

CAPTION SHEET

CASE MANAGEMENT SYSTEM

1. REPORT DATE: 00/00/00	:	
2. BUREAU: FUS	:	
3. SECTION(S):	:	4. PUBLIC MEETING DATE:
5. APPROVED BY:	:	00/00/00
DIRECTOR:	:	
SUPERVISOR:	:	
6. PERSON IN CHARGE:	:	7. DATE FILED: 08/04/05
8. DOCKET NO: A-110500 F0362	:	9. EFFECTIVE DATE: 00/00/00

PARTY/COMPLAINANT: UPPER MACUNGIE TWP, LEHIGH COUNTY

RESPONDENT/APPLICANT: PPL ELECTRIC UTILITIES CORP

COMP/APP COUNTY: UTILITY CODE: 110500

ALLEGATION OR SUBJECT

LETTER OF NOTIFICATION OF PPL ELECTRIC UTILITIES CORPORATION FILED PURSUANT TO 52 PA CODE CHAPTER 57 SUBCHAPTER G WITH RESPECT TO THE DORNEYVILLE 138/69 KV TAP REARRANGEMENT LOCATED IN UPPER MACUNGIE TOWNSHIP, LEHIGH COUNTY.

DOCUMENT  
FOLDER

DOCKETED  
AUG 08 2005

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Morgan Lewis  
COUNSELORS AT LAW

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215.963.5034  
adecusatis@morganlewis.com

August 4, 2005

VIA FEDERAL EXPRESS

James J. McNulty  
Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
Harrisburg, PA 17120

Re: **Letter Of Notification Of PPL Electric Utilities Corporation Filed Pursuant To 52 Pa. Code Chapter 57 Subchapter G With Respect To The Dorneyville 138/69 kV Tap Rearrangement Located In Upper Macungie Township, Lehigh County**

Dear Secretary McNulty:

A-110500 F 0362

Enclosed for filing in the above-captioned matter are an original and six (6) copies of PPL Electric Utilities Corporation's ("PPL") Letter of Notification requesting approval to rearrange a section of the existing Dorneyville 138/69 kV Tap. This Letter of Notification is filed pursuant to the Commission's regulations at 52 Pa. Code Section 57.72(d).

Copies of the Letter of Notification have been served upon the parties listed on the attached Certificate of Service. The enclosed documents are to be deemed filed on the date shown above, which is the date they were deposited with an overnight express delivery service as shown on the delivery receipt attached to the mailing envelope.

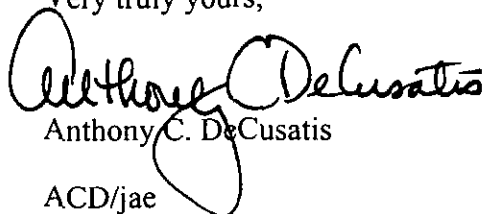
DOCKETED  
AUG 08 2005

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James J. McNulty  
August 4, 2005  
Page 2

Also enclosed is an additional copy of the Letter of Notification, which we request that you date stamp as evidence of filing and return to us in the stamped, self-addressed envelope provided for that purpose.

Very truly yours,

  
Anthony C. DeCusatis

ACD/jae

c: Darren Gill

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ORIGINAL

RECEIVED

AUG 4 2005  
PA. PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU

Re: Letter of Notification of PPL Electric :  
Utilities Corporation Filed Pursuant To 52 :  
Pa. Code Chapter 57 Subchapter G With :  
Respect To The Dorneyville 138/69 kV Tap :  
Rearrangement Located In Upper Macungie :  
Township, Lehigh County :

Docket No. A-110500

LETTER OF NOTIFICATION

DOCUMENT  
FOLDER

1. This Letter of Notification is filed pursuant to 52 Pa. Code §57.72(d)(1)(vi) to request the approval of the Pennsylvania Public Utility Commission ("Commission") to rearrange a section of the existing Dorneyville 138/69 kV Tap in Upper Macungie Township, Lehigh County, in order to support the conversion of the Dorneyville Substation from 69-12 kV to 138-12 kV operation. The conversion is necessary to alleviate overloading two of the 69 kV transformers at PPL's Wescosville 500-230-138-69 kV Substation, which currently feed the Dorneyville Substation. Construction of this project is scheduled to begin as soon as possible after the Commission grants siting approval in order to support the project's required in-service date of May 2006. Accompanying this Letter of Notification is a separately bound volume containing Exhibits A-C and Appendices A-C, which provide additional information about the project. This Letter of Notification and the accompanying Exhibits and Appendices, which are incorporated herein by reference, contain all of the information required by 52 Pa. Code § 57.72(d)(4).

2. The applicant is PPL Electric Utilities Corporation ("PPL"), Two North Ninth Street, Allentown, Pennsylvania 18101, a public utility incorporated in Pennsylvania for the

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AUG 08 2005

purpose of supplying light, heat and power to the public by means of electricity in all or portions of twenty-nine counties in eastern-central Pennsylvania.

3. PPL's attorneys are:

David B. MacGregor  
Anthony C. DeCusatis  
Morgan, Lewis & Bockius LLP  
1701 Market Street  
Philadelphia, Pennsylvania 19103  
215.963.5034 (T) 215.963.5001(Fax)

Paul E. Russell  
PPL Electric Utilities Corporation  
Two North Ninth Street  
Allentown, Pennsylvania 18101  
610.774.4254 (T) 610.774.6726 (Fax)

PPL's attorneys are authorized to receive all notices and communications regarding this Letter of Notification.

4. The Dorneyville 69-12 kV Substation is presently supplied from the #1 and #2 69 kV transformers at the Wescosville 500-230-138-69 kV Substation via the double circuit Hosensack – Wescosville 69 kV Lines and the double circuit Dorneyville 138/69 kV Tap. Presently, there are two problems at Wescosville Substation. First, during hot summer days, load on the #1 69 kV transformer has occasionally exceeded the normal transformer rating of 200 MVA which, in turn, caused the 69 kV transmission system to be operated outside of its normal configuration. Secondly, the unanticipated loss of either the #1 or the #2 transformer, even with the 69 kV transmission system operating in a normal configuration, would interrupt service to about 65 MW of load, or approximately 10,000 customers, until repairs could be made. At projected 2006 loads, during abnormal operating configurations on peak summer days, a failure

of either the #1 or #2 69 kV transformer would also cause the remaining transformer to exceed its emergency planning limit.

5. To resolve the problems discussed above, PPL, with the PUC's approval, proposes to transfer the Dorneyville Substation load from the 69 kV transmission system to the 138 kV transmission system. The load transfer will be completed by removing one span of double circuit 69 kV transmission line, in order to isolate the Dorneyville 138/69 kV Tap from the Hosensack-Wescosville #1 and #2 69 kV Lines, and constructing approximately 500 feet of new double circuit 138 kV transmission line to connect the Dorneyville Tap to the Siegfried-Wescosville #1 and #2 138 kV Transmission Lines. In order to accept load at 138 kV, the existing transformers at the Dorneyville Substation will be replaced with 138-12 kV units. Figures 3 and 4 in Exhibit A of the accompanying exhibits depict the proposed substation and transmission line modifications, respectively.

6. The proposed solution will reduce the forecasted load on the Wescosville transformers by 38 MVA and, thereby, eliminate potential transformer overloading problems at the Wescosville Substation.

7. The proposed line rearrangement will require the construction of approximately 500 feet of transmission line and the removal of approximately 250 feet of line. Three new poles will need to be installed to construct the new section of line. Two of the poles will be direct embedded, guyed poles installed on the existing Siegfried-Wescosville 138kV line, and the other will be a self-supporting pole with foundation that will be constructed on the Dorneyville 138kV Tap. All of the proposed construction will take place on property that PPL already owns in fee. The proposed line section will consist of six power conductors and one overhead shield wire.

The conductors will be 556.5 KCMIL 24/7 stranding ACSR, and the shield wire will be 3/8 inch high strength steel wire.

8. The project will be designed, constructed, operated and maintained in a manner that satisfies or surpasses National Electrical Safety Code (“NESC”) standards and all applicable legal requirements. The proposed project will not create an unreasonable risk of danger to the public health or safety. Descriptions of NESC standards and PPL’s design criteria and safety practices are set forth in Appendix A to the accompanying exhibits. Minimum conductor-to-ground clearances for the proposed line will be 30 feet, as more fully explained in Exhibit B.

9. All of the proposed construction will take place on property that PPL already owns in fee. No additional land or right-of-way is required.

10. The project described herein is proposed to begin as soon as possible after the Commission grants its siting approval in order to support a required in-service date in May 2006. The estimated cost for the line rearrangement is \$420,000.

11. As previously explained, the proposed line rearrangement involves the construction of 500 feet of double circuit 138 kV transmission line and the removal of 250 feet of existing 138/69 kV transmission line. The proposed new 500-foot section of the Dorneyville 138 kV Tap will be located entirely on PPL property just outside the fence of the Wescosville 500-230-138-69 kV Substation. Therefore, no additional impact on existing land use is anticipated. No nearby railroads, communication towers, pipelines or other utilities will be affected by the proposed project. Queen City Municipal Airport is approximately 3.5 miles from the project location. PPL will file the appropriate documentation with both the Federal Aviation Administration and PennDOT’s Bureau of Aviation to ensure the proposed line section is not a

hazard to the airport's flight operations. The project was reviewed with Upper Merion Township and Lehigh County, and neither the Township nor the County had any objection.

12. A project review by the Pennsylvania Historical and Museum Commission has determined that this project will have no effect on archeological resources. There are no places of historic or cultural interest that will be affected by the project.

13. The project will not affect any unique geological, scenic or natural areas. No National Natural Landmarks, parks, or recreational facilities are located near the project area. No tree clearing is required. The line will not cross any wetlands or other aquatic resources. In conducting the work necessary for this project, PPL will employ, as appropriate, the mitigating measures set forth in its "Program for Vegetation Management" and "Specifications for Soil Erosion and Sedimentation Control for Transmission Line Rights-of-Way." In addition, PPL has coordinated with various state and federal agencies and determined that no threatened or endangered plant or animal species will be affected by the project. PPL's environmental assessment of the proposed relocation is set forth in Exhibit C.

14. A copy of this Letter of Notification is being served in accordance with the provisions of 52 Pa. Code §57.72(d)(3).

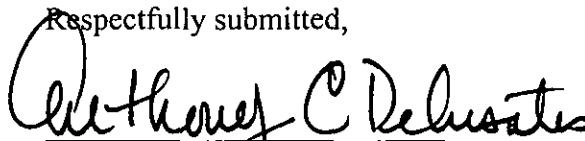
15. As soon as practicable after the filing of this Letter of Notification, PPL will publish notice of the filing in newspapers of general circulation in the area of the proposed project. Such notice will contain: (a) the date this Letter of Notification was filed with the Commission; (b) a brief description of the project and its location; (c) locations where the complete Letter of Notification may be reviewed by the public; and (d) an instruction that the

interested parties should contact, within 15 days, James J. McNulty, Secretary, at the Commission's Harrisburg address.

16. 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 project will be constructed as proposed herein without the formal application process set forth at 52 Pa. Code §57.71 *et seq.* If the Commission does not approve this Letter of Notification, the Commission's Order shall direct PPL to file for approval to construct the proposed project pursuant to the Commission's formal certification regulations.

WHEREFORE, PPL respectfully requests that the Commission approve the Dorneyville 139/69 kV Tap Rearrangement as proposed herein.

Respectfully submitted,



David B. MacGregor  
Anthony C. DeCusatis  
Morgan, Lewis & Bockius LLP  
1701 Market Street  
Philadelphia, PA 19103

Paul E. Russell  
PPL Electric Utilities Corporation  
Two North Ninth Street  
Allentown, PA 18101

Attorneys for PPL Electric Utilities  
Corporation

Dated: August 4, 2005



BEFORE/THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ORIGINAL RECEIVED

AUG 4 2005  
PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU

Letter of Notification of PPL Electric Utilities :  
Corporation Filed Pursuant to 52 Pa. Code :  
Chapter 57 Subchapter G With Respect To :  
The Dorneyville 138/69 kV Tap : Docket No.  
Rearrangement Located In Upper Macungie :  
Township, Lehigh County :

A-110500 F0362

**CERTIFICATE OF SERVICE**

I hereby certify that I have, this 4 day of August, 2005, served true and correct copies of the Letter of Notification and accompanying Exhibit Nos. A, B and C upon the persons and in the manner listed below.

**By Certified Mail/Return Receipt Requested**

**(GOVERNMENTAL AGENCIES)**

Pennsylvania Historical and Museum Commission  
Bureau for Historic Preservation  
Commonwealth Keystone Building, Second Floor  
400 North Street  
Harrisburg, PA 17120  
Attn: Mr. Douglas C. McClearen, Chief

DOCUMENT  
FOLDER

Pennsylvania Department of Transportation  
Commonwealth Keystone Building  
400 North Street, 8th Floor  
Harrisburg, PA 17120  
Attn: The Honorable Allen D. Biehler, P.E., Secretary

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

DOCKETED  
AUG 4 2005

Lehigh County  
17 South 7<sup>th</sup> Street  
Allentown, PA 18101-2400  
Attn: The Honorable Jane R. Ervin, County Executive

Lehigh Valley Planning Commission  
961 Marcon Boulevard, Suite 310  
Allentown, PA 18103-9397  
Attn: Mr. Michael Kaiser, AICP

Upper Macungie Township Board of Supervisors  
8330 Schantz Road  
Breinigsville, PA 18031  
Attn: Mr. Porter Krisher, Chair

Upper Macungie Township  
8330 Schantz Road  
Breinigsville, PA 18031  
Attn: Mr. Barry Moyer, Manager

Upper Macungie Township Planning Commission  
8330 Schantz Road  
Breinigsville, PA 18031  
Attn: Mr. James Miller, Chair



Anthony C. DeCusatis  
Counsel for PPL Electric Utilities Corporation

August 4, 2005

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ORIGINAL

AUG 4 2005

PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU



Before the  
Pennsylvania Public Utility Commission

# Dorneyville 138/69 kV Tap Rearrangement

DOCUMENT  
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## Letter of Notification

Application Docket No. A-110500 F0362

Submitted by: PPL Electric Utilities Corp.

DOCKETED  
AUG 08 2005

## SUMMARY

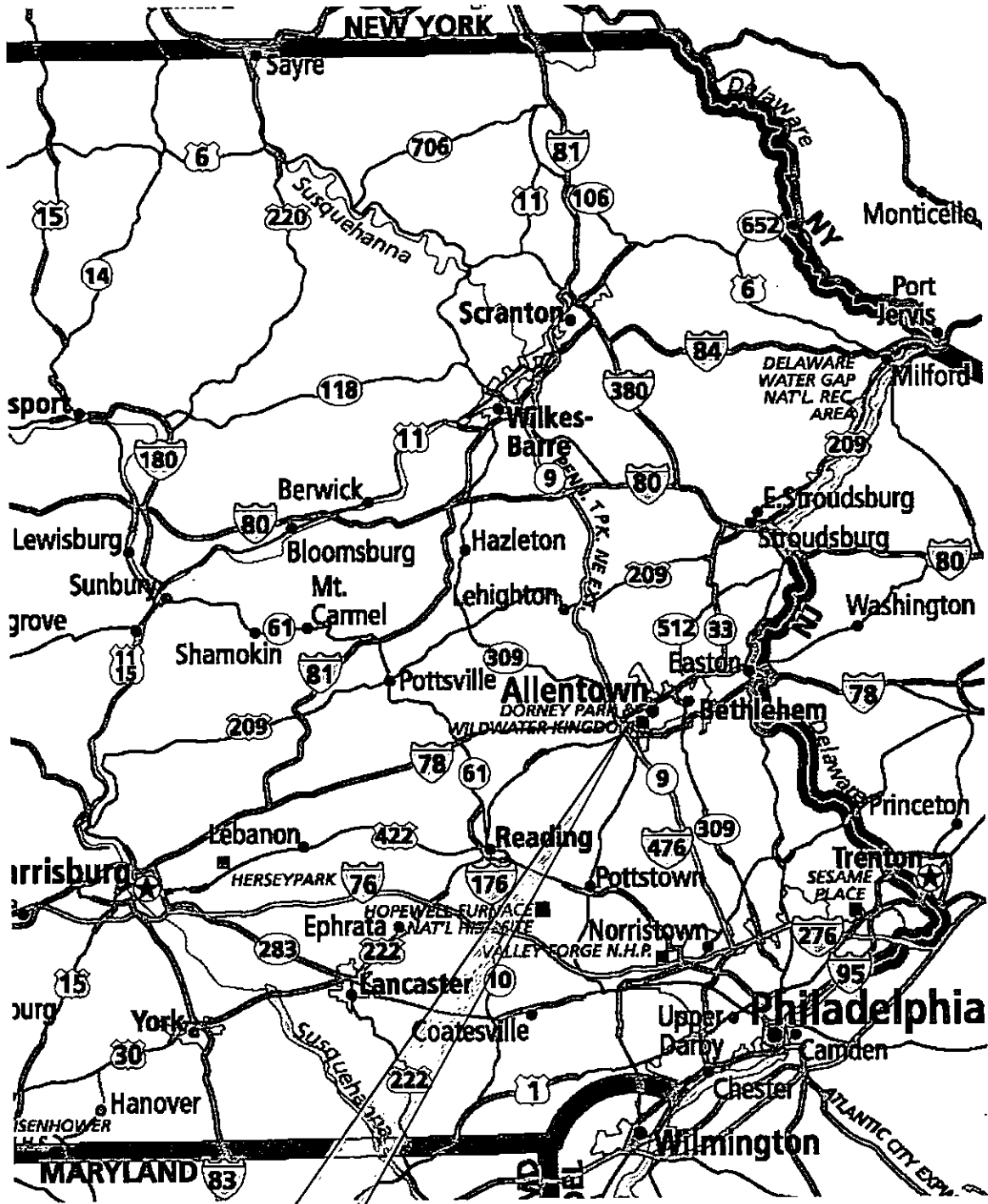
This filing is submitted by PPL Electric Utilities Corporation (PPL) pursuant to the Pennsylvania Public Utility Commission's (PUC or the Commission) regulations at 52 Pa. Code §§57.71 through 57.77 for PUC approval to rearrange a section of the existing Dorneyville 138/69 kV Tap. The proposed project transfers the Dorneyville 69-12 kV Substation from the 69 kV system to the 138 kV system. This project is required to prevent overloading two of the 69 kV transformers at PPL's Wescosville 500-230-138-69 kV Substation, which currently feed the Dorneyville Substation.

The estimated cost to design and construct the Dorneyville 138/69 kV Tap rearrangement is \$420,000. Construction is scheduled to begin as soon as possible to support the project's in-service date of May 2006.

This document, which describes the need for the project and discusses the engineering and siting analysis for the proposed construction, consists of the following exhibits and appendices:

- Exhibit "A" - Necessity Statement
- Exhibit "B" - Engineering Description
- Exhibit "C" - Environmental Assessment
  
- Appendix A - PPL Design Criteria and Safety Practices
- Appendix B - Magnetic Field Management at PPL
- Appendix C - List of Involved Governmental Agencies, Municipalities, and Other Public Entities

# LOCATION MAP



PROJECT LOCATION

**Exhibit A**

**EXHIBIT "A"**  
**DORNEYVILLE 138/69 kV TAP REARRANGEMENT**  
**NECESSITY STATEMENT**

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**MAP**

MAP 1      PPL SYSTEM MAP

EXHIBIT "A"  
MAP POCKET

**EXHIBIT "A"**  
**DORNEYVILLE 138/69 kV TAP REARRANGEMENT**  
**NECESSITY STATEMENT**

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**A. INTRODUCTION**

PPL plans to convert the existing Dorneyville 69-12 kV Substation to a 138-12 kV substation. The Dorneyville Substation is currently connected to the Hosensack-Wescosville #1 and #2 69 kV Transmission Lines by the Dorneyville 138/69 kV Tap. Consequently, to effect the conversion of the Dorneyville Substation, PPL is requesting PUC approval to transfer the double circuit Dorneyville 138/69 kV Tap source from the Hosensack-Wescosville #1 and #2 69 kV Transmission Lines to the Siegfried-Wescosville #1 and #2 138 kV Transmission Lines. This project is required to reduce load on the two Wescosville 69 kV substation transformers.

The estimated cost to design and construct the Dorneyville 138 kV Tap rearrangement is \$420,000. The proposed transmission line work will begin as soon as possible after PUC approval is obtained in order to support the project's required in-service date of May 2006. The required in-service date is defined as the date that the proposed facility must be placed in service to prevent overloads that could potentially damage equipment and result in service interruptions to customers.

A PPL system map showing the existing transmission line facilities with a design voltage of 35 kV or greater is included in the Exhibit "A" map pocket. This filing addresses only the existing and proposed 138 kV regional transmission system in the Wescosville/Dorneyville area.

**B. EXISTING SYSTEM**

The Dorneyville 69-12 kV Substation is presently supplied from the #1 and #2 69 kV transformers at the Wescosville 500-230-138-69 kV Substation via the double

circuit Hosensack – Wescosville 69 kV Lines and the double circuit Dorneyville 138/69 kV Tap. The existing Dorneyville 138/69 kV Tap (presently operated at 69 kV) was placed in-service in the late 1970s and predates the requirements for PUC approval of new or rebuilt transmission lines designed to operate at 100 kV or greater.

**C. DEFINITION OF THE PROBLEM**

Presently, there are two problems at Wescosville Substation. First, during hot summer days, load on the #1 69 kV transformer has occasionally exceeded the normal transformer rating of 200 MVA which, in turn, caused the 69 kV transmission system to be operated outside of its normal configuration. Secondly, the unanticipated loss of either the #1 or the #2 transformer with a normal 69 kV transmission operating configuration would interrupt service to about 65 MW of load, or approximately 10,000 customers, until repairs could be made. At projected 2006 loads, during abnormal operating configurations on peak summer days, a failure of either the #1 or #2 69 kV transformer would cause the remaining transformer to exceed its emergency planning limit.

**D. PROPOSED SOLUTION**

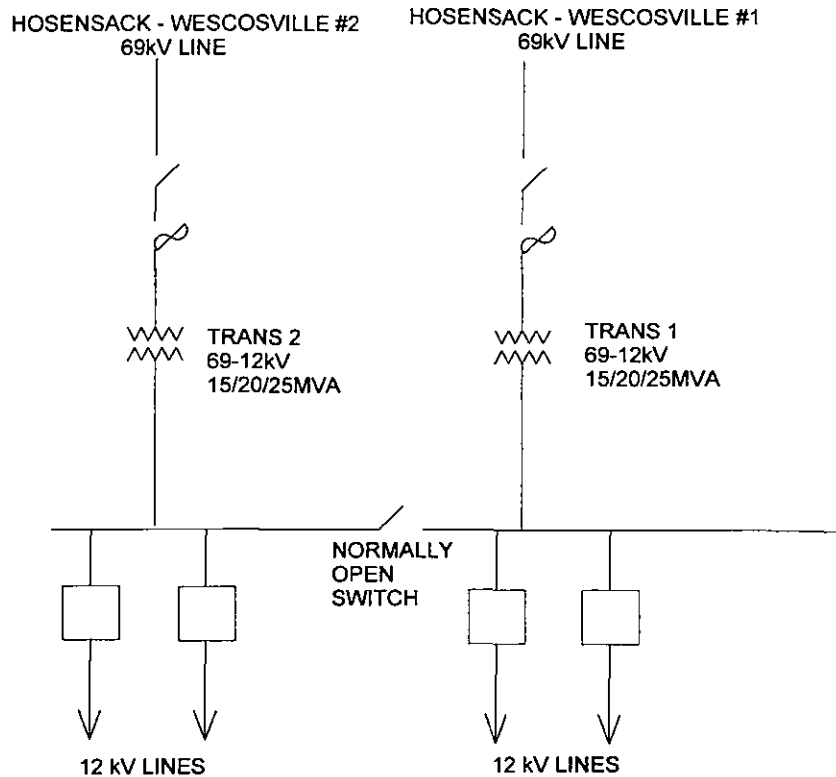
To resolve the issues discussed above, PPL with the PUC's approval, proposes to transfer the Dorneyville Substation load from the 69 kV transmission system to the 138 kV transmission system. The load transfer will be completed by removing one span of double circuit 69 kV transmission line, in order to isolate the Dorneyville 138/69 kV Tap from the Hosensack-Wescosville #1 and #2 69 kV Lines, and constructing approximately 500 feet of new double circuit 138 kV transmission line to connect the Dorneyville Tap to the Siegfried-Wescosville #1 and #2 138 kV Transmission Lines. In order to accept load at 138 kV, the existing transformers at the Dorneyville Substation will be replaced with 138-12kV, 20/27/34MVA units. Figures 3 and 4 depict the proposed substation and transmission modifications, respectively.

The proposed solution will reduce the forecasted load on the Wescosville transformers by 38 MVA eliminating potential transformer overloading problems.

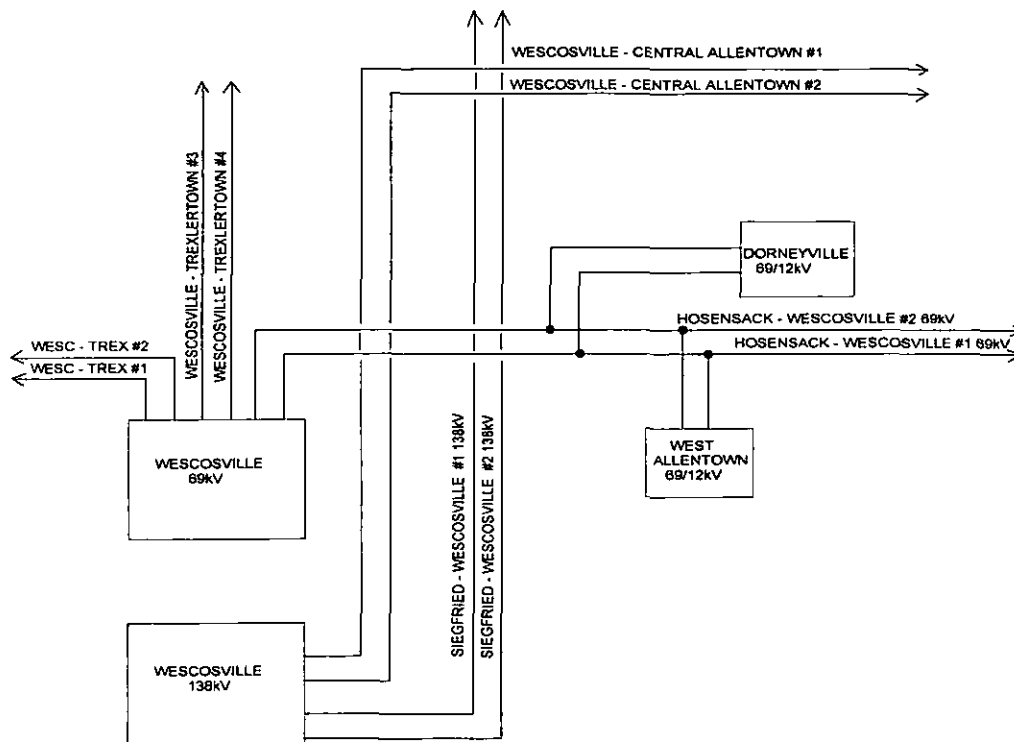
The total estimated cost for the proposed solution is \$1.1 million, which includes \$700,000 for the substation modifications and \$420,000 for the transmission work. This filing covers only the proposed transmission modifications, which are the only part of the project that requires prior PUC approval under 52 Pa. Code Chapter 57 Subchapter G.

**E. FUNCTIONAL ALTERNATIVES**

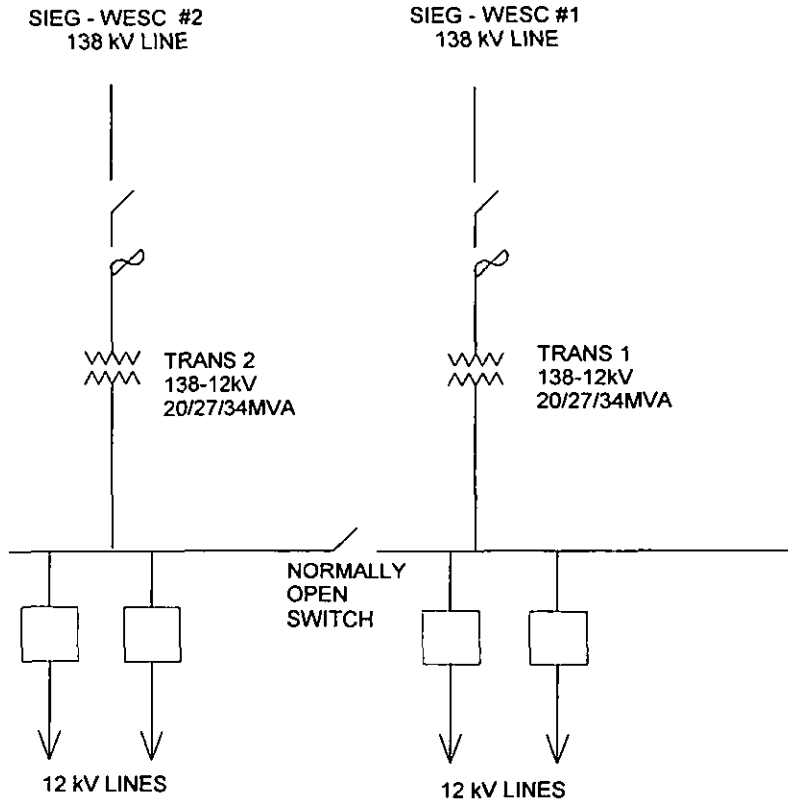
No other reasonably economical functional alternatives were identified that would completely resolve the problems outlined above.



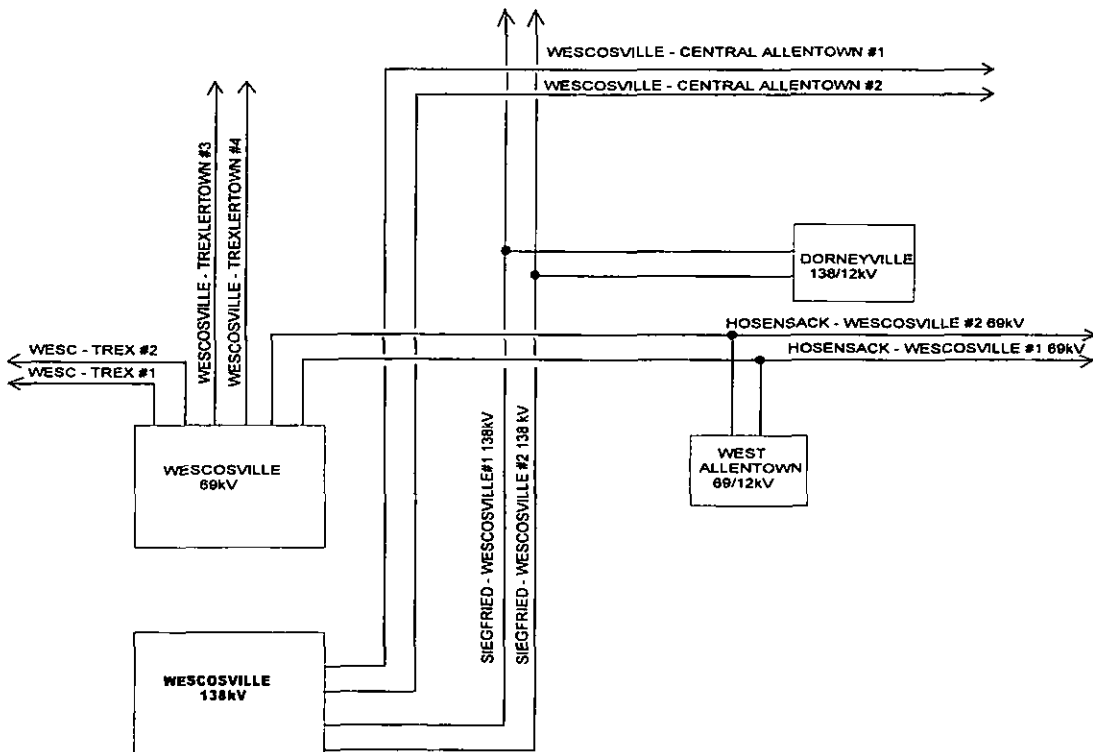
**Figure 1 – Existing Dorneyville Substation Configuration**



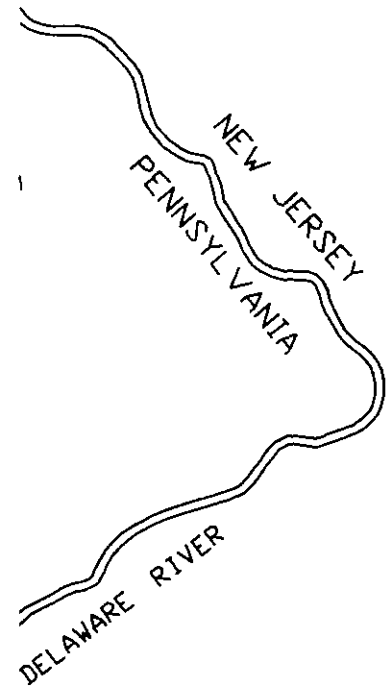
**Figure 2 – Existing Transmission Configuration**



**Figure 3 – Modified Dorneyville Substation Configuration**



**Figure 4 – Modified Transmission Configuration**



**OVERSIZED  
DOCUMENT(S)**

D

F

MF



ACCT- 805201		ELECTRICAL SYSTEM MAP	
SCALE- NONE			
BY-			
REVIEWED			
APPROVED ORIGINALLY BY		DATE	F
G. HAKUN III		7/17/85	
PP&L DRAWING NO.		SHEET NO.	REV.
D191830		1	31

F

PC FORMAT

PROVED

C

**Exhibit B**

**EXHIBIT "B"**  
**DORNEYVILLE 138/69 kV TAP REARRANGEMENT**  
**ENGINEERING DESCRIPTION**

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**MAP**

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**EXHIBIT "B"**  
**DORNEYVILLE 138/69 kV TAP REARRANGEMENT**  
**ENGINEERING DESCRIPTION**

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**A. DESCRIPTION OF PROPOSED LINE**

PPL proposes to rearrange the connection of the existing Dorneyville 138/69 kV tap so that the Dorneyville Substation can be operated at 138kV. The rearrangement will disconnect the existing Dorneyville 138/69 kV Tap from the 69 kV system and reconnect it to the 138 kV system via the existing Siegfried-Wescosville 138kV Line. The proposed line will supply electricity directly to PPL's Dorneyville Substation, which will be converted from 69-12 kV to 138-12 kV. The project is located in Upper Macungie Township, Lehigh County. A plot plan for the transmission line project is provided in the Exhibit "B" map pocket.

*The proposed rearrangement will require the construction of approximately 500 feet of transmission line and the removal of approximately 250 feet of line. Three new poles will need to be installed to construct the new section of line. Two of the poles will be direct embedded, guyed poles installed on the existing Siegfried-Wescosville 138kV line, and the other will be a self-supporting pole with foundation that will be constructed on the Dorneyville 138kV tap. All of the proposed construction will take place on property that PPL already owns in fee. The proposed line section will consist of six power conductors and one overhead shield wire. The conductors will be 556.5 KCMIL 24/7 stranding ACSR, and the shield wire will be 3/8 inch high strength steel wire.*

The proposed line will be designed to, and generally exceed, National Electrical Safety Code (NESC) standards. Design specifications and safety rules practiced by PPL are included in Appendix A. The minimum conductor to ground clearance will be 30 feet, which occurs at a maximum thermal conductor temperature of 125 degrees Celsius.

The designed minimum conductor clearances and conductor thermal ratings for the line are as follow:

**TABLE 1**  
**DESIGN MINIMUM CONDUCTOR CLEARANCES**  
**FOR 556.5 KCMIL 24/7 STRANDING ACSR\***

<u>Condition</u>	<u>Transmission Double-Circuit Design Clearance-to-Ground</u>
Normal load; average weather (16°C ambient temperature)	32.7 feet
Predicted extreme thermal load (125°C conductor temperature)	30.0 feet
Predicted extreme weather conditions (1/2-inch ice, 8 lbs. wind, -18°C)	33.2 feet

\*Clearances based on a maximum tension of 3540 pounds and a ruling span of 290 feet.

**CONDUCTOR THERMAL RATING**  
**556.5 KCMIL 24/7 STRANDING ACSR**  
**(257°F) 125°C MAXIMUM CONDUCTOR TEMPERATURE**

Condition	<u>Ambient Temperature °C</u>	<u>Wind Speed Knots</u>	<u>Ampacity Amps</u>
Summer Normal	35	0	810
Winter Normal	10	0	920
Summer Emergency	35	1 1/2	1,030
Winter Emergency	10	1 1/2	1,150

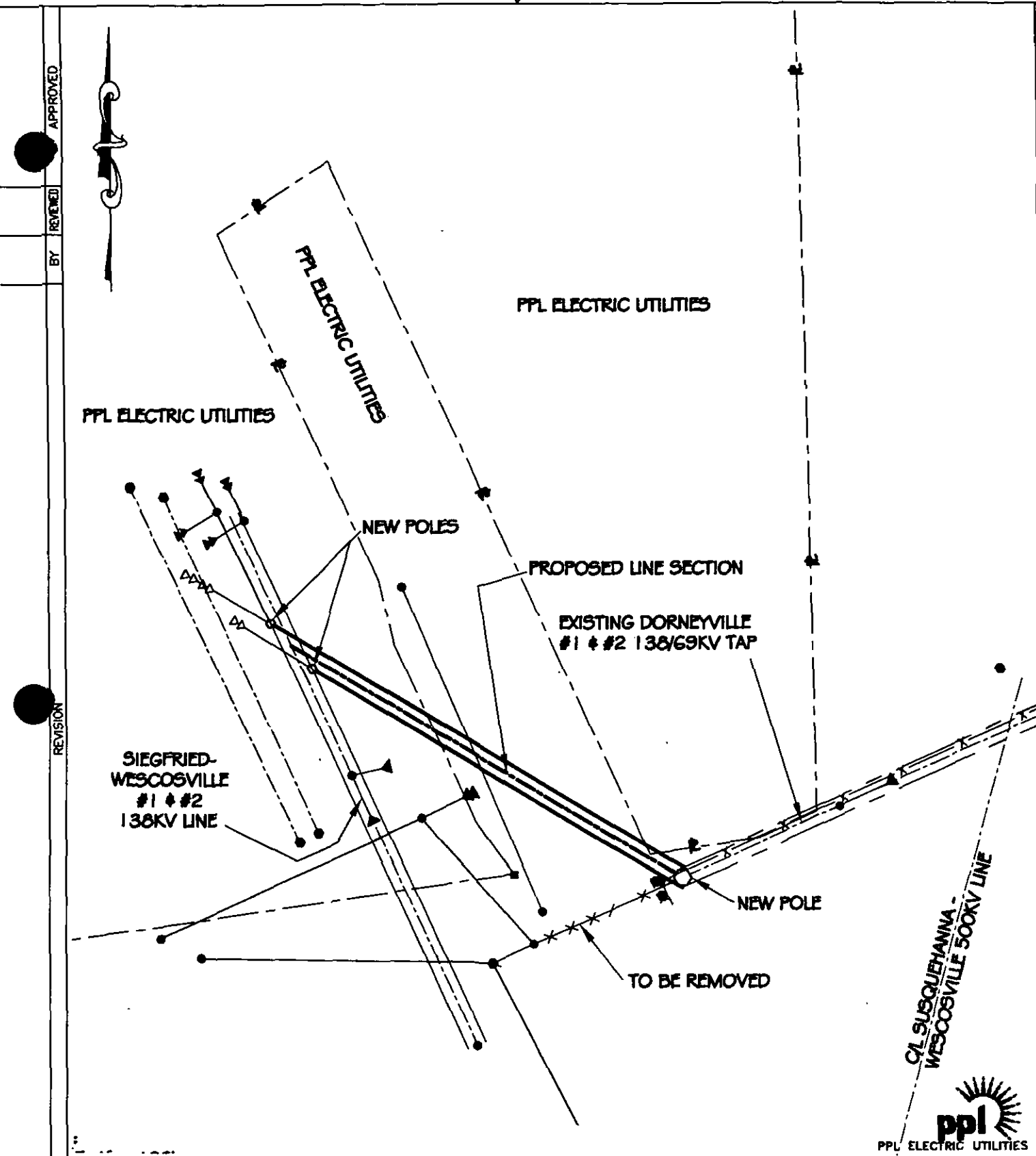
**B. MAGNETIC FIELD MANAGEMENT**

PPL's Magnetic Field Management Program, summarized in Appendix B, is applied to new and reconstructed transmission line projects. To reduce magnetic field exposures, the program generally prescribes the use of a line design that provides five feet higher ground clearance and reverse phasing of new double circuit lines where it is feasible to do so at low or no cost. The implementation of additional modifications will be considered, provided those modifications can be made at low or no cost.

Reverse phasing of the Dorneyville Tap would require the installation of two additional poles at an estimated cost that exceeds \$50,000 and is not feasible within the low or no cost criteria of PPL's Magnetic Field Management Plan.

**C. RIGHT-OF-WAY STATUS**

All work will be completed on property PPL already owns in fee. No additional right-of-way is required.



**DORNEYVILLE 138/69 KV TAP**  
**TRANSFER DORNEYVILLE TAPS TO SIEGFRIED-WESCOSVILLE LINE**

ACCT-	162003
SCALE-	NONE
BY-	CDW
NO.	DATE
REVIEWED	

UPPER MACUNGIE TWP.	LEHIGH CO., PA.
APPROVAL	DATE
PPL DRAWING NO.	SHEET NO.
<b>EXHIBIT</b>	<b>1</b>
	REV.
	<b>0</b>

**Exhibit C**

**EXHIBIT "C"**  
**DORNEYVILLE 138/69 kV TAP REARRANGEMENT**  
**ENVIRONMENTAL ASSESSMENT**

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**EXHIBIT "C"**  
**DORNEYVILLE 138/69 kV TAP REARRANGEMENT**  
**ENVIRONMENTAL ASSESSMENT**

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**A. INTRODUCTION**

To prevent overloading two of the 69 kV transformers at the Wescosville 500-230-138-69 kV Substation, PPL needs to convert the existing Dorneyville 69-12 kV Substation to 138-12 kV operation. To accomplish this conversion, PPL proposes transferring the Dorneyville 138/69 kV Tap source from the 69 kV system to the 138 kV system by constructing approximately 500 feet of double circuit 138 kV transmission line and reconnecting the existing Dorneyville 138/69 kV Line to the Siegfried-Wescosville 138 kV Transmission Line.

The proposed project was reviewed with Upper Macungie Township and Lehigh County, and neither the Township nor the County has any objection. A list of involved governmental agencies, municipalities and other public entities is presented in Appendix C.

**B. LAND USE**

The proposed new 500-foot section of Dorneyville 138 kV Tap is located entirely on PPL property just outside the fence of the Wescosville 500-230-138-69 kV Substation. Therefore, no additional impact on existing land use is anticipated.

No nearby railroads, communication towers, pipelines or other utilities will be affected by the proposed project. Queen City Municipal Airport is approximately 3.5 miles from the project location. PPL will file the appropriate documentation with both the Federal Aviation Administration and the PennDOT Bureau of Aviation to ensure the proposed line section is not a hazard to the airport's flight operations.

**C. CULTURAL RESOURCES**

This project was reviewed with the Pennsylvania Historical and Museum Commission (PHMC). PHMC has determined that due to the absence of historical sites and the small project size no further archaeological investigations are required.

The following lists were reviewed for the presence of historical districts and structures in the area:

- National Historic Landmarks in Pennsylvania
- National Register Historic Districts in Pennsylvania
- National Register Individual Properties and Historic Districts in Pennsylvania
- National Register/Listed and Eligible Properties in Pennsylvania

There are several structures of historical interest in the vicinity of the project. Impacts to these historic structures are not expected due to the small scope of the project and its location adjacent to PPL's Wescosville Substation.

**D. NATURAL FEATURES**

The proposed project will not affect any unique geological, scenic, or natural areas. No National Natural Landmarks, parks, recreational facilities, or natural areas are located near the project area. Tree clearing is not required. The line will not cross any wetlands or other aquatic resources. PPL will employ its "Specification for Soil Erosion and Sedimentation Control on Transmission Line Rights-of-Way" as appropriate.

E. **THREATENED AND ENDANGERED SPECIES**

PPL has coordinated with different state and federal agencies to obtain information regarding endangered and threatened species that could occur in the study area. The agencies report that, except for occasional transient species of wildlife, no threatened or endangered plant or animal life is found in the project area.

**Appendices**

## LIST OF APPENDICES

- APPENDIX A - PPL Design Criteria and Safety Practices
- APPENDIX B - Magnetic Field Management at PPL
- APPENDIX C - List of Involved Governmental Agencies, Municipalities, and Other Public Entities

## APPENDIX A

### PPL DESIGN CRITERIA AND SAFETY PRACTICES

The National Electrical Safety Code (NESC) is a set of rules to safeguard people during the installation, operation, and maintenance of electric power lines. The NESC contains the basic provisions considered necessary for the safety of employees and the public. Although it is not intended as a design specification, its provisions establish minimum design requirements. PPL Electric Utilities Corp. (PPL) has developed design specifications and safety rules which meet or surpass all provisions specified by the NESC.

#### Engineering Design Criteria and Parameters

The NESC includes loading requirements and clearances for the *design, construction, and operation* of power lines. The "loads" on conductors and supporting structures are the mechanical forces that develop from the weight of the conductors, the weight of ice on the conductors, plus wind pressure on the conductors and supporting structures. Loading requirements are the loads on the conductors and structures that are anticipated assuming certain ice and wind conditions. Loading requirements always contain "safety factors" to allow for unknown or unanticipated contingencies. The clearances and loading requirements contained in the NESC were developed to ensure public safety and welfare.

PPL transmission line design standards meet or surpass the NESC standards. For example, the relative order of grades of construction for conductors and supporting structures is B, C, and N; Grade B being the highest. According to the NESC standards, construction Grades B, C, or N may be used for transmission lines (except at crossings of railroad tracks and limited access highways where Grade B construction is specified). However, PPL designs all of its transmission lines for Grade B construction. The use of Grade B design and construction specifies such things as larger-minimum crossarm dimensions, larger-minimum conductor size, and increased safety factors.

Another example is the design parameters utilized to account for ice and wind loadings on the overhead ground wire (OHGW) and power conductors. The NESC standard ice and wind design magnitudes for the PPL territory are 0.5 inch thickness of radial ice combined with four pounds per square foot horizontal wind pressure (equivalent to 40-mile per hour wind velocity). The conductor sags and tensions used in line designs are the result of various ice and wind combinations, depending on the elevation at the line location and line design voltage. The conductor sags and tensions used in the design of all PPL transmission lines are at least 0.5-inch ice combined with eight pounds wind pressure (equivalent to 57 miles per hour wind velocity). This means that PPL lines are designed to operate safely and reliably during inclement weather even more severe than assumed by the NESC. In addition, PPL transmission lines are designed with more clearance to the ground than required by the NESC. The tables below compare PPL and NESC ground clearances for lines of various voltages.

**138 kV**

<u>Surface Underneath Conductors</u>	<u>Vertical Clearance to Ground</u>	
	<u>NESC Standard</u>	<u>PPL Design</u>
Roads, streets, alleys	21 Ft.	30 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	21 Ft.	30 Ft.
Spaces accessible to pedestrians only	17 Ft.	30 Ft.
Railroad tracks	31 Ft.	35 Ft.

## 230 kV

<u>Surface Underneath Conductors</u>	<u>Vertical Clearance to Ground</u>	
	<u>NESC Standard</u>	<u>PPL Design</u>
Roads, streets, alleys	23 Ft.	32 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	23 Ft.	32 Ft.
Spaces accessible to pedestrians only	19 Ft.	32 Ft.
Railroad tracks	31 Ft.	36 Ft.

## 500 kV

<u>Surface Underneath Conductors</u>	<u>Vertical Clearance to Ground</u>	
	<u>NESC Standard</u>	<u>PPL Design</u>
Roads, streets, alleys	28 Ft.	53 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	28 Ft.	53 Ft.
Spaces accessible to pedestrians only	24 Ft.	53 Ft.
Railroad tracks	38 Ft.	53 Ft.

A relay protection system is used to protect the public safety and welfare as well as equipment and the transmission system. Relay protection is installed for all transmission lines to automatically de-energize the line in the unlikely event that the line or supporting structure fails and the line contacts the ground.

### Periodic Maintenance Program on All Transmission Lines

To ensure continued public safety and integrity of service, a periodic maintenance and inspection program is implemented for every transmission line. The program is administered through the use of helicopter patrols, with supplemental foot and structure climbing patrols. A number of helicopter patrols are performed on all lines annually. The

two-man helicopter crew flies parallel, to the left, and above the line so that the observer can look for signs of line damage or deterioration and observe clearances between vegetation and conductors. The observations are included in a report that is forwarded to the appropriate department for corrective action.

Foot and structure climbing patrol programs for a transmission line begin approximately three to five years after the line is energized, unless a helicopter patrol reports a need for earlier action. The frequency of foot patrols varies from once every year to once every several years depending on line type and age.

An assigned foot patroller checks right-of-way conditions, including access roads, bridges, pole washouts, tower footers, vegetation height and clearance to conductors, pole and tower deterioration and, with the use of binoculars, insulators, and condition of hardware.

Identified problems are included in a report that is forwarded to the appropriate department for corrective action.

A scheduled line outage is required to perform an overhead patrol because of "hands-on" inspection of hardware. Overhead patrols are conducted on a schedule determined by line age, operating record, and observed general condition. The necessary repairs are also done during the inspection outage.

### Personnel Safety Rules

The following are a few of the PPL safety rules that demonstrate the Company's concern for employee safety:

- Work procedures have been developed to allow work to be performed on energized facilities in a safe manner. When lines or apparatus are removed from service to be worked on, the Energy Control Process system is applied. This system provides that a red tag must be physically placed on the control handle of the de-energized equipment. The red tag may be removed only after proper authorization to energize the equipment. Various other tags are used for limited operations and informational purposes. Employees will not apply or remove a tag or change the status of tagged equipment unless authorized.

- Temporary safety grounds are used on de-energized facilities for employee safety during maintenance, construction, or reconstruction work. Safety grounds are wires connecting the de-energized facility to an electrical ground. If the facility should be energized, the safety grounds will divert the current directly to ground and reduce the likelihood of personal injury. The conductor size and attachment clamps of temporary safety grounds must be capable of conducting anticipated fault currents. Rubber gloves, rubber sleeves, and additional rubber protective equipment are used as required when applying or removing temporary safety grounds to or from the lines or apparatus to be grounded. An approved nonconductive working stick of sufficient length to allow workers to maintain the following required minimum clearances is used to test that the line has been de-energized and to apply temporary safety grounds:

<u>Voltage-kV</u>	<u>Minimum Clearance</u>
138	3'-7"
230	5'-3"
500	11'-3"

Before applying grounds, a test is done to confirm that the line is de-energized. The voltage test device is checked before and after use to assure reliability. When ground pins are used to establish proper ground points, they are driven to a depth of not less than four feet as near vertical as possible.

- Poles or structures are inspected and examined for structural integrity before climbing. If there is any reason to believe that a pole is unsafe, it is stabilized before work is performed. Appropriate safety gear in the form of body belts, safety straps, hard hats, gloves, etc., is worn by linemen during line work activity.



**MAGNETIC  
FIELD  
MANAGEMENT  
PPL Electric Utilities  
Corporation**

**APPENDIX B**

**DECEMBER 2004**

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## INTRODUCTION

At PPL Electric Utilities Corp. (PPL EU), magnetic field management means investigating and implementing methods at low or no cost to reduce magnetic fields in new or rebuilt transmission and distribution lines. This document explains PPL EU's Magnetic Field Management Program, which is part of PPL EU's larger Electric and Magnetic Fields (EMF) policy.

### **PPL EU's View**

Some people are worried that electric and magnetic fields are harming their health. Others think the scientific research does not show a problem at all, and still others believe there's just too much scientific uncertainty to draw any conclusions.

Here's what we do know now. Various panels of scientists that have reviewed the EMF research generally have drawn two main conclusions. First, the large body of evidence does not demonstrate that EMF are harmful. Second, additional research is recommended to explore questions raised in some studies.

Given these conclusions, PPL EU is taking a reasoned approach in responding to the EMF issue. PPL EU's approach to the EMF issue consists of five elements:

- Providing EMF information to customers and employees
- Providing magnetic field measurements
- Establishing and implementing a magnetic field management program to reduce magnetic fields in new or rebuilt facilities when it can be done at no, or low, cost
- Integrating EMF in the public involvement process that PPL EU undertakes in the siting of transmission lines
- Have supported additional research

## **EMF Are All Around Us**

Electric and magnetic fields occur in nature and in all living things. The earth, for instance, has a magnetic field, which makes the needle on a compass point north.

Electric fields and magnetic fields of a different type also surround every wire that carries electricity. In everyday life, these EMF arise from several basic sources, including power lines, electrical appliances, home and building wiring, other utility lines and cables, and currents flowing on water pipes. Though they often occur together, EMF are made up of two separate components:

### **Electric Fields**

Electric fields are produced by the voltage—or electrical pressure—on a wire. The higher the voltage, the higher the electric field. As long as a wire is energized—has voltage present—an electric field is present (see Figure 1). In other words, an appliance, or an electric power line, doesn't actually have to be turned on to create an electric field. It just has to be plugged in.

Electric fields diminish with distance and can be blocked or partially shielded by objects such as trees and houses.

### **Magnetic Fields**

Magnetic fields are created by the current or flow of electricity through a wire. Generally speaking, the higher the current, the higher the magnetic field. Because they only occur when current is flowing, magnetic fields are present only when the power is turned on (see Figure 1). Magnetic fields also diminish with distance, but—unlike electric fields—are not blocked by common objects. In recent years, public and scientific interest has turned toward the magnetic field component of EMF because of some scientific studies regarding these fields.

Figure 1

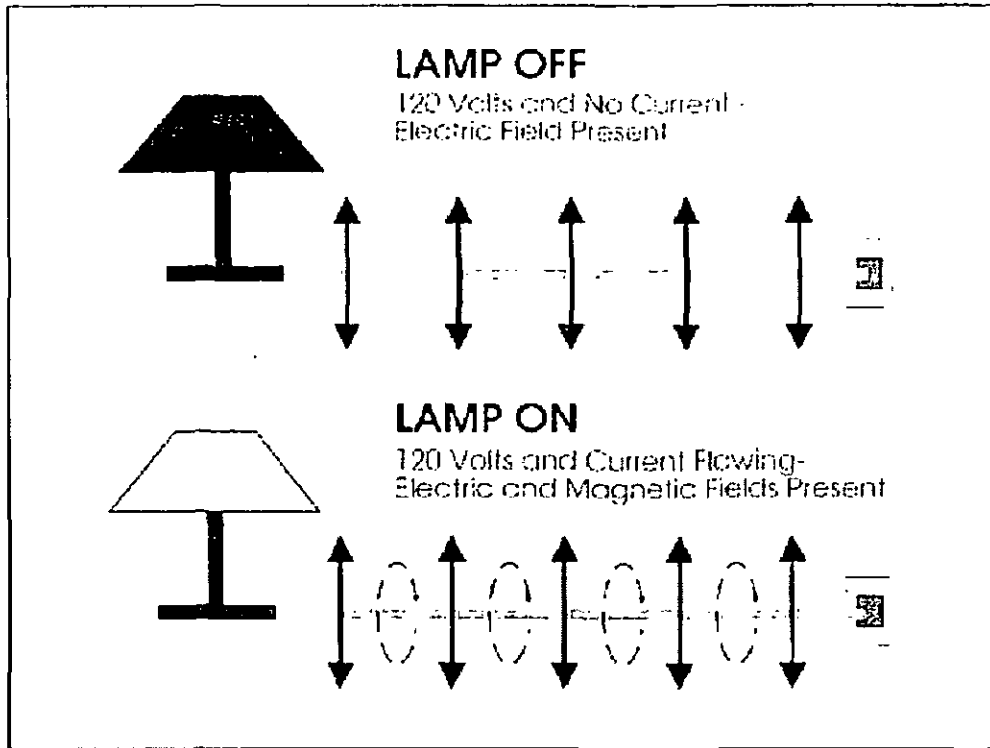


Figure 2









Magnetic field strengths decrease with distance Magnetic fields are measured in milligauss		Source: "EMF In Your Environment", U.S. Environmental Protection Agency 1992		
		At 6 inches	At 1 foot	At 2 feet
Clothes dryer		2 to 10	* to 3	*
Microwave oven		100 to 300	1 to 200	1 to 30
Toaster		5 to 20	* to 7	*
Power drill		100 to 200	20 to 40	3 to 6
Can opener		500 to 1500	40 to 300	3 to 30
Mixer		30 to 600	5 to 100	* to 10
Hair dryer		1 to 700	* to 70	* to 10
Color television		Data not available	* to 20	* to 8

FIGURE 2 \* The magnetic field measurement at this distance from the operating appliance could not be distinguished from background measurements taken before the appliance had been turned on.

### Measuring Magnetic Fields

Magnetic fields usually are measured in a unit called a milligauss. Magnetic field levels found in the living areas of homes typically range from less than 1 milligauss to about 4 milligauss according to the U.S. Environmental Protection Agency. They can be higher in some cases. The levels next to appliances can exceed 1,000 milligauss (1 gauss). Figures 2 and 3 show how the strength of the field falls off as you move away from the source, just as the heat of a campfire grows weaker as you walk away from it. For overhead power lines, the strength of the magnetic fields is dependent upon a number of factors that will be explained later. Those factors produce a magnetic field that drops off rapidly as you move away from the power line.

Figure 3

Sample Magnetic Field Levels in Milligauss				
Type of Overhead Power Line	Distance from the line			
	Under the line	50 ft.	100 ft.	200 ft.
220 kV and 500 kV	5-400	5-250	1-75	0.5-20
69 kV and 138 kV	3-80	0.5-2.5	0.1-10	0.1-3
12 kV and below	0.4-20	0.1-1	-	-

The magnetic field values provided in this table represent a general range of values associated with the types of overhead power lines listed and are provided for illustration. There will be circumstances in which there will be magnetic field levels above or below the range of values provided due to variations in such factors as height of the wires, current flow and so on.

## **DEVELOPMENT OF PPL EU's MAGNETIC FIELD MANAGEMENT PROGRAM**

One element of our response to EMF concerns expressed by some of our customers is PPL EU's Magnetic Field Management Program. The program was initiated in March 1991 because PPL EU believes it makes good sense, as a matter of policy, to respond to the concerns expressed by some of our customers and to reduce magnetic fields in new and rebuilt facilities where it can be done with either no-cost or low-cost design changes.

This document updates the original program which has been revised several times since 1991. These guidelines were developed by PPL EU's EMF Working Group.

### **VARIABLES THAT AFFECT MAGNETIC FIELDS**

Magnetic fields from transmission and distribution lines are a function of a number of design variables. The following parameters affect the magnetic field levels produced by transmission and distribution lines:

- Current
- Height of conductors above ground
- Configuration of conductors
- Distance from the line

### **EFFECT OF PHASE CURRENT ON MAGNETIC FIELDS**

At power frequencies (i.e., 60 hertz), the magnetic field level is a function of the current or flow of electricity through a wire. Keeping all other parameters the same, the magnetic field is proportional to the current. Hence, if the current increases by 25 percent, the resulting magnetic field level will increase by 25 percent.

The overall load current on any line varies with the demand for power. It's usually highest during daytime hours and lowest at night. There also are weekly, monthly, seasonal and yearly variations.

The difference in the currents between each phase in a multiphase line also can affect the magnetic field. This difference is called phase unbalance. For a constant load, a statistical analysis of this phase unbalance can be made to determine its effect on the magnetic field. Close to the line, there is very little effect. However, the phase unbalance slows the rate at which the magnetic field decreases with distance from the line.

### **EFFECT OF CONDUCTOR CONFIGURATION ON MAGNETIC FIELDS**

In the transmission and distribution of power, utilities like PPL EU presently use both three-phase and single-phase lines. Each phase on a three-phase power line has either a single conductor or a bundle of two or more conductors. In a three-phase system, the ground-level magnetic field is a result of the fields produced by the currents in each of the phases. Placing the three phases as close together as possible (compaction) creates some field cancellation, and the ground-level magnetic field is reduced. However, appropriate phase separation is required for the reliable operation of the line. In addition, the arrangement of the phases can create some; field cancellation and reduction of the ground-level magnetic field.

### **EFFECT OF DISTANCE FROM THE MAGNETIC FIELD SOURCE**

Magnetic field strength diminishes with the vertical and lateral distances from the magnetic field source. Increasing the height of the conductors above ground is useful for magnetic field reduction at ground level, but may result in increased structure costs and increased aesthetic impact of the structures. Another possible method of increasing the distance to the magnetic field source is to increase the right-of-way requirements. By keeping buildings off increased rights of way, thereby requiring the public to live and work further away from lines, exposure to magnetic fields produced by the lines can be reduced. Increases in right of way are not always practical and may increase costs significantly, however.

## **SUMMARY OF PPL EU's MAGNETIC FIELD MANAGEMENT PROGRAM**

Under its Magnetic Field Management Program, PPL EU has changed the way it builds and rebuilds some of its transmission and distribution lines. These design changes reduce magnetic field levels (assuming balanced circuit loadings and phase currents) by up to 69 percent in most of the company's new transmission lines. These guidelines now are being applied to new and reconstructed transmission facilities, based on this program.

The distribution component of the program focuses on 12 kV lines, the company's standard distribution voltage. It concentrates on the three-phase, primary 12 kV lines, since these are the most heavily loaded facilities and often are located in densely populated areas. The guidelines in this program are being applied to these three-phase, primary 12 kV lines.

A maximum 3-5 percent change in estimated cost was used as the limit for the guidelines since this value is consistent with low cost, is within estimating accuracy and is likely to have little impact on overall line costs.

The magnetic field calculations used in this document for the design of PPL EU's overall magnetic field management plan assume balanced load conditions among the phases and a fixed level of current, not necessarily representative of specific transmission or distribution lines. These levels were calculated using the Electric Power Research Institute's ENVIRO computer program. Under actual operating conditions, the magnetic field levels that result may vary due to such things as actual load per circuit, overall current on each phase conductor and the electrical configuration and operation of each line.

# MAGNETIC FIELD MANAGEMENT PROGRAM GUIDELINES

The guidelines for magnetic field management are noted below, with discussion points for each.

## **OVERHEAD LINES**

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### **NEW OR REBUILT TRANSMISSION LINES**

- 1. Balance transmission circuit loads and phase currents as much as possible.**
  - PPL EU should continue to make every effort to balance loadings between the two circuits of a double circuit line when planning new or rebuilt facilities to maximize the effects of reverse phasing.
  - PPL EU should continue the practice of balancing single-phase loads across the three phases of the distribution system. (Unbalanced phase currents on the distribution system are reflected through to the transmission system.)
    - Unbalanced phase currents result in higher magnetic fields that do not drop off as quickly with distance as do the fields resulting from balanced phase currents.
    - For a 5 percent phase current unbalance, the magnetic field 50 feet from the centerline of a single circuit 138 kV line could be more than twice the value than if the same line had balanced phase circuits.
  - Balanced phase currents on each three-phase distribution circuit also reduce magnetic fields from the distribution circuits themselves. In addition, they reduce magnetic fields on the transmission system from which the distribution system circuits are supplied and connected through substations.
  - Apart from magnetic field considerations, balanced phase currents on each three-phase distribution circuit also reduce line losses and improve the system voltage.

**2. Continue with the present practice of using long-span construction as the PPL EU 138/69 kV standard**

- Structure designs for short-span and long-span construction are illustrated on Charts I and II, respectively.
  - Short-span design does not significantly reduce magnetic fields when compared to long-span design even though it is more compact than long-span design. Comparison of the magnetic field values from Chart III indicates essentially the same values. Therefore, short-span design should not be used solely to reduce magnetic fields.
  - PPL EU will continue to use long-span construction for 138/69 kV double-circuit lines and for single-circuit/future-double-circuit lines.
  - For single-circuit/future-double-circuit lines, PPL EU will continue to install two conductors on the top positions and one in the middle position as shown in Chart IV.
    - This arrangement minimizes magnetic fields as shown in Chart V by placing the three initial conductors higher on the structure, which increases the ground clearances, and by placing the conductors in a triangular configuration.

**3. Compact design structures are not a low-cost alternative and should be used for magnetic field reduction only in special applications.**

Chart VI illustrates the compact design structure.

- The compact design increases the initial installation costs by 79 percent when compared to the long-span design but reduces the magnetic field from 9 mG to 3 mG (about 67 percent) at the edge of the 100-foot-wide right of way as shown on Chart III.

**4. Reverse phase new or rebuilt double-circuit transmission lines for all voltage levels.**

- Reverse phasing was adopted by PPL EU in March 1991 for double-circuit 138/69 kV transmission lines and in April 1992 for all other double circuit transmission lines. Reverse phasing is shown in Chart VII. Reverse phasing will reduce the magnetic fields when the current flow on both circuits is in the same

direction. Calculated values contained here are based on balanced and equal phase currents on both circuits.

- Reverse phasing reduces the magnetic field of a double circuit 138 kV single pole transmission line from 29 mG to 9 mG (about 69 percent) at the edge of the 100-foot-wide right of way as shown on Chart III.
- Reverse phasing reduces the magnetic field of a double circuit 230 kV single pole transmission line from 49 mG to 16 mG (about 67 percent) at the edge of the 150-foot-wide right of way as shown on Chart VIII.
- Reverse phasing reduces the magnetic field of a double-circuit 500 kV single pole transmission line from 37 mG to 21 mG (about 43 percent) at the edge of the 200-foot-wide right of way as shown on Chart IX.
- When new or rebuilt double-circuit lines require tapping existing double-circuit lines, PPL EU will review the existing lines to determine if reverse phasing can be provided at low cost.
- Computer modeling is required to develop the optimum phasing and overall conductor arrangements for lines added to, or rebuilt in, multiple-line corridors.
  - Merely adding a reverse-phase double-circuit line to an existing transmission line corridor or reverse phasing a rebuilt line in the multiple-line corridor will not necessarily produce lower magnetic field levels at the edge of the corridor right of way.
  - The corridor must be computer modeled with all the lines, existing phase conductor locations and currents. Then, magnetic field calculations must be made varying the phase arrangements of the new or reconstructed line to determine the appropriate phasing arrangement.
  - Current flow direction on a line also must be considered. For example, a reverse-phased line should have the current flowing in the same direction on both circuits. If the current flow is in the opposite direction for one circuit, reverse phasing will not produce the lowest magnetic field and another phase arrangement that produces lower fields may need to be utilized.

**5. Increase the minimum ground clearance for all new transmission lines.**

**138/69 kV Transmission Lines**

- Increasing the minimum line design ground clearance from 25 feet to 30 feet may add up to about 5 percent to the installed cost of a new double-circuit single pole 138/69 kV line. For a given project, such cost may be substantially less, however. In fact, PPL EU frequently uses higher-than-minimum ground clearances due to such features as road crossings, line crossings and site-specific terrain. With long-span reverse-phase design, the, magnetic field is reduced from 9 mG to 7 mG (about 22 percent) at the edge of a 100-foot-wide right of way as shown in Chart X.
  - In the actual design of transmission lines to include higher minimum ground clearances, there may be limited segments (such as highway crossings, severe slopes and transmission line crossing locations) where National Electrical Safety Code (NESC) minimum ground clearances may need to be used. The NESC minimum ground clearances are less than the increased ground clearance discussed previously.

**230 kV Transmission Lines**

- Increasing the minimum line design ground clearances from 27 feet to 32 feet may add up to about 5 percent to the cost of a single-circuit single-pole line (current standard). For a given project, such cost may be substantially less, however. In fact, PPL EU frequently uses higher-than-minimum ground clearances due to such features as road crossings, line crossings and site-specific terrain. By increasing the clearances, the magnetic field is reduced from 30 mG to 28 mG (about 7 percent) at the edge of a 150-foot-wide right of way.
- Increasing clearances from 27 feet to 32 feet could theoretically add up to about 2.8 percent to the cost of a double-circuit single-pole line (current standard) and reduce the magnetic field of a reverse-phase line from 16 mG to 15 mG (about 6 percent) at the edge of a 150-foot-wide right of way. Chart XI is a summary of this data.
- Studies are required for each new 230 kV line to determine optimum structure types, ground clearances, configurations and designs to reduce field levels. Such

studies could include analysis of reduction measures such as additional minimum ground clearances, increasing conductor tensions, using reduced phase spacing (a "Delta" configuration on a single-circuit line), installing the second circuit initially, and/or adding a second set of conductors that are reverse phased and operated in parallel with the first set (bundled/split phase).

#### **500 kV Transmission Lines**

- Increasing ground clearances from 33 feet to 53 feet may add up to about 4.5 percent to the cost of a single-circuit "H-frame" line (current standard). For a given project, such cost may be substantially less, however. In fact, PPL EU frequently uses higher-than-minimum ground clearances due to such features as road crossings, line crossings and site-specific terrain. By increasing the clearances, the magnetic field is reduced from 42 mG to 35 mG (about 17 percent) at the edge of a 200-foot-wide right of way.
- Increasing ground clearances from 33 feet to 53 feet could theoretically add up to 2.8 percent to the cost of a double-circuit "H-frame" line (current standard) and reduces the magnetic field of a reverse-phase line from 21 mG to 16 mG (about 24 percent) at the edge of a 200-foot-wide right of way. Chart XII is a summary of this data.
- Studies are required for each new 500 kV line to determine optimum structure types, ground clearances, configurations and designs to reduce field levels. Such studies could include analysis of reduction measures such as additional minimum ground clearances, increasing conductor tensions, using reduced-phase spacing (a "Delta" configuration on a single circuit line), installing the second circuit initially, and/or adding a second set of conductors that are reverse phased and operated in parallel with the first set (bundled/split phase).

## **RECONDUCTORING OR ADDING ADDITIONAL CIRCUITS TO EXISTING TRANSMISSION LINES**

**When reconductoring or adding additional circuits to existing transmission lines, PPL EU will evaluate low-cost or no-cost options for magnetic field management on a case-by-case basis.**

When reconductoring existing transmission lines or adding additional circuits, low-cost alternatives may not exist; however, the following steps will be taken:

- For a single-circuit line, the use of a Delta arrangement or other modifications on the existing structure, with reduced-phase spacing, will be evaluated.
- For double-circuit lines, application of reverse phasing may reduce the magnetic field under the line and within the right of way and will be evaluated.
- For single- and double-circuit lines, evaluate using higher conductor tensions that can increase the minimum line design ground clearance.

## **DISTRIBUTION LINES**

**At the 12 kV distribution level, new main three-phase lines will continue to be constructed with five feet of additional ground clearance.**

- Main lines are the most heavily loaded sections of a distribution line and therefore have the highest magnetic fields associated with them.
- Increasing the ground clearance by five feet reduces the magnetic field under the line from 14 mG to 11 mG using the standard eight-foot crossarm design. These values are based on increasing pole heights from 45 feet to 50 feet and a typical operating current of 300 amps per phase.
- Chart XIII is a summary of this data. Increasing ground clearance by five feet could theoretically add about 5 percent to the cost of a typical distribution line.

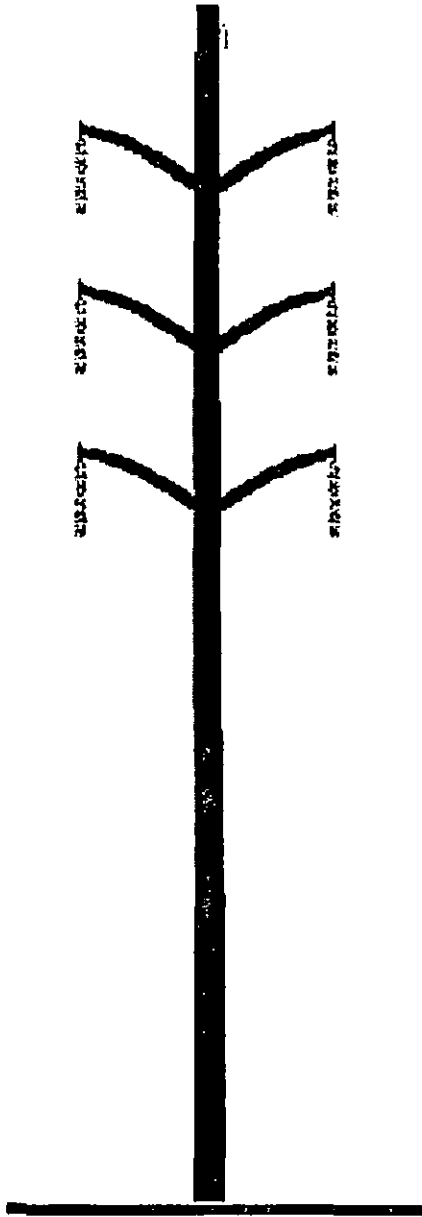
## **UNDERGROUND TRANSMISSION LINES**

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**Underground transmission lines are required due to environmental or land use factors or restrictions on available clearances, PPL EU will evaluate options for magnetic field management techniques on a case-by-case basis.**

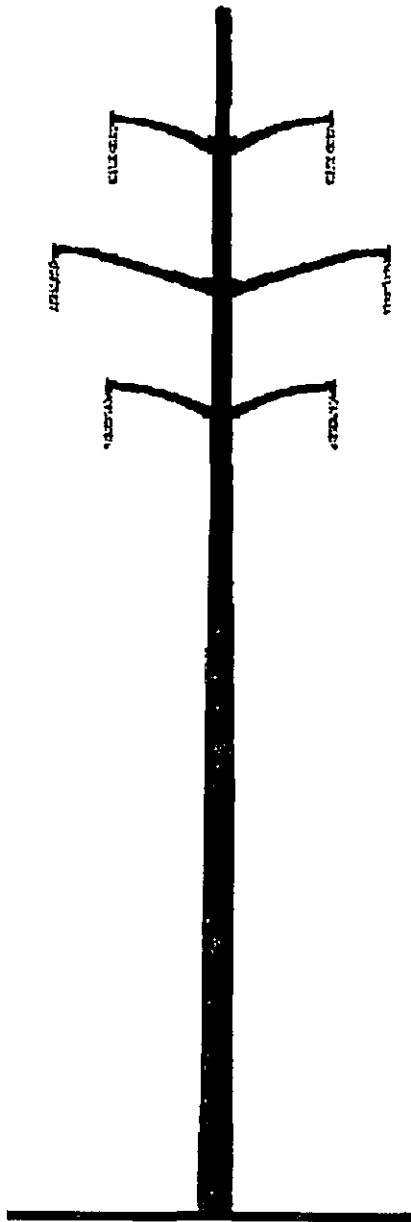
- The phase arrangement that produces the lowest field will be determined.
- The depth of burial of the line will be determined considering the cost of excavation and the location of other buried utilities in the area.
- The use of steel pipe ferromagnetic shielding that reduces magnetic fields will be evaluated.

# Short-Span Construction



- More compact design
- Should not be used solely to reduce magnetic fields
- Typical conductor data:
  - 1 3/8" HS steel overhead ground wire - 7.3 feet sag
  - 6-556.5 KCMIL 24/7 ACSR power conductors - (PARAKEET) 10.0 feet sag
  - Average span - 400 feet

# Long-Span Construction Remains PPL EU 138 kV Standard



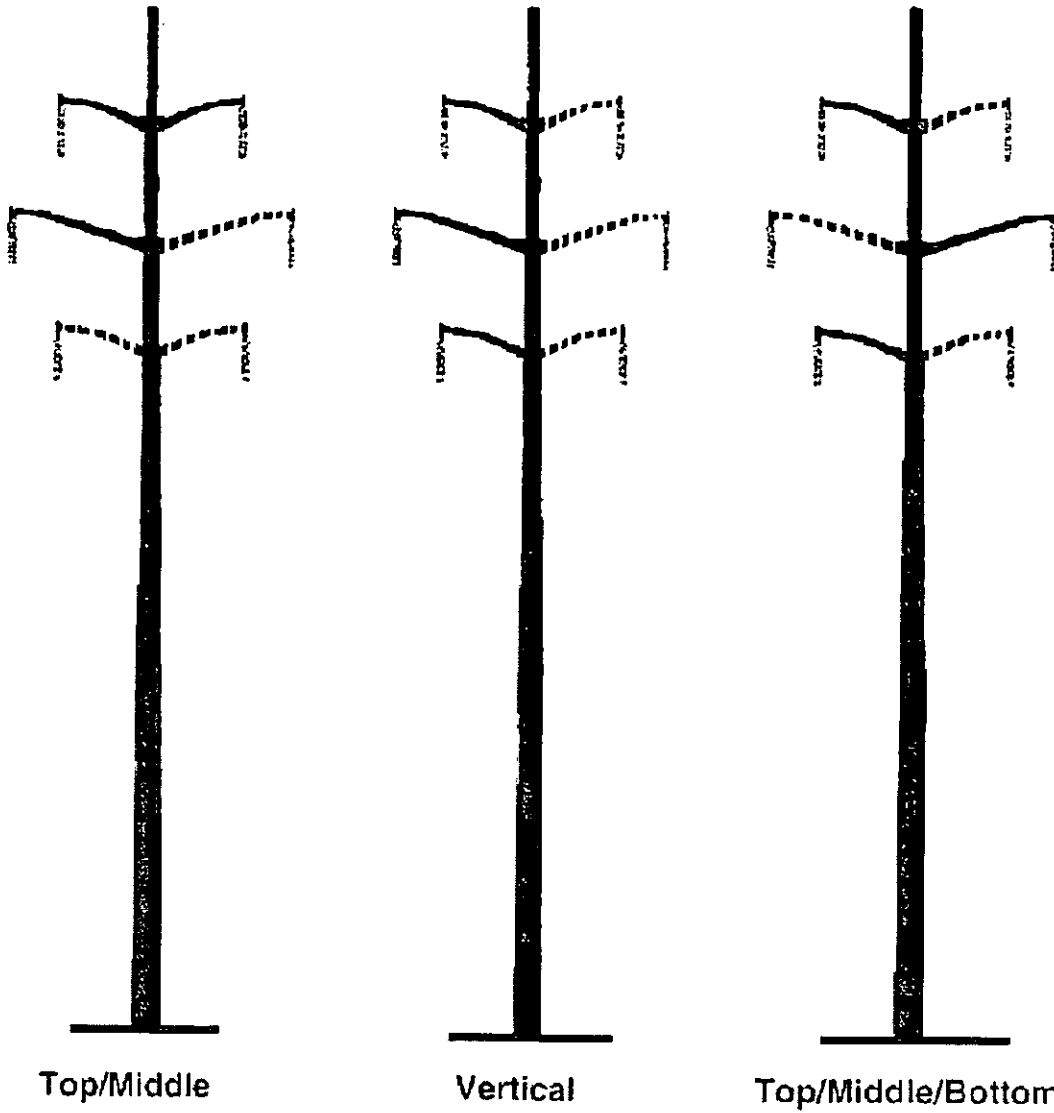
- Lower cost alternative
- Reduces magnetic fields due to higher structures
- Typical conductor data:
  - 1 3/8" HS steel overhead ground wire - 17.3 feet sag
  - 6-556.5 KCMIL 24/7 ACSR power conductors - (PARAKEET) 23.0 feet sag
  - Average span - 600 feet

**138/69 kV REVERSE-PHASE TRANSMISSION LINES  
CALCULATED MAGNETIC FIELDS AT 400 AMPERES**

TYPE CONSTRUCTION	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
SHORT SPAN (CHART I)	30
SHORT SPAN (REVERSE PHASE)	8
LONG SPAN (CHART II)	29
LONG SPAN (REVERSE PHASE)	9
COMPACT (CHART VI)	14
COMPACT (REVERSE PHASE)	3

The edge of right of way is 50 feet from the line centerline.  
 The 400 ampere phase current is balanced between phases.  
 Calculations are based on a minimum ground clearance of 25 feet.  
 LONG SPAN, SHORT SPAN and COMPACT are double-circuit lines.

# Typical Single-Circuit Structure Designs



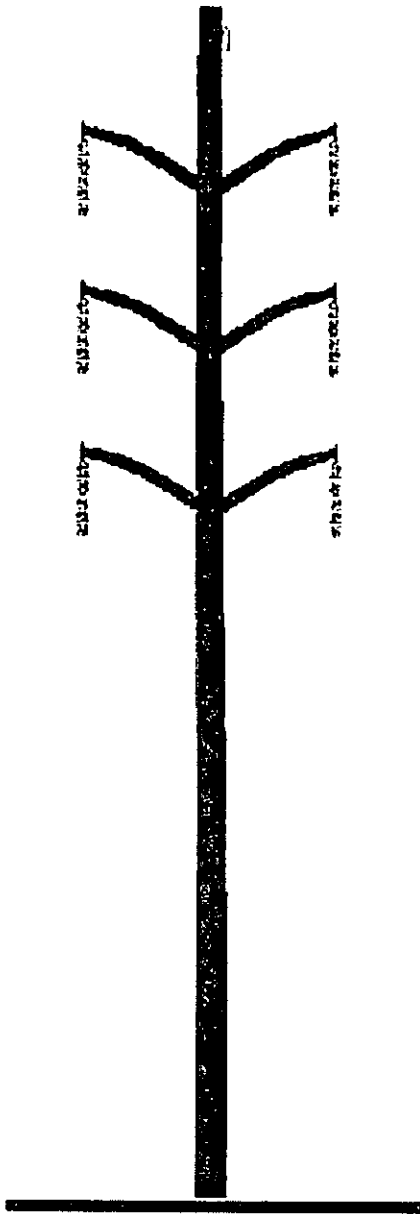
—— initial single circuit  
- - - future second circuit

**138/69 kV SINGLE CIRCUIT TRANSMISSION LINES  
CALCULATED MAGNETIC FIELDS AT 400 AMPERES**

TYPE CONSTRUCTION	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
TOP/MIDDLE/BOTTOM	20
VERTICAL	17
TOP/MIDDLE	12

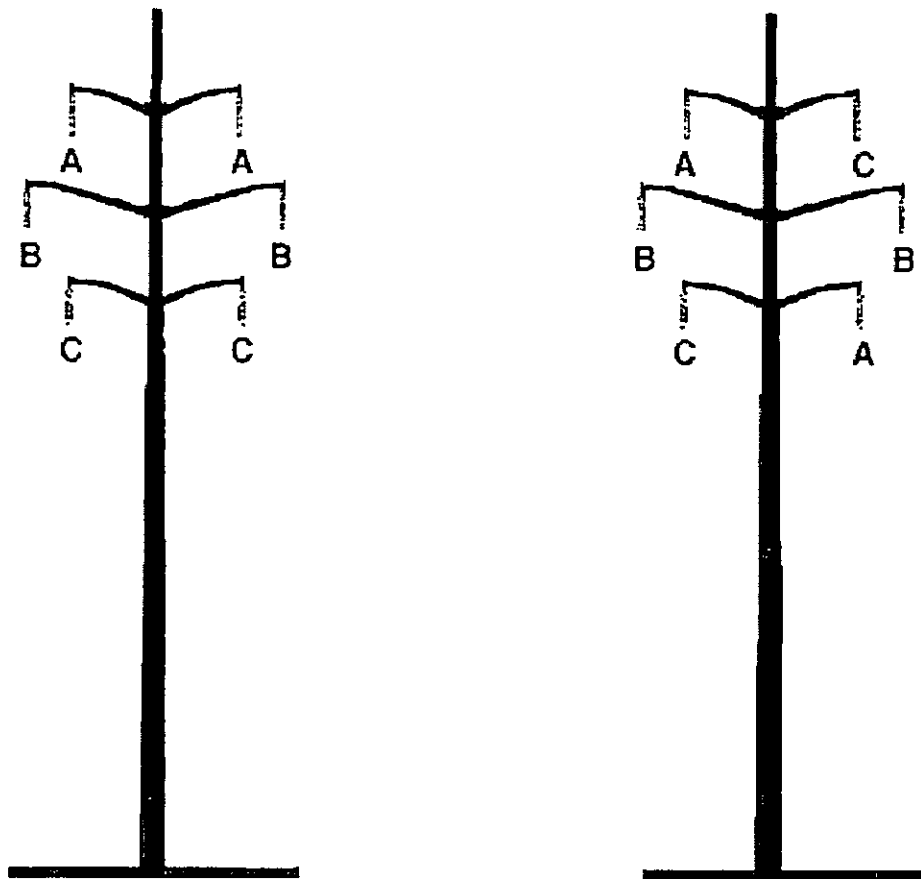
The edge of right of way is 50 feet from the line centerline.  
The 400 ampere phase current is balanced between phases.  
Calculations are based on a minimum ground clearance of 25 feet.

# Compact Design Structure



- Minimize magnetic fields due to compact design
- Not a low-cost alternative
- Typical conductor data:
  - 1 3/8" HS steel overhead ground wire - 9.0 feet sag
  - 6-556.5 KCMIL 24/7 ACSR power conductors - (PARAKEET) 9.0 feet sag
  - Average span - 300 feet

# Reverse Phasing of Double-Circuit Transmission Lines



From: → → → → To:

Reverse phasing also can be one of the following phase arrangements:

A	B		B	A		B	C		C	A		C	B
C	C	or	C	C	or	A	A	or	B	B	or	A	A
B	A		A	B		C	B		A	C		B	C

**230 kV REVERSE-PHASE TRANSMISSION LINES  
CALCULATED MAGNETIC FIELDS AT 800 AMPERES**

TYPE CONSTRUCTION	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
DOUBLE CIRCUIT POLE	49
DOUBLE CIRCUIT POLE (REVERSE-PHASE)	16

The edge of right of way is 75 feet from the line centerline.  
The 800 ampere phase current is balanced between phases.  
Calculations are based on a minimum ground clearance of 27 feet.

**500 kV REVERSE-PHASE TRANSMISSION LINES  
CALCULATED MAGNETIC FIELDS AT 1100 AMPERES**

TYPE CONSTRUCTION	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
DOUBLE CIRCUIT POLE	37
DOUBLE CIRCUIT POLE (REVERSE PHASE)	21

The edge of right of way is 100 feet from the line centerline.  
The 1,100 ampere phase current is balanced between phases.  
Calculations are based on a minimum ground clearance of 33 feet.

**INCREASED 138/69 kV MINIMUM GROUND CLEARANCE  
CALCULATED MAGNETIC FIELDS AT 400 AMPERES**

TYPE CONSTRUCTION	MINIMUM GROUND CLEARANCE FEET	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
SINGLE CIRCUIT TOP/MIDDLE	25	12
SINGLE CIRCUIT TOP/MIDDLE	30	10
LONG SPAN	25	29
LONG SPAN	30	26
LONG SPAN (REVERSE PHASE)	25	9
LONG SPAN (REVERSE PHASE)	30	7

The edge of right of way is 50 feet from the line centerline.  
The 400 ampere phase current is balanced between phases.

**INCREASED 230 kV MINIMUM GROUND CLEARANCE  
CALCULATED MAGNETIC FIELDS AT 800 AMPERES**

TYPE CONSTRUCTION	MINIMUM GROUND CLEARANCE FEET	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
SINGLE CIRCUIT TOP/MIDDLE	27	30
SINGLE CIRCUIT TOP/MIDDLE	32	28
DOUBLE CIRCUIT POLE	27	49
DOUBLE CIRCUIT POLE	32	46
DOUBLE CIRCUIT POLE (REVERSE PHASE)	27	16
DOUBLE CIRCUIT POLE (REVERSE PHASE)	32	15

The edge of right of way is 75 feet from the line centerline.  
The 800 ampere phase current is balanced between phases.

**INCREASED 500 kV MINIMUM GROUND CLEARANCE  
CALCULATED MAGNETIC FIELDS AT 1,100 AMPERES**

TYPE CONSTRUCTION	MINIMUM GROUND CLEARANCE FEET	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
SINGLE CIRCUIT "H" STRUCTURE	33	42
SINGLE CIRCUIT "H" STRUCTURE	53	35
DOUBLE CIRCUIT POLE	33	37
DOUBLE CIRCUIT POLE	53	31
DOUBLE CIRCUIT POLE (REVERSE PHASE)	33	21
DOUBLE CIRCUIT POLE (REVERSE PHASE)	53	16

The edge of right of way is 100 feet from the line centerline.  
The 1,100 ampere phase current is balanced between phases.

**12 kV DISTRIBUTION LINES  
CALCULATED MAGNETIC FIELDS AT 300 AMPERES**

TYPE CONSTRUCTION	POLE HEIGHT FEET	MAGNETIC FIELD IN MILLIGAUSS*	
		AT CENTERLINE	AT 30 FEET FROM CENTERLINE
STANDARD CROSSARM	45	14	7
STANDARD CROSSARM	50	11	6

\* Field level under the line at mid-span based on 300 amps, balanced loading, one meter above ground level.

## APPENDIX C

### LIST OF INVOLVED GOVERNMENTAL AGENCIES, MUNICIPALITIES AND OTHER PUBLIC ENTITIES

1. Pennsylvania Historical and Museum Commission  
Bureau for Historic Preservation  
Commonwealth Keystone Building, Second Floor  
400 North Street  
Harrisburg, Pennsylvania 17120-0053  
Attn: Mr. Douglas C. McLearn, Chief
2. Pennsylvania Department of Transportation  
Commonwealth Keystone Building  
400 North Street, 8<sup>th</sup> Floor  
Harrisburg, Pennsylvania 17120  
Attn: The Honorable Allen D. Biehler, P.E., Secretary
3. Department of Environmental Protection  
P.O. Box 2063  
Market Street State Office Building  
Harrisburg, Pennsylvania 17105-2063  
Attn: Office of Field Operations
4. Lehigh County  
17 South 7<sup>th</sup> Street  
Allentown, PA 18101-2400  
Attn: The Honorable Jane R. Ervin, County Executive
5. Lehigh Valley Planning Commission  
961 Marcon Boulevard, Suite 310  
Allentown, PA 18103-9397  
Attn: Mr. Michael Kaiser, AICP
6. Upper Macungie Township Board of Supervisors  
8330 Schantz Road  
Breinigsville, PA 18031  
Attn: Mr. Porter Krisher, Chair
7. Upper Macungie Township  
8330 Schantz Road  
Breinigsville, PA 18031  
Attn: Mr. Barry Moyer, Manager
8. Upper Macungie Township Planning Commission  
8330 Schantz Road  
Breinigsville, PA 18031  
Attn: Mr. James Miller, Chair

COMMONWEALTH OF PENNSYLVANIA  
PENNSYLVANIA PUBLIC UTILITY COMMISSION  
P. O. BOX 3265, HARRISBURG PA 17105-3265

IN REPLY PLEASE  
REFER TO OUR FILE  
Secretary  
717-772-7777

August 8, 2005

A-110500 F0362

MORGAN, LEWIS & BOCKIUS LLP  
ANTHONY C. DECUSATIS  
1701 MARKET STREET  
PHILADELPHIA PA 19103-2921

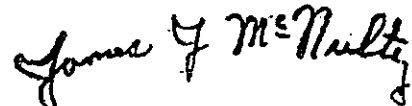
DOCUMENT  
FOLDER

Dear Mr. DeCusatis:

Receipt is acknowledged of the Letter of Notification of PPL  
Electric Utilities Corporation which has been captioned and docketed  
to the above number.

This matter will receive the attention of the Commission and  
you will be advised of any further necessary procedure.

Sincerely,



James J. McNulty  
Secretary

JJM:jih

DOCKETED  
AUG. 08 2005

DATE: August 8, 2005

SUBJECT: A-110500 F0362

TO: Bureau of Fixed Utility Services

FROM:  James J. McNulty, Secretary

DOCUMENT  
FOLDER

**Letter of Notification of PPL Electric Utilities Corporation**

---

We attach hereto a copy of the Letter of Notification of PPL Electric Utilities Corporation, which has been captioned and docketed to the above number.

May we have a report prepared by your Bureau for Public Meeting.

Attachment

cc: Law Bureau

jih

**DOCKETED**  
AUG 08 2005

Morgan, Lewis & Bockius LLP  
1701 Market Street  
Philadelphia, PA 19103-2921  
Tel: 215.963.5000  
Fax: 215.963.5001  
www.morganlewis.com

**ORIGINAL** Morgan Lewis  
COUNSELORS AT LAW

**Anthony C DeCusatis**  
Of Counsel  
215.963.5034  
adecusatis@morganlewis.com

September 1, 2005

**VIA OVERNIGHT MAIL**

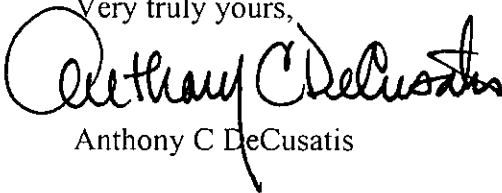
James J. McNulty, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
Harrisburg, PA 17120

Re: **Letter Of Notification Of PPL Electric Utilities Corporation Filed Pursuant To 52 Pa. Code Chapter 57 Subchapter G With Respect To The Dorneyville 138/69 kV Tap Rearrangement Located in Upper Macungie Township, Lehigh County Docket No. A-110500 F0362**

Dear Secretary McNulty:

Enclosed for filing please find an original and three copies of the Affidavit of Kenneth B. Kuhns affirming the publication of the Public Notice for the above-referenced letter of Notification on August 18 and 25, 2005 in The Morning Call and The Press, newspapers of general circulation in the project area.

Very truly yours,

  
Anthony C DeCusatis

Enclosures

c: Darren Gill

**RECEIVED**  
SEP 01 2005

**RECEIVED**

SEP 01 2005

PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU

59

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

RECEIVED

SEP 01 2005

Re: Letter of Notification of PPL Electric :  
Utilities Corporation Filed Pursuant To 52 :  
Pa. Code Chapter 57 Subchapter G With :  
Respect To The Dorneyville 138/69 kV Tap : Docket No. A-110500 F0362  
Rearrangement Located In Upper Macungie :  
Township, Lehigh County :

PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU

**AFFIDAVIT OF KENNETH B. KUHNS**

KENNETH B. KUHNS, being duly sworn, deposes and says the following:

1. My name is Kenneth B. Kuhns. I am employed by PPL Electric Utilities Corporation ("PPL" or the "Company") as the Siting Supervisor in the Transmission and Distribution Engineering Section.
2. I am authorized to make this affidavit, and do so, on behalf of PPL.
3. On August 4, 2005, PPL filed the above-referenced Letter of Notification with the Pennsylvania Public Utility Commission ("Commission") under 52 Pa. Code Chapter 57 Subchapter G for approval to rearrange a section of the existing Dorneyville 138/69 kV Tap in Upper Macungie Township, Lehigh County.

4. Paragraph No. 15 of the Letter of Notification provides as follows:

As soon as practicable after the filing of this Letter of Notification, PPL will publish notice of the filing in newspapers of general circulation in the area of the proposed project. Such notice will contain: (a) the date this Letter of Notification was filed with the Commission; (b) a brief description of the project and its location; (c) locations where the complete Letter of Notification may be reviewed by the public; and (d) an instruction that the interested parties should contact, within 15 days, James J. McNulty, Secretary, at the Commission's Harrisburg address.

5. Notices of filing of the Letter of Notification that conform to the requirements specified in Paragraph No. 15 of the Letter of Notification were published in the newspapers and on the dates shown below:

The Press	August 18 and 25, 2005
The Morning Call	August 18 and 25, 2005

6. Pages from The Press and The Morning Call for each of the above-referenced dates that contain the published notices of filing of the Letter of Notification are attached to this Affidavit.

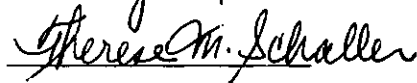
7. The Press and The Morning Call are newspapers of general circulation in the area where the project will be constructed.

8. Proofs of publication from The Press and The Morning Call will be filed with the Commission as soon as they become available.

The facts set forth in this Affidavit are true and correct to the best of my knowledge, information and belief.

  
\_\_\_\_\_  
Kenneth B. Kuhns

Sworn to and subscribed  
before me this 31<sup>st</sup> day  
of August, 2005.



COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Therese M. Schaller, Notary Public  
City Of Allentown, Lehigh County  
My Commission Expires Nov. 8, 2007  
Member, Pennsylvania Association Of Notaries

RECEIVED

SEP 01 2005

PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU

through Labor Day, Sept. 5. The expanded pre-fair box office hours are 10 a.m.- 4 p.m., Mondays, Tuesdays, Wednesdays, Fridays and Saturdays; 10 a.m.-7 p.m., Thursdays; and 1-5 p.m., Sunday, Aug. 28.

Starting the day before the fair, Aug. 29, the box office will be open 10 a.m.-7 p.m. and from noon-9 p.m. throughout fair week.

Guy on Sept. 1, Hilary Durr with special guests Tyler Hilton and Teddy Geiger on Sept. 2, and Motley Crue on Sept. 4.

Box Office Manager Cathy Radakovits reports that the

Ticketmaster charge by phone numbers are 215-336-2000 and 570-693-4100.

Tickets online are accessible on the Allentown Fairgrounds page at [www.ticketmaster.com](http://www.ticketmaster.com).

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## COMING EVENTS

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Aug. 27  
**Bid Board Closes**

Sept. 3  
**Garage Sale**  
Sept. 10 & 11  
**Gun Show**

Sept. 17 & 18  
**Music Expo**

1901 S. 12th St.,  
Allentown, PA  
**610-797-7743**

## PUBLIC NOTICE

### TRANSMISSION LINE CONSTRUCTION

PPL Electric Utilities Corp. (PPL) plans to construct approximately 500 feet of double circuit 138 kV transmission line in order to convert the Dorneyville Substation to 138 kV operation. The proposed 500-foot transmission line will be constructed on PPL-owned property located in Upper Macungie Township, Lehigh County.

This project is required to prevent overloading on two of the 69 kV transformers at PPL's Wescosville Substation and ensure the reliability of electrical service to PPL customers in the area.

If you would like more information about this project, please contact PPL Regional Community Relations Director, Kathy Frazier at (610) 774-3372.

On August 4, 2005 PPL filed an application with the Pennsylvania Public Utility Commission (PUC), which must approve the project before work can begin. A copy of this application is available for public inspection on weekdays during business hours at:

Upper Macungie Municipal Building  
8330 Schantz Road  
Breinigsville, PA 18031

If you wish to participate in the PUC application process, you should contact within 15 days:

James J. McNulty, Esquire  
Prothonotary  
Pennsylvania Public Utility Commission  
PO Box 3265  
Harrisburg, PA 17105-3265

As a reference aid, be sure to include the project's "docket number," which is A-110500 F0362.

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## PUBLIC NOTICE

### TRANSMISSION LINE CONSTRUCTION

PPL Electric Utilities Corp. (PPL) plans to construct approximately 500 feet of double circuit 138 kV transmission line in order to convert the Dorneyville Substation to 138 kV operation. The proposed 500-foot transmission line will be constructed on PPL-owned property located in Upper Macungie Township, Lehigh County.

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Harrisburg, PA 17105-3265

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For convenient  
home delivery,  
phone 610-820-6601.



**...DIA!**

**...ship Education**

**...a.m. 9:45 a.m.**

2623 Brookside Road  
(near Sauerkraut Ln.)  
Macungie, PA 18062  
610-965-3265

*d, Building Christ's Family*

# ...ER WHEEL FARM MARKET

Pleasant Corners -  
located on Route 309  
300 yards north of the  
intersection of Rt. 100 & Rt. 309.



## PUBLIC NOTICE TRANSMISSION LINE CONSTRUCTION

PPL Electric Utilities Corp. (PPL) plans to construct approximately 500 feet of double circuit 138 kV transmission line in order to convert the Dorneyville Substation to 138 kV operation. The proposed 500-foot transmission line will be constructed on PPL-owned property located in Upper Macungie Township, Lehigh County.

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Pennsylvania Public Utility Commission  
PO Box 3265  
Harrisburg, PA 17105-3265

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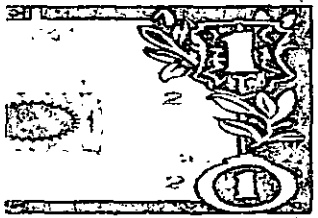
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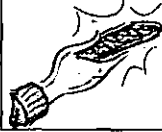
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**PUBLIC NOTICE**

**TRANSMISSION LINE CONSTRUCTION**

PPL Electric Utilities Corp. (PPL) plans to construct approximately 500 feet of double circuit 138 kV transmission line in order to convert the Dorneyville Substation to 138 kV operation. The proposed 500-foot transmission line will be constructed on PPL-owned property located in Upper Macungie Township, Lehigh County.

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 Prothonotary  
 Pennsylvania Public Utility Commission  
 PO Box 3265  
 Harrisburg, PA 17105-3265

As a reference aid, be sure to include the project's "docket number," which is A-110500 F0362.

Morgan, Lewis & Bockius LLP  
1701 Market Street  
Philadelphia, PA 19103-2921  
Tel: 215.963.5000  
Fax: 215.963.5001  
www.morganlewis.com

Morgan Lewis  
C O U N S E L O R S A T L A W

Anthony C DeCusatis  
Of Counsel  
215.963.5034  
adecusatis@morganlewis.com

ORIGINAL

October 13, 2005

DOCUMENT  
FOLDER

RECEIVED

OCT 13 2005

VIA OVERNIGHT MAIL

PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU

James J. McNulty, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
Harrisburg, PA 17120

Re: **Letter Of Notification Of PPL Electric Utilities Corporation Filed Pursuant To 52 Pa. Code Chapter 57 Subchapter G With Respect To The Dorneyville 138/69 kV Tap Rearrangement Located in Upper Macungie Township, Lehigh County Docket No. A-110500 F0362**

Dear Secretary McNulty:

Enclosed for filing please find an original and three copies of the Proofs of Publication evidencing the publication of the Public Notice for the above-referenced Letter of Notification on August 18 and 25, 2005, in The Morning Call and The Press, newspapers of general circulation in the project area.

Very truly yours,



Anthony C DeCusatis

Enclosures

c: Darren Gill

DOCUMENT  
FOLDER

Proof of Publication Notice in The Morning Call

Under Act No. 587, Approved May 16, 1929, and its amendments

STATE OF PENNSYLVANIA }  
COUNTY OF LEHIGH } SS:

COPY OF NOTICE OR ADVERTISEMENT

Glenn Adams, Credit Manager of THE

MORNING CALL, INC., of the County and State aforesaid, being duly sworn, deposes and says that THE MORNING CALL is a newspaper of general circulation as defined by the aforesaid Act, whose place of business is 101 North Sixth Street, City of Allentown, County and State aforesaid, and that the said newspaper was established in 1888 since which date THE MORNING CALL has been regularly issued in said County, and that the printed notice or advertisement attached hereto is exactly the same as was printed and published in regular editions and issues of the said THE MORNING CALL on the following dates, viz.:

August 18th

..... and the 25th day of August 2005

Affiant further deposes that he is the designated agent duly authorized by THE MORNING CALL, INC., a corporation, publisher of said THE MORNING CALL, a newspaper of general circulation, to verify the foregoing statement under oath, and the affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

*Glenn Adams*

Designated Agent, THE MORNING CALL, INC.

SWORN to and subscribed before me this 25th day of

August 2005

*Joanne Reiss*

Notary Public

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Joanne Reiss, Notary Public  
City Of Allentown, Lehigh County  
My Commission Expires Nov. 22, 2007  
Member, Pennsylvania Association Of Notaries

THE MORNING CALL, INC., publisher of THE MORNING CALL, a newspaper aforesaid notice and publication costs and certifies that the same have been duly paid

PUBLIC NOTICE

TRANSMISSION LINE CONSTRUCTION

PPL Electric Utilities Corp. (PPL) plans to construct approximately 500 feet of double circuit 138 kV transmission line in order to convert the Dorneyville Substation to 138 kV operation. The proposed 500-foot transmission line will be constructed on PPL-owned property located in Upper Macungie Township, Lehigh County.

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On August 4, 2005 PPL filed an application with the Pennsylvania Public Utility Commission (PUC), which must approve the project before work can begin. A copy of this application is available for public inspection on weekdays during business hours at:

Upper Macungie Municipal Building  
8330 Schantz Road  
Breinigsville, PA 18031

If you wish to participate in the PUC application process, you should contact within 15 days:

James J. McNulty, Esquire  
Prothonotary  
Pennsylvania Public Utility Commission  
PO Box 3265  
Harrisburg, PA 17105-3265

As a reference aid, be sure to include the project's "docket number," which is A-110500 F0362.

A Newspaper of General Circulation

RECEIVED

Record # 19355

OCT 13 2005

By **DOCKETED**  
OCT 19 2005

PA PUBLIC UTILITY COMMISSION  
SECRETARY'S OFFICE

RECEIVED

PROOF OF PUBLICATION

OCT 13 2005

EAST PENN PUBLISHING GROUP NEWSPAPERS

PA PUBLIC UTILITY COMMISSION  
REGISTRAR'S BUREAU

East Penn Press • Parkland Press • Northwestern Press  
• Whitehall-Coplay Press • Northampton Press • Salisbury Press • Catasauqua Press

ALLENTOWN, LEHIGH COUNTY, PENNSYLVANIA

Commonwealth of Pennsylvania )  
County of Carbon ) ss.

Scott A. Masenheimer, being duly sworn according to law does depose and say:

1. THAT East Penn Publishing is a group of weekly newspapers of general circulation published weekly, by Times News, Inc. Its place of business is Allentown, Lehigh County, Pennsylvania.
2. THAT East Penn Publishing was established on April 9, 1959.
3. THAT the affiant is the Publisher of East Penn Publishing newspapers and as such is authorized by the owner, Times News Inc., to take this affidavit.
4. THAT the affiant is not interested in the subject matter of the notice or advertising.
5. THAT all of the allegations of this affidavit as to time, place and character of publication are true.
6. THAT copy of the notice or advertising attached hereto was printed and published in the regular daily editions and issues of the East Penn Publishing on the following dates:

AUGUST 25, 2005

*Scott A. Masenheimer*

Sworn to and subscribed before me, this 20th day of September A.D., 2005

*Mary A. Gaal*

NOTARIAL SEAL  
Mary A. Gaal, Notary Public  
Borough of Lehighton, Carbon County  
My Commission Expires March 17, 2007

PUBLIC NOTICE

TRANSMISSION LINE CONSTRUCTION

PPL Electric Utilities Corp. (PPL) plans to construct approximately 500 feet of double circuit 138 kV transmission line in order to convert the Dorneyville Substation to 138 kV operation. The proposed 500-foot transmission line will be constructed on PPL-owned property located in Upper Macungie Township, Lehigh County.

This project is required to prevent overloading on two of the 69 kV transformers at PPL's Wescosville Substation and ensure the reliability of electrical service to PPL customers in the area.

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*Mary A. Gaal*

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