

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Re: Letter Of Notification Of PPL Electric :  
Utilities Corporation, Filed Pursuant To 52 :  
Pa. Code Chapter 57 Subchapter G, With : Docket No. A-2012-\_\_\_\_\_  
Respect To The West Shore - Harrisburg :  
#1 & #2 138/69 kV Transmission Line in :  
Lower Allen Township, Cumberland :  
County, Pennsylvania :

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**LETTER OF NOTIFICATION**

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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(d), this Letter of Notification to request that the Pennsylvania Public Utility Commission (“Commission”) approve the siting and construction of the West Shore - Harrisburg #1 & #2 138/69 kV Transmission Line (“West Shore - Harrisburg #1 & #2 Line”) to address reliability concerns in Lower Allen Township, Cumberland County, Pennsylvania. The Line will require approximately 1.3 miles of new 138/69 kV transmission line. Additionally, certain reconnections of 69 kV lines will be performed. In support thereof, PPL Electric states as follows:

**I. INTRODUCTION AND OVERVIEW**

1. This Letter of Notification 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:

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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 Letter of Notification.

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<sup>1</sup> or higher, approximately 375 substations with a capacity of 10 MVA<sup>2</sup> or more, and approximately 43,000 miles of distribution lines operating at less than 69 kV.

6. Accompanying this Letter of Notification is a separately bound volume containing Attachments 1-7, which provide additional information about the proposed construction of the West Shore - Harrisburg #1 & #2 Line:

- Attachment 1: Necessity Statement.
- Attachment 2: Engineering Description.
- Attachment 3: Environmental Assessment.
- Attachment 4: PPL Electric Design Criteria and Safety Practices.
- Attachment 5: PPL Electric Field Management Program.
- Attachment 6: List of Owners of Property within the Right-of-Way
- Attachment 7: List of Involved Governmental Agencies, Municipalities, and Other Public Entities.

7. This Letter of Notification and accompanying Attachments, which are incorporated herein by reference, contain all the information required by 52 Pa. Code § 57.72(d)(4).

8. This Project is required to resolve violations of PPL Electric's Reliability Principles and Practices ("RP&P") guidelines, and improve the reliability of service and

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<sup>1</sup> Kilovolts.

<sup>2</sup> Megavolt Amperes.

operating flexibility of PPL Electric's system in Lower Allen Township. In addition, the Project will help meet the increasing demand for electrical power in the area.

9. The total estimated cost of the proposed Project is \$1,895,400. Subject to the Commission's approval, construction is scheduled to begin in April of 2012, to support the project's scheduled in-service date of May of 2013.

## **II. PROJECT SUMMARY**

10. The proposed West Shore - Harrisburg #1 & #2 Line will be located in Lower Allen Township, Cumberland County. An aerial exhibit showing the location of the proposed facilities is provided at the end of Attachment 2 to the Letter of Notification. The aerial exhibit depicts the location of the proposed construction route.

11. The proposed West Shore - Harrisburg #1 & #2 Line will involve the construction of approximately 1.3 miles of new line. The purpose of the proposed construction is to alleviate a first contingency overload on the West Shore – Cumberland #1 69 kV line for the loss of the West Shore – Harrisburg #1 69 kV line.

12. The Necessity Statement for the proposed construction of the West Shore - Harrisburg #1 & #2 Line is provided as Attachment 1 accompanying this Letter of Notification. As explained therein, this Project is necessary to comply with the reliability requirements for PPL Electric's 69 kV transmission system, as found in PPL Electric's RP&P.

13. PPL Electric plans its system in accordance with the guidelines found in the RP&P so that PPL Electric can sustain probable contingencies and disturbances with only minimal customer service interruptions and so that it can adequately serve each customer's needs with regard to capacity, voltage and reliability for all load levels throughout the daily load cycle. System Planning is the process which assures that PPL Electric's regional system can supply electricity to all customer load in a manner that is reliable and economic. In addition, the system

is planned so that system reliability can be maintained to prevent large scale, long term, or frequent service interruptions in order to avoid adverse effects and hazards to the public.

14. The planning process begins with the development of a computer model of the future system. A specific study year is chosen. The future system model is then developed using the existing system plus any planned modifications to the transmission system scheduled to be in service prior to the study year. Load levels used in the system model are based on the latest forecast prepared annually by PPL Electric, which is based on recent summer peak load forecasts that take into account ambient temperatures and humidity indices.

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

16. There are four existing 69 kV transmission lines from the West Shore 230 – 69 kV Substation to the White Hill 69 kV Tap. Two of these 69 kV transmission lines, the West Shore-Cumberland #1 and #2, extend to the Cumberland 230 – 69 kV Substation. The other two transmission lines, the West Shore-Harrisburg #1 and #2, extend to the Harrisburg 69 – 12 kV Substation. The two existing transmission lines to the White Hill 69 – 12 kV Substation are tapped from the West Shore – Cumberland #1 69 kV line and the West Shore – Harrisburg #1 69 kV line. These four 69 kV transmission lines out of the West Shore 230-69 kV Substation

provide electric power to eleven 69-12 kV distribution substations, five of which are owned by PPL Electric, and six of which are customer-owned.

17. Figure 1 to Attachment 1 of this Letter of Notification provides a one-line diagram of the existing transmission system configuration.

18. This Project is required to alleviate a first contingency overload on the West Shore – Cumberland #1 69 kV Line that would result from the loss of the West Shore – Harrisburg #1 69 kV Line. Presently the White Hill 69 – 12 kV Substation is supplied by two tapped 69 kV lines, one from the West Shore – Cumberland #1 69 kV Line and the other from the West Shore – Harrisburg #1 69 kV Line. In this configuration, the loss of the West Shore – Harrisburg #1 69 kV Line would cause all of the White Hill Substation load to transfer to the West Shore – Cumberland #1 69kV Line. This scenario would create an overload on the West Shore – Cumberland #1 69 kV Line because its summer emergency rating is 124 MVA and adding the total load of White Hill Substation would load the line to 127 MVA. This is a violation of PPL Electric’s Non-Bulk Electric System RP&P regarding single contingency overloads.

19. The proposed Project involves the construction of a double-circuit, high-capacity 138/69 kV transmission line, approximately 1.3 miles long, between the West Shore 230 – 69 kV Substation and the present location of the White Hill Tap Lines. At the tap point, the proposed line will be connected to the existing West Shore – Harrisburg #1 and #2 69 kV Lines. Line rearrangements will be completed so that the existing section of the West Shore – Harrisburg #1 Line between West Shore Substation and the White Hill Tap point will be reconnected to the Cumberland #2 69 kV Line. Also, the existing section of the West Shore – Harrisburg #2 Line between West Shore Substation and the White Hill Tap point will be reconnected to the White

Hill #1 Tap Line establishing the new West Shore – White Hill #1 69kV Tap Line. Additional line rearrangements will be completed so that supply to the White Hill 69 – 12 kV Substation is directly from the West Shore 230 – 69 kV Substation.

20. Transferring the White Hill Substation load directly to the West Shore Substation reduces the loading on the West Shore – Cumberland #1 69 kV Line, eliminating the first contingency overload condition.

21. In order to construct the proposed line, PPL Electric does not require any new right-of-way or other property interest. All work will be completed in existing rights-of-way or on land owned in fee by PPL Electric.

22. The proposed West Shore – Harrisburg #1 & #2 138/69 kV Transmission Line will utilize 29 single-shaft steel monopoles equipped with steel upswept conductor support arms. An additional eight monopoles will be replacing existing structures to affect the rearrangement at the White Hill Tap point. The average height of these monopoles is 85 feet. Tangent structures will be direct embedded. *See* Attachment 2, Figure 1. Angle structures will either be installed on concrete foundations or direct embedded and guyed. *See* Attachment 2, Figure 2. The line will consist of six power conductors and one overhead ground wire. The power conductors will be 556.5 kcmil,<sup>3</sup> 24/7 stranding, ACSR<sup>4</sup> power conductors. A 0.567 inch diameter Fiber Optic Overhead Ground Wire will be installed for lightning protection and for communication between circuit breakers that remove the line from service when a fault is detected.

23. Figure 2 to Attachment 1 of this Letter of Notification provides a one-line diagram of the proposed transmission system configuration.

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<sup>3</sup> Kcmil wire size is the equivalent cross sectional area in thousands of circular mills. A circular mil is the area of a circle with a diameter of one thousandth (.001) of an inch.

<sup>4</sup> ACSR stands for aluminum conductor steel reinforced.

24. The total estimated cost to design and construct the proposed Project is \$1,895,400.

25. The proposed construction has a required in-service date of May 2013. In order to meet that date, subject to the Commission's approval, construction is scheduled to begin by April of 2012.

26. In selecting the proposed solution for this Project, PPL Electric considered one other alternative. The alternative reconducted approximately 6.6 miles of the West Shore - Cumberland #1 & #2 69 kV lines from West Shore Substation to Sporting Hill Substation utilizing high capacity conductors. It also required upgrades to the West Shore Substation 69 kV terminal equipment to match the ratings of the higher capacity conductors. This alternative is estimated to cost approximately \$8.2 million.

27. The alternative resolves the short-term overload concerns, however, it is \$6 million more expensive than the preferred solution. It also does not provide longer term transmission capacity and transfer capability. Therefore, it was rejected in favor of the proposed Project.

28. The Engineering Description of the proposed construction of the West Shore - Harrisburg #1 & #2 Line is provided in Attachment 2 accompanying this Letter of Notification.

### **III. HEALTH AND SAFETY**

29. The proposed construction of the West Shore - Harrisburg #1 & #2 Line will not create any unreasonable risk of danger to public health or safety. The proposed line sections will be designed, constructed, operated, and maintained in a manner that meets or surpasses all applicable National Electric Safety Code ("NESC") minimum standards and all applicable legal

requirements. Descriptions of NESC standards, PPL Electric's design criteria, and PPL Electric's safety practices are provided in Attachment 4.

30. Attachment 5 accompanying this Letter of Notification explains PPL Electric's standards for Magnetic Field Management. PPL Electric has determined, as a matter of policy, to design its new and rebuilt transmission lines to reduce magnetic fields when that can be done at low or no cost and consistent with functional requirements. PPL Electric's Magnetic Field Management Program has been developed to implement that policy decision. To reduce magnetic field exposures, the program generally prescribes the use of a line design that provides for five feet higher ground clearance than NESC standards and reverse phasing of new double-circuit lines where it is feasible to do so at low or no cost.

31. Consistent with the program, PPL Electric will construct the new overhead line sections for five feet higher ground clearance than NESC standards, in order to reduce magnetic field exposures. For this project, reverse phasing is beyond the low cost threshold of the Program due to the number of substations supplied by the line that would require alteration.

#### **IV. RIGHT-OF-WAY STATUS**

32. The proposed construction of the West Shore - Harrisburg #1 & #2 Line will be located within existing rights-of-way. PPL Electric does not need any additional right-of-way or other property interest.

#### **V. ENVIRONMENTAL EVALUATION**

33. Because the proposed West Shore - Harrisburg #1 & #2 Line will be located in close proximity to other PPL Electric transmission facilities, it is anticipated that the proposed construction will have minimal incremental impacts on the area.

34. No communication towers, pipelines, or other utilities will be affected by the proposed construction of the West Shore - Harrisburg #1 & #2 Line. Capital City Airport is located approximately 4.4 miles east-northeast of the project area. Impacts to air traffic are not expected because the intervening terrain is higher than the structures being proposed for the new line. PPL Electric will contact the PennDOT Bureau of Aviation and the Federal Aviation Administration to ensure that the proposed construction will not be a hazard to flight operations.

35. The proposed construction of the West Shore - Harrisburg #1 & #2 Line was reviewed with the Pennsylvania Historical and Museum Commission (“PHMC”).<sup>5</sup> PHMC has determined that, based upon its survey files, which include both archaeological sites and standing structures, there are no National Register eligible or listed historic or archaeological properties in the area of this proposed project and, therefore, no further archaeological investigations are required.

36. The proposed construction of the West Shore - Harrisburg #1 & #2 Line will not affect any unique geological, scenic, or natural areas. No National Natural Landmarks, parks, or recreational facilities are located near the project area.

37. Tree clearing will be minimal and PPL Electric will apply its “Specification 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” to mitigate any impacts.

38. The proposed Project will not cross any wetlands or other aquatic resources. PPL Electric will acquire any required soil erosion and sedimentation control permits and comply with any conditions imposed by such permits.

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<sup>5</sup> File No. ER 2011-0192-041-A.

39. PPL Electric has consulted with state and federal agencies to obtain information regarding endangered and threatened species in close proximity to the proposed construction of the West Shore - Harrisburg #1 & #2 Line.<sup>6</sup> One of the agencies, the Pennsylvania Fish and Boat Commission (“PF&BC”) reported a potential conflict. PPL Electric provided the PF&BC with additional information that cleared the conflict. All other agencies report that, except for occasional transient species of wildlife, no threatened or endangered plant or animal life is found in the project area.

## **VI. NOTICE**

40. The proposed construction of the West Shore - Harrisburg #1 & #2 Line was reviewed with representatives of Lower Allen Township and Cumberland County. The Township and the County had no objection.

41. Attachment 6 accompanying this Letter of Notification identifies the owners of property within the existing right-of-way. A copy of this Letter of Notification is being served on the property owners listed in Attachment 6 in accordance with 52 Pa. Code § 57.72(d)(3).

42. Attachment 7 accompanying this Letter of Notification contains a list of the involved governmental agencies, municipalities, and other public entities. Copies of this Letter of Notification are being served on the agencies listed in Attachment 7 in accordance with 52 Pa. Code § 57.72(d)(3).

43. As soon as practicable after the filing of this Letter of Notification and the assignment by the Commission of a docket number, PPL Electric will publish notice of the filing in newspapers of general circulation in the area of the proposed construction of the West Shore - Harrisburg #1 & #2 Line. Such notice will contain: (a) the date this Letter of Notification was

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<sup>6</sup> Pennsylvania Natural Diversity Inventory (PNDI) Search ID: 20111014321361.

filed with the Commission; (b) a brief description of the proposed construction Project and its location; and (c) an instruction that interested parties should contact Secretary Rosemary Chiavetta, at the Commission's Harrisburg address.

**VII. LETTER OF NOTIFICATION**

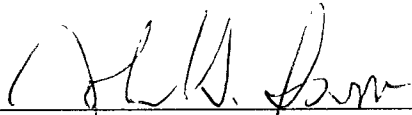
44. PPL Electric is proceeding by means of a Letter of Notification, instead of a full Application, pursuant to the Commission's regulations at 52 Pa. Code § 57.72(d). The proposed construction of the West Shore - Harrisburg #1 & #2 Line qualifies for use of a Letter of Notification because the Project is less than two miles in length.

45. This Letter of Notification is filed on the date set forth below. As provided in 52 Pa. Code § 57.72(d)(5), the Commission will review and, by order, approve or disapprove this Letter of Notification. If the Commission approves this Letter of Notification, the proposed construction of the West Shore - Harrisburg #1 & #2 Line will be completed as proposed herein without the formal application process set forth at 52 Pa. Code §§ 57.71, *et seq.*

**VIII. CONCLUSION**

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission approve the proposed construction of the West Shore - Harrisburg #1 & #2 Line in Lower Allen Township, Cumberland County, Pennsylvania, that is explained above and in the Attachments hereto.

Respectfully submitted,



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Date: February 8, 2012

Attorneys for PPL Electric Utilities Corporation

**VERIFICATION**

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

  
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