructure are contemplated, require review and approval by PPL Electric. These development changes are usually compatible, provided the design and work performed in the area does not interfere with the safe and reliable operation and maintenance of our facilities.

Q. Please explain the status of PPL Electric's attempts to acquire rights-of-way and easements for the Project.

A. Since the majority of the Preferred Route makes use of existing PPL Electric rights-of-way, enhanced rights are needed from the property owners. PPL Electric requires enhanced rights-of-way from five property owners, as well as the Pennsylvania Game Commission ("PGC"). PPL Electric has reached agreements with two of the five property owners, and is in ongoing negotiations with the PGC. PPL Electric filed applications for approval of the condemnations of rights-of-way and easements across the

three remaining properties with the Commission at the time the Company filed the Siting Application. Negotiations continue with these property owners.

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

A. I am sponsoring Attachment 13, which contains the public notices required by the Commission in its regulations at 52 Pa. Code § 57.91. These notices were provided to the property owners along the right-of-way.

Q. Does this complete your direct testimony?

A. Yes, it does

## CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **"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 Blooming Grove – Jackson and Peckville – Jackson 138/69 kV Transmission Line In Monroe County, Pennsylvania" ("Application")** has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

**VIA CERTIFIED MAIL**
**RETURN RECEIPT REQUESTED**

Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1923

Office of Small Business Advocate
Commerce Building
300 North Second Street, Suite 1102
Harrisburg, PA 17101

Bureau of Investigation & Enforcement
PO Box 3265
Commonwealth Keystone Building
400 North Street, 2nd Floor West
Harrisburg, PA 17105-3265

Pennsylvania Historical and
Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building,
400 North Street, 2nd Floor
Harrisburg, PA 17120-0053
Attn: Mr. Douglas C. McLearen, Chief

Honorable Barry Schoch, P.E., Secretary
Pennsylvania Department of Transportation
c/o Office of Chief Counsel
Commonwealth Keystone Building
400 North Street, 9th Floor
Harrisburg, PA 17120
Attn: Andrew Gordon, Esquire

Pennsylvania Department of
Environmental Protection
Rachel Carson State Office Building
PO Box 2063
400 Market Street
Harrisburg, PA 17105-8767
Attn: Secretary's Office of Policy

Monroe County Commissioners
1 Quaker Plaza, Room 201
Stroudsburg, PA 18360-2141

Monroe County Planning Commission
1 Quaker Plaza, #106
Stroudsburg, PA 18360

Jackson Township Municipal Building
2162 Route 715
Reeders, PA 18352

Jackson Township Planning Commission
P.O. Box 213
Reeders, PA 18352

Pocono Township Board of Supervisors
PO Box 197
Tannersville, PA 18372

Pocono Township Planning Commission
PO Box 197
Tannersville, PA 18372

Iroquois Ridge Partners, LLP
*C/O Henry Speerstra*
2384 Horse Creek Road
Oil City, PA 16301

Pocono Manor Investors, LP
PO Box 38
Pocono Manor, PA 18349

Estate of Charles L. Vassallo
C/O Ross Wood Williams, Executor
2684 Wellingham Drive
Livermore, CA 94551

I hereby certified that a true and correct copy of the foregoing **"Notice of Filing"** of the Application and the applicable map has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

**VIA CERTIFIED MAIL**
**RETURN RECEIPT REQUESTED**

U.S. Army Corps of Engineers
Philadelphia District Regulatory Branch
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3390

US Fish and Wildlife Service
315 South Allen Street, Suite 322
State College, PA 16801-4850
Attn: Pam Shellenberger

PA Department of Conservation
and Natural Resources
Rachel Carson State office Building
PO Box 8767
400 Market Street
Harrisburg, PA 17105-8767
Attn: Rebecca Bowen

Pennsylvania Game Commission
2001 Elmerton Avenue
Harrisburg, PA 17110-9797
Attn: Olivia Braun

Pennsylvania Fish and Boat Commission
450 Robinson Lane
Bellefonte, PA 16823-9620
Attn: Kathy Gipe

Monroe County Conservation District
8050 Running Valley Road
Stroudsburg, PA 18360

Jerzy Mackowaik
RR1 Box 115A
Scotrun, PA 18355

Estate of Charles L. Vassallo
C/O Ross Wood Williams, Executor
2684 Wellingham Drive
Livermore, CA 94551

Henry Speerstra, Greg Campbell, Charles Campbell, IR Development, L.L.C., UTM Development, L.L.C., & Steve Bacik Partners
t/a Iroquois Ridge Partners, L.L.P.
C/O Henry Speerstra
2384 Horse Creek Road
Oil City, PA 16301

Howard L. Curtis et ux
C/O Kripps Shirley
RR1 Box 115
Scotrun, PA 18355

Pocono Manor Investors
C/O Matzel Devel
PO Box 38
Pocono Manor, PA 18349

Paul Richard Frantz et al
RR1 Box 43
Scotrun, PA 18355



Date: May 15, 2012

John H. Isom