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File #: 150995

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December 28, 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 Transmission Lines Associated with the Northeast-Pocono Reliability Project in Portions of Luzerne, Lackawanna, Monroe, and Wayne Counties, Pennsylvania Docket No. A-**

Dear Secretary Chiavetta:

Enclosed, for filing, are the original and six (6) copies of the Application of PPL Electric Utilities Corporation ("PPL Electric") for the above-referenced proceeding, together with seven (7) copies of the accompanying exhibits and appendices which are contained in a separately-bound volume. Also enclosed for filing is an original and six (6) copies of the Notice of Filing. A CD containing copies of the Application, exhibits and appendices and Notice of Filing is also enclosed. Also enclosed is a check in the amount of \$350 for payment of the filing fee.

Copies of the Application and accompanying exhibits and appendices are being served by certified mail, return receipt requested upon the persons indicated on the certificate of service.

Copies of the Notice of Filing are being serviced by certified mail, return receipt requested upon the persons indicated on the certificate of service.

Upon Commission approval, construction is schedule to commence in the spring of 2014 to meet the in-service date of November 2017.

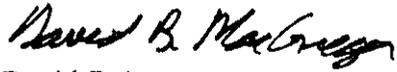
Rosemary Chiavetta, Secretary

December 28, 2012

Page 2

If there are any questions concerning this matter, please contact me at the addresses or telephone numbers provided above.

Respectfully Submitted,



David B. MacGregor

DBM/jl

Enclosures

cc: Robert F. Young  
Paul T. Diskin  
Nicholas Okoro  
Kimberly Hafner  
Bohdan Pankiw  
Tanya J. McCloskey  
Certificate of Service

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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Application of PPL Electric Utilities :  
Corporation filed Pursuant to 52 Pa. Code :  
Chapter 57, Subchapter G, for Approval of the :     Docket No. A-2012-\_\_\_\_\_  
Siting and Construction of Transmission Lines :  
Associated with the Northeast-Pocono :  
Reliability Project in Portions of Luzerne, :  
Lackawanna, Monroe, and Wayne Counties, :  
Pennsylvania :

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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” or the “Company”) hereby files, pursuant to 52 Pa. Code § 57.72, this Application requesting Pennsylvania Public Utility Commission (“Commission”) approval to site and construct transmission lines associated with the proposed Northeast-Pocono Reliability Project to resolve projected reliability violations and to reinforce the 138/69 kV system in Carbon, Lackawanna, Luzerne, Monroe, Pike, and Wayne Counties.

Currently, the only source of supply to the Northeast Pocono region is provided by 138/69 kV transmission lines. It has been approximately 30 years since the last major regional transmission reinforcement was built in the Northeast Pocono region. There has been substantial load growth in this area since that time, which is expected to continue. The existing 138/69 kV transmission lines serving the Northeast Pocono region are long and serve a significant number of customers who are exposed to long duration outages in the event of the loss of one of these transmission lines. PPL Electric’s system studies of the Northeast Pocono Region indicate that, starting in 2014, certain facilities would be in violation of PPL Electric’s “Reliability Principles

& Practices” (“RP&P”). These violations are evidence that the 138/69 kV systems serving the Northeast Pocono region need to be reinforced.

The Northeast-Pocono Reliability Project is required to resolve the violations of the RP&P guidelines and to reinforce the existing 138/69 kV systems serving the Northeast Pocono Region by bringing a new 230 kV supply source closer to the growing load centers. To accomplish this, PPL Electric proposes to locate the new West Pocono and North Pocono 230-69 kV Substations central to the loads they will serve. The two new Substations and associated new transmission lines will reduce the distance between the supply of power and the homes and businesses that use the electricity, which will reduce the number of customers affected by a single facility outage, as well as the duration of the outage.

The new Substations will be connected to the existing 230 kV transmission systems by building an approximately 58-mile new 230 kV transmission line. The new Substations will be connected to the existing local 138/69 kV transmission systems by building approximately 11.3 miles of new 138/69 kV transmission lines. PPL Electric herein seeks Commission approval to site and construct the 230 kV and 138/69 kV transmission lines associated with the Northeast-Pocono Reliability Project. Upon Commission approval, construction is scheduled to commence in the spring of 2014 to meet the in-service date of November 2017. In support of this Application, PPL Electric states as follows:

## **I. INTRODUCTION AND OVERVIEW**

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

2. PPL Electric’s address is as follows:

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. The Northeast-Pocono Reliability Project is required to resolve reliability and planning violations and to reinforce the 69 kV systems serving the Northeast Pocono region by bringing a new 230 kV supply source closer to the growing load centers. To accomplish this, PPL Electric proposes to locate the new West Pocono and North Pocono 230-69 kV Substations central to the loads they will serve.<sup>1</sup> The two new Substations and associated new transmission lines will reduce the distance between the supply of power and the homes and businesses that use the electricity. This proposed arrangement also will provide an alternative source of power to the Northeast Pocono region in the event that the normal sources are interrupted, which will improve

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<sup>1</sup> PPL Electric is filing separate zoning petitions for the West Pocono and North Pocono 230-69 kV Substations, requesting a finding that the buildings to shelter control equipment at each of the Substations are reasonably necessary for the convenience or welfare of the public and, therefore, exempt from any local zoning ordinance pursuant to 53 P.S. § 10619.

power restoration times and provide operating flexibility and improved reliability for customers in the region. The Northeast-Pocono Reliability Project will reduce the number of customers affected by a single facility outage, as well as the duration of the outage.

7. The proposed new West Pocono and North Pocono Substations will be connected to the existing 230 kV transmission systems by a new 58-mile 230 kV transmission line. PPL Electric also proposes to construct five new 138/69 kV transmission lines, collectively approximately 11.3 miles, to connect the new North Pocono and West Pocono 230-69 kV Substations to the existing local 138/69 kV transmission system.

8. The estimated cost to design and construct the Northeast-Pocono Reliability Project is approximately \$154 million. This cost includes approximately \$36 million for the substation work, \$90.6 million for the 230 kV transmission line work, \$10.3 million for the 138/69 kV transmission line work, and \$17.1 million for the acquisition of needed rights-of-way and land for the substations.

9. The Northeast-Pocono Reliability Project has a scheduled construction start date of spring 2014 to meet an in-service date of November 2017.

10. Accompanying this Application in a separate three-ring binder are the following Attachments that provide additional detailed information regarding the Northeast-Pocono Reliability Project:

- Executive Summary
- Attachment 1 Commission Regulation Cross-Reference Matrix
- Attachment 2 Necessity Statement
- Attachment 3 Environmental Assessment
- Attachment 4 Alternatives and Siting Analysis
- Attachment 5 Design and Engineering Description

- Attachment 6 Right of Way Property Owners
- Attachment 7 Local, State, and Federal Regulatory Requirements
- Attachment 8 List of Governmental Agencies, Municipalities, and other Public Entities Receiving the Application
- Attachment 9 List of Governmental Agencies, Municipalities, and other Public Entities Contacted
- Attachment 10 List of Public Locations where Application can be examined
- Attachment 11 Magnetic Field Management Plan
- Attachment 12 Vegetation Management
- Attachment 13 PPL Design & Safety Rules and Guidance
- Attachment 14 Agency Coordination (PNDI/Wetlands)
- Attachment 15 Cultural Resource Report
- Attachment 16 Public Notice Requirements

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

PPL Electric Statement No. 1, Direct Testimony of Doug L Haupt. This testimony provides an overview of the Northeast-Pocono Reliability Project.

PPL Electric Statement No. 2, Direct Testimony of Lisa R. Krizenoskas. This testimony explains the need for the Northeast-Pocono Reliability Project.

PPL Electric Statement No. 3, Direct Testimony of Richard A. Woodyka. This testimony supports the need for the Northeast-Pocono Reliability Project

PPL Electric Statement No. 4, Direct Testimony of Barry A. Baker. This testimony explains the selection of the routes for the transmission lines associated with the Northeast-Pocono Reliability Project.

PPL Electric Statement No. 5, Direct Testimony of Kyle J. Supinski. This testimony explains the design features of the Northeast-Pocono Reliability Project.

PPL Electric Statement No. 6, Direct Testimony of Colleen Kester. This testimony explains the process that PPL Electric used to attempt to acquire the

rights-of-way and easements necessary for the Northeast-Pocono Reliability Project.

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

## **II. NEED FOR THE PROJECT**

### **A. TRANSMISSION PLANNING**

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

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

15. PJM Interconnection, L.L.C. ("PJM") is a Federal Energy Regulatory Commission ("FERC") approved Regional Transmission Organization charged with ensuring the reliability of the electric transmission system under its functional control and coordinating the

movement of electricity in all or parts of thirteen states and the District of Columbia, including most of Pennsylvania. PPL Electric, an owner of transmission facilities in Pennsylvania, is a member of PJM and actively participates in the PJM transmission planning process.

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

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

18. PPL Electric undertakes an independent analysis of both its bulk electric system (“BES”) transmission facilities, which include transmission facilities operated at voltages of 100 kV or higher, and its non-BES transmission system facilities to ensure that these facilities meet the planning guidelines set forth in the RP&P. Based upon this analysis, PPL Electric determined that the proposed Northeast-Pocono Reliability Project is necessary to resolve violations of PPL Electric’s local planning criteria on the 138/69 kV systems serving customers in Carbon, Lackawanna, Luzerne, Monroe, Pike, and Wayne Counties.

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

20. Attachment 2 to this Application contains a detailed description of PJM's RTEP transmission planning process and PPL Electric's transmission planning process. Attachment 2 also contains the analysis supporting the determination that the Northeast-Pocono Reliability Project is necessary to resolve projected violations of PPL Electric's RP&P guidelines and reinforce the 138/69 kV systems in the Northeast Pocono region by bringing a new 230 kV supply source closer to the growing load centers.

## **B. EXISTING SYSTEM**

### **1. Overview of Northeast Pocono Area**

21. The Northeast Pocono area is loosely bounded on the west by several 230 kV lines; on the north and east by a single 230 kV line; and on the south by a double-circuit 138 kV line.

22. All of the local transmission lines that serve customers in the Northeast Pocono area are operated at 138/69 kV. The current configuration of PPL Electric's transmission system in the Northeast Pocono Area consists of long transmission line lengths between regional substations. There are approximately 128,000 customers (approximately 635 MW of load) in the Northeast Pocono area. Although there has been substantial load growth in this area, which is expected to continue, there have been no significant improvements to the regional electric transmission systems serving the area since the early 1980s.

23. Sources of electric power to the Northeast Pocono area currently are provided by four non-BES transmission substations located at the outer boundaries of the area: the Peckville, Blooming Grove and East Palmerton 230-69 kV Substations, and the Jackson 138-69 kV Substations. The Peckville, Blooming Grove, and East Palmerton 230-69 kV Substations receive power from the 230 kV bulk power network and transform that voltage down to 69 kV. The

Jackson 138-69 kV Substation receives power from the 230 kV bulk power network through the Monroe and Siegfried 230-138 kV Substations, and transforms that voltage down to 69 kV.

24. Figure 2-1 in Attachment 2 provides an area map of the existing transmission facilities in the Northeast Pocono area.

## **2. Northern Portion of the Northeast Pocono Region**

25. Presently, the only sources of electrical power to the northern portion of the Northeast Pocono region are the Peckville-Jackson and Blooming Grove-Jackson 138/69 kV Transmission Lines. These circuits are constructed for future 138 kV operation, but currently are operated at 69 kV.

26. The Peckville-Jackson 138/69 kV circuit is 47 miles and has one normally open (sectionalizing) point located at the North Coolbaugh 69-12 kV Substation. The Blooming Grove-Jackson 138/69 kV circuit is 67 miles and has one normally open (sectionalizing) point located at the Gouldsboro 69-12 kV Substation.<sup>2</sup> Both the Peckville-Jackson and Blooming Grove-Jackson 138/69 kV circuits are heavily loaded.

27. From the Jackson 138-69 kV Substation to the Gouldsboro 69-12 kV Substation, the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits are built on double-

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<sup>2</sup> The Blooming Grove-Jackson 138/69 kV circuit currently supplies the Lake Naomi 138/69 kV Tap. On May 15, 2012, PPL Electric filed a Full Siting Application at Docket No. A-2012-2304631, which currently is pending before the Commission. Therein, PPL Electric is seeking Commission approval to construct a new double-circuit 138/69 kV circuit, the Jackson-Wagners #1 & #2 138/69 kV circuit from the Jackson 138/69 kV Substation to the Lake Naomi 138/69 kV Tap, a distance of approximately 4 miles. If this project is approved, the Lake Naomi 138/69 kV Tap will have its own independent power source and will no longer be supplied by the Blooming Grove-Jackson 138/69 kV circuit. The in-service date for this project is November 2013. A one-line diagram of the transmission facilities in the northern portion of the Northeast Pocono area after completion of this project is provided as Figure 2-6 in Attachment 2 to this Siting Application.

circuit 138/69 kV structures -- that is, both the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits are installed on common structures as a double-circuit transmission line.

28. From the Gouldsboro 69-12 kV Substation to the Peckville 230-69 kV Substation, the Peckville-Jackson 138/69 kV circuit proceeds on separate single-circuit 138/69 kV tower structures.

29. From the Gouldsboro 69-12 kV Substation to the Blooming Grove 230-69 kV Substation, the Blooming Grove-Jackson 138/69 kV circuit proceeds on separate single-circuit 138/69 kV tower structures.

30. Figure 2-5 in Attachment 2 to this Siting Application provides a one-line diagram of the existing transmission facilities in the northern portion of the Northeast Pocono area.

### **3. Western Portion of the Northeast Pocono Region**

31. Presently, the only sources of electrical power to the western portion of the Northeast Pocono region are the East Palmerton-Wagners #1 & #2 138/69 kV Transmission Lines. These circuits are constructed for future 138 kV operation but currently are operated at 69 kV.

32. The East Palmerton-Wagners #1 69 kV circuit, including related taps, is 37 miles. The East Palmerton-Wagners #2 69 kV circuit, including related taps, is 33 miles.

33. From the East Palmerton 230-69 kV Substation to the Lake Harmony 69-12 kV Substation, the East Palmerton-Wagners #1 & #2 138/69 kV circuits are built on double-circuit 138/69 kV structures -- that is, both the #1 and #2 138/69 kV circuits are installed on common tower structures as a double-circuit line.

34. The East Palmerton-Wagners #2 138/69 kV circuit terminates at the Lake Harmony 69-12 kV Substation. The East Palmerton-Wagners #1 138/69 kV circuit proceeds from the Lake Harmony 69-12 kV Substation to the Wagners 69-12 kV Substation on separate

single-circuit 138/69 kV tower structures and then terminates at the Lake Naomi 138/69 kV Tap pole.<sup>3</sup>

35. Figure 2-5 in Attachment 2 to this Siting Application provides a one-line diagram of the existing transmission facilities in the western portion of the Northeast Pocono area.

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<sup>3</sup> PPL Electric plans to rebuild the East Palmerton-Wagners #1 & #2 circuit from the Lake Harmony 69-12 kV Substation to the Lake Naomi 138/69 kV Tap pole for double-circuit operation. The length of circuit to be rebuilt is approximately 24 miles. Upon completion, this portion of the Palmerton-Wagners Transmission Line (from Lake Harmony to Lake Naomi) will be renamed the Jackson-Wagners #1 & #2 138/69 kV Transmission Line. A one-line diagram of the transmission facilities in the western portion of the Northeast Pocono area after completion of the project is provided as Figure 2-7 in Attachment 2 to this Siting Application. PPL Electric plans to submit this project for Commission review and approval in mid-2013, and, if approved, this new double-circuit line will be in service prior to the in-service date for the Northeast-Pocono Reliability Project. For purposes of its transmission planning studies, PPL Electric assumed that this project would be in-service when it evaluated the need for the Northeast-Pocono Reliability Project.

### **C. DEFINITION OF THE PROBLEM**

36. Currently, the only sources of supply to the Northeast Pocono region are 138/69 kV transmission lines. There has been substantial load growth in this area since that time, which is expected to continue. However, it has been approximately 30 years since the last major transmission reinforcement was built for the Northeast Pocono region.

37. The current configuration of PPL Electric's transmission system in the Northeast Pocono area consists of long transmission line lengths between regional substations. When service on a long, heavily-loaded transmission line is interrupted, the ability to restore the interrupted load from an alternate source is limited due to unacceptable low voltages that occur at particular distribution substations when the load on one line is transferred to an adjacent line. As a result, it is difficult under emergency situations to restore interrupted load through line transfers between regional sources. The transmission system in the Northeast Pocono area experiences these load transfer limitations during certain peak winter loading periods.

38. Using the system planning process described above, PPL Electric projects that the following outages would result in violations of the system planning and reliability guidelines set forth in the RP&P if the system serving the Northeast Pocono area is not reinforced: (1) a double-circuit outage of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line; (2) a single-circuit outage of the Peckville-Jackson 138/69 kV circuit; (3) a single-circuit outage of the Blooming Grove-Jackson 138/69 kV circuit; (4) a double-circuit outage of the Palmerton-Wagners #1 & #2 138/69 kV Transmission Line; and (5) a single-circuit outage of the East Palmerton-Wagners #2 138/69 kV circuit.

39. PPL Electric's planning studies also project that, by the winter of 2015-2016, the normal line loading on the Blooming Grove-Jackson 138/69 kV circuit and Peckville-Jackson

138/69 kV circuit will exceed the normal line loading guideline set forth in the RP&P. This will limit PPL Electric's ability to restore load from the interruption of a neighboring circuit.

40. In addition, PPL Electric's planning studies identified that, by 2026-2027, the loss of one of the transformers at the Jackson 138-69 kV Substation could overload the remaining transformer in violation of the RP&P.

41. These violations are expected because the existing transmission system in the Northeast Pocono area does not have sufficient capacity to restore load interrupted under contingency situations within acceptable limits as specified within the RP&P guidelines. Given the load growth in the area, PPL Electric anticipates that the severity of each violation will continue to increase each year if the transmission system serving the Northeast Pocono area is not reinforced.

42. The identified contingencies are explained more fully below.

**1. Double-Circuit Outage of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line**

43. As explained above, the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits are built on double-circuit 138/69 kV structures from the Jackson 138-69 kV Substation to the Gouldsboro 69-12 kV Substation. The Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits are long and heavily loaded.

44. Under peak winter conditions, PPL Electric projects that, by the winter of 2014-2015, a double-circuit outage of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line occurring outside the Jackson 138-69 kV Substation would interrupt approximately 124 MW of customer load for an extended period of time until repairs could be made. This interruption would violate PPL Electric's RP&P guideline for maximum allowable

load loss for a double-circuit line outage, which allows only 120 MW or less to be interrupted until manual sectionalizing could be performed -- usually a 2 hour or less duration.

45. The ability to restore any portion of this interrupted load using the Blooming Grove and Peckville 230-69 kV Substations and Jackson 138-69 kV Substation is limited. This limitation is due to the unacceptable low voltage levels (below 62 kV) that would occur at certain distribution substations located at the end of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines.

46. Only 56 MW of the 124 MW of interrupted load could be restored using the Blooming Grove, Peckville, or Jackson Substations while maintaining acceptable voltage levels at the local 69 kV distribution substation buses. Therefore, approximately 68 MW of load would remain interrupted for an extended period of time until repairs could be completed.<sup>4</sup> This would violate PPL Electric's RP&P guideline for maximum allowable load loss for a double-circuit line outage, which only allows 45 MW or less to be interrupted until overhead line repairs can be completed.

## **2. Single-Circuit Outage of the Peckville-Jackson 138/69 kV Circuit**

47. Under peak winter conditions, PPL Electric projects that, by the winter of 2014-2015, a single-circuit outage of the Peckville-Jackson 138/69 kV circuit occurring outside the Jackson 138/69 kV Substation would interrupt 64 MW of customer load.

48. Given the limitations on transferring load between the Peckville 230-69 kV Substation and the Jackson 138-69 kV Substation, as explained above, only approximately 8 MW of the 64 MW of interrupted load could be restored while maintaining acceptable voltage levels at the local 69 kV distribution substation buses. Therefore, approximately 56 MW of load

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<sup>4</sup> In general, the amount of time required to repair a damaged overhead transmission line might last for an extended work day or longer.

would remain interrupted for an extended period of time until repairs could be completed. This would violate PPL Electric's RP&P guideline for maximum allowable load loss for a single-circuit line outage, which only allows 30 MW or less to be interrupted until overhead line repairs can be completed.

**3. Single-Circuit Outage of the Blooming Grove-Jackson 138/69 kV Circuit**

49. Under peak winter conditions, PPL Electric projects that, by the winter of 2013-2014, a single-circuit outage of the Blooming Grove-Jackson 138/69 kV circuit occurring outside the Jackson 138-69 kV Substation would interrupt 64 MW of customer load.

50. Given the limitations on transferring load between the Blooming Grove and Jackson Substations, as explained above, only approximately 30 MW of the 64 MW of interrupted load could be restored while maintaining acceptable voltage levels at the local 69 kV distribution substation buses. Therefore, approximately 34 MW of load would remain interrupted for an extended period of time. This would violate PPL Electric's RP&P guideline for maximum allowable load loss for a single-circuit line outage, which only allows 30 MW or less to be interrupted until overhead line repairs can be completed.

**4. Double-Circuit Outage of the East Palmerton-Wagners #1 & #2 138/69 kV Transmission Line**

51. As explained above, from the East Palmerton 230-69 kV Substation to the Lake Harmony 69-12 kV Substation, the East Palmerton-Wagners #1 & #2 138/69 kV circuits are built on double-circuit 138/69 kV tower structures.

52. Under peak winter conditions, PPL Electric projects that, by the winter of 2024-2025, a double-circuit outage of the East Palmerton-Wagners #1 & #2 138/kV Transmission Line occurring outside the East Palmerton 69-12 kV Substation would initially interrupt approximately 75 MW of customer load.

53. Restoring load from the Jackson 138/69 kV Substation results in low voltage at the end of the East Palmerton-Wagners #1 & #2 138/kV Transmission Line. If load is restored from the Jackson 138/69 kV Substation, the customer load served by distribution substations located at Weissport, Lehighon Boro (customer), and Little Gap would need to be interrupted to restore 69 kV voltage levels along the East Palmerton-Wagners #1 & #2 138/kV Transmission Line to acceptable limits.

54. Only 29 MW of the 75 MW of interrupted load could be restored using the Jackson 138/69 kV Substation while maintaining acceptable voltage levels at the local 69 kV substation buses. As a result, approximately 46 MW would remain interrupted for an extended period of time. This would violate PPL Electric's RP&P guideline for maximum allowable load loss for a double-circuit line outage, which only allows 45 MW or less to be interrupted until overhead line repairs can be completed.

#### **5. Single-Circuit Outage of the Palmerton-Wagners #2 69 kV Circuit**

55. Under peak winter conditions, PPL Electric projects that, by the winter of 2014-2015, an outage on the East Palmerton-Wagners #2 circuit occurring outside the East Palmerton 69-12 kV Substation would initially interrupt 31 MW of customer load.

56. Given the limitations in transferring load between the East Palmerton 69-12 kV and the Jackson 138-69 kV Substations, as explained above, the customer load served by distribution substations located at Weissport, Lehighon Boro (customer-owned), and Little Gap would need to be interrupted to restore 69 kV voltage along the East Palmerton-Wagners #2 Transmission Line to acceptable limits.

57. The transmission system currently has no capacity for load restoration using adjacent lines. As a result, approximately 31 MW of load would remain interrupted for an extended period of time. This would load violate PPL Electric's RP&P guideline for maximum

allowable load loss for a single-circuit outage, which only allows 30 MW or less of load to be interrupted until overhead line repairs can be completed.

**6. Normal Line Loading on the Blooming Grove-Jackson 138/69 kV Circuit and Peckville-Jackson 138/69 kV Circuit**

58. Under peak winter conditions, PPL Electric projects that the 2015-2016 peak winter load on the Blooming Grove-Jackson 138/69 kV circuit will be 61 MVA. Similarly, PPL Electric projects that, under peak winter conditions, the 2014-2015 peak winter load on the Peckville-Jackson 138/69 kV Transmission Line will be 64 MVA.

59. The projected normal line loadings on the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits violate PPL Electric's RP&P guideline, which recommends that the load on a single-circuit 138/69 kV line not exceed 60 MW. If a circuit is loaded above 60 MW, PPL Electric is restricted in its ability to restore load from the interruption of a neighboring circuit while keeping within the emergency rating of the conductor and within acceptable voltage limits. Further, when a circuit is long in length and heavily loaded, such as the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits, the low voltage condition is exacerbated when trying to restore interrupted load from a neighboring circuit.

**7. Loss of One Transformer at the Jackson 138-69 kV Substation**

60. As explained above, the Jackson 138-69 kV Substation receives 230 kV supply from the 230 kV bulk power network through the Monroe and Siegfried 230-138 kV Substations, which transform the voltage from 230 kV down to 138 kV. The Jackson 138-69 kV Substation, in turn, transforms the voltage from 138 kV down to 69 kV. The Jackson 138-69 kV Substation has two 138/69 kV transformers.

61. PPL Electric's RP&P provides that, for the forced outage of a power transformer, the loading of the remaining transformer(s) should be restricted to the two hour emergency

rating<sup>5</sup> and, for succeeding days, the load shall be further reduced to correspond with the applicable one-month and normal ratings. The one month thermal rating is used after another transformer is put in service via Supervisory Control and Data Acquisition (“SCADA”) to relieve the loading on the remaining transformer. It takes approximately one month to install a replacement transformer.

62. PPL Electric’s RP&P guidelines also recommend that a new non-BES substation be added when the minimum normal load at a substation exceeds the one-month emergency rating of the remaining transformer when one transformer is out of service.

63. *Each of the 138/69 kV transformers at the Jackson 138-69 kV Substation has a one month winter emergency rating of 240 MVA.*

64. PPL Electric projects that, by the winter of 2026-2027, the loss of one of the 138/69 kV transformers at the Jackson 138-69 kV Substation (failure or maintenance) for an extended period of time would cause the remaining transformer to supply a total load of 243 MVA, which would be approximately 101% of its one month winter emergency rating of 240 MVA. This would be a violation of PPL Electric’s RP&P.

## **8. Summary**

65. The only sources of supply to the Northeast Pocono region are provided by 138/69 kV transmission lines. It has been approximately 30 years since the last major regional transmission reinforcement was built for the Northeast Pocono region. There has been substantial load growth in this area since that time, which is expected to continue. The existing 138/69 kV transmission lines serving the Northeast Pocono region are quite long and serve a

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<sup>5</sup> The two hour emergency rating is used for the initial loss of one transformer. The remaining transformers must be below the two hour emergency rating after the loss of the first transformer.

significant number of customers who are exposed to long duration outages in the event of the loss of one transmission line.

66. PPL Electric's system studies of the area revealed that, starting in 2014, outages of certain facilities would result in violations of PPL Electric's RP&P guidelines. PPL Electric projects that each of these violations, and the amount of load lost as a result therefrom, will increase in magnitude due to the forecasted load growth in the Northeast Pocono area. These violations are evidence that the 138/69 kV systems serving the Northeast Pocono region need to be reinforced. Therefore, PPL Electric proposes the Northeast-Pocono Reliability Project as a *long-term plan to reinforce the Northeast Pocono area.*

67. The Northeast-Pocono Reliability Project is required to resolve the above-described violations of the RP&P and to reinforce the 69 kV systems serving the Northeast Pocono region by bringing a new 230 kV supply source closer to the growing load centers. The Northeast-Pocono Reliability Project will reduce the number of customers affected by a single facility outage, as well as the duration of the outage.

### **III. DESCRIPTION OF THE PROPOSED TRANSMISSION LINE**

68. The Northeast-Pocono Reliability Project is required to resolve the above-described violations of the RP&P and to reinforce the 69 kV systems serving the Northeast Pocono region by bringing a new 230 kV supply source closer to the growing load centers. To accomplish this, PPL Electric proposes to locate the new West Pocono and North Pocono 230-69 kV Substations central to the load they will serve.

69. The two new Substations and associated new transmission lines will reduce the distance between the supply of power and the homes and businesses that use the electricity. This proposed arrangement also will provide an alternate source of power to the Northeast Pocono

region in the event that the normal sources are interrupted, which will improve power restoration times and provide operating flexibility and improved reliability for customers in the region. The Northeast-Pocono Reliability Project will reduce the number of customers affected by a single facility outage, as well as the duration of the outage.

70. The new regional West Pocono 230-69 kV Substation will be constructed and located between the East Palmerton 230-69 kV Substation and the Jackson 138-69 kV Substation. The proposed location for the new West Pocono 230-69 kV Substation is central to the load it will serve. The West Pocono 230-69 kV Substation will tie into the East Palmerton-Wagners #1 & #2 and Jackson-Wagners #1 & #2 139/69 kV Transmission Lines,<sup>6</sup> which will (1) reduce the load on these lines by providing a new 230 kV source, and (2) reduce the length of each 138/69 kV line through re-sectionalizing (changing the normally open point). The West Pocono 230-69 kV Substation also will provide a backup source to the East Palmerton 230-69 kV and Jackson 138-69 kV Substations using interconnected 138/69 kV lines.

71. The new regional North Pocono 230-69 kV Substation will be constructed and located centrally with respect to the Jackson 138-69 kV, Blooming Grove 230-69 kV, and Lackawanna 230-69 kV Substations. The proposed location for the North Pocono 230-69 kV Substation is central to the load it will serve. The North Pocono 230-69 kV Substation will tie

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<sup>6</sup> Currently, from the East Palmerton 230-69 kV Substation to the Lake Harmony 69-12 kV Substation, the East Palmerton-Wagners #1 and #2 138/69 kV circuits are built on double-circuit tower structures. From the Lake Harmony 69-12 kV Substation, the East-Palmerton Wagners #1 circuit proceeds on separate single-circuit tower structures to the Wagners 69-12 kV Substation and then terminates at the Lake Naomi 138/69 kV Tap pole. PPL Electric plans to rebuild the East Palmerton-Wagners #1 & #2 Transmission Line from the Lake Harmony Substation to the Lake Naomi Tap pole for double-circuit operation. Upon completion, this portion of the Palmerton-Wagners Transmission Line (from Lake Harmony to Lake Naomi) will be renamed the Jackson-Wagners #1 & #2 138/69 kV Transmission Line. PPL Electric plans to submit this project for Commission review and approval in mid-2013, and, if approved, this new double-circuit line will be in service prior to the in-service date for the Northeast-Pocono Reliability Project.

into the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines, which will (1) reduce the load on these lines by providing a new 230 kV source, and (2) reduce the length of each 138/69 kV line through re-sectionalizing. The North Pocono 230-69 kV Substation also will provide a backup source to the Blooming Grove 230-69 kV, Lackawanna 230-69 kV and Jackson 138-69 kV Substations using interconnected 138/69 kV lines.

72. The new West Pocono and North Pocono 230-69 kV Substations will be connected to the existing 230 kV transmission systems by a new 58-mile 230 kV transmission line. PPL Electric also proposes to construct five new 138/69 kV transmission lines, collectively approximately 11.3 miles, to connect the new North Pocono and West Pocono 230-69 kV Substations to the existing local 138/69 kV transmission systems. Without this transmission work, the new West Pocono and North Pocono 230-69 kV Substations cannot be placed in service.

73. The proposed 230 kV and 138/69 kV transmission line segments are summarized below. The engineering description of the Northeast-Pocono Reliability Project is provided in Attachment 5 to this Application.

**A. 230 KV TRANSMISSION LINE WORK**

74. PPL Electric proposes to construct approximately 58 miles of new 230 kV overhead transmission line to strengthen the electrical delivery system and improve reliability in the Northeast Pocono region. The 230 kV portion of the Northeast-Pocono Reliability Project is divided into three major segments: the Jenkins-West Pocono segment, the West Pocono-North Pocono segment, and the North Pocono-Paupack segment.

75. Figure 2-3 in Attachment 2 to this Application provides an area map of the proposed 230 kV transmission lines. Figure 2-8 in Attachment 2 to this Application provides a

one-line diagram of the proposed 138/69 kV connecting lines from the new West Pocono 230-69 kV Substation.

76. The new 230 kV segments of the Northeast-Pocono Reliability Project will each be designed for 230 kV double circuit capability, but initially only one 230 kV circuit will be installed until load growth in the area makes it appropriate to add the second 230 kV circuit. The 230 kV double-circuit design will utilize six power conductors and two overhead ground wires. The power conductors will be 1,590 kcmil<sup>7</sup> 45/7 ACSR<sup>8</sup> conductors. The overhead ground wires will be 48 count single mode fiber optical ground wires and will provide lightning protection and communication between circuit breakers that remove the line from service should a fault in the line be detected.

77. The new structures for the 230 kV segments will be self-weathering tubular steel tangent structures equipped with upswept arms<sup>9</sup> and installed on concrete caisson foundations. Angle structures, which will consist of two-pole and/or guyed steel structures, will be installed as appropriate.

78. The new 230 kV segments of the Northeast-Pocono Reliability Project will each be designed to meet, and generally exceed, the National Electrical Safety Code (“NESC”) minimum standards. Design specifications and safety rules practiced by PPL Electric are included in Attachment 13 to this Application. The minimum conductor-to ground clearance for the proposed 230 kV lines will be 32 feet, which occurs at a maximum conductor temperature of

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<sup>7</sup> Kcmil stands for thousand circular mils. Kcmil wire size is the equivalent cross sectional area in thousands of circular mils. A circular mil is the area of a circle with a diameter of one thousandth (0.001) of an inch.

<sup>8</sup> ACSR stands for aluminum conductor steel reinforced.

<sup>9</sup> Due to the limitation of steel pole manufacturers’ ability to provide arms with the necessary curved radius, PPL Electric is evaluating the need to utilize straight arms with a vertical rise on all 230kV lines.

140 degrees Celsius. The designed minimum conductor-to-ground clearances and conductor thermal ratings are set forth in Tables 1 and 2 of Attachment 5 to this Application.

79. Each of the three 230 kV segments of the Northeast-Pocono Reliability Project is summarized below.

**1. The Jenkins-West Pocono 230 kV Transmission Line**

80. Approximately 15 miles of new 230 kV transmission line will be constructed between the existing Jenkins 230-69 kV Substation and the proposed new West Pocono 230-69 kV Substation. This segment is referred to as the Jenkins-West Pocono 230 kV Transmission Line.

81. The new Jenkins-West Pocono 230 kV Transmission Line will run in a southeast direction using both existing and new right-of-way. Figure 5-1 in Attachment 5 to this Application provides an area map of the proposed Jenkins-West Pocono 230 kV Transmission Line.

82. The new Jenkins-West Pocono 230 kV Transmission Line will require the installation of approximately 83 structures with an average height of 155 feet. The spans between the structures will be approximately 1,000 feet. The Jenkins-West Pocono 230 kV Transmission Line will consist of approximately 58 self-weathering tubular steel tangent structures installed on concrete caisson foundations. There will be approximately 25 angle structures, which will consist of two-pole and/or guyed steel structures.

**2. The West Pocono-North Pocono 230 kV Transmission Line**

83. Approximately 21 miles of new 230 kV transmission line will be constructed from the new West Pocono 230-69 kV Substation to the new North Pocono 230-69 kV Substation. This segment is referred to as the West Pocono-North Pocono 230 kV Transmission Line.

84. The new West Pocono-North Pocono 230 kV Transmission Line will run in a northeast direction using a new right-of-way. Figure 5-2 in Attachment 5 to this Application provides an area map of the proposed West Pocono-North Pocono 230 kV Transmission Line.

85. The new West Pocono-North Pocono 230 kV Transmission Line will require the installation of approximately 107 structures with an average height of 150 feet. The spans between the structures will be approximately 1,000 feet. The West Pocono-North Pocono 230 kV Transmission Line will consist of approximately 69 self-weathering tubular steel tangent structures installed on concrete caisson foundations. There will be approximately 38 angle structures, which will consist of two-pole and/or guyed steel structures.

### **3. The North Pocono-Paupack 230 kV Transmission Line**

86. Approximately 22 miles of new 230 kV transmission line will be constructed from the new North Pocono 230-69 kV Substation to the Paupack 230-69 kV Substation.<sup>10</sup> This segment is referred to as the North-Pocono-Paupack 230 kV Transmission Line.

87. The new North-Pocono-Paupack 230 kV Transmission Line will run in a northeast direction using both existing and new right-of-way. Figure 5-3 in Attachment 5 to this Application provides an area map of the proposed North Pocono-Paupack 230 kV Transmission Line.

88. The new North-Pocono-Paupack 230 kV Transmission Line will require the installation of approximately 120 structures with an average height of 150 feet. The spans between structures will be approximately 1,000 feet. The North-Pocono-Paupack 230 kV Transmission Line will consist of approximately 72 self-weathering tubular steel tangent

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<sup>10</sup> On June 11, 2012, PPL Electric submitted a Zoning Petition, at Docket No. P-2012-2309302, for a finding that will exempt the control equipment building at the proposed Paupack 230-69 kV Substation from the Paupack Township Zoning Ordinance. This Zoning Petition was approved by the Commission on September 27, 2012.

structures installed on concrete caisson foundations. There will be approximately 48 angle structures, which will consist of two-pole and/or guyed steel structures.

**B. 138/69 KV TRANSMISSION WORK**

89. PPL Electric also proposes to construct approximately 11.3 miles of new 138/69 kV transmission lines to connect the new North Pocono and West Pocono 230-69 kV Substations with the existing local 138/69 kV systems. These new 138/69 kV connecting lines will, in conjunction with the new Substations and 230 kV transmission lines, further improve system reliability in the Northeast Pocono region.

90. The new 138/69 kV connecting lines will be designed and constructed for future 138 kV double circuit operation, but initially will be operated at 69 kV until load growth in the area makes it appropriate to increase the operating voltage.

91. The 138/69 kV design will utilize six power conductors and two overhead ground wires. The power conductors will be 556 kemil 24/7 ACSR conductors. The overhead ground wires will be 48 count single mode fiber optical ground wires and will provide lightning protection and communication between circuit breakers that remove the line from service should a fault in the line be detected.

92. The structures for the new 138/69 kV connecting lines will be self-weathering tubular steel tangent structures equipped with upswept arms<sup>11</sup> and will be either direct embedded or installed on concrete caisson foundations as necessary. Angle structures, which will consist of two-pole and/or guyed steel structures, will be installed as appropriate.

93. The new 138/69 kV connecting lines will be designed to meet, and generally exceed, NESC minimum standards. Design specifications and safety rules practiced by PPL

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<sup>11</sup> Due to the limitation of steel pole manufacturers' ability to provide arms with the necessary curved radius, PPL Electric is evaluating the need to utilize straight arms with a vertical rise on all 138 kV lines.

Electric are included in Attachment 13 to this Application. The minimum conductor-to-ground clearance for the proposed 138/69 kV connecting lines will be 30 feet, which occurs at a maximum conductor temperature of 125 degrees Celsius. The designed minimum conductor-to-ground clearances and conductor thermal ratings are set forth in Tables 3 and 4 of Attachment 5 to this Application.

94. The new 138/69 kV connecting lines for the Northeast-Pocono Reliability Project are divided into two major segments, which are summarized below.

**1. 138/69 kV Connecting Lines from the New West Pocono 230-69 kV Substation**

95. PPL Electric proposes to construct two new double-circuit 138/69 kV transmission lines, each approximately 3 miles, to connect the new West Pocono 230-69 kV Substation to the existing 138/69 kV system.

96. Both double-circuit connecting lines will extend approximately 3 miles from the West Pocono 230-69 kV Substation and tap into the existing East Palmerton-Wagners #1 & #2 Transmission Line. One double-circuit will be renamed the East Palmerton-West Pocono #1 & #2 138/69 kV Transmission Line (from the West Pocono Substation to the East Palmerton Substation), and the other double-circuit line will be renamed the West Pocono-Jackson #1 & #2 138/69 kV Transmission Line<sup>12</sup> (from the West Pocono Substation to the Jackson Substation).

97. The new double-circuit 138/69 kV connecting lines from the West Pocono 230-69 kV Substation will be constructed using a new, single 150-foot right-of-way. Both 138/69 kV connecting lines will share the right-of-way using a 50-foot centerline separation.

98. Figure 5-4 in Attachment 5 to this Application provides an area map of the proposed 138/69 kV connecting lines from the new West Pocono 230-69 kV Substation. Figure

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<sup>12</sup> See footnote 6, *supra*.

2-9 in Attachment 2 to this Application provides a one-line diagram of the proposed 138/69 kV connecting lines from the new West Pocono 230-69 kV Substation.

99. The new double-circuit 138/69 kV connecting lines from the West Pocono 230-69 kV Substation will require the installation of approximately 48 structures with an average height of 105 feet. The spans between structures will be approximately 650 feet. The structures for the new 138/69 kV connecting lines will consist of approximately 34 self-weathering tubular steel tangent structures that will be either direct embedded or installed on concrete caisson foundations as necessary. There will be approximately 14 angle structures, which will consist of two-pole and/or guyed steel structures.

**2. 138/69 kV Connecting Lines from the New North Pocono 230-69 kV Substation**

100. PPL Electric proposes to construct three new 138/69 kV transmission lines, collectively approximately 5.3 miles, to connect the new North Pocono 230-69 kV Substation to the existing Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines. Two of the connecting lines will be single-circuit and the third line will be double-circuit.

101. Figure 5-5 in Attachment 5 to this Application provides an area map of the proposed 138/69 kV connecting lines from the new North Pocono 230-69 kV Substation. Figure 2-10 in Attachment 2 to this Application provides a one-line diagram of the proposed 138/69 kV connecting lines from the new North Pocono 230-69 kV Substation.

**a. North Pocono Single-Circuit Connecting Lines**

102. Two of the new North Pocono connecting lines will be single-circuit 138/69 kV transmission lines that will connect the North Pocono 230-69 kV Substation to the existing Peckville-Jackson 138/69 kV Transmission Line. One single-circuit line will be renamed the

Lackawanna-North Pocono 138/69 kV Transmission Line and the other single-circuit line will be renamed the North-Pocono-Jackson #2 138/69 Transmission Line.

103. The new single-circuit Lackawanna-North Pocono 138/69 kV Transmission Line will extend approximately 1.1 miles from the North Pocono 230-69 kV Substation to break into the existing Peckville-Jackson 138/69 kV Transmission Line, and then will proceed northwest to the existing Lackawanna Substation.<sup>13</sup>

104. The new single-circuit North-Pocono-Jackson #2 138/69 kV Transmission Line will extend approximately 1.1 miles from the North Pocono 230-69 kV Substation to break into the existing Peckville-Jackson 138/69 kV Transmission Line and proceed south to the existing Gouldsboro Substation, and then proceed southeast from the Gouldsboro Substation to the existing Jackson Substation.

105. The new Lackawanna-North Pocono and North-Pocono-Jackson #2 138/69 kV Transmission Lines initially will have only one circuit installed until load growth in the area makes it appropriate to add the second circuit.

106. The new single-circuit Lackawanna-North Pocono and North-Pocono-Jackson #2 138/69 kV Transmission Lines will be constructed within a new, shared 200-foot right-of-way, using a 50 foot centerline separation, that will extend from the North Pocono 230-69 kV Substation to the existing Peckville-Jackson 138/69 kV Transmission Line.

107. The new single-circuit Lackawanna-North Pocono 138/69 kV Transmission Line will require the installation of approximately 10 structures with an average height of 110 feet. The spans between structures will be approximately 650 feet. The structures for the

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<sup>13</sup> The Peckville Substation is scheduled to be decommissioned in September 2015 and, as a result, the new Lackawanna-North Pocono 138/69 kV Transmission Line will ultimately terminate at the Lackawanna Substation.

Lackawanna-North Pocono 138/69 kV Transmission Line will consist of approximately 7 self-weathering tubular steel tangent structures that will be either direct embedded or installed on concrete caisson foundations as necessary. There will be approximately 3 angle structures, which will consist of two-pole and/or guyed steel structures.

108. The new single-circuit North-Pocono-Jackson #2 138/69 kV Transmission Line will require the installation of approximately 12 structures with an average height of 110 feet and an average span of 650 feet. The structures for the North Pocono-Blooming Grove 138/69 kV Transmission Line will consist of approximately 7 self-weathering tubular steel tangent structures that will be either direct embedded or installed on concrete caisson foundations as necessary. There will be approximately 5 angle structures, which will consist of two-pole and/or guyed steel structures.

**b. North Pocono Double-Circuit Connecting Line**

109. The third new North Pocono connecting line will be a double-circuit 138/69 kV line that extends approximately 3.1 miles to connect the North Pocono 230-69 kV Substation to the existing Blooming Grove-Jackson and 138/69 kV Transmission Line. One circuit on this double-circuit connecting line will be named the North Pocono-Jackson #1 138/69 kV circuit, and the other circuit will be named the North Pocono-Blooming Grove 138/69 kV circuit.

110. The new North Pocono Jackson #1 138/69 kV circuit will break into the one of the circuits on the existing double-circuit Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line, and then proceed southeast to the Jackson Substation.<sup>14</sup>

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<sup>14</sup> The new North Pocono-Jackson #1 and new North Pocono-Jackson #2 lines meet on the existing double-circuit Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line and continue on the same existing double-circuit line to the Jackson Substation. This double-circuit line will be renamed the North-Pocono-Jackson #1 & #2 138/69 kV Transmission Line after the Northeast-Pocono Reliability Project has been completed.

111. The new North Pocono-Blooming Grove 138/69 kV circuit will tie into the existing single-circuit Blooming Grove-Jackson 138/69 kV Transmission Line, and then proceed Northeast to the Blooming Grove Substation.<sup>15</sup>

112. The new North Pocono double-circuit connecting line will be constructed in the middle of the new 200-foot right-of-way shared with the new single-circuit Lackawanna-North Pocono and North-Pocono-Jackson #2 138/69 kV Transmission Lines described above. Thereafter, the right-of-way for the new double-circuit connecting line will continue south on a new 100-foot right-of-way where it will intersect the existing Blooming Grove-Jackson 138/69 kV Transmission Line.

113. The new North Pocono double-circuit connecting line will require the installation of approximately 25 structures with an average height of 110 feet. The spans between structures will be approximately 650 feet. The structures for the North Pocono-Jackson #1 & #2 138/69 kV Transmission Line will consist of approximately 18 self-weathering tubular steel tangent structures that will be either direct embedded or installed on concrete caisson foundations as necessary. There will be approximately 7 angle structures, which will consist of two-pole and/or guyed steel structures.

#### **IV. SITING ANALYSIS**

##### **A. SUMMARY OF THE SITING ANALYSIS**

114. The goal of PPL Electric's siting analysis for the 230 kV transmission line was to determine the most suitable route for a new 230 kV transmission line to connect the existing

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<sup>15</sup> The existing Blooming Grove-Jackson circuit is built on single-circuit tower structures from the Gouldsboro Substation to the Blooming Grove Substation. This circuit will be renamed the North Pocono-Blooming Grove 138/69 kV Transmission Line after the Northeast-Pocono Reliability Project has been completed.

Jenkins 230-69 kV Substation in Plains Township, Luzerne County with a previously-approved Paupack 230-69 kV Substation to be constructed in Paupack Township, Wayne County. This new 230 kV transmission line will connect the Jenkins 230-69 kV Substation in Plains Township, Luzerne County, the new West Pocono 230-69 kV Substation to be located in Buck Township, Luzerne County, new North Pocono 230-69 kV Substation to be located in Covington Township, Lackawanna County, and the previously-approved Paupack 230-69 kV Substation in Paupack Township, Wayne County.

115. In addition to siting the 230 kV transmission line alignments between these Substations, the siting study also determined the most suitable routes for the new 138/69 kV transmission lines routes necessary to connecting the new West Pocono and North Pocono Substations to the local existing 138/69 kV transmission line network.

116. 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 Northeast-Pocono Reliability Project. This analysis included the designation of a "Study Area," compilation of an environmental inventory, identification of alternative routes, analysis of the alternative routes, and selection of the proposed line route. This process enables PPL Electric to select routes for the proposed transmission lines that appropriately balance functional requirements, environmental factors, social factors, and cost considerations. The siting study process was executed independently for each of the proposed 230 kV and 138/69 kV transmission line segments of the Northeast-Pocono Reliability Project.

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

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

118. PPL Electric identified a Study Area for the Northeast-Pocono Reliability Project that encompasses approximately 385 square miles (246,000 acres) within Carbon, Lackawanna, Luzerne, Monroe, Pike, and Wayne Counties, Pennsylvania. Detailed maps of the Study Area for this Project are provided at the end of Attachment 4 to this Application.

119. In order to identify the preferred routes for the Northeast-Pocono Reliability Project, PPL Electric identified objectives it would consider, to the extent practical, in selecting the preferred routes. These objectives included the following:

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

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

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

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

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

122. Using the information summarized above, PPL Electric began identification of potential routes. The process for identifying potential transmission line routes produced a network of links that could be considered to reach from the existing Jenkins 230-69 kV Substation in Plains Township, Luzerne County to the previously-approved Paupack 230-69 kV Substation to be constructed in Paupack Township, Wayne County, as well as the new West Pocono and North Pocono Substations. Those links were combined into a number of initial potential routes for the Northeast-Pocono Reliability Project.

123. After the initial potential routes were identified, key members of the Siting Team conducted field inspections of the routes. These inspections involved the visual examination of the potential and alternative routes from road crossings and other points of public access. The

field investigations resulted in changes to the potential route alignments to reduce impacts on constrained areas. As a result, some potential routes were eliminated from further consideration.

124. PPL Electric conducted an extensive public outreach program, which included: telephone calls and e-mails to Government Officials; letters to all residents within a 1,000-foot corridor of the alternative routes; a fact sheet distributed to residents within a 1,000-foot corridor of the alternative routes; and open houses that gave attendees the opportunity to ask questions and provide input and information to PPL Electric. Feedback provided by landowners within the proposed alignments and from adjacent properties resulted in adjustments to the alternative routes for the *Northeast-Pocono Reliability Project*. A detailed explanation of PPL Electric's public outreach efforts is provided in Attachment 4 to this Application.

125. After carefully analyzing and evaluating the potential routes, PPL Electric selected alternative routes for detailed examination. Two alternative routes were identified within the Jenkins-West Pocono Segment, three alternative routes were identified within the West Pocono-North Pocono Segment, and three alternative routes were identified within the North Pocono-Paupack Segment. Additionally, two alternative routes for the 138/69 kV lines required to connect the West Pocono and North Pocono 230-69 kV Substation to the existing 138/69 kV system were identified. A detailed description of the alternative routes is provided in Attachment 4 to this Application.

126. Quantitative metrics were calculated and compared for each alternative route. A qualitative assessment also was conducted to compare the alternative routes. The alternative routes were compared and preferred routes were selected based upon a detailed analysis and balance of societal concerns, environmental impacts, engineering considerations, and costs. A

detailed explanation of the qualitative and quantitative analysis and comparison of the alternatives routes is provided in Attachment 4 to this Application.

127. Based on these evaluation processes the Siting Team chose a preferred route for the proposed 230 kV transmission line: Alternative Route B is the Preferred Route for the Jenkins-West Pocono Segment; Alternative Route D-1 is the Preferred Route for the West Pocono-North Pocono Segment; and Alternative Route F-1 is the Preferred Route for the North Pocono-Paupack Segment. The Siting Team also chose a preferred route for each of the 138/69 kV lines needed to connect the West and North Pocono Substations to the 138/69 kV system: Alternative Route Connector Line 2 is the Preferred Route for the West Pocono 138/69 kV Connector Line; and Alternative Route Connector Line 4 is the Preferred Route for the North Pocono 138/69 kV Connector Line. Overall, the preferred routes will have substantially less impact on the natural and built environments, land use, and citizens in the Northeast Pocono region. A detailed explanation of the selection of the preferred routes is provided in Attachment 4 to this Application.

## **B. LAND USE, ENVIRONMENTAL, AND CULTURAL RESOURCES**

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

### **1. Land Use**

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

130. Conserved lands involve areas preserved as private or public open space.<sup>16</sup> Several private and public conserved lands were identified within the Study Area during the route selection process. During this process, specific attention was given to avoid the private conserved lands but, due to the size and location of the public conserved lands, some were not avoidable. In an effort to minimize impacts to the resources on these lands, PPL Electric coordinated with the landowners, primarily the Pennsylvania Department of Conservation and Natural Resources (“DCNR”) for the state forest lands and the Pennsylvania Game Commission (“PGC”) for the state game lands, to determine the best alignment across these lands. Input from these meetings has been incorporated into the Preferred Routes to the satisfaction of the DCNR and PGC.

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

## **2. Natural Environment**

132. Vegetation clearing is required to ensure the safe and reliable operation of the Preferred Routes. Vegetation clearing processes and measures are reviewed in PPL Electric’s “Specifications for Initial Clearing and Control of Vegetation On or Adjacent to Electric Line Right-of-Way through Use of Herbicides, Mechanical, and Hand Clearing Techniques,” which is included as Attachment 12 to this Application. These processes will preserve compatible species

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<sup>16</sup> Private open space generally involves land trusts such as Pocono Heritage Land Trust and North Branch Land Trust, who focus on obtaining parcels of land to preserve based on existing natural or cultural features (*i.e.*, Bear Creek Camp in Luzerne County). Other land trust organizations, such as the Natural Lands Trust and The Nature Conservancy, preserve lands that are often open to the public for passive recreation (*i.e.*, Bear Creek Preserve in Luzerne County). Public conserved lands include state parks, state forests, and state game lands.

of low growing trees, shrubs, and grasses where practicable. Herbicides used within the right-of-way will be Environmental Protection Agency (“EPA”) approved and will be applied selectively in accordance with all label instructions.

133. Wetlands along the Preferred Routes were delineated in 2012 by certified wetland specialists using Pennsylvania Department of Environmental Protection (“DEP”) and United States Army Corps of Engineers (“USACE”) approved methodologies. This task documented 83 wetlands covering an area of 88.4 acres within the rights-of-way for the Preferred Routes. The Preferred Routes have been designed so that the placement of transmission structures will avoid or minimize wetland impacts. Through this process, only 9 of the 414 (2%) required transmission poles will be located within a wetland. All required permits for these unavoidable wetland impacts will be obtained from the DEP and the USACE prior to construction.

134. Streams along the Preferred Routes were also delineated in 2012 using DEP and USACE approved methodologies. This task documented 60 perennial or intermittent stream crossings within the right-of-way of the Preferred Routes. The Preferred Routes will cross 27 Exceptional Value (“EV”) designated streams, as well as 33 High Quality (“HQ”) designated streams. Long-term impacts to these watercourses are expected to be minimal, as they will be spanned by the proposed transmission lines. Due to the water quality level in these watersheds, an Individual Pollutant Discharge Elimination System (“NPDES”) permit will be required to mitigate any potential short-term impacts of erosion and sedimentation during construction.

135. Federal Emergency Management Agency (“FEMA”) and state-identified floodplains are found adjacent to watercourses and identify the areas that routinely flood during heavy rain events. Where practicable, transmission structures will be constructed outside the floodplain areas. Due to the steep, narrow valleys associated with many of the waterways along

the Preferred Routes, many of the floodplains and floodways will be relatively narrow and can be spanned by the transmission lines. For those locations where the floodplains are not avoidable, additional analysis of the proposed structures may be required by DEP to confirm that the activity will not create flooding conditions in the local area. No structures will be located in the floodway of any stream.

136. Coordination with state and federal agencies regarding potential rare, threatened and endangered species along the Preferred Routes was initiated in October 2011. Responses from the United States Fish and Wildlife Service (“USFWS”) indicated that federally protected species of concern that may occur in the project area included the federally-threatened bog turtle (*Glyptemys muhlenbergii*) and the federally-endangered Indiana bat (*Myotis sodalists*).

137. Based on USFWS guidance, specific studies for the bog turtle were limited to sections of the West Pocono 138-69 kV transmission lines located in Monroe County. Phase I habitat studies were conducted by a qualified surveyor who identified one wetland along this portion of the connector line that contained the required habitat conditions. This wetland was subsequently subjected to a Phase II presence/absence analysis, which concluded that bog turtles are not present in that wetland.

138. Indiana bat studies were required along the entire length of the Preferred Routes for the 230 kV and 138/69 kV transmission lines. In the summer of 2012, qualified bat surveyors evaluated approximately 121 sites near the Preferred Routes that were conducive for bat travel including stream valleys, forested access road corridors, and open fields. No Indiana

bats were captured during this effort. A report documenting the methods and findings of this study is being developed and will be provided to the USFWS for its review.<sup>17</sup>

139. The USFWS has recommended that guidelines be established that will result in the avoidance and minimization of potential impacts to migratory birds and eagles within and around the project area. This recommendation is the result of USFWS's role in enforcing the Migratory Bird Treaty Act, which prohibits the taking, killing, possession, or transportation of migratory birds, and the Bald and Golden Eagle Protection Act, which prohibits the killing, selling or harming of eagles, their nests, or their eggs. PPL Electric relied on the coordinated information from the Rural Utilities Service, USFWS, Edison Electric Institute, and the National Audubon Society to develop an Avian Protection Plan that has been submitted to USFWS.

140. In addition to the federal species of concern, several state-listed species were identified that may be located within the project area. The Pennsylvania Fish and Boat Commission ("PFBC") indicated that the timber rattlesnake (*Crotalus horridus*), a state candidate species, is known in the vicinity of the Jenkins-West Pocono Segment of the project area. A PFBC-approved herpetologist will perform a Phase I habitat assessment along this segment prior to submission of the permit applications for this segment.

141. Correspondence with the PGC noted the potential presence of two state-listed bat species: the state-threatened eastern small-footed bat (*Myotis leibii*), and the special concern northern myotis (*Myotis septentrionalis*). Surveys for the eastern small-footed bat were required for the Preferred Routes for the 230 kV and 138/69 kV transmission lines, whereas a survey for the northern myotis was only required for the Jenkins-West Pocono Segment. These surveys

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<sup>17</sup> An Indiana bat survey was not conducted along the West Pocono 138/69 kV connecting lines as the feasibility of that alignment was in question during the mist-netting time frame. An Indiana bat survey will be coordinated for this section in 2013.

were conducted by a USFWS-qualified bat surveyor during the summer of 2012. Results of the survey indicated the presence of a small-footed bat population along the Jenkins-West Pocono Segment. The surveyors applied transmitters to the bats and tracked their movements. This information, as well as the report documenting the results of the bat mist-netting activity for the Project area will be submitted to PGC.<sup>18</sup>

142. In addition to the bat surveys, PGC noted the need to conduct flying squirrel (*Glaucomys sabrinus*) and eastern small-footed bat habitat assessments. Habitat assessments for the flying squirrel, a state-endangered species of concern, were conducted along the North Pocono 138/69 kV connecting lines located primarily in State Game Land #312, and along the North Pocono-Paupack Segment north of State Route (“SR”) 191 in Wayne County. Eastern small footed bat habitat surveys were conducted along the Jenkins-West Pocono Segment, with a specific focus on rocky habitat areas preferred by the bat species. A report documenting the findings of these habitat assessments will be provided to PGC.

143. Responses from DCNR have indicated that the following plants or communities of special concern may be present within the project area: Horned Bladderwort (*Utricularia cornuta*); Few-seeded Sedge (*Carex oligosperma*); Common Labrador-tea (*Ledum groenlandicum*); Creeping Snowberry (*Gaultheria hispidula*); Rhodora-Mixed Heath- Scrub Oak Shrubland; Scrub Oak Shrubland; Leatherleaf-Cranberry Peatland; Red Dart moth (*Diarsia rubifera*); Bog Copper (*Lycaena epixanthe*); and Noctuid Moth (*Platyperigea meralis*). Botanical studies were conducted in August 2012. All of these species will be documented in the botanical survey report to be submitted to PADCNR.

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<sup>18</sup> A survey for the eastern small-footed bat was not conducted along the West Pocono 138/69 kV connecting line as the feasibility of that alignment was in question during the mist-netting time frame. An eastern small-footed bat survey will be coordinated for this section in 2013.

### 3. Cultural Resources

144. Cultural resource coordination with the Pennsylvania Historical and Museum Commission (“PHMC”) was initiated in October 2011. The PHMC indicated the need to conduct an assessment of the potential effect of the West Pocono 138/69 kV connecting lines on the National Register-listed Stoddartsville Historic District located near SR 115 and the Lehigh River in Monroe County. An evaluation of the Stoddartsville Historic District was conducted in July 2012, which provided information on the height of the proposed poles, distance of the alignment from the historic district, and an assessment of the landscape and vegetation in the general area. Based on this evaluation, PHMC responded in August 2012 with a finding that the proposed route for the West Pocono 138/69 kV connecting lines would have no effect on the Stoddartsville Historic District.

145. The PHMC also noted the presence of the National Register-eligible Delaware, Lackawanna & Western Railroad along the West Pocono-North Pocono Segment but concluded that the project activity will have no effect on this resource.

146. The PHMC also noted that there is a high probability that significant archaeological sites are located within the Project area, and that Phase I archaeological surveys are required for the entire project area.<sup>19</sup> The Phase IA report, submitted to PHMC in August 2012, concluded that there are pockets of high sensitivity for archaeological resources throughout the proposed corridor, and that the historical overview and map analysis confirms that there is a wide variety of potential historic-period archaeology property types within the project area. Based on this analysis, the PHMC recommended that a Phase IB survey be

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<sup>19</sup> The Phase I archaeological investigations have been divided into two steps: Phase IA, a high-level review of the Project area topography and human settlement patterns used to determine high-to-low probability areas; and Phase IB, a field analysis of the project area guided by the findings of the Phase IA process.

conducted. The focus of the Phase IB survey will be areas of anticipated ground disturbance including the proposed pole locations, floodplain crossings, new access road locations, and the footprints of the new substations and work areas. Response from PHMC regarding the Phase IB survey has indicated that they support this plan of action.

**V. RIGHTS-OF-WAY**

147. PPL Electric's current standard right-of-way width for a double-circuit 230 kV transmission line is 150 feet. PPL Electric's current standard right-of-way width for a double-circuit 138 kV transmission line is 100 feet. The right-of-way is determined by the structure type, design tensions, span length, and conductor "blowout" (the distance the wires are moved by a crosswind). The right-of-way width for shared a shared rights-of-way (more than one transmission line), such as the shared right-of-way for the North Pocono 138/69 kV connecting lines, is determined by the number of lines.

148. There are a total of 126 different owners of 177 deeded properties along the transmission line routes selected for the Northeast-Pocono Reliability Project. At the time of this filing, new rights-of way and easements are needed from only 37 property owners.

149. The new Jenkins-West Pocono 230 kV Transmission Line will run in a southeast direction using both existing and new 150-foot rights-of-way. At the time of this filing, PPL Electric requires rights-of-way and easements from 5 property owners for the Jenkins-West Pocono segment.

150. The new West Pocono-North Pocono 230 kV Transmission Line will run in a northeast direction using a new 150-foot right-of-way. At the time of this filing, PPL Electric requires rights-of-way and easements from 12 property owners for the West Pocono-North Pocono segment.

151. The new North-Pocono-Paupack 230 kV Transmission Line will run in a northeast direction using both existing and new 150-foot right-of-way. At the time of this filing, PPL Electric requires rights-of-way and easements from 15 property owners for the West Pocono-North Pocono segment.

152. The two new double-circuit 138/69 kV transmission lines to connect the new West Pocono 230-69 kV Substation to the existing 138/69 kV system will be constructed using a new, single 200-foot right-of-way. Both 138/69 kV connecting lines will share the right-of-way using a 50-foot centerline separation. At the time of this filing, PPL Electric requires rights-of-way and easements from 5 property owners for the West Pocono 138/69 kV connecting lines.

153. The two single-circuit Lackawanna-North Pocono and North-Pocono-Jackson #2 138/69 kV Transmission Lines will connect the North Pocono 230-69 kV Substation with the existing single-circuit Peckville-Jackson 138/69 kV Transmission Line using a new, shared 200 foot right-of-way with a 50 ft centerline separation. At the time of this filing, PPL Electric requires license agreements from the Pennsylvania State Game Commission and Lackawanna State Forest for the new right-of-way.

154. The new double-circuit North Pocono-Jackson #1 & North Pocono-Blooming Grove 138/69 kV Transmission Line will connect the North Pocono 230-69 kV Substation with the existing double-circuit Peckville-Jackson and Blooming Grove Jackson 138/69 kV Transmission Lines using the middle of the new 200-foot right-of-way shared with the new single-circuit Lackawanna-North Pocono and North-Pocono-Jackson #2 138/69 kV Transmission Lines described above. Thereafter, the right-of-way for the new double circuit North Pocono-Jackson #1 & North Pocono-Blooming Grove 138/69 kV Transmission Line will continue south on a new 100-foot right-of-way where it will intersect the existing double-circuit Blooming

Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line. At the time of this filing, PPL Electric requires license agreements from agreements from the Pennsylvania State Game Commission and Lackawanna State Forest for the new right-of-way.

155. Although negotiations for the needed rights-of-way continue, PPL Electric is separately filing 37 Condemnation Applications, pursuant to 15 Pa.C.S. §1511(c), for a finding and determination that the service to be furnished through its proposed exercise of the power of eminent domain to acquire the above-mentioned tracts of land for the proposed Northeast-Pocono Reliability Project is necessary or proper for the service, accommodation, convenience, or safety of the public.

## **VI. HEALTH AND SAFETY**

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

157. Attachment 11 accompanying this Application explains PPL Electric's standards for Magnetic Field Management. As explained therein, PPL Electric will construct the proposed 230 kV and 138/69 kV transmission lines for conductor-to-ground clearances that are a minimum of five feet higher than the required NESC minimum conductor-to-ground clearance for 230 kV and 138/69 kV lines. The implementation of additional modifications will be considered, provided those modifications can be made at low or no cost.

158. The new Jenkins-West Pocono, West Pocono-North Pocono, and North-Pocono-Paupack 230 kV Transmission Lines will each be designed for 230 kV double circuit capability, but initially only one 230 kV circuit will be installed until load growth in the area makes it appropriate to add the second 230 kV circuit. Therefore, reverse phasing cannot be accomplished on the proposed new 230 kV transmission lines. Reverse phasing of the 230 kV transmission lines will be evaluated when a second circuit is added.

159. The new double circuit 138/69 kV lines connected to the new West Pocono and North Pocono 230-69 kV Substations will be designed to be reverse phased.

160. The new 138/69kV initial single/future double circuit lines connected to North Pocono 230-69 kV Substation will not be reverse phased. Since each of these lines are to be constructed as single circuit; reverse phasing at this time is not feasible. Where it is feasible to do so at low or no cost, PPL Electric will select a phasing arrangement for these lines that lowers the magnetic field. In the future, when a second circuit is added to these lines, PPL Electric will select the best circuit/phase arrangement to reduce the magnetic field where it is feasible to do so at low or no cost.

161. No communication towers, pipelines, or other utilities will be affected by the proposed Northeast-Pocono Reliability Project.

162. Several major roadways including the Pennsylvania Turnpike, I-81, I-380, and I-84 will be spanned by the various segments of the Project. Pennsylvania Department of Transportation (“PennDOT”) Highway Occupancy Permits or equivalent type permits will be acquired by PPL Electric for these major highways and all other state roads prior to construction.

163. Aviation coordination will be conducted through the Federal Aviation Association (“FAA”) and the PennDOT Bureau of Aviation Association. To assure that the pole locations

and heights are properly recorded by these agencies, information will be provided to them through use of Form 7460-1 and AV-57 (Notice of Proposed Construction or Alteration), respectively. PPL Electric will comply with any additional lighting or other visual aids that may be required by these agencies to assure aviation safety in the region.

**VII. COST AND COMPELETION DATE**

164. The estimated cost to design and construct the Northeast-Pocono Reliability Project using the Preferred Routes is approximately \$154 million. This cost includes approximately \$36 million for the substation work, approximately \$90.6 million for the 230 kV transmission line work, approximately \$10.3 million for the 138/69 kV transmission line work, and approximately \$17.1 million for the acquisition of needed rights-of-way and land for the substations.

165. The Northeast-Pocono Reliability Project has a scheduled construction start date of spring 2014 to meet an in-service date of November 2017.

**VIII. NOTICE AND SERVICE**

166. PPL Electric announced its intent to build the Northeast-Pocono Reliability Project in February 9, 2011. Since that time, PPL Electric has undertaken significant public outreach activities to provide information and seek input on the Project from the public and government officials, including: calls, E-mails and meetings with Government Officials; informational letters to more than 33,000 residents and businesses within the Project Study Area; information letters to residents within the 1,000-foot corridor for the alternative routes and to open house attendees after the proposed transmission line routes were defined; a fact sheet was developed to provide the public with an overview of the Project and a detailed description of the

line routes; Project-specific Web Site; news releases on February 9, 2011, June 23, 2011 and October 11, 2011 to a wide range of news media throughout the Project area; and one-on-one meetings with interested residents and businesses near the Project area.

167. In addition, PPL Electric placed 33 advertisements in local newspapers to announce a series of open houses. In March, July, and October 2011, PPL Electric conducted 13 separate public open houses at several locations within the Project Study Area. The intent of the open houses was to provide information and seek community input on the Project. The open houses provided detailed information about the project and gave attendees the opportunity to ask questions and provide input and information to PPL Electric.

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

169. PPL Electric's public outreach efforts for the Northeast-Pocono Reliability Project are explained in Attachment 4 to this Application.

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

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

172. 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 Northeast-Pocono Reliability Project. This notice will: (a) note the filing with the Commission; (b) provide brief description of the project and its location; (c) provide area locations where the complete application may be reviewed by the public; and (d) provide any additional information as directed by the Commission.

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

#### **IX. RELATED PROCEEDINGS**

174. Contemporaneously with the filing of this Application, PPL Electric is separately filing two Zoning Petitions requesting findings that the buildings to shelter control equipment at the proposed North Pocono 230-69 kV Substation in Covington Township, Lackawanna County and the proposed West Pocono 230-69 kV Substation in Buck Township, Luzerne County are reasonably necessary for the convenience or welfare of the public and, therefore, exempt from any local zoning ordinance pursuant to 52 Pa. Code § 5.41 and 53 P.S. § 10619. Both the North Pocono and West Pocono Substations are required for the Northeast Pocono Project. Issues related to these Zoning Petitions are interrelated with this Application.

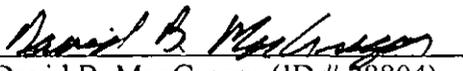
175. PPL Electric also is separately filling 37 Condemnation Applications, pursuant to 15 Pa.C.S. § 1511(c), for a finding and determination that the service to be furnished through its proposed exercise of the power of eminent domain to acquire certain tracts of land for the proposed Northeast-Pocono Reliability Project is necessary or proper for the service, accommodation, convenience, or safety of the public. Issues relating to the need for these Condemnation Applications are interrelated with this Application.

176. Pursuant to 52 Pa. Code § 57.75(i)(1), PPL Electric requests that these related proceedings be consolidated for purposes of hearings, if necessary, and decision.

**X. CONCLUSION**

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission: (1) consolidate this Siting Application with the North Pocono Zoning Petition, West Pocono Zoning Petition, and the 37 Condemnation Applications contemporaneously filed herewith; and (2) approve the siting and constructing of transmission lines associated with the Northeast-Pocono Reliability Project in portions of Luzerne, Lackawanna, Monroe, and Wayne Counties, Pennsylvania as explained above and in the Attachments and Testimony in support of this Application.

Respectfully submitted,

  
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E-mail: cwright@postschell.com

Of Counsel:  
Post & Schell, P.C.

Date: December 28, 2012

Attorneys for PPL Electric Utilities Corporation

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**VERIFICATION**

I, Stephanie Raymond, being the Vice President of Transmission and Substations 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 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: 12/20/12

Stephanie Raymond  
Stephanie Raymond

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PA PUC  
SECRETARY'S BUREAU

## CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **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

Pennsylvania Department of  
Environmental Protection  
P.O. Box 2063  
Market Street State Office Building  
Harrisburg, PA 17105-2063  
Attn: Office of Field Operations

Honorable Barry J. Schoch, PE, Secretary  
Pennsylvania Department of Transportation  
Commonwealth Keystone Building  
400 North Street, 9<sup>th</sup> Floor  
Harrisburg, PA 17120  
Attn: William J. Cressler, Chief Counsel

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

Bureau of Investigation and Enforcement  
Pennsylvania Public Utility Commission  
P.O. Box 3265  
Commonwealth Keystone Building  
400 North Street  
Harrisburg, PA 17105-3265

Office of Consumer Advocate  
555 Walnut Street  
5th Floor, Forum Place  
Harrisburg, PA 17101-1925

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

Lackawanna County Commissioners  
Lackawanna County Administration Bldg.  
200 Adams Avenue, 6th Floor  
Scranton, PA 18503

Lackawanna County Planning Commission  
135 Jefferson Avenue, 2nd Floor  
Scranton, PA 18503

Luzerne County Council  
Luzerne County Courthouse  
200 N River Street  
Wilkes-Barre, PA 18711

Luzerne County Planning Commission  
20 N. Pennsylvania Avenue  
Wilkes-Barre, PA 18711

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

Monroe County Planning Commission  
1 Quaker Plaza, Room 106  
Stroudsburg, PA 18360-2169

Wayne County Commissioners  
Wayne County Courthouse  
925 Court Street  
Honesdale, PA 18431

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Wayne County Planning Department  
925 Court Street  
Honesdale, PA 18431

Bear Creek Township Board of Supervisors  
3333 Bear Creek Boulevard  
Bear Creek Township, PA 18702

Bear Creek Township Planning Commission  
3333 Bear Creek Boulevard  
Bear Creek Township, PA 18702

Buck Township Board of  
Supervisors/Planning Commission  
114 Buck Boulevard  
Bear Creek, PA 18602

Clifton Township Board of Supervisors  
361 State Route 435  
Clifton Township, PA 18424

Clifton Township Planning Commission  
361 State Route 435  
Clifton Township, PA 18424

Covington Township Board of Supervisors  
20 Moffat Drive  
Covington Township, PA 18444

Covington Township Planning Commission  
20 Moffat Drive  
Covington Township, PA 18444

Lehigh Township Board of Supervisors  
32 Second Street  
PO Box 651  
Gouldsboro, PA 18424

Lehigh Township Planning Commission  
32 Second Street  
PO Box 651  
Gouldsboro, PA 18424

Madison Township Board of Supervisors  
3200 Madisonville Road  
Madison Township, PA 18444

Madison Township Planning Commission  
3200 Madisonville Road  
Madison Township, PA 18444

Paupack Township Board of Supervisors  
25 Daniels Road  
Lakeville, PA 18438

Paupack Township Planning Commission  
25 Daniels Road  
Lakeville, PA 18438

Plains Township Board of Supervisors  
126 North Main Street  
Plains, PA 18705

Plains Township Planning Commission  
126 North Main Street  
Plains, PA 18705

Salem Township Board of Supervisors  
PO Box 278  
Hamlin, PA 18427

Salem Township Planning Commission  
PO Box 278  
Hamlin, PA 18427

Sterling Township Board of Supervisors  
PO Box 100  
Sterling, PA 18463

Sterling Township Planning Commission  
PO Box 100  
Sterling, PA 18463

Thornhurst Township Board of Supervisors  
HC1 Box 238-B, River Road  
Thornhurst, PA 18424-9313

Thornhurst Township Planning Commission  
HC1 Box 238-B, River Road  
Thornhurst, PA 18424-9313

Tobyhanna Township Board of Supervisors  
105 Government Center Way  
Pocono Pines, PA 18350

Tobyhanna Township Planning Commission  
105 Government Center Way  
Pocono Pines, PA 18350

Ronald Solt  
1200 Thornhurst Rd.  
Bear Creek Twp, PA 18702-8212

Atty: Thomas E., Mark M., and  
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Atty: Anthony Jr. and Lillian Lupas et al  
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Wilkes Barre, PA 18701-1427

John F. and Veronica Iskra  
11 Green Arrow Trail  
White Haven, PA 18661

Eylla Hughes Est  
C/O Judy Scarfoss  
38 Buck Blvd.  
White Haven, PA 18661-2130

Transcontinental Gas Pipeline Co  
PO Box 2400 Md 46-4  
Tulsa, OK 74102-2400

Blue Ridge Real Estate Company  
PO Box 707  
Blakeslee, PA 18610-0707

Dietrick Hunting Club  
PO Box 39 Hooper John  
Clifford, PA 18413

International Consolidated  
Investment Company  
C/O Arthur Kania  
560 E Lancaster Ave, Ste 108  
St. Davids, PA 19087

Sylvester J. Coccia  
310 W Mary St.  
Old Forge, PA 18518

William Petrouleas & Joanna Petrouleas  
5 Helena Road  
Staten Island, NY 10304

NLMS Inc  
1170 Winola Rd  
Clarks Summit, PA 18411

Clifton Acres Inc  
C/O Wayne Moore  
159 East Walton Place, Apt. 23  
Chicago, IL 60611

Art Mrtg Borrower Propc 2010-5  
10 Glenlake Pkwy S Twr, Ste 800  
Atlanta, GA 30328

Fr First Ave Prop Holding LP  
C/O Jeffery R. Thomas  
2601 Market Place  
Harrisburg, PA 17110

US Industrial Reit II  
9830 Colonnade Blvd, Ste 600  
San Antonio, TX 78230

Fr E2 Property Holding LP  
311 S Wacker Dr Ste 4000  
Chicago, IL 60606

Edward R Schultz  
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Christopher & Melinda Maros  
586 Twin Rocks Rd  
Newfoundland, PA 18445-2156

Margaret G. Arthur (Deceased)  
and Barbara A. Saurman, Trustees of the  
Residuary Trust of James C. Arthur  
11 Brownstone Dr.  
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Merel J. & Arlene J. Swingle  
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Lake Ariel, PA 18436

Bradley D. Hummel  
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Peter & Francine Palermo  
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John C. & Linda S. Justice  
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Lake Ariel, PA 18436-6135

Three Griffins Enterprises Inc  
PO Box 136  
Hamlin, PA 18427-0136

Lawrence Duda  
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Albany, NY 12203-4431

Michael A. & Sue K. Mitch  
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Dianne L. Doss  
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James L & Michaelene J Butler  
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Tulsa, OK 74137

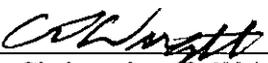
Susan Butler Living Trust  
Reigeluth  
HC 1 Box 1134  
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Grumble Knot LLC  
2642 Route 940  
Pocono Summit, PA 18346

Pennsylvania Glacial Till LLC  
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Blueberry Mountain Realty LLC  
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Port Washington, NY 11050

Date: December 28, 2012

  
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Christopher T. Wright