

**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 : Docket No. A-2009-_____
OF THE PENNSYLVANIA PORTION OF :
THE PROPOSED SUSQUEHANNA- :
ROSELAND 500 KV TRANSMISSION :
LINE IN PORTIONS OF LACKAWANNA, :
LUZERNE, MONROE, PIKE AND :
WAYNE COUNTIES, PENNSYLVANIA :**

APPLICATION OF PPL ELECTRIC UTILITES CORPORATION

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

I. INTRODUCTION AND OVERVIEW

1. The Applicant is PPL Electric Utilities Corporation (“PPL Electric”), Two North Ninth Street, Allentown, Pennsylvania 18101.

2. PPL Electric is a Pennsylvania corporation which supplies electric distribution and provider of last resort electric supply services pursuant to the regulatory jurisdiction of the Pennsylvania Public Utility Commission (“Commission”) to approximately 1.4 million customers. Its service territory covers approximately 10,000 square miles in all or portions of twenty-nine counties in eastern and central Pennsylvania.

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. This Application is filed pursuant to Chapter 57, Subchapter G of the Commission's regulations at 52 Pa. Code §§ 57.71–57.77, governing the siting and construction of high voltage transmission lines, and seeks Commission approval for the siting and construction of the Pennsylvania portion of the 500 kV Susquehanna-Roseland electric transmission line (“Susquehanna-Roseland Line”). The Pennsylvania portion of the Susquehanna-Roseland Line includes approximately 101 miles of 500 kV transmission line and

related 230 kV transmission lines which will be situated mostly in existing rights-of-way and along paths of existing transmission lines in Pennsylvania. The proposed transmission line will originate at the Company's Susquehanna Substation in Salem Township, Luzerne County, near Berwick. It will proceed through portions of Luzerne, Lackawanna, Wayne, Pike and Monroe Counties to the Delaware River at the Delaware Water Gap National Recreation Area, where it will use an existing right-of-way to cross the Delaware River into New Jersey. A detailed description of the Pennsylvania portion of this line is provided in Paragraphs Nos. 12-19 below. The New Jersey portion of the Susquehanna-Roseland Line will extend approximately 45 miles from the Delaware River crossing to the Public Service Electric and Gas Company ("PSE&G") substation in Roseland Borough, Essex County, New Jersey. This portion of the line will be constructed by PSE&G.¹

5. The Pennsylvania portion of the Susquehanna-Roseland Line will be a mixture of single and double circuit design, as described more fully below. All circuits, except on small segments, will be designed for 500 kV operation, but on the double circuit portion of the line, one circuit will be operated initially at 230 kV.

6. In conjunction with the proposed 500 kV transmission line, PPL Electric proposes to construct a new 500/230 kV substation in Blakely Borough, Lackawanna County, Pennsylvania, in order to connect the 500 kV transmission line with the regional transmission system in that area. PPL Electric, by separate petition, is asking the Commission to find that the control equipment building at that substation is reasonably necessary for the convenience or welfare of the public.

¹ The entirety of the Susquehanna-Roseland Line is located in the Department of Energy's designated Mid-Atlantic Area National Interest Electric Transmission Corridor. Docket No. 2007-OE-01.

7. In this Application, PPL Electric seeks approval for the siting and construction of the portion of the proposed Susquehanna-Roseland Line that will be located in Pennsylvania. Siting and construction of the overall project will be coordinated between PPL Electric and PSE&G.

8. The Susquehanna-Roseland Line is required to resolve numerous violations of mandatory reliability standards and to ensure reliable long-term electric service to customers within the PJM Interconnection, LLC (“PJM”), including the approximately 1.4 million retail customers served by PPL Electric. As explained below, the Susquehanna-Roseland Line also will provide other important benefits to PJM, PPL Electric and the customers they serve.

9. The estimated cost to design and construct the Pennsylvania portion of the Susquehanna-Roseland Line is approximately \$510 million. Construction of the project should begin as soon as practicable to support an in-service date of June 1, 2012.

10. Accompanying this Application are two separate three-ring binders containing Exhibits A through E and Appendices E-1 through E-10, which provide additional detailed information regarding the Pennsylvania portion of the Susquehanna-Roseland Line. Exhibit A explains the need for the Susquehanna-Roseland Line. Exhibit B explains the study area and how the route was developed. Exhibit C provides the siting analysis for the Pennsylvania portion of the Susquehanna-Roseland Line. Exhibit D contains the engineering description of the Pennsylvania portion of the Susquehanna-Roseland Line. Exhibit E contains the Appendices for the Application.

11. This Application, including the accompanying Exhibits and Appendices, which are incorporated herein by reference, contain all of the information required by 52 Pa. Code §

57.72(c). In the near future, PPL Electric will file written direct testimony further explaining and supporting this Application.

II. DESCRIPTION OF THE PROPOSED TRANSMISSION LINE

12. The Pennsylvania portion of the Susquehanna-Roseland Line consists of seven discrete segments of the transmission line and related construction, including two minor segments involving additions or removals of small line sections and five major segments composing the bulk of the Pennsylvania portion of the new line. PPL Electric seeks approval for the siting and construction of all of the transmission lines and associated facilities that are described below.

- Small Segment 1 - Susquehanna 230 kV: A 0.44-mile section of new 230 kV single circuit transmission line from PPL Electric's Susquehanna T10 230 kV Switchyard to a section of existing 230 kV line that will be disconnected as a result of re-energizing at 500 kV. This line is referred to as the Susquehanna T10 Yard – Susquehanna 230 kV line. In this section, line structures will be single steel poles installed on concrete foundations with phase conductors vertically configured (phase-over-phase) and one overhead ground wire at the top of each pole. There will be approximately four structures in this line section with an average span length of 460 feet. Some structures may be guyed. All structures will be located on property owned by PPL Susquehanna SES.
- Small Segment 2 - Susquehanna 500 kV: A 0.9-mile section of new 500 kV single circuit transmission line from PPL Electric's Susquehanna 500 kV Substation north to a connection point with an existing line section that is currently energized at 230 kV but designed for 500 kV operation. In this section, tangent and light angle structures (angles less than 30 degrees deflection) will be 2-pole H-frame type steel pole structures installed

with three horizontally configured phases and two overhead ground wires above the phase conductors. Heavy angle structures will consist of 3-pole steel structures with phases horizontally configured and two overhead ground wires above the phase conductors. One overhead ground wire will be an overhead ground wire with fiber optic cables inside (“OPGW”); the other will be a stranded steel cable overhead ground wire (“OHGW”). All structures will be installed on concrete foundations; additionally, some structures may be guyed. There will be approximately five structures in this section with an average span of 715 feet.

- Large Segment 1: A 29.7-mile long single circuit line section, located between Susquehanna and a point near PPL Electric’s Stanton Substation (located near Pittston). This section of the Susquehanna-Roseland Line will use an existing line that was constructed in the 1970s with tubular steel H-Frame structures. This line is currently operated at 230 kV but was designed for ultimate 500 kV operation. This line will be reenergized for 500 kV operation. No new construction or rights-of-way will be required for this segment of the line. The line will utilize double-bundle 2493 ACAR 54/37 conductors (two per phase on 18-inch subconductor spacing) and two 19 No. 9 Alumoweld conductors for overhead ground wires. Typically, the right-of-way is 200-foot wide. This line section will be reconnected at both ends to provide the needed 500 kV path. One of the existing overhead ground wires will be replaced with one new 36 fiber OPGW. A 450-foot section of existing 230 kV line currently connecting the 30-mile section to Stanton Substation will be removed.
- Large Segment 2: A 13.4-mile section of new 500 kV transmission line from the end of Segment 1 at the Susquehanna River northeastward to PPL Electric’s proposed

Lackawanna 500 – 230 kV Substation located on a PPL Electric owned site adjacent to PPL Electric’s existing Lackawanna 230 – 69 kV Substation in Blakely Borough, Lackawanna County. This section of the line will be designed as a double circuit 500 kV line with only one circuit installed initially. This line section parallels an existing 230 kV double circuit line and will share the existing 325-foot wide right-of-way. In this section, tangent structures will be either single shaft steel poles or 3-pole portal type steel poles. Light angle structures (i.e., angles less than 30 degrees deflection) will be 3-pole portal type steel pole structures. Heavy angle structures will consist of 2-pole steel structures. All structures will be installed on concrete foundations, and some structures may be guyed. There will be approximately 76 structures in this section with an average span of 930 feet.

- Large Segment 3: An 8.4-mile section of new 500 kV transmission line from the end of Segment 2 at Lackawanna 500 – 230 kV Substation eastward to a point where the line rejoins an existing 230 kV line in Jefferson Township, Lackawanna County. This segment will be designed as a double circuit 500 kV line with only one circuit installed initially. In this section, tangent structures will be either single shaft steel poles or 3-pole portal type steel poles. Light angle structures will be 3-pole portal type steel pole structures. Heavy angle structures will consist of 2-pole steel structures. All structures will be installed on concrete foundations, and some structures may be guyed. There will be approximately 40 structures in this section, with an average span of 950 feet.
- Large Segment 4: A 19.5-mile section of new 500 kV transmission line from the end of Segment 3 in Jefferson Township, Lackawanna County to a point near the northern tip of Lake Wallenpaupack, just east of Hawley in Pike County. In this segment, the new line

will replace an existing 230 kV line. The line will be designed as a double circuit 500 kV line with one circuit energized at 230 kV and the other circuit energized at 500 kV. The new double circuit line will occupy the same centerline as the existing 230 kV line. In this section, tangent structures will be either single shaft steel poles or 3-pole portal type steel poles. Light angle structures will be 3-pole portal type steel pole structures. Heavy angle structures will consist of 2-pole steel structures. All structures will be installed on concrete foundations, and some structures may be guyed. The existing 230 kV line and structures will be removed in this line section. There will be approximately 112 structures in this section with an average span of 920 feet.

- Large Segment 5: A 29.2-mile section of new 500 kV transmission line from the end of Segment 4 just east of Hawley in Pike County to the Delaware River in Monroe County near Bushkill, Pennsylvania. In this segment, the new line will replace an existing 230 kV line. The line will be designed as a double circuit 500 kV line with one circuit energized at 230 kV and the other circuit energized at 500 kV. The new double circuit line will occupy the same centerline as the existing 230 kV line, and the 230 kV line will terminate into Blooming Grove Substation and Bushkill Switchyard. In this section, tangent structures will be either single shaft steel poles or 3-pole portal type steel poles. Light angle structures will be 3-pole portal type steel pole structures. Heavy angle structures will consist of 2-pole steel structures. All structures will be installed on concrete foundations and some structures may be guyed. The existing 230 kV line and structures will be removed in this line section. There will be approximately 169 structures in this section with an average span of 950 feet.

13. PPL Electric requests specifically that the Commission approve future operation of the transmission lines described above at the highest voltage for which the lines are designed and constructed and the addition of a second circuit in those areas described above where the structures are designed to accommodate two circuits but only one circuit will be installed initially.

14. Generally, the structures for the line will consist of single shaft or multiple shaft tubular steel pole structures on concrete foundations. Structures will be guyed where loadings make it appropriate to do so. Structures will be bare corrosion-resistant steel, which, over time, will form a protective, dark brown rust layer. In populated areas, structures may be painted green to blend better with the local terrain. Structure heights will vary from 150 to 195 feet; the average height will be approximately 165 feet. Photographs and sketches showing proposed structure types along the Pennsylvania portion of the Susquehanna-Roseland Line are shown in Exhibit D to this Siting Application.

15. The 500 kV circuit will consist of nine conductors arranged in triple-bundles with 18-inch spacing in a triangular configuration. Each of three phases will consist of 3 – 1590 KCMIL (thousand circular mil) 45/7 stranding ACSR (aluminum conductor steel reinforced) sub-conductors. The 230 kV circuit, where installed, will consist of a single 1590 45/7 stranding ACSR power conductor (or equivalent) for each of three phases.

16. The 500 kV portion of the line will have two OHGWs installed at the top of the structures for lightning protection. One OHGW will be a 19 No. 9 Alumoweld wire (or equivalent); the other OHGW will be an optical ground wire incorporating 36 optical fibers for relay and control communications as well as corporate and security communications.

17. The Pennsylvania portion of the Susquehanna-Roseland Line will fully comply with the National Electric Safety Code, PJM Facilities Design Criteria and the North American Electric Reliability Corporation (“NERC”) Reliability Standards. Further information regarding the engineering design of the project is provided in Exhibit D to this Siting Application.

18. The Pennsylvania portion of the Susquehanna-Roseland Line and the proposed substation are shown in Attachment C of Exhibit A to this Application, which is a functional one-line diagrams of the proposed facilities.

19. The Pennsylvania portion of the Susquehanna-Roseland Line 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 Exhibit D to this Application.

**III. NECESSITY FOR THE SUSQUEHANNA-ROSELAND
500 KV TRANSMISSION LINE**

20. The Susquehanna-Roseland Line is needed to resolve numerous violations of NERC reliability standards on critical 230 kV circuits in eastern Pennsylvania and northern New Jersey. PJM, pursuant to its Open Access Transmission Tariff (“OATT”), has directed PPL Electric and PSE&G to build the Susquehanna-Roseland 500 kV transmission line, with a specified in-service date of June 1, 2012.

21. Pursuant to Section 215 of the Federal Power Act, the Federal Energy Regulatory Commission (“FERC”) has certified NERC as the electric reliability organization (“ERO”) to develop and enforce mandatory reliability standards, which are subject to FERC review and approval. The FERC-approved NERC reliability standards are mandatory, and failure to comply with those standards can result in penalties of up to \$1 million per day.

22. PJM is a FERC-approved Regional Transmission Organization (“RTO”) charged with ensuring the reliability of the electric transmission system under its functional control and

coordinating the movement of wholesale electricity in all or parts of 13 states, including most of Pennsylvania and New Jersey. Among other things, PJM is responsible for assuring compliance with NERC planning and operating standards for the bulk electric system (i.e., above 100 kV) within its control area. PJM currently has more than 500 members, including power generators, transmission owners, electricity distributors, power marketers and large consumers. As a federally-regulated RTO, PJM acts independently and impartially in operating and planning the regional transmission system and in overseeing the wholesale electricity market.

23. In order to ensure reliable transmission service, PJM plans and operates the integrated transmission system for the entire PJM region. PJM and its members, including PPL Electric, prepare an annual Regional Transmission Expansion Plan (“RTEP”) to identify system reinforcements that are required to meet NERC reliability standards, PJM and transmission owner planning reliability criteria. The RTEP process results in the identification of existing or forecasted reliability violations on the PJM system. Based upon the requirements for firm transmission service on the PJM system, and using the RTEP process, PJM develops specific transmission projects to resolve any reliability violations and identifies the transmission owner(s) obligated to build these projects.

24. PJM’s RTEP process is currently set forth in Schedule 6 of PJM’s Amended and Restated Operating Agreement (“Schedule 6”). Schedule 6 provides that the RTEP must conform with NERC and other applicable reliability standards. In addition, it outlines the procedures for stakeholder input to develop the RTEP, the procedures used to develop the RTEP, the review and approval process for the RTEP, the obligation of transmission owners to build transmission upgrades included in the RTEP, and procedures applicable to interregional transmission upgrades.

25. PJM's 2007 RTEP identified numerous transmission reliability criteria violations on critical 230 kV and 500 kV circuits in eastern Pennsylvania and northern New Jersey, beginning as early as 2013. This analysis was updated as part of the 2008 RTEP to incorporate updated assumptions such as load forecasts, generation and demand response availability. The updated analysis developed as part of the 2008 RTEP validated the findings of the 2007 RTEP. Specifically, the 2008 RTEP identified 23 violations of NERC reliability standards on critical 230 kV circuits in eastern Pennsylvania and northern New Jersey, beginning as early as 2013. These electric reliability violations identified are a result of "overloaded" transmission facilities. This designation means that the loading on the transmission facilities will exceed the applicable rating which may cause permanent damage to transmission infrastructure and widespread power outages.

26. The 23 reliability violations are set forth in Appendix D to Exhibit A, which accompanies this Siting Application. These violations were determined through the application of NERC Category A,² Category B³ and PJM Load and Generation Deliverability Procedures.⁴

27. Eighteen of the 23 violations were load deliverability violations. Nine of these violations occurred for the PSE&G load deliverability criteria, with the most severe problem on the Branchburg-Readington 230 kV line.

28. In addition, there were five load deliverability violations in the Eastern Mid-Atlantic region with the most severe problem on the Martins Creek-Portland 230 kV line, a tie

² NERC Category A requires that the bulk electric system be able to meet customer demands and maintain firm transmission service with all facilities in service.

³ NERC Category B requires that the bulk electric system be able to meet customer demands and maintain firm transmission service with the loss of a single bulk electric system element.

⁴ PJM's load deliverability test examines defined load zones within the PJM region and evaluates the ability of the transmission system to deliver adequate power to the load zone during a generation capacity emergency. The generator deliverability test evaluates the capability of the transmission system to assure that capacity resources can be delivered to the remainder of the PJM system at peak load.

line that interconnects the PPL Electric transmission zone with the Metropolitan Edison Company transmission zone. The violations of the applicable load deliverability criteria were:

- Richmond-Camden 230 kV which is a tie line that interconnects the PECO Energy transmission zone with the PSE&G transmission zone;
- Waneeta-Richmond 230 kV line in the PECO Energy transmission zone;
- Hosensack-Elroy 500 kV line which is a tie line that interconnects the PPL Electric transmission zone and the PECO Energy transmission zone; and
- Bridgewater-Middlesex 230 kV line in the PSE&G transmission zone.

29. Five electric reliability violations were generator deliverability violations, all of which occur in the Jersey Central Power & Light transmission zone. The most severe problem was on the Greystone to Whippany 230 kV line. Other violations are forecasted to occur on the Kittatinny-Pohatcong 230 kV line, the Martins Creek-Morris Park 230 kV line, the Portland-Kittatinny 230 kV line and the Portland-Greystone 230 kV line.

30. After identifying these violations, PJM and its members, including PPL Electric, examined various functional alternatives to address the violations. After extensive analysis, PJM concluded that the preferred functional alternative was to construct a 146-mile, 500 kV transmission line between the PPL Electric 500 kV substation near Berwick, Pennsylvania, and the PSE&G 500 kV substation in Roseland, New Jersey.

31. The 2007 RTEP was approved by the PJM Board on June 22, 2007. By letter dated October 5, 2007, PJM notified PPL Electric that it had been designated as the transmission owner responsible for construction of the Pennsylvania portion of the Susquehanna-Roseland Line. On November 21, 2007, PPL Electric, in accordance with Section 4.2 of the PJM Transmission Owners Agreement, acknowledged the designation and accepted construction responsibility for the Pennsylvania portion of this line.

32. In addition to remedying the NERC facility overload violations, the Susquehanna-Roseland Line will: (a) enable PPL Electric to incorporate a previously identified transmission line project, currently estimated to cost approximately \$75 million into a single project; (b) in conjunction with other PJM RTEP projects, substantially reduce congestion costs in PJM and the PPL Electric transmission zone; (c) improve voltage levels in the Northeastern part of the PPL Electric service territory and portions of Pennsylvania Electric Company's service territory; and (d) eliminate existing stability limits imposed on the amount of generation allowed to be on-line in the north-central areas of Pennsylvania during certain transmission equipment outages in that area.

33. Exhibit A, which accompanies this Application, contains a detailed description of PJM's RTEP planning process, the FERC-approved NERC reliability standards and PPL Electric's planning process. That exhibit also contains the analysis supporting the determination that the Susquehanna-Roseland 500 kV transmission line is the best alternative to resolve all of the relevant NERC violations, and will in conjunction with other RTEP projects, help ensure reliable service to retail electric customers in PJM as well as in the PPL Electric transmission zone.

IV. SITING ANALYSIS

34. In accordance with the Commission's regulations at 52 Pa. Code § 57.72(c), PPL Electric conducted an extensive, multi-faceted analysis to determine the preferred route for the Pennsylvania portion of the Susquehanna-Roseland Line. This analysis included designation of a "Study Area," compilation of an environmental inventory, identification of alternative routes, analysis of the alternative routes and selection of the proposed line route. This process enabled PPL Electric to select a route for the proposed transmission line that appropriately balances functional requirements, environmental factors, social factors and cost considerations.

35. The Study Area for the project is shown on Figure B-1 in Exhibit B to this Siting Application. The Study Area is the general area in which alternative line routes can be feasibly sited to meet the Project's functional requirements and minimize social impacts, environmental impacts, and project costs. For the Pennsylvania portion of the Susquehanna-Roseland Line, the Study Area includes approximately 3,165 square miles (2.03 million acres) in northeastern Pennsylvania and includes all or portions of Monroe, Pike, Wayne, Lackawanna, Luzerne, Carbon, Schuylkill, Lehigh and Northampton counties.

36. In order to identify the preferred route for the Pennsylvania portion of the Susquehanna-Roseland Line, PPL Electric identified objectives that it would consider, to the extent possible, in selecting the route. These objectives included the following:

- a. Minimize environmental impacts,
- b. Minimize route length and costs,
- c. Use general design parameters specified by PPL Electric and PSE&G,
- d. Maximize paralleling or use of existing rights-of-way,
- e. Avoid residences,
- f. Minimize removal of barns, garages and other appurtenant structures,
- g. Maximize distances from residences, schools, cemeteries, historical resources, recreational areas and important cultural sites,
- h. Minimize new crossings of designated natural resources lands, and
- i. Avoid large lakes.

37. Another step in the route selection process was the identification of routing constraints. Constraints were divided into large and small constraints. Possible routes were identified to avoid large constraints to the extent practical. These routes were then adjusted to

the extent practical to avoid small constraints. Although complete avoidance of all constraints is not feasible, PPL Electric sought routes that would minimize intrusions into constrained areas.

38. In order to identify constraints, PPL Electric compiled a detailed environmental inventory of the Study Area. Compilation of the environmental inventory involved detailed reviews of data from numerous sources. The principal data sources included the following:

- a. Aerial photography from the National Agricultural Inventory Project and the PAMAP (Pennsylvania Map) Program,
- b. Maps from the United States Geological Survey, state and county road maps, transmission line map information, land ownership maps and maps provided by contacts at public meetings, on-line websites, local and county agencies, interest groups, county planning departments, The Nature Conservancy and other contacts identified in Section 6.5 of Exhibit B to this Siting Application,
- c. Geographic Information System data,
- d. Field inspections, and
- e. Other agencies.

39. Using the information summarized above, PPL Electric began the identification of potential routes. The process for identifying potential routes produced a network of links that could be considered to reach from the Susquehanna substation near Berwick to the Delaware River. Those links were combined into a number of initial potential routes for the Pennsylvania portion of the line.

40. After initial potential routes were identified, PPL Electric conducted field inspections of the routes from road crossings and other points of public access. The field

inspections resulted in numerous refinements of the potential routes to reduce impacts on constrained areas. As a result, some potential routes were eliminated from further consideration.

41. One potential route that was eliminated from further consideration would have run along Interstate 80. PPL Electric determined that PennDOT would not allow PPL Electric to construct an electric transmission line within the right-of-way for Interstate 80. PPL Electric then studied the possible use of a route adjacent to, but outside of, the public right-of-way. This route was determined not to be practical because PPL Electric would have to obtain new rights-of-way along the entire Interstate 80 route, and because development along Interstate 80, especially at interchanges and through the East Stroudsburg area, made it impossible to obtain adequate right-of-way.

42. After reviewing numerous potential alternatives, PPL Electric settled upon three alternative routes for detailed examination. These routes are:

- Route A, which begins at the PPL Electric Susquehanna Substation near Berwick and travels northeast through Luzerne and Lackawanna counties on the path of an existing 230 kV power line. The route then travels east through Lackawanna and Wayne counties primarily on the path of existing power lines before heading east-southeast through Pike County to cross the Delaware River north of Milford.
- Route B, which begins at the PPL Electric Susquehanna Substation near Berwick and travels through Luzerne, Lackawanna and Wayne counties on the same power line rights-of-way as Route A. Route B separates from Route A at a point northeast of Lake Wallenpaupack and travels south through the

Delaware State Forest on the path of an existing 230 kV power line to cross the Delaware River near Bushkill.

- Route C, which begins at the PPL Electric Susquehanna Substation near Berwick and travels south primarily on existing future use right-of-way through Luzerne and Schuylkill counties. The route then travels east primarily on future use or existing transmission power line routes in Schuylkill, Lehigh and Northampton counties to cross the Delaware River adjacent to the Martins Creek and Lower Mount Bethel power plant near Martins Creek.

43. After identifying these alternative routes, PPL Electric conducted an extensive public outreach program. The program included phone calls, meetings, a webcast with elected officials, mailings to about 2,200 people who own property within 1,000 feet of the corridor of each alternative route, newspaper and radio advertisements, press releases and website postings. Using these methods, PPL Electric notified the public of nine open houses in the project area between June 16 and 30, 2008. Overall, about 1,400 people attended the open houses and provided more than 944 written responses containing 1,573 specific comments.

44. The three line route alternatives were compared and a preferred route was selected based upon a detailed analysis of comments from the public, societal concerns, environmental impacts, engineering considerations and cost. The preferred route, Route B, was communicated to the public and to municipal, state and federal officials and agencies for further feedback and adjustments, where appropriate.

45. Route B has many advantages over Routes A and C. The primary advantage of Route B, however, is that it makes the best use of existing transmission line structures, existing

transmission line corridors and existing rights-of-way which will minimize environmental impacts, social impacts and cost.

46. Approximately 30 percent of Route B will require re-energizing an existing 230 kV line between the Susquehanna and Stanton substations. This line was originally designed and constructed to be operated at 500 kV, when load growth supports 500 kV operation. This portion of Route B will require no construction or clearing in order to be operated at 500 kV. Building transmission lines for future operation at higher voltage levels is one of the ways that PPL Electric meets increasing demands on its system while minimizing environmental and social impacts.

47. Approximately 61 percent of Route B will require constructing double circuit structures in existing transmission line corridors to accommodate both existing 230 kV transmission lines and the new Susquehanna-Roseland 500 kV transmission line. The 230 kV transmission line would be constructed to operate at 500 kV when future load growth makes it appropriate to do so. Although the rights-of-way would have to be widened, in some areas, to accommodate the increased voltage and expansion of the line from one to two circuits, impacts would be minimal compared to new construction. Because the corridor is already being used, construction would not involve complete clearing for new rights-of-way.

48. The remaining approximately 9 percent of Route B will utilize rights-of-way previously acquired by PPL Electric for future use and new rights-of-way.

49. In contrast, both Route A and Route C would require construction of substantial portions of the transmission line in areas where no transmission facilities currently exist. Although Route A and Route B share a common corridor for approximately 70 miles, after the routes diverge, Route A traverses substantial areas of uncut forest in Pike County. Construction

of a new transmission line in these areas would affect the environment, wildlife habitat and scenic viewsheds. Route C utilizes primarily future use rights-of-way. Construction of the Susquehanna-Roseland 500 kV transmission line along Route C would create new disturbances of the environment along almost its entire length, including several environmentally sensitive areas.

50. Route B has significant advantages over the other alternative routes and is preferable to those routes, recognizing numerous factors that are appropriately considered in selecting a transmission line route. These advantages include the following:

- a. Route B will require significantly less clearing of vegetation, which is particularly important on steep slopes where vegetation promotes soil stability.
- b. Route B will have the least impact on surface water quality because it requires the least amount of clearing and least amount of new rights-of-way.
- c. Route B will have the least impact on exceptional value wetlands and high quality water bodies.
- d. Route B will require clearing of approximately one-half of the acreage that would have to be cleared for either Route A or Route C. For this and other reasons, Route B will have the least impact on vegetation and wildlife, including species of special concern.
- e. Route B will cause less fragmentation of forest habitat than the alternative routes because it will require clearing of only about one-half of the acreage that would have to be cleared for either Route A or Route C and because the majority of forest crossed by Route B would be “edge” forest. In contrast, both Route A and Route C cross more uncut forest which provides habitat for interior forest species.

f. Route B will make best use of existing transmission line rights-of-way and corridors and therefore it would have the least impact on land use.

g. Route B will have less impact on residences than Route C. Eight residences and 18 other structures have been identified within 100 feet of Route B. In comparison, there are 63 residences and 28 other structures within 100 feet of Route C. There are only 5 residences and 11 other structures within 100 feet of Route A, but Route A avoids most residences by traversing substantial areas of uncut forests in Pike County.

h. Route B will have the least impact on recreational areas because Route B would use existing structures, rights-of-way and corridors. There would be some incremental aesthetic impacts on the Delaware Water Gap National Recreational Area because some additional acreage would have to be cleared and because the structures for the line would be taller. Route A would have significant impacts in Pike County, where it would use virgin right-of-way that would necessitate clearing many areas that have statewide or county importance as conservation opportunities or recreational uses. Route C would require construction of a new transmission line through many recreational areas where no transmission lines presently exist. Route C also would impact the viewshed for the Appalachian Trail in Northampton County.

i. Route B has a slightly higher number of architectural and archaeological sites within the area of potential effect for each respective resource suggested by the Pennsylvania Historical and Museum Commission and Bureau of Historical Preservation (14 architectural sites compared to 10 for Route A and 5 for Route C; and 15 archaeological sites for Route B compared to 6 for Route A and 4 for Route C). However, the area of potentially adverse visual effects and direct impacts related to

historic architectural structures will be greater where transmission line structures do not currently exist, and Route B will require the least construction of new transmission line structures. Similarly, construction of Route B involves the least amount of new ground disturbance and fewer new structure locations and access roads than the other Alternative Routes. Compared to the other routes, Route B therefore has the least potential to affect archaeological sites and historic structures. Construction and operation of the proposed 500 kV transmission line on Route B has the lowest potential to affect cultural resources because it would require only 8.4 miles (plus an additional 0.9-mile connection at the Susquehanna Substation) of new transmission line, cleared corridors, and access roads in areas where no transmission lines or corridors currently exist. In contrast, approximately 32.9 miles of Route A and 47.7 miles of Route C would require new structures in newly cleared corridors and new access roads.

j. Route B will have the least aesthetic impact because it makes the best use of existing structures, rights-of-way and corridors. Route B does bisect the Saw Creek Estates community in Pike County. Although Route B in this area would use the corridor of an existing 230 kV transmission line, there will be some aesthetic impacts from the higher structures and double circuit construction. Route A would have greater aesthetic impacts especially in Pike county, where 25 miles of new rights-of-way would have to be cleared through virgin forests. Route C would have greater aesthetic impacts because: (1) it passes close to the most residences, (2) it crosses the most agricultural land allowing for long pastoral views across substantial landscape, (3) it requires transmission facilities along the Blue Mountain/Kittatinny Ridge in Northampton County, which would cause substantial viewshed impacts.

k. Route B will eliminate the need for PPL Electric separately to reinforce a portion of its existing 230 kV transmission system. Specifically, PPL Electric would not have to separately rebuild its existing, antiquated Wallenpaupak-Bushkill 230 kV transmission line. This line, which was discussed above, bisects the Saw Creek Estates community in Lehman Township, Pike County. The Wallenpaupak-Bushkill 230 kV transmission line was constructed in 1929, is the second oldest high voltage transmission line in operation in the United States and needs to be replaced with modern structures and conductors regardless of whether the Susquehanna-Roseland Line is built. However, the cost of the replacement, if done separately from the construction of the Susquehanna-Roseland Line, would be approximately \$75 million.

l. Route B is the least cost alternative route. The estimated cost of the Pennsylvania portion of the Susquehanna-Roseland Line using Route B is \$510 million. The total cost of constructing the Susquehanna-Roseland line, using Route B and including the New Jersey portion of the line will be approximately \$1.21 billion. In comparison, the estimated cost of the Pennsylvania portion of the line using Route A is \$457 million, and the total cost of the line using Route A is approximately \$1.657 billion. The estimated cost of the Pennsylvania portion of the line using Route C is \$552 million, and the total cost of the line using Route C is approximately \$1.752 billion. Thus, the total cost of the Susquehanna-Roseland line using Route B is less than the total cost of either of the other two routes.

The cost figures for the Pennsylvania portion of the Susquehanna-Roseland Line using Route A or Route C do not reflect the approximately \$75 million cost to replace the Wallenpaupak-Bushkill 230 kV 230 kV transmission line. If either of these routes were

used instead of Route B, PPL Electric would have to replace the Wallenpaupak-Bushkill 230 kV transmission line as a separate project. This would increase the total costs of Route A and Route C by approximately \$75 million. On this basis, Route B is the least cost alternative for the Pennsylvania portion of the Susquehanna-Roseland Line.

m. Finally, Route B crosses the Delaware River and meets the route preferred by PSE&G for the New Jersey portion of the Susquehanna-Roseland 500 kV transmission line.

A detailed analysis of the decision to use Route B for the Pennsylvania portion of the Susquehanna-Roseland Line is provided in Exhibit C to this Application.

V. RIGHTS-OF-WAY

51. The right-of-way width for the Pennsylvania portion of the proposed Susquehanna-Roseland Line varies from place to place, as does the width of the right-of-way to be cleared. The standard minimum right-of-way width for a 500 kV transmission line is 200 feet. In certain areas, additional right-of-way width is required for co-occupancy with parallel additional transmission lines and/or a double circuit transmission line. In addition, in some areas, PPL Electric is seeking to acquire additional right-of-way width for future use.

52. Details of the rights-of-way required in various areas are provided in Exhibit C, Table C-1 to this Siting Application.

53. At the time this Siting Application was prepared, PPL Electric had successfully negotiated right-of-way agreements with 25 landowners along its preferred route. However, to date, the Company has not been able to negotiate agreements with 23 other property owners. In the near future, PPL Electric will file applications for findings that the service to be provided using facilities on the property of those 23 landowners is necessary or proper for the service, accommodation, convenience or safety of the public and that, therefore, PPL Electric may

acquire appropriate rights-of-way from such landowners through the exercise of the right of eminent domain.⁵

VI. COST AND COMPLETION DATE

54. The estimated cost to construct the portion of the Susquehanna-Roseland 500 kV transmission line in Pennsylvania is approximately \$510 million. This project has a scheduled in-service date of June 1, 2012.

VII. MISCELLANEOUS

55. 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).

56. 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 filing with the Commission; (b) provide a brief description of the project and its location; (c) provide area locations where the complete Application may be reviewed by the public; and (d) provide the date, time and location of the initial Prehearing Conference in this proceeding.

57. As explained above, portions of the Susquehanna-Roseland Line will replace the Wallenpaupak-Bushkill 230 kV transmission line that was constructed in 1929 and that has become inadequate to provide reliable service to customers. This antiquated transmission line must be replaced regardless of where or when the Susquehanna-Roseland Line is constructed. PPL Electric acknowledges that final permitting for portions of the Susquehanna-Roseland Line may require significant time. Conversely, permitting for other portions may be completed

⁵ PPL Electric is continuing to attempt to negotiate rights-of-way with the 23 landowners. Therefore, the number of condemnation proceedings that PPL Electric will file for the Susquehanna-Roseland transmission line may be reduced if PPL Electric's negotiations with any of the landowners are successful.

quickly. Therefore, PPL Electric specifically requests approval to begin construction of the portion of the Susquehanna-Roseland Line that will replace the Wallenpaupak-Bushkill 230 kV transmission line as soon as all approvals for construction of that segment of the Susquehanna-Roseland Line have been obtained, regardless of the status of permitting for other portions of the Susquehanna-Roseland Line.

VIII. CONCLUSION

PPL Electric respectfully requests that the Commission approve the siting and construction of the Pennsylvania portion of the Susquehanna-Roseland 500 kV transmission line as described in Paragraph Nos. 12 and 19 of this Application, above, or any individual portion of the transmission line, as soon as practical.

Respectfully submitted,



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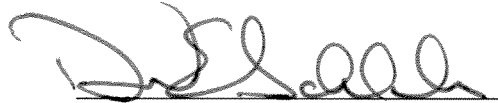
Post & Schell, P.C.

Date: January 6, 2009

Attorneys for PPL Electric Utilities Corporation

VERIFICATION

I, DAVID E. SCHLEICHER, Vice President-Transmission of PPL Electric Utilities Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief, and that I expect PPL Electric Utilities Corporation to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).



David E. Schleicher

Date: 12-30-08