

**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 :
Respect To The Reconstruction of the St. :
Johns – Freeland 69 kV Transmission Tie :
Line In Butler and Foster Townships, :
Luzerne County, Pennsylvania

Docket No. A-2013-_____

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 siting and reconstruction of the St. Johns – Freeland 69 kV Transmission Tie Line (“St. Johns – Freeland Line”) in Butler and Foster Townships, Luzerne County, Pennsylvania. PPL Electric proposes to reconstruct in place the existing St. John – Freeland Line because it is approximately 90 years old, is in a deteriorated condition, has structures with an outdated design and cannot be relied upon to continue to provide reliable service in the future. In addition, replacing the old conductors, as part of the reconstruction of the Line, with modern conductors with greater capacity will enable PPL Electric to restore service to more customers in a shorter period of time in the event of an outage of other facilities in the area and to resolve a violation of PPL Electric’s Reliability Principles and Practices. PPL Electric has discussed the Project with officials from Butler Township, Foster Township and

Luzerne County; and they did not object to the Project. The St. Johns – Freeland Line will be reconstructed entirely in existing rights-of-way and on tracts of land already owned by PPL Electric. Subject to the Commission’s approval, construction on the Project is scheduled to begin in early 2014, and construction is expected to be completed in the third quarter of 2014. In support of this Letter of Notification, 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 those terms are defined in Sections 102 and 2803 of the Pennsylvania Public Utility Code, 66 Pa. C.S. §§ 102, 2803, respectively.

5. PPL Electric owns approximately 5,000 miles of transmission lines operating at 69 kV (kilovolts) or higher, approximately 375 substations with a capacity of 10 MVA (megavolt amperes) or more, and approximately 43,000 miles of distribution lines operating at less than 69 kV.

6. Accompanying this Letter of Notification is a separately bound volume containing Attachments 1-7, which provide additional information about the proposed St. Johns - Freeland 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 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

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. The construction proposed in this Letter of Notification will extend approximately 5.18 miles between the existing St. Johns 69-12 kV Substation and the existing Freeland 69-12 kV Substation.

9. The total estimated cost of the proposed Project is approximately \$5.4 million.

10. Subject to the Commission's approval, construction is scheduled to begin in early, 2014 and is expected to be completed in the third quarter of 2014.

II. THE PROJECT

11. The St. Johns - Freeland Line is located in Butler and Foster Townships, Luzerne County. An aerial exhibit showing the location of the proposed facilities is provided at the end of Attachment 2 to this Letter of Notification. The aerial exhibit depicts the location of the proposed construction.

12. The reconstruction of the St. Johns - Freeland Line will require the construction of approximately 5.18 miles feet of transmission line. The Line will be designed and built for 138 kV double-circuit operation. Initially, however, only a single circuit will be installed, and the line will be operated at 69 kV. The additional circuit will be added when load growth in the area makes it appropriate to do so. The Line will be converted to 138 kV operation when the transmission system serving the area is converted from 69 kV to 138 kV operation.

13. The Necessity Statement for the proposed construction of the St. Johns - Freeland Line is provided as Attachment 1 to this Letter of Notification. The Project is being undertaken in order to replace a 90 year old transmission line that is in a deteriorated condition, has structures with an outdated design and cannot be relied upon to continue to provide reliable service in the future. In addition, replacing the old conductors, as part of the reconstruction of the Line, with modern conductors with greater capacity will enable PPL Electric to restore service to more customers in a shorter period of time in the event of an outage of other transmission facilities in the area and will enable PPL Electric to resolve a violation of its Reliability Principles and Practices (“RP&P”). The Project will also enable PPL Electric to serve increased load in the future.

14. The principal reasons for the reconstruction of the St. Johns – Freeland Line are its age, deteriorated condition and obsolete structure design. The St. Johns – Freeland 69 kV Transmission Tie Line has been in service for approximately 90 years, since 1923. The transmission line still utilizes the original #2/0 AWG¹ copper conductor that was installed when the line was built, and much of the line hardware and insulators are also original.

15. In order to evaluate the condition of the St. Johns – Freeland Line, PPL Electric hired an outside engineering consultant, DiGioia, Gray and Associates,² to perform an independent field investigation and assessment of the line components. This assessment found significant deterioration of the structural components, foundations, insulators, line hardware, shield wire, grounding, signage, paint and galvanizing as well as outdated structure design. Non-compliance with current National Electrical Safety Code standards was also reported. DiGioia, Gray and Associates concluded:

¹ American Wire Gauge

² DiGioia Gray & Associates of Monroeville, PA 15146

“Normally, structure rehabilitation and replacement of select components (insulators, clamps, shield wire...) that are deemed deficient would be considered as an option for continued use of the line. However the line and structures are well beyond expected life and are no longer suitable candidates for rehabilitation. The grade of construction is also not acceptable due to the use of flexible bent type structures. The only reasonable option for this line is complete replacement.”

16. PPL Electric’s independent engineering consultant, DiGioia, Gray & Associates elaborated on the reasons for its conclusion that the Line should be reconstructed as follows:

“It is the opinion of DiGioia, Gray & Associates that the St. Johns-Freeland Tie Asset has reached the end of its useful life. Given the quantity of conductor and shield wire damage on the line, it would be prudent to replace this line with a more reliable, redundant and robust transmission line. The following reasons listed below summarize why this line should be taken out of service:

- This type of construction is not permitted today as stated by the current NESC code, Section 261. Structures are not permitted to be supported by the wires they are intended to carry and support.
- The minimum loads and strengths used at the time of construction are significantly less than the current.
- It is highly unlikely that this transmission line would be strong enough to withstand the current prescribed loads of NESC and of PPL Electric Utilities. No amount of reinforcing would enable these structures to be self supporting.
- Any longitudinal imbalance, unbalanced ice, broken wire or tree falls have the potential to cause cascading failures of all flexible bent type structures located between two dead end strain towers.

Reconductoring therefore would not be an option. A decision to replace the existing line provides the company the opportunity to upgrade the line to current standards, as well as to install additional circuits and improved conductors to allow for future load growth.”

17. PPL Electric considered the possibility of abandoning the St. Johns – Freeland Tie Line. Abandoning the line, however, would cause a deterioration of service reliability in the area.

- a. The St. Johns – Freeland Tie line is the northern half of a 69 kV loop served from the Harwood 230 - 69 kV Regional Substation. This northern loop taps the Harwood-Jenkins # 1 69kV circuit and supplies electrical power to the St. Johns 69 – 12 kV Substation and, under abnormal sectionalizing, the Freeland 69 - 12kV Substation. The southern half of the loop is also served by the Harwood Regional Substation. This southern loop supplies electrical power to the following 69 - 12 kV distribution substations -- Consolidated Cigar (customer-owned), P&E Kama (customer-owned), East Hazleton, Weatherly (customer-owned), White Haven, Jeddo Highland (customer-owned), and Freeland. The southern loop also serves as an outlet for the NEPCO independent power producer (IPP), which generates approximately 56 MW.
- b. PPL Electric plans its system in accordance with its RP&P guidelines, so that PPL Electric can sustain probable contingencies and disturbances with minimal customer service interruptions and 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 reliable and economic manner. 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.

- c. A “normally open” 69 kV switch, located on the St. Johns – Freeland Tie line just west of Freeland substation, separates the northern and southern loops under normal sectionalizing. Under maintenance conditions, this normally open switch would be closed, and the St. Johns – Freeland Tie Line would supply the Weatherly, White Haven, Jeddo Highland, and Freeland substations on the combined northern and southern loops. The aged #2/0 AWG copper conductors on the St. Johns – Freeland Tie Line, however, do not have sufficient capacity to serve the entire load of the northern and southern loops without exposing these loads to low voltage. Presently, the East Hazleton, P&E Kama, and Consolidated Cigar Substations cannot be supplied using the northern loop because the #2/0 AWG copper conductor does not have sufficient capacity for the entire existing load. The PPL Electric Reliability Principles and Practices (RP&P) guideline states that a transmission system shall be planned in such a manner to enable any system facility to be taken out of service at some time for scheduled maintenance without adversely affecting system reliability. The suggested maintenance would violate this reliability criteria. By reconductoring the St. Johns – Freeland Tie Line to the PPL Electric standard design, the 69 kV bus voltages at these substations will be improved under abnormal sectionalizing, and an alternate source of electrical power will continue to be available for these substations.
- d. Without the availability of the St. Johns – Freeland Tie Line, the southern loop (Harwood – East Hazleton #1 or #2 circuits) would have no alternate supply for the above-mentioned PPL Electric and customer-owned distribution substations.

- e. An outage on the Harwood – East Hazleton circuits, between the East Hazleton and Weatherly substations, would interrupt the supply to four substations (Weatherly, White Haven, Jeddo Highland, and Freeland). Under the projected winter 2015-2016 peak load, 34 MW of customer load would be interrupted. The PPL Electric RP&P guidelines allow up to 30 MW of load to be interrupted for a period of up to 10 hours or a long work day. Interrupting 34 MW of load would violate this reliability criterion.

18. Rebuilding and retaining the northern loop between the Harwood, St. Johns, Freeland, Jeddo Highland, White Haven, Weatherly, and East Hazleton substations is necessary for adequate reliability of the 69 kV transmission system. For this reason, the St. Johns – Freeland Tie line cannot be abandoned. The reconstructed Line will also enable PPL Electric to serve future load growth in the future.

19. The only viable solution to the problems explained above is to rebuild the St. Johns – Freeland Line. It will be designed for future double-circuit operation because PPL Electric intends to maximize use of the existing right-of-way to meet future load growth. The Line is supplied by the Harwood – Jenkins #1 and #2 69 kV lines through two switches, one of which is normally closed. The Harwood – Jenkins circuits will be converted to 138 kV operations in the future as part of the long-term plan to reinforce the existing line corridor between the regional substations at Jenkins and Harwood. In preparation for this conversion, the rebuilt St. Johns – Freeland Tie line must also be capable of operating at 138 kV at a future date. These requirements for rebuilding 69 kV lines for future double-circuit 138 kV operation are in accordance with the PPL Electric RP&P.

20. The Engineering Description of the proposed construction of the St. Johns - Freeland Line is provided in Attachment 2 accompanying this Letter of Notification.

- a. PPL Electric proposes to reconstruct approximately 5.18 miles of 69 kV transmission line between the Company's St. Johns 69 -12 kV Substation and the Freeland 69 – 12 kV Substation. The new line will be constructed for future double-circuit 138 kV operations although initially, only one circuit will be installed, and it will operate a 69 kV. The Project is located in portions of Butler and Foster Townships in Luzerne County.

21. The St. Johns – Freeland Transmission Tie Line is presently supported by 61 lattice steel towers, averaging 65 feet in height and five wood poles averaging 60 feet in height. All of these structures will be removed and replaced with approximately 34 double-circuit, weathering steel monopoles equipped with straight weathering steel arms and glass 138 kV insulator assemblies. The new steel monopoles will average 110 feet in height. Average span lengths will increase from approximately 450 feet to approximately 775 feet.³ Therefore, the rebuilt line will utilize about half the number of structures as the old line. The new steel poles will be located as close as practical to the existing structures. Each of the new steel monopoles will be installed on concrete foundations. The reconstructed transmission line initially will consist of three 556.5 kcmil,⁴ 24/7 stranding, ACSR⁵ power conductors (single-circuit initial operation) and two 0.752 inch diameter Optical Ground Wires (OPGW) that will provide lightning protection and communication between circuit breakers that remove the line from

³ The design of the structures is preliminary and may be changed before construction.

⁴ 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.

⁵ ACSR stands for “aluminum conductor steel reinforced.”

service when a faulted line is detected. Figures 1 through 3 are drawings of structures similar to the ones that will be installed for the proposed line reconstruction.

III. HEALTH AND SAFETY

22. The St. Johns - Freeland Line will not create any unreasonable danger to the public health or safety. The proposed Project will be designed, constructed, operated, and maintained in a manner that meets or surpasses all applicable National Electric Safe Code (“NESC”) minimum standards and meet all applicable legal requirements. Descriptions of NESC standards, PPL Electric’s design criteria, and PPL Electric’s safety practices are provided in Attachments 2 and 4.

23. PPL Electric does not believe that the current scientific evidence demonstrates that magnetic fields cause any adverse health effects or pose a health or safety danger to the public. Nevertheless, PPL Electric has determined, as a matter of policy, to design its new and rebuilt transmission lines to reduce magnetic fields when that can be done at low or no cost, consistent with functional requirements.

24. Attachment 5 accompanying this Letter of Notification explains PPL Electric’s standards for Magnetic Field Management. PPL Electric’s Magnetic Field Management Program has been developed to implement the policy decision to construct transmission lines to reduce magnetic fields when it can be done at low or no cost consistent with functional requirements. To reduce magnetic field levels, the program generally prescribes a line design with ground clearances at least five feet greater than NESC standards and reverse phasing of new double-circuit lines where it is feasible to do so at low or no cost and consistent with functional requirements.

25. Consistent with the program, PPL Electric will construct the new overhead line with ground clearances at least five feet greater than NESC standards to reduce magnetic field exposures. Since the initial construction will involve only a single circuit, reverse phasing is not possible at this time. Reverse phasing will be evaluated in the future when a second circuit is added.

IV. ENVIRONMENTAL EVALUATION

26. PPL Electric proposes to rebuild approximately 5.18 miles of the single-circuit St. Johns – Freeland 69 kV Line. The existing line and all of the lattice steel towers along and all wood poles will be removed and replaced with single-shaft steel poles capable of accommodating two circuits. The line will be rebuilt utilizing the existing route.

A. LAND USE

27. The proposed line reconstruction will result in little, if any, environmental or social impacts. In fact, land use impacts are expected to decrease because the footprint of the proposed single-shaft steel poles and support foundations is much less than the existing four-legged lattice steel towers.

28. No pipelines, communication towers or other utilities will be affected by the proposed Project. Hazleton Municipal Airport is approximately 2.7 miles away. PPL Electric will file the appropriate documentation with the Federal Aviation Administration and PennDOT Bureau of Aviation to ensure that the proposed reconstructed line will not be a hazard to the airport's flight operations.

B. CULTURAL RESOURCES

29. The Project was reviewed by the Pennsylvania Historical and Museum Commission (PHMC) for potential impacts to both historic and archaeological resources. The

PHMC has determined that there are no National Register eligible or listed historic or archaeological properties in the area.⁶ Therefore, no impacts to such resources are anticipated, and no further investigations are required.

C. NATURAL FEATURES

30. The proposed Project will not affect any unique scenic or natural areas. Hell’s Kitchen, a narrow, steep-sided valley on the north flank of Green Mountain is listed in “Outstanding Geologic Features of Pennsylvania” is approximately 0.75 miles north of the proposed Project. Visual impact, if any, will be minimal due to intervening vegetation and terrain.

31. No National Natural Landmarks or parks are located near the project area. Edgewood Golf and Banquet Facility is located approximately 0.25 miles north of the proposed Project and will not be impacted due to intervening terrain and vegetation.

32. 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.

33. The St. Johns – Freeland Tie Line crosses the Nescopeck Creek and two wetlands. PPL Electric will acquire, and adhere to the terms and conditions of all required permits and soil erosion and sedimentation control plans.

D. THREATENED AND ENDANGERED SPECIES

34. PPL Electric has coordinated with the relevant state and federal agencies, to obtain information regarding endangered and threatened species that could occur in the vicinity

⁶ (File No. ER 2010-0293-079-B)

of the proposed Project. The Pennsylvania Fish and Boat Commission (PFBC) requested a habitat evaluation for the Timber rattlesnake (*Crotalus horridus*). PPL Electric contracted with Herpetological Associates, Inc. to perform that assessment. Based upon their field assessment, Herpetological Associates submitted documentation to the PFBC indicating that no Timber rattlesnake habitat was found. In their letter concurring with the habitat assessment results, PFBC noted that as long as best management practices are employed and strict erosion and sedimentation control measures are maintained, no adverse impact to species under PFBC jurisdiction is anticipated. PPL Electric will employ best management practices and implement strict erosion control measures.

35. Also, the U. S. Fish and Wildlife Service and the Pennsylvania Game Commission (PGC) note the potential for impact to the Indiana bat (*Myotis sodalis*) and recommends that any required tree clearing occur between October 15 and March 31. The PGC also notes the same tree clearing window to avoid impacts to the Northern myotis (*Myotis septentrionalis*). The Department of Conservation and Natural Resources (DCNR) reports that no impact to species of special concern under DCNR jurisdiction is anticipated. PPL Electric will comply with the recommendations that tree clearing should occur only between October 15 and March 31.

V. NOTICE

36. The proposed reconstruction of the St. Johns - Freeland Line was reviewed with representatives of Butler Township, Foster Township and Luzerne County. The Townships and the County had no objection to the Project.

37. 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).

VI. LETTER OF NOTIFICATION

38. 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 reconstruction of the St. Johns - Freeland Line qualifies for use of a Letter of Notification because it will be located entirely on an existing transmission right-of-way or land owned in fee by PPL Electric and because the size, character design or configuration of the proposed HV line will not substantially alter the right-of-way.

- a. The foundations of the new structures will have a much smaller footprint than those of the existing four-legged lattice steel structures.
- b. The rebuilt line will be supported by fewer structures than the existing line. The rebuilt line will be supported by 34 structures, whereas the existing line is supported by 66 structures – 61 lattice steel structures and five wooden poles.
- c. Although the structures for the rebuilt line will be taller than the existing structures, they will have less visual impact than the existing structures. The structures for the rebuilt line will be simple monopoles. In comparison, the majority of the existing structures are steel lattice structures which have four legs and numerous braces and cross members.
- d. Structures for the rebuilt line will be placed as near as practical to existing structures. No tract of land subject to rights-of-way for the St. Johns – Freeland Line will have more structures than presently occupy the land, and many tracts of land will have fewer structures.

e. This Letter of Notification is being 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 St. Johns - Freeland Line will be completed as proposed herein without the formal application process set forth at 52 Pa. Code §§ 57.71, *et seq.*

VII. CONCLUSION

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission approve the proposed siting and construction of the St. Johns – Freeland 138/69 kV Transmission Tie Line in Butler and Foster Townships, Luzerne County, Pennsylvania, that is explained above and in the Attachments hereto.

Respectfully submitted,



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Date: March 8, 2013

Attorneys for PPL Electric Utilities Corporation

VERIFICATION

I, Stephanie Raymond, being the Transmission and Substations Vice President 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 will 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:

3/6/13

Stephanie Raymond