

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Letter of Notification of PPL Electric :
Utilities Corporation, Filed Pursuant to :
52 Pa. Code Chapter 57 Subchapter G, : Docket No. A-2012-_____
for Approval of the Reconstruction of :
the Cumberland-West Shore #3 and #4 :
Transmission Line in Lower Allen :
Township and Upper Allen Township, :
Cumberland County, Pennsylvania. :

LETTER OF NOTIFICATION

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

PPL Electric Utilities Corporation (“PPL Electric”), 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 reconstruction of approximately 1.6 miles of the existing double-circuit Cumberland-West Shore #3 and #4 Transmission Line in Lower Allen Township and Upper Allen Township, Cumberland County, Pennsylvania (“Cumberland-West Shore Project”). PPL Electric has provided information regarding this Project to these political subdivisions, and none of them have objected to the Project.

This Project will resolve a violation of mandatory reliability standards by replacing the existing transmission line segment between the Mount Allen Tap Line and the Rossmoyne Tap Line with higher capacity conductors. Subject to the Commission’s

approval, construction of this Project is scheduled to begin in January 2013, to support an in-service date of May 2013. In support thereof, PPL Electric states as follows:

I. INTRODUCTION

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 as follows:

PPL Electric Utilities Corporation
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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 (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. PPL Electric proposes to rebuild a portion of the existing double-circuit Cumberland-West Shore #3 and #4 69 kV Transmission Line for double-circuit 138/69 kV operation using high capacity conductors to resolve identified transmission reliability criteria violations in central Pennsylvania and to ensure reliable long-term electric service to customers in Cumberland County.

7. This Letter of Notification includes the following accompanying attachments:

- Attachment 1 Necessity Statement.
- Attachment 2 Engineering Description.
- Attachment 3 Environmental Assessment.
- Attachment 4 PPL Electric Design Criteria and Safety Practices.
- Attachment 5 Magnetic 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.

8. 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).

II. THE PROJECT

A. OVERVIEW

9. PPL Electric proposes to rebuild a 1.6 mile segment of the existing West Shore #3 and #4 69 kV Transmission Line in Upper and Lower Allen Townships, Cumberland County. The Line was originally constructed in 1950. PPL Electric proposes to replace a portion of the aging, low capacity, 69 kV double-circuit transmission line with a high capacity double-circuit 138/69 kV transmission line. The reconstructed line segment will be designed and constructed for future 138 kV operation, but initially will operate at 69 kV until load growth in the area makes it appropriate to increase the operating voltage.

10. This project is required to resolve violations of the PJM Interconnection, L.L.C. ("PJM") Reliability Planning Criteria as defined in "Manual 14B: PJM Region Transmission Planning Process" (PJM Manual 14B) and PPL Electric's Reliability Principles and Practices (RP&P), and to improve reliability and increase operating flexibility of the 69 kV system in Cumberland County.

11. The estimated cost of the proposed Cumberland-West Shore Project is approximately \$2.3 million.

12. Subject to the Commission's approval, construction of the proposed Project is scheduled to begin in January 2013, to support an in-service date of May 2013.

13. As explained below, PPL Electric does not require any additional right-of-way for the rebuild of the segment of the Cumberland-West Shore #3 and #4 138/69 kV Transmission Line.

14. An aerial plot plan is provided at the end of Attachment 2 to this Letter of Notification. The plot plan depicts the location of the existing transmission facilities for this Project.

B. NEED FOR THE PROJECT

1. Transmission Planning

15. The North American Electric Reliability Corporation ("NERC") has developed mandatory reliability standards, which define the reliability requirements for planning and operating transmission systems in North America. The NERC Reliability Standards apply to all users, owners, and operators of the nation's interconnected transmission grid, including PPL Electric. NERC achieves compliance through monitoring, audits and investigations, the imposition of financial penalties, and other enforcement actions for non-compliance. PPL Electric's transmission planning has adopted and incorporated the NERC Reliability Standards. A further description of the NERC Reliability Standards is provided in Attachment 1 to this Letter of Notification.

16. PJM is the Federal Energy Regulatory Commission-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, as an owner of transmission facilities in Pennsylvania, is a member of PJM and actively participates in the PJM transmission planning process.

17. In order to ensure reliable transmission service, PJM prepares an annual Regional Transmission Expansion Plan (“RTEP”) to identify system reinforcements that are required to, among other things, meet the mandatory NERC Reliability Standards. A further description of PJM’s RTEP process is provided in Attachment 1 to this Letter of Notification.

18. PJM has developed the PJM Reliability Planning Criteria as set forth in the PJM Manual 14B. The PJM Reliability Planning Criteria consist of multiple standards and applicable planning principles that include PJM planning procedures, NERC Planning Standards, NERC Regional Council planning criteria, Reliability First Corporation Standards, and Transmission Owner-defined reliability criteria (in this case, the PPL Electric RP&P). PJM applies all applicable planning criteria when identifying reliability problems and determining the need for transmission system upgrades in the PJM service territory. As a transmission owner in the PJM service territory, PPL Electric is required to follow the PJM Reliability Planning Criteria.

19. 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 are under the functional control of PJM, and its non-bulk electric system transmission facilities. The PPL Electric planning guidelines are outlined in the RP&P, which was developed to ensure adequate and appropriate levels of electric service to its customers consistent with good utility practice. The PPL Electric RP&P for the bulk electric system is consistent with the NERC Reliability Standards and

PJM Reliability Planning Criteria. A further description of PPL Electric's system planning process is provided in Attachment 1 to this Letter of Notification.

20. The Necessity Statement for the proposed Cumberland-West Shore Project is provided as Attachment 1 accompanying this Letter of Notification. As explained in greater detail therein, the purpose of the project is to resolve reliability violations of the PJM Reliability Planning Criteria and PPL Electric RP&P and to increase operating flexibility of PPL Electric's 69 kV system in Cumberland County.

2. Existing System

21. The Cumberland-West Shore #3 and #4 69 kV Transmission Lines extend 17.7 and 19.9 miles, respectively, between the Cumberland 230-69 kV Substation and the West Shore 230-69 kV Substation.

22. Presently, twelve 69-12 kV substations are served from the existing Cumberland-West Shore #3 and #4 69 kV Transmission Line: five of the 69-12 kV substations are PPL Electric-owned substations, and seven are large customer-owned 69-12 kV substations.

23. Under normal operating conditions, both the Cumberland 230-69 kV Substation and the West Shore 230-69 kV Substation supply the twelve 69-12 kV substations served by the Cumberland-West Shore #3 and #4 69 kV Transmission Line.

24. PPL Electric's Cumberland 230-69 kV Substation serves approximately 325 MW of load. The Cumberland 230-69 kV Substation is supplied by two 230 kV sources: the Juniata-Cumberland 230 kV Transmission Line and the Cumberland-West Shore 230 kV Transmission Line.

25. The conductors for the Cumberland-West Shore #3 and #4 69 kV Transmission Line, including the 1.6 mile section of the between the Mount Allen Tap

and Rossmoyne Tap that will be rebuilt, currently are low-capacity 336 kcmil¹ ACSR² conductors.

26. The basic functional arrangement of the existing transmission system in the region is shown in Figure 1 at the end of Attachment 1 to this Letter of Notification.

3. Violation of Reliability Criteria

27. The violations of the PJM Reliability Planning Criteria and PPL Electric RP&P were first identified in the 2008 RTEP, which was approved by the PJM Board in December 2008. Specifically, the 2008 RTEP identified a load loss violation and a thermal overload for an N-1-1 event.³

28. If an outage of both 230 kV sources supplying the Cumberland 230-69 kV Substation were to occur, an N-1-1 event, all 325 MW of load served by the Cumberland 230-69 kV Substation will be interrupted. This load loss would violate the PJM Reliability Planning Criteria identified in Manual 14B, which limits load loss to 300 MW for all criteria events.

29. Further, if a portion of the interrupted load were to be transferred to the 1.6 mile section of the Cumberland-West Shore #3 and #4 69 kV Transmission Line between the Mount Allen Tap and Rossmoyne Tap to reduce the amount of interrupted load at the Cumberland 230-69 kV Substation to within the PJM limit of 300 MW, the summer emergency thermal rating of its current 336 kcmil ACSR conductors would be

¹ Wire sizes are expressed in thousands of circular mils (kcmil). A circular mil is the cross-sectional area of a wire one mil in diameter, where 1 kcmil = 0.5067 mm².

² ACSR stands for aluminum conductor steel reinforced.

³ An N-1-1 event involves the loss of one system element followed by system readjustments, and the loss of a second system element.

violated.⁴ Therefore, the existing Cumberland-West Shore #3 and #4 69 kV Line cannot be used as a transmission path to reduce the amount of interrupted load at the Cumberland 230-69 kV Substation.

C. THE PROPOSED PROJECT

30. To resolve the reliability criteria violations described above, PPL Electric, with approval from the Commission, plans to rebuild a 1.6 mile segment of the existing double-circuit Cumberland-West Shore #3 and #4 69 kV Transmission Line between the Mount Allen Tap and the Rossmoyne Tap.

31. The existing 336 kcmil ACSR conductors will be replaced using higher capacity 795 kcmil 30/19 stranding ACSR conductors.⁵ Six power conductors and one overhead groundwire will be installed. The overhead ground wire will be 3/8 high strength steel and will provide lightning protection for the reconstructed section of line. In addition, one Load Sectionalizing Air Break switch will be installed.

32. The proposed Cumberland-West Shore Project will allow approximately 50 MW of load to be restored after the loss of both 230 kV sources to the Cumberland 230-69 kV Substation by transferring the load to the rebuilt segment of the Cumberland-West Shore #3 and #4 138/69 kV Transmission Line, without overloading the rebuilt Line. As a result, the amount of load interrupted by the loss of supply to the Cumberland

⁴ Transmission lines have a maximum rated thermal capacity, which is the maximum electrical current they can safely carry. When a transmission line overloads, the conductor, the hardware securing the conductor and the line terminal equipment begin to overheat. Overheating the conductor may cause the line to sag. Under these conditions, the metal in the conductor may become brittle, rendering it useless. In addition, the line may break and fall to the ground causing a potentially dangerous situation for those near the line, as well as the crews required to respond to the event. Overloading transmission lines may cause permanent damage to transmission infrastructure and catastrophic long duration power outages.

⁵ The summer emergency rating of 795 kcmil ACSR is 161 MVA compared to 92 MVA for 336 kcmil ACSR. Although the standard for 138/69 kV line design usually calls for 556 kcmil ACSR conductors, PPL Electric proposes to use 795 kcmil ACSR conductors due to the greater load carrying capability of the larger conductor.

230-69 kV Substation would then be below the 300 MW limit and remain within the PJM Reliability Planning Criteria.

33. The rebuilt segment of the Cumberland-West Shore #3 and #4 138/69 kV Transmission Line will be designed and constructed as a double-circuit 138 kV transmission line but initially will be operated at 69 kV. The voltage will be increased to 138 kV when future load increases make it appropriate to maintain service reliability.

34. The existing Cumberland-West Shore #3 and #4 69 kV Transmission Line presently is supported by 50 wood poles, averaging 65 feet in height, with an average span of 200 feet. However, these poles will need to be replaced as part of this Project because they are 62 years old, approaching the end of their useful lives, cannot support the heavier conductor required for this project, and are not high enough to meet current ground clearance requirements.

35. The existing 50 wood poles will be replaced in approximately the same locations with 50 steel poles averaging 75 feet high. Each steel pole will be equipped with six steel upswept conductor support arms. Angle structures will be guyed, and tangent structures will be direct embedded. In addition, a steel High-Low Tap structure will replace the existing wood pole tap structure.⁶

36. The total estimated cost for the proposed Cumberland-West Shore Project is approximately \$2,314,900.

37. The proposed Cumberland-West Shore Project was approved by the PJM Board in December 2008. The Cumberland-West Shore Project was included in the PJM

⁶ The high pole will be 97 feet high, and the low pole will be 60 feet high.

2008 RTEP report as a baseline load growth reliability upgrade, PJM baseline project number b0625.

38. Subject to the Commission's approval, construction of this Project is scheduled to begin in January 2013, to support a required in-service date of May 2013. The required in-service date is defined by PPL Electric as the date the proposed facility needs to be placed in service to prevent equipment overloads that have the potential to damage existing facilities and, thereby, interrupt service to customers.

39. The Engineering Description of the proposed Cumberland-West Shore Project is provided in Attachment 2 accompanying this Letter of Notification.

III. HEALTH AND SAFETY

40. The proposed Cumberland-West Shore Project will not create any unreasonable risk of danger to the public health or safety. The reconstructed 138/69 kV lines will be designed, constructed, operated, and maintained in a manner that meets or surpasses all applicable National Electrical Safety Code ("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 4 to this Letter of Notification.

41. Attachment 5 accompanying this Letter of Notification explains PPL Electric's standards for Magnetic Field Management. As explained there, ground clearances for the rebuilt of the Cumberland-West Shore #3 and #4 138/69 kV Transmission Line will be increased five feet higher than those required by the NESC standard in order to reduce the magnetic field exposure. Further, PPL Electric will reverse phase the double-circuit Cumberland-West Shore #3 and #4 Line 138/69 kV Transmission Line to further reduce magnetic field levels.

42. No communication towers, pipelines, or other utilities will be affected by the proposed Cumberland-West Shore Project.

43. The closest airport is the Capital City Airport, which is a public airport located approximately 5 miles from the Cumberland-West Shore Project. Impacts to this airport are not expected. Nevertheless, PPL Electric will file the appropriate notifications with the PennDOT Bureau of Aviation and the Federal Aviation Administration to confirm that the proposed Lines will not be a hazard to flight operations at this airport.

IV. RIGHT-OF-WAY STATUS

44. PPL Electric does not require any additional right-of-way for the rebuild of the Cumberland-West Shore #3 and #4 138/69 kV Transmission Line. With the possible exception noted next, the proposed reconstruction will take place within the right-of-way for the existing the Cumberland-West Shore #3 and #4 69 kV Transmission Line.

45. In order to facilitate the rebuild of the Line without using custom-designed structures, PPL Electric is attempting to widen its right-of-way across one property. PPL Electric has approached the Dunkard Brethern Church for a 0.5 acre increase in the width of the right-of-way that traverses the church property for the installation of guy wires on an angle structure. If the Church declines, PPL Electric will install a custom-designed steel pole on a concrete foundation within the existing right-of-way.

46. An aerial plot plan is provided at the end of Attachment 2 to this Letter of Notification. The plot plan depicts the location of the existing transmission facilities that will be rebuilt by this Project.

V. LAND USE AND ENVIRONMENTAL EVALUATION

47. As explained above, construction of the proposed Cumberland-West Shore Project will take place, for the most part, within the right-of-way for the existing the Cumberland-West Shore #3 and #4 69 kV Transmission Line, as depicted in the aerial plot plan at the end of Attachment 2 to this Letter of Notification. It is anticipated that the proposed Cumberland-West Shore Project will have minimal incremental impacts on the area.

48. The proposed Cumberland-West Shore Project will be constructed in Lower and Upper Allen Townships, Cumberland County. Impacts to land use, cultural resources, and natural features are anticipated to be minimal because the Cumberland-West Shore Project will be constructed almost entirely within the right-of-way of the existing Cumberland-West Shore #3 and #4 69 kV Transmission Line and because the length of the segment to be rebuilt is relatively short.

49. Some tree clearing along the right-of-way may be required. If so, PPL Electric will apply its “Specifications for Initial Clearing and Control of Vegetation on or Adjacent to Electric Right-of-Way Through Use of Herbicides, Mechanical, and Hand Clearing Techniques” to mitigate any impacts.

50. The Project area contains no state lands, national parks, state parks, or local parks.

51. The Cumberland-West Shore Project will not traverse or affect any unique geological, scenic, or natural areas.

52. The Cumberland-West Shore Project will not affect any recreational areas or natural landmarks. The closest local recreation area, the Vernon C. Wass Park, is located approximately 0.7 mile northeast of the Project. Other local recreation areas or

natural landmarks are located over 1 mile from the Project areas. Based on the distances from the proposed Project, no impacts are expected any recreational areas or natural landmarks.

53. The Project area was reviewed with the Pennsylvania Historical and Museum Commission (PHMC). There are two eligible National Register of Historic Places within the review area around the Project right-of-way. Because the Cumberland-West Shore Project involves reconstructing an existing transmission line, however, the Project will not have any material impact on any architectural sites.

54. The PHMC indicated in its March 21, 2012 letter that the activities associated with the Cumberland-West Shore Project should have no effect on existing or potential historic buildings, structures, and/or archaeological resources in the project area. If PPL Electric becomes aware of any previously unidentified resources that would be affected by the construction of the proposed Cumberland-West Shore Project, the PHMC will be contacted immediately.

55. PPL Electric conducted a wetland delineation of the Cumberland-West Shore Project right-of-way on December 15, 2011. One palustrine emergent (PEM) wetland approximately 0.7 acre in size and one perennial unnamed tributary of Cedar Run were observed within the ROW. The unnamed tributary is designated as a cold water fishery (CWF). PPL Electric will acquire all required environmental permits and adhere to all of their terms and conditions.

56. PPL Electric will obtain all necessary permits from Pennsylvania Department of Environmental Protection and the United States Corps of Engineers and will comply with all of the terms and conditions placed on those permits.

57. PPL Electric will acquire any required soil erosion and sedimentation control permits and will comply with any conditions placed on those permits.

58. PPL Electric has consulted with state and federal agencies to obtain information regarding endangered and threatened species in close proximity to the Project. A review of the Pennsylvania Natural Diversity Inventory records under the jurisdiction of the Department of Conservation and Natural Resources, the Pennsylvania Fish and Boat Commission, the Pennsylvania Game Commission, and the U.S. Fish and Wildlife Service has been completed. These agencies indicate that there are no known species of concern within the study area under their jurisdiction. Therefore, the Cumberland-West Shore Project will have no negative impact on any threatened or endangered species.

VI. NOTICE

59. PPL Electric has provided information regarding the Cumberland-West Shore Project to representatives of the Upper and Lower Allen Townships and their respective planning commissions. PPL Electric also has provided information to the Board of Commissioners and Planning Commission for Cumberland County. These entities have not objected to the proposed Project.

60. 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).

61. All owners of land subject to the right-of-way are listed in Attachment 6. The landowners listed in Attachment 6 were notified by PPL Electric representatives and

sent a letter summarizing the construction of the line section. Further, copies of this Letter of Notification will be served on the landowners.

VII. LETTER OF NOTIFICATION

62. 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)(vi). The proposed Cumberland-West Shore Project qualifies for use of a Letter of Notification because the total length is less than two miles.

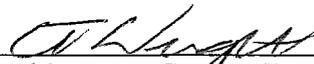
63. This Letter of Notification is filed on the date set forth below. As provided in 52 Pa. Code § 57.72(d)(5), the Commission will review and, by order, approve or disapprove this Letter of Notification. If the Commission approves this Letter of Notification, the proposed Cumberland-West Shore Project will be constructed 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 reconstruction of approximately 1.6 miles of the existing double-circuit Cumberland-West Shore #3 and #4 Transmission Line in Lower Allen Township and Upper Allen Township, Cumberland County, Pennsylvania, that is explained above and in the Attachments hereto.

Respectfully submitted,

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Date: June 29, 2012

Attorneys for PPL Electric Utilities Corporation

VERIFICATION

I, David J. Bonenberger, being the General Manager – Transmission and Substations at PPL Electric Utilities Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect that PPL Electric Utilities Corporation to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date:

6/28/12

