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File #: 150995

August 26, 2013

*VIA ELECTRONIC FILING*

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
P.O. Box 3265
Harrisburg, PA 17105-3265

**Re: Application of PPL Electric Utilities Corporation filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of Transmission Lines Associated with the Northeast-Pocono Reliability Project in Portions of Luzerne, Lackawanna, Monroe, and Wayne Counties, Pennsylvania**
**Docket Nos. A-2012-2340872, et al.**

Dear Secretary Chiavetta:

Enclosed for filing is the Initial Brief of PPL Electric Utilities Corp-oration in the above-referenced proceeding.

Copies will be provided as indicated on the Certificate of Service.

Respectfully submitted,

David B. MacGregor

DBM/jl
Enclosures

cc: Honorable David A. Salapa (*Via E-Mail & First Class Mail*)
Certificate of Service

## CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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Date: August 26, 2013

Christopher T. Wright

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

| | | |
|---|---|---|
| Application of PPL Electric Utilities Corporation filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of Transmission Lines Associated with the Northeast-Pocono Reliability Project in Portions of Luzerne, Lackawanna, Monroe, and Wayne Counties, Pennsylvania | : | Docket No. A-2012-2340872 |
| Petition of PPL Electric Utilities Corporation for a Finding that a Building to Shelter Control Equipment at the North Pocono 230-69 kV Substation in Covington Township, Lackawanna County, Pennsylvania is Reasonably Necessary for the Convenience or Welfare of the Public | : | Docket No. P-2012-2340871 |
| Petition of PPL Electric Utilities Corporation for a Finding that a Building to Shelter Control Equipment at the West Pocono 230-69 kV Substation in Buck Township, Luzerne County, Pennsylvania is Reasonably Necessary for the Convenience or Welfare of the Public | : | Docket No. P-2012-2341105 |
| Application Of PPL Electric Utilities Corporation Under 15 Pa.C.S. §1511(c) For A Finding And Determination That The Service To Be Furnished By The Applicant Through Its Proposed Exercise Of The Power Of Eminent Domain To Acquire Right-of-Way And Easement Over A Certain Portion Of The Lands Of The Following For Siting And Construction Of Transmission Lines Associated With The Proposed Northeast-Pocono Reliability Project Is Necessary Or Proper For The Service, Accommodation, Convenience Or Safety Of The Public: | : | |

| | | |
|---|---|---|
| Margaret G. Arthur and Barbara A. Saurman, Trustees of the Residuary Trust of James C. Arthur | : | Docket No. A-2012-2341115 |
| Blue Ridge Real Estate | : | Docket No. A-2013-2341277 |
| Clifton Acres, Inc. | : | Docket No. A-2013-2341236 |
| Sylvester J. Coccia | : | Docket No. A-2013-2341267 |
| Dietrich Hunting Club | : | Docket No. A-2013-2341237 |
| Dianne L. Doss | : | Docket No. A-2013-2341214 |
| Lawrence Duda | : | Docket No. A-2013-2341271 |
| Fr E2 Property Holding LP | : | Docket No. A-2013-2341263 |
| FR First Avenue Property Holding, LP | : | Docket No. A-2012-2341123 |
| Donald W. Henderson and Louis V. Bellucci | : | Docket No. A-2013-2341262 |
| Bradley D. Hummel | : | Docket No. A-2013-2341220 |
| International Consolidated Investment Company | : | Docket No. A-2013-2341216 |
| John F. and Veronica B. Iskra | : | Docket No. A-2013-2341233 |
| Donald Januszewski | : | Docket No. A-2013-2341215 |
| John C. Justice and Linda S. Justice | : | Docket No. A-2012-2341107 |
| Anthony J. Lupas, Jr. and Lillian Lupas, John Lupas and Judy Lupas, Grace Lupas, Eugene A. Bartoli and Robert J. Frankelli | : | Docket No. A-2012-2341118 |
| Michael A. Mitch and Sue K. Mitch | : | Docket No. A-2013-2341234 |
| NLMS, Inc. | : | Docket No. A-2013-2341239 |
| Michael Palermo and Joanne Palermo | : | Docket No. A-2013-2341221 |
| Peter Palermo and Francine Palermo | : | Docket No. A-2013-2341211 |

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|---|---|---|
| William Petrouleas and Joanna Petrouleas | : | Docket No. A-2013-2341209 |
| Edward R. Schultz | : | Docket No. A-2013-2341253 |
| Roberta Searfoss a/k/a Judy Searfoss, Executrix of the Estate of Euylla Hughes a/k/a Eylla Hughes | : | Docket No. A-2013-2341232 |
| Ronald G. Sidovar and Gloria J. Sidovar | : | Docket No. A-2012-2341120 |
| Ronald Solt | : | Docket No. A-2013-2341249 |
| Three Griffins Enterprises Inc. | : | Docket No. A-2012-2341114 |
| Transcontinental Gas Pipe Line Corporation | : | Docket No. A-2013-2341208 |
| US Industrial Reit II | : | Docket No. A-2013-2341241 |
| James L. & Michaelene J. Butler, | : | Docket No. A-2013-2344353 |
| Susan Butler Living Trust, | : | Docket No. A-2013-2344604 |
| Grumble Knot LLC, | : | Docket No. A-2013-2344612 |
| Pennsylvania Glacial Till LLC, and | : | Docket No. A-2013-2344616 |
| Blueberry Mountain Realty LLC. | : | Docket No. A-2013-2344605 |

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|---|---|---|
| Joe & Vanessa Caparo | : | Docket No. C-2011-2276731 |
| v. | : | |
| PPL Electric Utilities Corporation | : | |

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# INITIAL BRIEF OF
# PPL ELECTRIC UTILITIES CORPORATION

**To Administrative Law Judge**
**David A. Salapa**


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Date: August 26, 2013

Counsel for PPL Electric Utilities Corporation

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## TABLE OF AUTHORITIES

### Pennsylvania Court Decisions

**Pennsylvania Administrative Agency Decisions**

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## I. INTRODUCTION

In these consolidated proceedings, PPL Electric seeks approvals and findings necessary for the siting and construction of the transmission lines associated with the Northeast-Pocono Reliability Project and for construction of control equipment buildings at the West Pocono and North Pocono 230-69 kV Substations. Specifically, PPL Electric seeks (1) approval for the siting and construction of a new 58-mile 230 kV transmission line and approximately 11.3 miles of new 138/69 kV transmission lines needed to connect the new West Pocono and North Pocono 230-69 kV Substations with the existing 69 kV system, (2) findings that the exercise of the power of eminent domain to acquire rights-of-way across 29 tracts of land is necessary or proper for the service, accommodation, convenience or safety of the public, and (3) findings that the locations of the buildings to shelter control equipment at the West Pocono and North Pocono 230-69 kV Substations are reasonably necessary for the convenience or welfare of the public. (PPL Electric Exs. 1 through 36)

The Northeast-Pocono Reliability Project is required to resolve violations of PPL Electric's "Reliability Principles & Practices" ("RP&P") and to reinforce the existing 69 kV systems in Monroe, Carbon, Wayne, Lackawanna, Luzerne, and Pike Counties by bringing a new source 230 kV supply into the area. Currently, the only source of supply to the Northeast Pocono region is provided by 138/69 kV transmission lines. It has been approximately 30 years since the last major regional transmission reinforcement in the Northeast Pocono region. There has been substantial load growth in the area since that time, which is expected to continue. The existing 138/69 kV transmission lines serving the Northeast Pocono region are long and serve a significant number of customers who are exposed to prolonged outages in the event of the loss of one of these transmission lines. The ability to restore service to these customers is limited due to the lack of 230 kV transmission sources in the area. (PPL Electric St. 2, p. 3)

To resolve reliability and planning violations and to reinforce the 138/69 kV systems serving the Northeast Pocono region, PPL Electric proposes to construct a new 230 kV network of transmission facilities. This new 230 kV network will be created by strategically locating the new West Pocono and North Pocono 230-69 kV Substations central to the loads they will serve and extending the existing 230 kV system into the Northeast Pocono region. (PPL Electric St. 2, p. 22) The two new substations and associated new transmission lines will reduce the distance between the supply of power and the homes and businesses that use the electricity. This proposed arrangement also will provide an alternative source of power to the Northeast Pocono region in the event that normal sources of supply are interrupted, which will improve power restoration times and provide operating flexibility and improved reliability for customers in the region. The Northeast-Pocono Reliability Project will reduce the number of customers affected by a single facility outage, as well as the duration of the outage. (PPL Electric St. 2, pp. 3-4)

The proposed new West Pocono and North Pocono Substations will be connected to the existing 230 kV transmission systems by a new 58-mile 230 kV transmission line. The proposed 230 kV transmission line will extend approximately 15 miles between the existing Jenkins 230-69 kV Substation and the proposed new West Pocono 230-69 kV Substation ("Jenkins-West Pocono Segment"), approximately 21 miles between the new West Pocono 230-69 kV Substation and the new North Pocono 230-69 kV Substation ("West Pocono-North Pocono Segment"), and approximately 22 miles between the new North Pocono 230-69 kV Substation and the Paupack 230-69 kV Substation ("North Pocono-Paupack Segment"). (PPL Electric Ex. 1, Att. 5, pp. 2-7)

The proposed new West Pocono and North Pocono Substations will be connected to the existing 69 kV system by five new 138/69 kV transmission lines that will bifurcate and reduce

the length of the existing 69 kV transmission lines. (PPL Electric St. 2-R, p. 39) Collectively, these five new 138/69 kV transmission lines will be approximately 11.3 miles in length: two new double-circuit 138/69 kV transmission lines, each approximately 3 miles, to connect the new West Pocono 230-69 kV Substation to the existing 138/69 kV system; and three new 138/69 kV transmission lines, collectively approximately 5.3 miles, to connect the new North Pocono 230-69 kV Substation to the existing Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines. (PPL Electric Ex. 1, Att. 5, pp. 7-13)

PPL Electric's most current cost estimate for the Northeast-Pocono Reliability Project is $247 million. (PPL Electric St. 5-RJ, p. 4) Conditioned upon receipt of Pennsylvania Public Utility Commission ("Commission") approval, the construction and permitting for the Northeast-Pocono Reliability Project will be completed in a staged manner with a scheduled construction start date of spring 2014 to meet staged in-service dates from November 2015 to November 2017. (PPL Electric St. 1, p. 10; PPL Electric St. 4-R-2, p. 5)

As explained below, the record evidence in this matter clearly demonstrates that: (1) the proposed Northeast-Pocono Reliability Project is reasonably necessary to provide safe and reliable service to its customers; (2) the route selection process was reasonable and the preferred routes for the 230 kV transmission line and 138/69 kV connecting lines will have minimum adverse environmental impacts, considering the electric power needs of the public, the state of the available technology, and the available alternatives; (3) the locations of the buildings to shelter control equipment at the West Pocono and North Pocono Substation sites are reasonably necessary for the convenience or welfare of the public; and (4) the exercise of the power of eminent domain by PPL Electric to acquire rights-of-way across 29 tracts of land is necessary or proper for the service, accommodation, convenience or safety of the public. Accordingly,

Administrative Law Judge David A. Salapa (the "ALJ") and the Commission should find that the proposed Northeast-Pocono Reliability Project satisfies the requirements of the applicable statutes and regulations and approve the pending siting application, two zoning exemption petitions, and 29 eminent domain applications.

## II. STATEMENT OF THE CASE

This proceeding was initiated on December 28, 2013, when PPL Electric filed the "Application of PPL Electric Utilities Corporation filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of Transmission Lines Associated with the Northeast-Pocono Reliability Project in Portions of Luzerne, Lackawanna, Monroe, and Wayne Counties, Pennsylvania" ("Siting Application"), which was docketed at Docket No. A-2012-2340872. (PPL Electric Ex. 1) Together with the Siting Application, PPL Electric filed and served the following attachments in support of the Siting Application:

- Executive Summary
- Attachment 1 Commission Regulation Cross-Reference Matrix
- Attachment 2 Necessity Statement
- Attachment 3 Environmental Assessment
- Attachment 4 Alternatives and Siting Analysis
- Attachment 5 Design and Engineering Description
- Attachment 6 Right of Way Property Owners
- Attachment 7 Local, State, and Federal Regulatory Requirements
- Attachment 8 List of Governmental Agencies, Municipalities, and other Public Entities Receiving the Application
- Attachment 9 List of Governmental Agencies, Municipalities, and other Public Entities Contacted

- Attachment 10 List of Public Locations where Application can be examined
- Attachment 11 Magnetic Field Management Plan
- Attachment 12 Vegetation Management
- Attachment 13 PPL Design & Safety Rules and Guidance
- Attachment 14 Agency Coordination (PNDI/Wetlands)
- Attachment 15 Cultural Resource Report
- Attachment 16 Public Notice Requirements

Also on December 28, 2012, PPL Electric filed two zoning exemption petitions: (1) the "Petition of PPL Electric Utilities Corporation for a Finding that a Building to Shelter Control Equipment at the North Pocono 230-69 kV Substation in Covington Township, Lackawanna County, Pennsylvania is Reasonably Necessary for the Convenience or Welfare of the Public" ("North Pocono Zoning Petition"), which was docketed at Docket No. P-2012-2340871 (PPL Electric Ex. 2); and (2) the "Petition of PPL Electric Utilities Corporation for a Finding that a Building to Shelter Control Equipment at the West Pocono 230-69 kV Substation in Buck Township, Luzerne County, Pennsylvania is Reasonably Necessary for the Convenience or Welfare of the Public" ("West Pocono Zoning Petition"), which was docketed at Docket No. P-2012-2341105 (PPL Electric Ex. 3) By Prehearing Order No. 1 issued on January 8, 2013, the North Pocono Zoning Petition and West Pocono Zoning Petition were consolidated with the Siting Application at Docket No. A-2012-2340872.

On December 28, 2012, PPL Electric also filed 32 applications under 15 Pa.C.S. §1511(c), seeking findings and determinations that the service to be furnished by the Company through its proposed exercise of the power of eminent domain to acquire rights-of-way and easements over the following lands for the siting and construction of transmission lines

associated with the proposed Northeast-Pocono Reliability Project is necessary or proper for the service, accommodation, convenience or safety of the public:

Art Mortgage Borrower Propco 2010-5 LLC in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341238;

Margaret G. Arthur and Barbara A. Saurman, Trustees of the Residuary Trust of James C. Arthur in Sterling Township, Wayne County, Pennsylvania, Docket No. A-2012-2341115;

Blue Ridge Real Estate in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341277;

Clifton Acres, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341236;

Sylvester J. Coccia in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341267;

Dietrich Hunting Club in Lehigh Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341237;

Dianne L. Doss in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341214;

Lawrence Duda in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341271;

FR E2 Property Holding, LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341263;

FR First Avenue Property Holding, LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2012-2341123;

Donald W. Henderson and Louis V. Bellucci in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341262;

Bradley D. Hummel in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341220;

International Consolidated Investment Company in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341216;

John F. and Veronica B. Iskra in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341233;

Donald Januszewski in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341215;

John C. Justice and Linda S. Justice in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341107;

Anthony J. Lupas, Jr. and Lillian Lupas, John Lupas and Judy Lupas, Grace Lupas, Eugene A. Bartoli and Robert J. Frankelli in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341118;

Mark M. Mack, J. Dean Mack and Heather K. Mack in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341272;

Christopher Maros and Melinda Maros in Sterling Township, Wayne County, Pennsylvania, Docket No. A-2013-2341213;

Michael A. Mitch and Sue K. Mitch in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341234;

NLMS, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341239;

Michael Palermo and Joanne Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341221;

Peter Palermo and Francine Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341211;

William Petrouleas and Joanna Petrouleas in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341209;

Edward R. Schultz in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341253;

Roberta Searfoss a/k/a Judy Searfoss, Executrix of the Estate of Euylla Hughes a/k/a Eylla Hughes in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341232;

Ronald G. Sidovar and Gloria J. Sidovar in Salem Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341120;

Ronald Solt in Plains Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341249;

Merel J. and Arlene J. Swingle in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341250;

Three Griffins Enterprises, Inc. in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341114;

Transcontinental Gas Pipe Line Corporation in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341208; and

US Industrial Reit II in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341241.[1]

On January 18, 2013, PPL Electric filed five additional applications under 15 Pa.C.S. §1511(c), seeking findings and determinations that the service to be furnished by the Company through its proposed exercise of the power of eminent domain to acquire rights-of-way and easements over the following lands for the siting and construction of transmission lines associated with the proposed Northeast-Pocono Reliability Project is necessary or proper for the service, accommodation, convenience or safety of the public:

James L. & Michaelene J. Butler in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344353;

Susan Butler Living Trust in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344604;

Grumble Knot, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344612;

Pennsylvania Glacial Till LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344616; and

Blueberry Mountain Realty, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344605.[2]

By Secretarial Letter dated December 7, 2011, PPL Electric was served with a Complaint filed by Joe and Vanessa Caparo at Docket No. C-2011-2276731 ("Caparo Complaint"). By

[1] On June 28, 2013, Duke Realty 400 First Avenue Gouldsboro Holding, LLC (Duke) filed a motion to substitute as a party for US Industrial REIT II (US REIT). Duke's motion alleges that it has purchased US REIT's property located in Covington Township, Lackawanna County that is the subject of PPL Electric's eminent domain application at A-2013-2341241. Duke's motion states that it adopts the pleadings filed in this proceeding by its predecessor in interest, US REIT. Duke's motion was unopposed and was granted in Prehearing Order No. 11, issued on July 9, 2013.

[2] The eminent domain applications filed by PPL Electric are hereinafter collectively referred to as the "Eminent Domain Applications."

Secretarial Letter dated May 18, 2012, PPL Electric was served with the Formal Complaint filed by Christopher and Melinda Maros at Docket No. C-2012-2305047 ("Maros Complaint"). These complaints raise issues related to the siting and route selection of the proposed transmission lines associated with the Northeast-Pocono Reliability Project.

On January 25, 2013, PPL Electric filed a motion to consolidate the 37 Eminent Domain Applications and the two Complaints with the Siting Application. These matters were consolidated with the Siting Application, North Pocono Zoning Petition, and West Pocono Zoning Petition in Prehearing Order #2, dated January 29, 2013.

Subsequently, PPL Electric reached right-of-way agreements with the following eight property owners: (1) Merel J. and Arlene J. Swingle, Docket No. A-2013-2341250; (2) Christopher Maros and Melinda Maros, Docket No. A-2013-2341213;[3] (3) ART Mortgage Borrower Propco 2010-5, LLC, Docket No. A-2013-2341238; (4) Mark M. Mack, J. Dean Mack, and Heather K. Mack, Docket No. A-2012-2340872; (5) Roberta Searfoss a/k/a Judy Searfoss, Executrix of the Estate of Euylla Hughes a/k/a Eylla Hughes in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341232; (6) Blue Ridge Real Estate in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341277; (7) Dianne L. Doss in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341214; and (8) James L. and Michaelene J. Butler in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344353. Consequently, PPL Electric petitioned to withdraw each of the above-mentioned eminent domain applications.[4]

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[3] On March 1, 2013, PPL Electric also filed a Certificate of Satisfaction for the Maros Complaint at Docket No. C-2012-2305047.

[4] The petition to withdraw the eminent domain application for the property of Roberta Searfoss a/k/a Judy Searfoss, Executrix of the Estate of Euylla Hughes a/k/a Eylla Hughes in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341232, was filed on July 30, 2013. The petition to withdraw the eminent domain application for the properties of Blue Ridge Real Estate in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-

Pursuant to Prehearing Order No. 1, protests and petitions to intervene were required to be filed on or before February 27, 2013. The Office of Consumer Advocate ("OCA") filed a Notice of Intervention and Public Statement on February 27, 2013. Timely protests and/or petitions to intervene were filed by Blue Ridge Real Estate Company; Covington Township; North Pocono Citizens Alert Regarding the Environment ("NPCARE"); Transcontinental Gas Pipe Line Company, LLC ("Transco"); US Industrial Reit II (now "Duke Realty"); FR First Avenue Property Holding, LP ("FR First"); FR E2 Property Holding, LP ("FR E2"); Bradley D. Hummel; John C. and Linda S. Justice; Ronald G. and Gloria Sidovar; and Pennsylvania Glacial Till, LLC. Notices of appearance were also entered on behalf of Lawrence Duda; John F. and Veronica B. Iskra; and Anthony J. Lupas, Jr. and Lillian Lupas, John Lupas and Judy Lupas, Grace Lupas, Eugene A. Bartoli and Robert J. Frankelli.

A prehearing conference was held on March 6, 2013. Following the prehearing conference, a scheduling order was issued on March 13, 2013. Pursuant to the procedural and discovery schedule set at the prehearing conference, the parties engaged in extensive discovery in support of their respective positions.[5]

Two public input hearings were held on May 2, 2013, in Thornhurst Township, based on correspondence from members of the General Assembly and local residents requesting that public input hearings be held at the Thornhurst Volunteer Fire Company. PPL Electric published notice of the public input hearings in two newspapers of general circulation once per week for

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2341277, was filed on August 9, 2013. Petitions to withdraw the eminent domain applications for the properties of Dianne L. Doss in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341214, and James L. and Michaelene J. Butler in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344353, were filed on August 20, 2013. As of the date of this Initial Brief, these petitions to withdraw remain pending for disposition and, therefore, the applications have not yet been withdrawn. The other four eminent domain applications were withdrawn and removed from the caption in Prehearing Order Nos. 3, 7, and 8.

[5] During the course of discovery, PPL Electric responded to over 161 interrogatories and requests for production of documents, many of which included multiple subparts.

two consecutive weeks prior to the date of the public input hearings. PPL Electric filed proofs of publication with the Commission.

On December 28, 2013, PPL Electric served the parties with its Direct Testimony, which comprised of statements from six witnesses. On June 5, 2009, the other parties except NPCARE served the following Direct Testimony: OCA served the Direct Testimony of one witness; Transco served the Direct Testimony of two witnesses; Covington Township served the Direct Testimony of one witness; FR First served the Direct Testimony of one witness; and FR E2 served the Direct Testimony of one witness. NPCARE, which was granted an extension of time to serve direct testimony, served the Direct Testimony of four witnesses on June 14, 2013.

PPL Electric served the Rebuttal Testimony of eight witnesses on July 8 and 15, 2013. On July 17, 2013, the other parties except NPCARE served the following Surrebuttal Testimony: OCA served the Surrebuttal Testimony of one witness; Transco served the Surrebuttal Testimony of one witness; and FR First and FR E2 jointly served the Surrebuttal Testimony of one witness. NPCARE, which was granted an extension of time to serve surrebuttal testimony, served the Surrebuttal Testimony of four witnesses on July 22, 2013. PPL Electric served the Rejoinder Testimony of eight witnesses on July 23 and 25, 2013.

Evidentiary hearings were held before the ALJ on July 24 and 26, 2013. At the hearings, parties moved into evidence their respective testimonies and exhibits, and witnesses were cross-examined.

Pursuant to the scheduling order, initial briefs are due August 26, 2013, and reply briefs are due September 9, 2013. PPL Electric herein submits its Initial Brief in support of the Siting Application, North and West Pocono Zoning Petitions, and the 29 remaining Eminent Domain Applications.

## III. STATEMENT OF QUESTIONS INVOLVED

1. Has PPL Electric demonstrated that the Northeast-Pocono Reliability Project is necessary for the service, accommodation, convenience or safety of the public?

Suggested answer: *In the affirmative.*

2. Has PPL Electric demonstrated that the preferred routes for the 230 kV transmission line and 138/69 kV connecting lines are reasonable and will have a minimum adverse environmental impact, considering the electric power needs of the public, the state of the available technology, and the available alternatives?

Suggested answer: *In the affirmative.*

3. Has PPL Electric demonstrated that the locations of the buildings to shelter control equipment at the West Pocono and North Pocono Substation sites are reasonably necessary for the convenience or welfare of the public?

Suggested answer: *In the affirmative.*

4. Has PPL Electric demonstrated that the exercise of the power of eminent domain by PPL Electric to acquire rights-of-way across 29 tracts of land is necessary or proper for the service, accommodation, convenience or safety of the public?

Suggested answer: *In the affirmative.*

## IV. LEGAL STANDARDS

### A. BURDEN OF PROOF

PPL Electric is seeking Commission approval of a siting application for new high voltage transmission lines, two zoning exemption petitions for control equipment buildings at two new substations, and 29 eminent domain applications for the remaining rights-of-way needed for the proposed transmission lines. Section 332(a) of the Public Utility Code ("Code"), 66 Pa.C.S. § 332(a), provides that the party seeking a rule or order from the Commission has the burden of proof in that proceeding. It is well established that "[a] litigant's burden of proof before administrative tribunals as well as before most civil proceedings is satisfied by establishing a preponderance of evidence which is substantial and legally credible." *Samuel J. Lansberry, Inc. v. Pa. PUC*, 578 A.2d 600, 602 (Pa. Cmwlth. 1990). The preponderance of evidence standard requires proof by a greater weight of the evidence. *Commonwealth of Pennsylvania v. Williams*, 557 Pa. 207, 732 A.2d 1167 (1999). This standard is satisfied by presenting evidence more convincing, by even the smallest amount, than that presented by another party. *Brown v. Commonwealth of Pa.*, 940 A.2d 610, 614, n.14 (Pa. Cmwlth. 2008).

Additionally, any finding of fact necessary to support an adjudication of the Commission must be based upon substantial evidence. *Met-Ed Indus. Users Group v. Pa. PUC*, 960 A.2d 189, 193, n.2 (Pa. Cmwlth. 2008) (citing 2 Pa.C.S. § 704). Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. *Borough of E. McKeesport v. Special/Temporary Civil Service Commission*, 942 A.2d 274, 281 (Pa. Cmwlth. 2008). Although substantial evidence must be "more than a scintilla and must do more than create a suspicion of the existence of the fact to be established," *Kyu Son Yi v. State Board of Veterinarian Medicine*, 960 A.2d 864, 874 (Pa. Cmwlth. 2008) (citation omitted), the "presence of conflicting evidence in the record does not mean that substantial evidence is lacking." *Allied*

*Mechanical and Elec., Inc. v. Pa. Prevailing Wage Appeals Board*, 923 A.2d 1220, 1228 (Pa. Cmwlth. 2007) (citation omitted).

If the applicant sets forth a *prima facie* case, then the burden shifts to the opponent. *McDonald v. Pa. Railroad Co.*, 348 Pa. 558, 36 A.2d 492 (1940). Establishing a *prima facie* case requires either evidence sufficient to make a finding of fact permissible or evidence to create a presumption against an opponent which, if not met, results in an obligatory decision for the proponent. Once a *prima facie* case has been established, if contrary evidence is not presented, there is no requirement that the applicant produce additional evidence in order to sustain its burden of proof. *District of Columbia's Appeal*, 343 Pa. 65, 21 A.2d 883 (1941). *See, e.g., Application of Pennsylvania Power & Light Co.*, Docket Nos. A-110500F0196, *et al.*; 1994 Pa. PUC LEXIS 65 (Oct. 21 1994) (holding that the company met its burden to prove that there was an immediate need for the reinforcement of the power supply where the need for the project was uncontested and no party presented any evidence challenging the need for the project).

**B. STANDARDS FOR APPROVAL OF THE SITING APPLICATION**

Pursuant to Section 1501 of the Public Utility Code, an electric distribution company has a statutory obligation to provide safe, adequate, and reliable electrical service to its customers. 66 Pa.C.S. § 1501. The Commission's regulations provide that an electric distribution company may not construct high voltage ("HV") transmission lines, *i.e.*, electrical lines with an operating voltage of 100 kV or higher, without prior Commission approval. 52 Pa. Code § 57.71. As explained by the Commonwealth Court, the Commission's transmission line siting regulations set forth the following:

> (1) the procedures for applying for approval of an HV line -- 52 Pa. Code § 57.72; (2) the procedures for hearings on HV line applications -- 52 Pa. Code § 57.75; and (3) what the [Commission] will consider when deciding whether to approve or deny an HV line application -- 52 Pa. Code § 57.76(a). These

> regulations, and 52 Pa. Code § 57.76 in particular, represent a codification of the review required by article I, section 27 of the Pennsylvania Constitution. *Re Proposed Electric Regulation*, 1976 Pa. PUC LEXIS 114, 49 Pa. P.U.C. 709, 712 (March 2, 1976) (stating that the "review required by article I, section 27 is being incorporated into our siting regulations").

*Energy Conservation Council of Pennsylvania v. Pa. PUC,* 995 A.2d 465, 477-78 (Pa. Cmwlth. 2010) (hereinafter "*Trailco*").

In order to grant an application for the construction and siting of a HV transmission line, the Commission must find and determine the following as to the proposed line:

> (1) That there is a need for it.
>
> (2) That it will not create an unreasonable risk of danger to the health and safety of the public.
>
> (3) That it is in compliance with applicable statutes and regulations, providing for the protection of the natural resources of this Commonwealth.
>
> (4) That it will have minimum adverse environmental impact, considering the electric power needs of the public, the state of the available technology and the available alternatives.

52 Pa. Code § 57.76(a).

The Public Utility Code does not define need; however, Pennsylvania courts have recognized that there is a need for reliable regional electric service and transmission systems. *Stone v. Pa. PUC*, 162 A.2d 18, 19-221 (Pa. Super. 1960); *Dunk v. Pa. PUC*, 232 A.2d 231, 234-35 (Pa. Super. 1967). The Commonwealth Court has further explained that the need for a project is not limited to need from an "engineering" prospective. *Pennsylvania Power & Light Co. v. Pa. PUC*, 696 A.2d 248, 250 (Pa. Cmwlth. 1997).

Moreover, the General Assembly has recognized the importance of ensuring the reliability of electric transmission systems, and the provision of sufficient electrical power at affordable rates. Section 2802(12) of the Public Utility Code states that "[r]eliable electric

service is of the utmost importance to the health, safety and welfare of the citizens of the Commonwealth. Electric industry restructuring should ensure the reliability of the interconnected electric system by maintaining the efficiency of the transmission . . . system." 66 Pa.C.S. § 2802(12). Section 2802(20) of the Code provides, *inter alia*, that ensuring the reliability of electric service depends on conscientious maintenance of transmission systems, and that electric system operators shall establish inspection, maintenance, repair and replacement standards. 66 Pa.C.S. § 2802(20). Finally, Section 2803 of the Code defines "reliability" as:

> Includes adequacy and security. As used in this definition, "adequacy" means the provision of sufficient generation, transmission and distribution capacity so as to supply the aggregate electric power and energy requirements of consumers, taking into account scheduled and unscheduled outages of system facilities; and "security" means designing, maintaining and operating a system so that it can handle emergencies safely while continuing to operate.

66 Pa.C.S. § 2803.

With respect to health and safety, the Commission has held in numerous cases that transmission lines that meet or exceed National Electric Safety Code ("NESC") requirements do not create an unreasonable risk of danger to the health and safety of the public. *Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line*, Docket Nos. A-2009-2082652, *et al.*, 2010 Pa. PUC LEXIS 434 at *166 (Feb. 12, 2010); *Investigation on Commission Motion of the Safety of the Cabett-Wylei Ridge 500 kV Transmission Line*, I.D. 236 (Sept. 18, 1981); *Application of PP&L for Approval to Locate and Construct a 138 kV Transmission Line Between West Allentown and Salisbury Substations*, Docket No. A-00104160 (July 20, 1984); *Application of PP&L for Authorization to Locate and Construct its Hamlin 138 kV Electric Transmission Line*,

Docket No. A-00101826 (Apr. 3, 1981); *Larken v. Philadelphia Electric Co.*, 39 Pa. PUC 777 (1961).

For compliance with applicable statutes and regulations providing for the protection of the natural resources, the Commission has generally found compliance with the applicable environmental statutes and regulations where the applicant agrees to obtain any and all environmental permits necessary prior to construction and to comply with any conditions on those permits during construction.[6] Importantly, however, the applicant is not required to receive all necessary permits before the Commission may approve the transmission line, or before construction of the proposed line begins. *Energy Conservation Council of Pennsylvania v. Pa. PUC*, 25 A.3d 440, 452 (Pa. Cmwlth. 2011) (hereinafter "*Susquehanna-Roseland*").

Finally, with respect to the siting of the transmission line, the Commonwealth Court has recently held that a utility's route for a proposed HV transmission line should be approved where the record evidence shows that the utility's route-selection process was reasonable and that the utility properly considered the factors relevant to siting a transmission line:

> [I]t is settled law that the designation of the route for a HV line is a matter for determination by [a utility's] management in the first instance, and the utility's conclusion will be upheld unless shown to be wanton or capricious. Thus, where the record establishes that the utility's route selection was reasonable, considering all the factors, its route will be upheld. The mere existence of an

[6] *See, e.g., Application of Pennsylvania Electric Company For Approval to Locate and Construct the Bedford North-Osterburg East 115 kV HV Transmission Line Project Situated in Bedford and East St. Clair Townships, Bedford County, Pennsylvania*, Docket Nos. A-2011-2247862, et al., 2012 Pa. PUC LEXIS 298 at *61 (Initial Decision Feb. 9, 2012); *Application of Trans-Allegheny Interstate Line Company for the Approval to locate, construct, operate and maintain certain high voltage electric transmission line facilities and to exercise the power of eminent domain to construct and to install the proposed aerial electric transmission line facilities along the proposed route, being a 138 kV transmission line and related facilities collectively, the Osage-Whiteley Line Facilities or Project, in portions of Dunkard Township, Perry Township, and Whiteley Township, Greene County in Southwestern Pennsylvania*, Docket Nos. A-2010-2187540, et al., 2011 Pa. PUC LEXIS 2028 (Recommended Decision March 28, 2011); *Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line*, Docket Nos. A-2009-2082652, et al., 2010 Pa. PUC LEXIS 434 at *191-201 (Feb. 12, 2010).

> alternative route does not invalidate the utility's judgment. This reasoning is equally sound when considering whether a utility has complied with 52 Pa. Code § 57.72(c)(10), as the information required by this section goes towards establishing the reasonableness of the utility's route selection.

*Susquehanna-Roseland*, at 449-50 (quoting *Trailco*, 995 A.2d 465, 479-80). The route selected by the applicant must demonstrate reasonable efforts to minimize adverse environmental impacts when compared to the available alternative routes, but the utility need not consider all possibilities. *Susquehanna-Roseland*, at 448-49. Moreover, the applicant is not required to choose a route that has no adverse impacts. Instead, a utility must make reasonable efforts to minimize and mitigate any impacts and ensure that any harm to the environment is outweighed by the benefits of the project. *Id.*

### C. STANDARDS FOR APPROVAL OF THE ZONING PETITIONS

As a general matter, public utility facilities are exempt from local regulation.[7] A limited exception to this general rule is that a municipality may apply local zoning rules to a public utility "building" unless the Commission finds that the location of the building is reasonably necessary for the convenience or welfare of the public. *See* Section 619 of the Pennsylvania

[7] The lack of authority for a local municipality to regulate the design, location, or construction of public utility facilities is consistent with the long line of cases holding that public utilities are exempt from local ordinances. *See Duquesne Light Company v. Monroeville Borough*, 449 Pa. 573, 580, 298 A.2d 252, 256 (1972) ("This Court has consistently held, however, that the Public Utility Commission has exclusive regulatory jurisdiction over the implementation of public utility facilities") (citations omitted). *See, e.g., County of Chester v. Philadelphia Elec. Co.*, 420 Pa. 422, 218 A.2d 331 (1966) (holding that regulation by a multitude of jurisdictions would result in "twisted and knotted" public utilities with consequent harm to the general welfare); *Newtown Township v. Philadelphia Elec. Co.*, 594 A.2d 834, 837 (Pa. Cmwlth. 1991) (noting that "it is clear that no 'implied' power exists in the MPC which would allow the Township to regulate [the Philadelphia Electric Company] through its subdivision and land development ordinance"); *Heintzel v. Zoning Hearing Board of Millcreek Township*, 533 A.2d 832 (Pa. Cmwlth. 1987) (holding that township had no power to regulate, under its zoning ordinance, city's erection of water tower because that power was under the exclusive jurisdiction of the PUC); *South Coventry Township v. Philadelphia Elec. Co.*, 504 A.2d 368 (Pa. Cmwlth. 1986) (noting that to possibly subject [the Philadelphia Electric Company] to a miscellaneous collection of regulations upon its system would clearly burden and indeed disable it from successfully functioning as a utility); *Commonwealth v. Delaware and Hudson Railway Co.*, 339 A.2d 155 (Pa. Cmwlth. 1975) (holding that the MPC did not authorize local governments to regulate public utilities in any manner which infringes upon the power of the Commission to so regulate).

Municipalities Planning Code ("MPC"), 53 P.S. § 10619. Section 619 of the MPC provides the standard for approval of the siting of a public utility "building," and provides as follows:

> This article shall not apply to any existing or proposed building, or extension thereof, used or to be used by a public utility corporation, if, upon petition of the corporation, the Pennsylvania Public Utility Commission shall, after a public hearing, decide that the present or proposed situation of the building in question is reasonably necessary for the convenience or welfare of the public. It shall be the responsibility of the Pennsylvania Public Utility Commission to ensure that both the corporation and the municipality in which the building or proposed building is located have notice of the hearing and are granted an opportunity to appear, present witnesses, cross-examine witnesses presented by other parties and otherwise exercise the rights of a party to the proceedings.

53 P.S. § 10619. Thus, a municipality may exercise its zoning powers over a public utility building unless the Commission determines that the "site is reasonably necessary for the public convenience or welfare." *Del-AWARE Unlimited, Inc. v. Pa. PUC*, 513 A.2d 593, 596 (Pa. Cmwlth. 1986), *appeal denied*, 515 Pa. 587, 527 A.2d 547 (1987). If the Commission finds that the location is reasonably necessary for the convenience or welfare of the public, the building is exempt from local zoning ordinances under the MPC. *Id.*

Section 619 of the MPC does not require a utility to prove that the site it has selected is absolutely necessary or that it is the best possible site; rather, the utility must only demonstrate "reasonable necessity" for a particular location, not absolute need. *O'Connor v. Pa. PUC*, 582 A.2d 427, 433 (Pa. Cmwlth. 1990) (citing *Re Philadelphia Suburban Water Co.*, 54 Pa. PUC 127, 132 (1980)). If the evidence of record demonstrates that the site chosen is reasonably necessary for the convenience or welfare of the public, the Commission should grant the necessary findings under Section 619 of the MPC. *Id.* at 433.

## D. STANDARDS FOR APPROVAL OF THE EMINENT DOMAIN APPLICATIONS

Section 1511 of the Business Corporation Law of 1988 grants public utility corporations, such as PPL Electric, the power to take and condemn property for the purpose of providing electricity to the public. *See* 15 Pa. C.S. § 1511(a)(3). However, before a public utility may seek to exercise the authority to condemn property for an aerial transmission line, it must obtain approval from the Commission pursuant to Section 1511(c), which provides, in pertinent part, as follows:

> (c) The powers conferred by subsection (a) [for the running of aerial electric facilities] may be exercised to condemn property ... only after the Pennsylvania Utility Public Commission, upon application of the public utility corporation, has found and determined ... that the service to be furnished by the corporation through the exercise of those powers is necessary or proper for the service, accommodation, convenience or safety of the public.

15 Pa. C.S. § 1511(c). Thus, on an application for condemnation, the Commission must determine whether the proposed service, *i.e.*, the transmission or distribution of electricity to or for the public that will be provided to the public if the subject property is condemned, is necessary or proper for the service, accommodation, convenience, or safety of the public.

The Commonwealth Court has explained that the Commission's only role under 15 Pa.C.S. § 1511 is to consider if the project is necessary or proper for the benefit of the public, and that the Commission is expressly barred from considering the power of the utility to condemn. *SEPTA v. Pa. PUC*, 991 A.2d 1021, 1023 (Pa. Cmwlth. 2010). Therefore, the Commission does not determine whether to grant a condemnation application on the basis of the legal authority, scope, validity, damages, or the willingness of a condemnee to negotiate.

Pennsylvania Appellate Courts have interpreted Section 1511 as requiring a condemning utility to show that the proposed transmission line is necessary or proper and that it has not acted

wantonly, capriciously, or arbitrarily in selecting the proposed right-of-way. *Department of Environmental Resources v. Pa. PUC*, 335 A.2d 860 (Pa. Cmwlth. 1975), *aff'd.*, 473 Pa. 378, 374 A.2d 693 (1977); *Dickson v. Public Service Commission*, 89 Pa. Super. 126 (1926). The selection of the right-of-way is a matter for the public utility in the first instance and, while the route selection must be reasonable, it need not be the "best alternative" in terms of reducing or eliminating inconvenience to particular landowners. *Stone v. Pa. PUC*, 162 A.2d 18 (Pa. Super. 1960).[8]

## V. SUMMARY OF ARGUMENT

The two principal issues presented for decision in this proceeding regarding PPL Electric's siting application are whether PPL Electric has demonstrated that the Northeast-Pocono Regional Reliability Project is necessary or proper to provide reliable service to customers, and whether PPL Electric has chosen a reasonable route for siting the line. As explained below, the line is needed, and PPL Electric has chosen a reasonable route. Indeed, these issues, to a very large degree, are uncontested.

Regarding need, the unrebutted record evidence demonstrates that the Northeast-Pocono Regional Reliability Project is needed to address multiple violations of PPL Electric's RP&P and is needed to bring a new 230 kV source of supply closer to load centers in the Project area. No

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[8] For example, in *Paxtowne v. Pa. PUC*, 398 A.2d 254, 256 (Pa. Cmwlth. 1979), the route selected by the public utility was affirmed. In order to establish that the selected route was reasonable in comparison with two alternative routes, the public utility established the following:

> "[T]hat the proposed route was selected over alternative routes because the topography of petitioner's property was superior with regard to land use, environmental and engineering considerations; and that the selection of other routes would be more costly in acquiring rights-of-way from additional property owners."

*Id.* at 647-648. The Court went on to hold that, although the proposed route clearly impacted the petitioner's property, when balanced against the utility's evidence, there was no indication that the utility's selection of the proposed route was done wantonly, capriciously, or arbitrarily.

party has contested this fundamental conclusion. Indeed, the OCA, the only party to present any expert need testimony, agrees that system reinforcement is required and that PPL Electric's proposed solution will fully and adequately address these issues.

The OCA, in its direct testimony, identified a possible 138 kV alternative project, but did not conclude that it was preferable to the proposed Northeast-Pocono Reliability Project, stating only that it should receive further study. Although the 138 kV alternative addresses the "symptoms," it does not provide a "cure" for the underlying reliability problems. In rebuttal testimony, PPL Electric demonstrated that the 138 kV alternative was not a viable project, would not address the underlying causes of the RP&P violations (too many customers and too much load being served from long, lower voltage transmission line segments), would not accomplish the goal of bringing a 230 kV source of supply into the Project area, and would, in fact, result in less reliable service to customers. Notably, the OCA presented no response to this portion of PPL Electric's testimony, and it is therefore unrebutted. PPL Electric also demonstrated that the 138 kV alternative would be much more expensive than the preferred Northeast-Pocono Reliability Project because it would require the rebuilding of the entire 138 kV system in the area if it were to continue to serve as the sole source of supply to the area. There is simply no credible evidence of record to reject PPL Electric's proposed solution.

Regarding siting, the record evidence demonstrates that PPL Electric's selected of proposed routes for the Jenkins-West Pocono Segment, West Pocono-North Pocono Segment, and North Pocono-Paupack Segment as routes that will have the least overall social and environmental impacts. The only contested siting issues raised in this proceeding relate to the West Pocono-North Pocono Segment of the Project. NPCARE, the only party to present siting testimony, simply presented a broad and generalized description of possible environmental

impacts of the project without providing any feasible alternative route for consideration. PPL Electric acknowledges that any major transmission line project will have environmental and social impacts. Simply reciting these impacts, however, without providing any alternative provides no basis for rejecting PPL Electric's route selection. NPCARE did present four possible minor reconfigurations of PPL Electric's proposed route. PPL Electric has fully addressed these four proposals to NPCARE's satisfaction, and these modifications are no longer at issue.

NPCARE's principal argument is that PPL Electric has not "minimized the environmental impacts" of the Northeast-Pocono Reliability Project as required by the Commission's siting regulations. This argument should be rejected for several reasons. First, this argument takes the siting regulation completely out of context. The full text of the relevant regulation states: "That it will have minimum adverse environmental impact, considering the electric power needs of the public, the state of the available technology and the available alternatives." 52 Pa. Code § 57.76(a)(4) (emphasis added). The siting regulations require the Commission to evaluate and compare alternative line routes. *Susquehanna-Roseland*, at 448-49. Clearly, the requirement to minimize environmental impacts refers to the relative impacts of siting alternatives and is not a general and unconstrained requirement to eliminate all environmental impacts along a particular line route. The Commission and the courts have repeatedly rejected NPCARE's argument, and it should be rejected here. *Id.*

Second, NPCARE, in essence, is proposing that the Commission establish an entirely new set of expanded environmental rules and regulations for this Project that go far beyond what is required under existing environmental laws and regulations. PPL Electric has explained that it will apply for all necessary environmental permits and will fully comply with all conditions and

requirements imposed by those permits. The Commission does not have the jurisdiction, expertise, or resources to establish a new set of environmental rules and regulations for this project. Indeed, it is well settled that the Commission must defer to those agencies that have appropriate jurisdiction over these environmental matters.

Third, NPCARE has clearly overstated the environmental impacts of this project. For example, NPCARE witness Koval addresses 17 "species of special concern," but admitted in his testimony that there is no legal protection for these species under current law, and admitted on cross-examination that none of the species identified by NPCARE are listed as Pennsylvania Threatened or Pennsylvania Endangered, and that the vast majority of the species were listed as either G4 Globally Apparently Secure or G5 Globally Secure. Similarly, NPCARE witness Eldredge testified broadly about potential thermal impacts, but did very little actual analysis of the streams at issue. By contrast, PPL Electric witness Foote, through actual site visits or photographic review, examined 23 of the total 24 stream crossings for the West Pocono-North Pocono Segment and concluded that there should be little if any thermal impact and that any minor impact should quickly dissipate downstream.

Fourth, NPCARE largely ignores the many mitigation measures, described in more detail below, that PPL Electric has taken and will undertake to reduce any environmental impacts from this Project. These measures demonstrate the care with which PPL Electric has designed this Project and its compliance with relevant Commission regulations. It also may explain the relative lack of opposition to a project of this size and scope.

In connection with its siting application, PPL Electric also filed two petitions for zoning exemption and 37 condemnation applications, eight of which have been resolved. Only three of the remaining property owners (Transco, FR First, and FR E2) actively opposed the

condemnation applications and or Siting Application. Transco largely raises safety concerns regarding construction of the line near its existing and proposed natural gas pipelines. PPL Electric has operated its lines in close proximity to natural gas pipelines for many years without incident or problem and will do so here. The details will be worked out after a study is completed. Importantly, the areas of concern here are not related to the land rights which PPL Electric plans to condemn and provide no basis for rejecting the Transco condemnation application.

FR First and FR E2, related property owners within the Covington Industrial Park, have challenged routing the line through the Industrial Park. PPL Electric has fully supported its routing and has made adjustments to address these concerns. Finally, it must be remembered that the selection of the right-of-way is a matter for the public utility in the first instance and, while the route selection must be reasonable, it need not be the "best alternative" in terms of reducing or eliminating inconvenience to particular landowners.

For these reasons and as more fully explained below, PPL Electric requests that ALJ Salapa and the Commission approve the Company's various applications and petitions necessary to permit the prompt construction of the Northeast-Pocono Reliability Project and related facilities.

## VI. SITING APPLICATION

### A. OVERVIEW OF SITING A TRANSMISSION LINE PROJECT

As a preliminary matter, it is important to understand the vital role that transmission facilities play in supplying reliable electric service. The nation's electric system is comprised of three basic components: generation, transmission, and distribution. Generating plants typically produce electricity at a relatively low voltage. Transformers located adjacent to the generating

plants increase or "step up" the voltage to transmission-level voltages such as 230 kV or 500 kV, depending on the size of the generating facility and the distance the electricity must travel for delivery to customers. After the voltage is stepped up, the power is transmitted to substations, where the voltage level is sequentially stepped down for ultimate delivery into the distribution system. Distribution transformers then further reduce the voltage from primary to secondary distribution levels for ultimate delivery to customers.[9] *See Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line in Portions of Lackawanna, Luzerne, Monroe, Pike and Wayne Counties, Pennsylvania*, Docket Nos. A-2009-2082652, *et al.*, 2009 Pa. PUC LEXIS 2323 at *151-54 (Recommended Decision Nov. 12, 2009).

Transmission lines are designed to operate at a specified voltage level. On the PPL Electric system, those voltages are typically 69 kV and higher. The transmission system is further subdivided into bulk and non-bulk systems, with transmission lines operating at or above 100 kV constituting the bulk electric system. Transmission lines also have a maximum rated thermal capacity, which is the maximum electrical current they can safely carry. When a transmission line overloads, the conductor, the hardware securing the conductor and the line terminal equipment begin to overheat. Overheating the conductor may cause the line to sag. When overheated, the metal in the conductor may become brittle, rendering it useless. In addition, a brittle conductor may break and fall to the ground causing a dangerous situation for

[9] For example, at the proposed West Pocono and North Pocono Substations, electricity will enter the substations at 230 kV and be stepped down to 69 kV. The electricity will then proceed to another substation where it will be stepped down from 69 kV to 12 kV, the primary distribution system voltage. Secondary distribution lines then deliver the lower voltage electricity for use in homes and businesses.

those near the line, as well as responding crews. Overloading transmission lines may cause permanent damage to transmission infrastructure and catastrophic power outages. *Id.*

The nation's interconnected transmission grid is the backbone for the safe and reliable delivery of large amounts of electricity from generation stations over substantial distances to customers served from local distribution systems. It is critical that this interconnected transmission system be planned and designed to be highly reliable so that service can be provided under peak loading conditions and when certain elements of the system are out of service due to planned or forced outages.[10] (PPL Electric Ex. 1, p. 7)

PPL Electric has a statutory obligation to provide safe and reliable service to its customers. To meet this obligation, PPL Electric employs a regional transmission system planning process to identify facilities that require reinforcement to enable it to continue to provide adequate and reliable service to the public and plan appropriate measures to assure reasonably continuous supply to customers, even during adverse conditions. The facilities are evaluated based on the appropriate reliability criteria and planning practices to identify any facilities that need to be reinforced to maintain reliable electric service. Failure to reinforce these facilities would create the potential for system instability or cascade tripping, exceeding voltage tolerances, exceeding equipment capability, or causing large-scale, long-term or frequent interruptions. (PPL Electric Ex. 1, Att. 2, pp. 5-6)

Typically, system planning engineers evaluate multiple electrical solutions to identify the solution that best resolves the underlying reliability issues. After alternative solutions are identified, PPL Electric's system planning engineers compare and select the electrical solution

[10] The need to upgrade transmission infrastructure also is reflected in the American Recovery and Reinvestment Act of 2009 ("ARRA"), P.L. No. 111-5, 123 Stat. 115 (2009). Specifically, the Electricity Delivery and Energy Reliability section of Title IV of the ARRA provides appropriations for the development of regional transmission plans, future demand and transmission requirements, and interconnection-based transmission plans.

that best meets customers' electric needs in a reliable manner over the planning horizon. The evaluation of alternative electrical solutions considers the ability of each solution to solve the original reliability problem and provide the ability and flexibility to meet future system needs, as well as the overall cost.[11] (PPL Electric St. 2, p. 5; PPL Electric St. 2-R, pp. 20-21)

Once a preferred solution is selected, the system planning engineers then present the preferred electrical solution to PPL Electric's siting team.[12] The siting team then conducts a full siting analysis to identify and analyze possible alternative routes for the high voltage transmission lines that are necessary to implement the selected solution. First, a study area within the selected electrical solution is delineated. The study area is defined by the electric supply point and destination service point, and a combination of man-made and natural boundaries beyond which no reasonable alternative line routes could exist. Next, PPL Electric conducts an environmental inventory of the entire study area, together with an inventory of other significant features of the study area, to identify factors relevant to siting high voltage transmission lines. (PPL Electric St. 1, pp. 16-17; PPL Electric St. 4, p. 5)

Although the environmental impact is an important factor in selecting a transmission route, many other considerations must be taken into account, including: avoidance of residential areas, parks, open space, schools, cemeteries, and day care centers; the cost of the project; the reliability of the resulting system; the safety of the facilities to the public and work crews during construction and maintenance; potential interference with airport operations; damage to

[11] A full siting analysis is not part of the initial determination of alternative electrical solution; rather, an electrical solution is selected on the basis of how well it accomplishes PPL Electric's statutory obligation to provide safe and reliable service to its customers over time and at a reasonable cost. *Board of Supervisors of Springfield Township v. Pa. PUC*, 41 A.3d. 142 (Pa. Cmwlth. 2012).

[12] The siting team conducts a general review of the relevant area, which includes a preliminary consideration of the environmental impacts of the selected solution. If the siting team finds that the selected electrical solution has significant environmental or other relevant impacts, the siting team will communicate these concerns to the system planning engineers for further consideration of an alternative electrical solution.

archeological and historic sites; land use; terrain; hydrology; landscape; soil and sedimentation; plant and wildlife habitats; compatibility with long-term system design plans; inconvenience to the public during construction and maintenance; and access for inspection and maintenance. These inventories provide the information needed to meet the requirements of the Commission's siting regulations. From these studies, constraints or obstacles to a transmission line are identified and used to select alternative routes that avoid or minimize encounters with social and natural environmental features to the extent practical. (PPL Electric St. 4, pp. 7-9)

After carefully analyzing and evaluating the potential routes, alternative routes are selected for detailed examination. As part of the review process, PPL Electric conducts an extensive public outreach program to provide detailed information about the alternative routes and provide the public the opportunity to provide input and information to PPL Electric. This information is incorporated into the review of the alternative routes, which in this case resulted in adjustments to the alternative routes. (PPL Electric St. 1, pp. 18, 24-26) The siting team reviews in detail the merits and detriments of each of the alternative routes. Alternative routes for a proposed high voltage transmission line are then analyzed, in accordance with the Commission's siting regulations, to select the route that achieves the best balance of relevant engineering, environmental, and cost considerations. (PPL Electric St. 4, pp. 7-9)

In this case, PPL Electric's system planning engineers determined that the Northeast-Pocono Reliability Project is the best overall solution to resolve the violations of the RP&P practices and to reinforce the existing 138/69 kV transmission system in the Northeast Pocono region by bringing a new 230 kV supply source closer to the growing load centers. (PPL Electric Ex. 1, Att. 2; PPL Electric St. 2-R, *passim*) PPL Electric's siting team conducted a detailed siting analysis to determine the routes for the transmission lines associated with the Northeast-

Pocono Reliability Project that best balance social, environmental, engineering, and economic considerations. That analysis included the determination of a study area, the compilation of an environmental inventory, identification and analysis of alternative line routes and, finally, selection of a preferred line route that would meet the Project's functional requirements and, at the same time, minimize the environmental and social impacts. Based on this detailed analysis and comparison of the alternative routes, PPL Electric selected the preferred routes for the new 58-mile 230 kV transmission line to connect the new West and North Pocono Substations with the existing 230 kV system, as well as the preferred routes for the five new 138/69 kV transmission lines, collectively about 11.3 miles, to connect the new West and North Pocono Substations with the existing 69 kV system. (PPL Electric Ex. 1, Att. 4; PPL Electric St. 4, *passim*)

As explained above, in order to grant an application for the construction and siting of a high voltage transmission line, the Commission must find and determine the following as to the proposed line:

> (1) That there is a need for it.
>
> (2) That it will not create an unreasonable risk of danger to the health and safety of the public.
>
> (3) That it is in compliance with applicable statutes and regulations, providing for the protection of the natural resources of this Commonwealth.
>
> (4) That it will have minimum adverse environmental impact, considering the electric power needs of the public, the state of the available technology and the available alternatives.

52 Pa. Code § 57.76(a). As explained below, the record evidence clearly demonstrates that PPL Electric has met its burden with respect to each of the required findings under Section 57.76(a).

## B. NEED FOR THE NORTHEAST-POCONO RELIABILITY PROJECT

The planning process for a transmission line project is a two-part process. First, PPL Electric identifies facilities that require reinforcement to enable it to continue to provide adequate and reliable service to the public, even during adverse conditions. Second, PPL Electric analyzes potential electrical solutions and selects the electrical solution that best resolves the underlying reliability issues. PPL Electric's two-step transmission planning process is further explained below.

### 1. Identification of the Problem in the Northeast Pocono Region

#### a. PPL Electric's Transmission Planning Process

The first step in the planning process is identifying the facilities that require reinforcement. PPL Electric employs a regional transmission system planning process to identify facilities that require reinforcement to enable it to continue to provide adequate and reliable service to the public and plan appropriate measures to assure reasonably continuous supply to customers, even during adverse conditions. As explained below, the facilities are evaluated based on the appropriate reliability criteria and planning practices to identify any facilities that need to be reinforced to maintain reliable electric service.

System planning assures that transmission systems can supply electricity to all customer loads reliably and economically. The process of planning the transmission system requires PPL Electric to look far enough in advance to be able to complete a project when it is needed. Ideally, transmission facility upgrades are planned such that the in-service date corresponds with the time frame that the facility is required to meet the planning criteria. (PPL Electric Ex. 1, Att. 2, p. 5)

PPL Electric undertakes an independent analysis of both its bulk electric system ("BES") transmission facilities and its non-BES transmission system facilities.[13] PPL Electric's BES and non-BES transmission systems are planned so that they can be operated at all projected load levels and during normal scheduled outages and unscheduled contingencies without exceeding the equipment capability, causing system instability or cascade tripping, or exceeding voltage tolerances. (PPL Electric Ex. 1, Att. 2, pp. 5-6)

To ensure the reliable and economical operation of PPL Electrics BES and non-BES transmission system facilities, PPL Electric has adopted planning practices set forth in PPL Electric's RP&P. PPL Electric's need witness explained:

> The reliable and economical operation of PPL Electric's transmission system requires planning guidelines for system expansion and reinforcement. The PPL Electric planning guidelines are outlined in the [Reliability Principles and Practices] RP&P, which was developed to ensure adequate and appropriate levels of electric service to its customers consistent with good utility practice. The fundamental purpose of the RP&P is to provide PPL Electric planning engineers with a comprehensive set of planning guidelines and criteria that enable them to plan for a reliable transmission and distribution system for PPL Electric's customers. PPL Electric's RP&P is consistent with good utility practices and with reliability criteria and standards used by similarly situated distribution and transmission utilities.

(PPL Electric St. 2, pp. 4-5) Further, an independent expert with over 40 years of experience with transmission planning processes and study methods concluded that PPL Electric's RP&P plays a critical role in establishing the foundation of reliability standards and planning criteria for maintaining its electric system so that PPL Electric can provide reliable service to its customers. (PPL Electric St. 3, pp. 12-13). This independent expert also concluded that PPL Electric's RP&P is consistent with good utility practice, with the reliability criteria and standards used by

[13] The BES includes transmission facilities operated at voltages of 100 kV or higher. The non-BES includes transmission facilities that are operated at voltages less than 100 kV. (PPL Electric Ex. 1, Att. 2, p. 6)

other transmission system operators, and with PJM Interconnection, L.L.C. ("PJM") transmission planning policies. (PPL Electric St. 3, pp. 8-10)[14]

PPL Electric's transmission planning process is done in conjunction with PJM, which is a Federal Energy Regulatory Commission ("FERC") approved Regional Transmission Organization charged with ensuring the reliability of the electric transmission system under its functional control and coordinating the movement of electricity in all or parts of thirteen states and the District of Columbia, including most of Pennsylvania. PPL Electric, an owner of transmission facilities in Pennsylvania, is a member of PJM and actively participates in the PJM transmission planning process. (PPL Electric St. 2, p. 6)

In order to ensure reliable transmission service, PJM prepares an annual Regional Transmission Expansion Plan ("RTEP") to ensure that power continues to flow reliably to customers. The North American Electric Reliability Corporation, PJM, and transmission owner reliability criteria are used by PJM and the transmission owners to analyze the system and determine whether specific transmission upgrade projects are needed to ensure long-term reliable electric service to customers. (PPL Electric St. 2, p. 6)

In conjunction with transmission owners, PJM conducts RTEP studies of the BES and applies North American Electric Reliability Corporation ("NERC") and PJM reliability criteria

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[14] Similarly, the OCA's independent expert explained the importance of the RP&P planning requirements as follows:

> PPL Electric's Reliability Principles and Practices ("RP&P") which address transmission planning requirements for reliable electric system performance. These requirements reflect mandatory transmission planning requirements and PJM planning requirements. NERC transmission planning standards describe various systems states, including i) normal conditions (no contingencies, ii) single contingency (referred to as N-1) conditions, iii) multiple contingency conditions (referred to as N-2 or N-1-1), and iv) extreme contingency conditions. The NERC standards describe the minimum system performance required under each set of contingencies. After the large blackout in parts of the Midwest and northeast United States in August of 2003, NERC transmission planning reliability requirements were made mandatory.

(OCA St. 1, pp. 10-11 (Footnote omitted))

to specific conditions on the BES. When the studies show an inability of the transmission system to meet a specific reliability criterion, then solutions, such as construction of one or more new transmission lines or upgrades to existing transmission facilities, may be necessary. (PPL Electric St. 2, pp. 6-7)

For the non-BES, the local transmission operator, in this case PPL Electric, is responsible for identifying the reliability violations and correcting any violations to meet its own reliability and planning practices. The local transmission operators submit their lower voltage reliability projects to PJM so that they can be presented before the PJM stakeholders at the Sub-Regional RTEP Committee meetings. The local reliability violations and projects to resolve those violations are reviewed and endorsed by the Committee, and then included in the final version of the RTEP. Once a project is included in a PJM-approved RETP, the transmission owners are then obligated, under the PJM Tariff and Operating Agreements, to go forward to implement the project.[15] (PPL Electric St. 2, pp. 7-8)

The planning process begins with the development of a computer model of the future system. The future system model is developed using the existing system plus any planned modifications to the system scheduled to be in service prior to the study year. Load levels used in the model are based on the latest forecast prepared annually by PJM. (PPL Electric Ex. 1, Att. 2, p. 7) When the model has been completed, comprehensive power flow simulations are performed to determine the ability of the system to comply with the reliability criteria in the RP&P. Through this process, PPL Electric identifies transmission facilities that require reinforcement to ensure adequate and appropriate levels of electric service to its customers consistent with good utility practice. (PPL Electric St. 2, p. 5)

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[15] Attachment 2 to the Siting Application contains a more detailed description of PJM's RTEP transmission planning process and PPL Electric's transmission planning process. (PPL Electric Ex. 1, Att. 2)

Currently, the only sources of supply to the Northeast Pocono region are transmission lines operated at 69 kV. Using the system planning process described above, PPL Electric determined that the transmission system serving the Northeast Pocono region consists of long, heavily–loaded transmission lines that lack a 230 kV source central to the load to be served. PPL Electric's system planning process also determined that certain violations of the system planning and reliability practices set forth in the RP&P would occur if the Northeast Pocono transmission system is not reinforced. These reliability issues and the need to reinforce the system serving the Northeast Pocono region are explained below.

**b. The Existing System in the Northeast Pocono Region**

In order to understand the reliability issues and the need to reinforce the system serving the Northeast Pocono region, it is important to first understand the existing system serving the area. The Northeast Pocono region is located in portions of Carbon, Lackawanna, Monroe, Pike and Wayne counties in Northwestern Pennsylvania. The region is loosely bounded on the west by several 230 kV lines, on the north and east by a single 230 kV line, and on the south by a double-circuit 138 kV line. (PPL Electric St. 2, p. 8)

All of the local transmission lines that presently serve customers in the Northeast Pocono region are operated at 69 kV. Thus, they are part of the non-BES. PPL Electric's current local transmission system in the Northeast Pocono region consists of long non-BES transmission lines between regional substations. There are approximately 128,000 customers (approximately 635 MW of load) in the Northeast Pocono region. Although load has grown substantially in this area, and is expected to continue, there have been no significant improvements to the local electric transmission systems serving this area since the early 1980s – approximately 30 years ago. (PPL Electric Ex. 1, p. 9)

Four non-BES transmission substations presently supply electric power to the Northeast Pocono region: the Peckville, Blooming Grove and East Palmerton 230-69 kV substations, and the Jackson 138-69 kV Substation. The Peckville, Blooming Grove, and East Palmerton 230-69 kV Substations receive power from the 230 kV bulk power network and transform that voltage down to 69 kV. The Jackson 138-69 kV Substation receives power from the 230 kV bulk power network, through the Monroe and Siegfried 230-138 kV Substations, and transforms that voltage down to 69 kV. (PPL Electric Ex. 1, pp. 10-12) The principal concern regarding the 69 kV transmission system in the region is in that the northern and western portions of the region have limited and distant sources of supply. (PPL Electric Ex. 1, pp. 9-10)

A map of the Northeast Pocono region showing the present transmission system is provided in Appendix B. (PPL Electric Ex. 1, Att. 2, p. 11, Figure 2-1)

**i. The Northern Portion of the Northeast Pocono Region**

Presently, the only sources of electrical power to the northern portion of the Northeast Pocono region are the Peckville-Jackson and Blooming Grove-Jackson 138/69 kV[16] Transmission Lines. The Peckville-Jackson 138/69 kV circuit is 47 miles long and has one normally open point[17] located at the North Coolbaugh 69-12 kV Substation. The Blooming Grove-Jackson 138/69 kV circuit is 67 miles and has one normally open point located at the Gouldsboro 69-12 kV Substation. Both the Peckville-Jackson and Blooming Grove-Jackson 138/69 kV circuits are heavily loaded and serve a significant number of customers. (PPL Electric St. 2, p. 9)

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[16] The term "138/69 kV" indicates that the transmission line currently operates at 69 kV but was initially built to accommodate future 138 kV operation.

[17] Transmission line facilities are "sectionalized" with electrical switches. When the switch is "closed," the electric current flows across the switch and the transmission line operates as one single transmission line. When the switch is "open," the electric current is disrupted and the transmission line is sectionalized at the open point. (PPL Electric Ex. 1, Att. 2, p. 46)

From the Jackson 138-69 kV Substation to the Gouldsboro 69-12 kV Substation, the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits are built on double-circuit 138/69 kV structures -- that is, both the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits are installed on common structures as a double-circuit transmission line. From the Gouldsboro 69-12 kV Substation to the Peckville 230-69 kV Substation, the Peckville-Jackson 138/69 kV circuit proceeds on single-circuit 138/69 kV structures. From the Gouldsboro 69-12 kV Substation to the Blooming Grove 230-69 kV Substation, the Blooming Grove-Jackson 138/69 kV circuit proceeds on separate single-circuit 138/69 kV structures.[18] (PPL Electric St. 2, pp. 9-10)

**ii. The Western Portion of the Northeast Pocono Region**

Presently, the only source of electrical power to the western portion of the Northeast Pocono region is the East Palmerton-Wagners #1 & #2 138/69 kV Transmission Line. The East Palmerton-Wagners #1 69 kV circuit, including related taps, is 37 miles. The East Palmerton-Wagners #2 69 kV circuit, including related taps, is 33 miles. From the East Palmerton 230-69 kV Substation to the Lake Harmony 69-12 kV Substation, the East Palmerton-Wagners #1 & #2 138/69 kV circuits are built on double-circuit 138/69 kV structures -- that is, both the #1 and #2 138/69 kV circuits are installed on common structures as a double-circuit line. Both the East Palmerton-Wagners #1 & #2 138/69 kV circuits serve a significant number of customers. (PPL Electric St. 2, p. 10)

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

[18]Figure 2-5 in Attachment 2 to PPL Electric Ex. 1 provides a one-line diagram of the present transmission facilities in the northern portion of the Northeast Pocono region.

138/69 kV structures and then terminates at the Lake Naomi 138/69 kV Tap pole. (PPL Electric St. 2, p. 10)

### c. The System Consists of Long, Heavily-Loaded Transmission Lines

As explained above, the only sources of electrical supply to the Northeast Pocono region are provided by transmission lines operated at 69 kV. Currently, there are no 230 kV sources located within the Northeast Pocono region. The distance between 230 kV sources in the Northeast Pocono study area is 45 miles between Jenkins and Bushkill Substations, and 55 miles between Peckville and Siegfried Substations. Because these 230 kV sources are not located within the areas of higher population density, the power supply is too distant to reliably and effectively serve that customer load. (PPL Electric St. 2-R, pp. 2-3, 39; PPL Electric Ex. LRK-2)

The existing 138/69 kV lines serving the Northeast Pocono region are very long in length. The length, number of customers served, and the peak load on each of the circuits that presently supply the Northeast Pocono region are provided below:

| Circuit Name (Source) | Number of Customers | Total Length of Circuit (miles) | Normal Peak Loading of Circuit (MW) |
|---|---|---|---|
| Blooming Grove – Jackson (Jackson) | 16306 | 37 | 112 |
| Blooming Grove – Jackson (Blooming Grove) | 8895 | 30 | 35 |
| Blooming Grove – Jackson Total | 25201 | 67 | 147 |
| Peckville – Jackson (Jackson) | 5914 | 23 | 66 |
| Peckville – Jackson (Peckville) | 11746 | 24 | 49 |
| Peckville – Jackson Total | 17660 | 48 | 115 |
| East Palmerton – Wagners #1 (East Palmerton) | 15017 | 37 | 57 |
| East Palmerton – Wagners #2 (East Palmerton) | 7974 | 32 | 42 |

(PPL Electric Ex. LRK-6)

Several witnesses at the public input hearing testified that the Northeast-Pocono Reliability Project is not needed because the population of the Northeast Pocono regions has declined (Tr. 74-77, 197) It has been 30 years since the last major regional transmission reinforcement was built for the Northeast Pocono region. There has been substantial load growth in this area since that time. From 2003 through 2012, the peak load in the area has increased from 565 MW to 635 MW. During the same period, the number of customers has increased from approximately 119,000 to 128,000. From 2000 through 2010, population of the area increased from 824,000 to 880,000. (PPL Electric Ex. 1, Att. 2, pp. 14-15; PPL Electric St. 2-R, pp. 7-8) The existing load growth since the last major reinforcement was constructed 30 years ago has used up available capacity in the lines to the point that near-term and future loading levels under normal operating conditions or after certain contingencies will violate PPL Electric's RP&P reliability criteria. (PPL Electric St. 2, p. 11; PPL Electric St. 2-R, p. 8)

In addition, PPL Electric expects the load growth on these long, already heavily-loaded lines to continue. PJM projects that winter peaks in the PPL Electric Zone will increase by approximately 1.1 percent annually. (PPL Electric St. 2-R, p. 10) PPL Electric also explained that numerous residential, commercial, and industrial development projects are planned for the area, which will further increase customer load:

> I note also that there are multiple development projects planned in the future in Monroe County including: Arcadia New Ventures, a Blakeslee business park, a new campus for Northampton Community College, and expansion at the Pocono Medical Center. Further, there is a new multiphase 150 acre resort, Kalahari Resorts, planned near Pocono Manor. In addition, Camelback Mountain Resort is creating an indoor water park, and Blue Mountain will be building a new $20 million water park, known as Summit Splash, with a 100 room hotel. These are just some of the examples of the future economic growth expected in the Northeast Pocono Study Area. Clearly, these project and other similar future projects will increase the load in the Northeast Pocono Study Area.

(PPL Electric St. 2-R, pp. 8-9)

It also is important to note that, although future load growth in the area is important, reinforcement of the transmission system in the Northeast Pocono region is required regardless of future growth. As stated by OCA's expert witness, the only non-company witness who addressed the need for the Project, "even at their historical [loading] levels, they reflect a need for transmission system reinforcement in the region." (OCA St. 1, p. 10)

Because the transmission lines serving the area are so heavily loaded, there is only a limited ability to transfer load in the event of an outage of one line to other lines. Further, because the lines now serving the area are long, they serve many customers. (PPL Electric St. 4-R, p. 8) When service on a long, heavily-loaded transmission line is interrupted, the ability to restore service from an alternate source is limited due to unacceptable low voltages that would occur at distribution substations when the load on an interrupted line is transferred to an adjacent line. Consequently, restoration of service through line transfers between regional sources is difficult under emergency situations. The transmission system in the Northeast Pocono region experiences these load transfer limitations during peak winter loading periods. (PPL Electric St. 2, p. 12)

**d. Violations of PPL Electric's RP&P**

In addition to the long, heavily loaded 69 kV transmission lines, and the lack of a 230 kV source within the Northeast Pocono region, PPL Electric also determined that violations of the system planning and reliability practices set forth in the RP&P would occur if the transmission system serving the Northeast Pocono region is not reinforced. Using the planning process described above, PPL Electric initially identified the following seven violations of the RP&P:

> (1) A double-circuit outage of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line would violate the RP&P guideline for maximum allowable load loss;

(2) A double-circuit outage of the East Palmerton-Wagners #1 & #2 138/69 kV Transmission Line would violate the RP&P guideline for maximum allowable load loss;

(3) A single-circuit outage of the Blooming Grove-Jackson 138/69 kV circuit would violate the RP&P guideline for maximum allowable load loss;

(4) A single-circuit outage of the Peckville-Jackson 138/69 kV circuit would violate the RP&P guideline for maximum allowable load loss;

(5) Single-circuit outage of the East Palmerton-Wagners #2 138/69 kV circuit would violate the RP&P guideline for maximum allowable load loss;

(6) The normal line loading on the Blooming Grove-Jackson 138/69 kV circuit will exceed the normal line loading guideline set forth in the RP&P by the winter of 2015-2016; and

(7) The normal line loading on the Peckville-Jackson 138/69 kV circuit will violate the loading guideline in the RP&P by the winter of 2014-2015.

(PPL Electric St. 2, pp. 13-15, 21-22)

As part of the discovery process, PPL Electric undertook an independent evaluation of each of these violations to confirm the need to reinforce the transmission system serving the Northeast Pocono region. Through these efforts, PPL Electric confirmed that 4 of the 7 original violations have not changed as to need or timing, 2 have been confirmed but the required in-service dates have been delayed, and 1 has been resolved through alternate switching methods. (PPL Electric St. 2-R, p. 4)

These violations will occur because the existing transmission system in the Northeast Pocono region does not have sufficient capacity to restore load interrupted under contingency situations within acceptable limits as specified within the RP&P. (PPL Electric St. 2, pp. 12-13; PPL Electric St. 2-R, p. 8) Given the load growth in the area, PPL Electric anticipates that the severity of each violation will continue to increase each year if the transmission system serving the Northeast Pocono region is not reinforced. (PPL Electric St. 2, pp. 11-12)

The only other party to present expert testimony on the need for the Project was the OCA. Importantly, the OCA agreed that the 69 kV transmission system in the Northeast Pocono region required reinforcement:

> My conclusion is that reinforcement of the transmission system in Northeast Pocono Pennsylvania is required, although much of the justification initially presented by the Company has been eliminated or deferred. The remaining transmission planning violations and heavy facilities loading still indicate a need for reinforcement.

(OCA St. 1, p. 3) The violations of the RP&P are separately discussed below.

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

As explained above, the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits are built on double-circuit 138/69 kV structures from the Jackson 138-69 kV Substation to the Gouldsboro 69-12 kV Substation. PPL Electric's initial analysis determined that, under peak winter conditions, by the winter of 2014-2015, a double-circuit outage of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line occurring outside the Jackson 138-69 kV Substation would interrupt approximately 124 MW of customer load for an extended period of time until repairs could be made. This load drop would violate PPL Electric's RP&P for maximum allowable load loss for a double-circuit line outage, which allows only 120 MW or less to be interrupted until completion of manual switching, which usually can be completed within two hours. (PPL Electric St. 2, p. 15)

The ability to restore this interrupted load using the Blooming Grove and Peckville 230-69 kV Substations and Jackson 138-69 kV Substation is limited due to the unacceptable low voltage levels (below 62 kV) that would occur at distribution substations located at the ends of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines. Only 56 MW of the 124 MW of interrupted load could be restored using the Blooming Grove, Peckville,

or Jackson Substations while maintaining acceptable voltage levels at the local 69 kV distribution substation buses. Therefore, approximately 68 MW of load would remain interrupted for an extended period of time until repairs could be completed. This load drop would violate PPL Electric's RP&P guideline for maximum allowable load loss for a double-circuit line outage, which only allows 45 MW or less to be interrupted until overhead line repairs can be completed. This amount of load interrupted will increase each year as customer load grows. (PPL Electric St. 2, p. 16; PPL Electric Ex. 1, Att. 2, pp. 17-18)

PPL Electric's updated analysis confirmed that a double-circuit outage of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line will result in a violation of the RP&P by winter 2014-2015. (PPL Electric St. 2-R, p. 5)

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

As explained above, from the East Palmerton 230-69 kV Substation to the Lake Harmony 69-12 kV Substation, the East Palmerton-Wagners #1 & #2 138/69 kV circuits share common double-circuit 138/69 kV structures. PPL Electric's initial analysis determined that, by the winter of 2024-2025, under peak winter conditions, a double-circuit outage of the East Palmerton-Wagners #1 & #2 138/kV Transmission Line occurring outside the East Palmerton 69-12 kV Substation would initially interrupt approximately 75 MW of customer load. (PPL Electric St. 2, p. 18)

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

69 kV voltage levels along the East Palmerton-Wagners #1 & #2 138/kV Transmission Line to acceptable limits. (PPL Electric St. 2, p. 18)

Given the limitations on restoring load from the Jackson 138/69 kV Substation, only 29 MW of the 75 MW of interrupted load could be restored while maintaining acceptable voltage levels at the local 69 kV substation buses. As a result, approximately 46 MW would remain interrupted for an extended period of time. This load drop would violate PPL Electric's RP&P guideline for maximum allowable load loss for a double-circuit line outage, which only allows 45 MW or less to be interrupted until overhead line repairs can be completed. The amount of load lost would increase each year as customer load grows. (PPL Electric St. 2, pp. 18-19; PPL Electric Ex. 1, Att. 2, pp. 19-20)

PPL Electric's updated analysis confirmed that a double-circuit outage of the East Palmerton-Wagners #1 & #2 138/kV Transmission Line will result in a violation of the RP&P by winter 2024-2025. (PPL Electric St. 2-R, p. 5)

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

PPL Electric's initial analysis determined that, by the winter of 2021-2022, under peak winter conditions, a single-circuit outage of the Blooming Grove-Jackson 138/69 kV circuit occurring outside the Jackson 138-69 kV Substation would interrupt 64 MW of customer load. (PPL Electric St. 2, p. 17; PPL Electric St. 2-R, p. 5) Given the limitations on transferring load between the Blooming Grove and Jackson Substations, as explained above, only approximately 30 MW of the 64 MW of interrupted load could be restored while maintaining acceptable voltage levels at the local 69 kV distribution substation buses. Therefore, approximately 34 MW of load would remain interrupted for an extended period of time. This would violate PPL Electric's RP&P guideline for maximum allowable load loss for a single-circuit line outage, which only

allows 30 MW or less to be interrupted until overhead line repairs can be completed. (PPL Electric St. pp 17-18; PPL Electric Ex. 1, Att. 2, p. 19)

PPL Electric's updated analysis determined that the violation due to a single-circuit outage of the Blooming Grove-Jackson 138/69 kV circuit, originally expected to occur by winter 2021-2022, will not occur until after winter 2029-2030 because of alternative switching methods. (PPL Electric St. 2-R, p. 5)

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

PPL Electric's initial analysis determined that, by the winter of 2014-2015, under peak winter conditions, a single-circuit outage of the Peckville-Jackson 138/69 kV circuit outside the Jackson 138/69 kV Substation would interrupt 64 MW of customer load. Given the limitations on transferring load between the Peckville 230-69 kV Substation and the Jackson 138-69 kV Substation, as explained above, only approximately 8 MW of the 64 MW of interrupted load could be restored while maintaining acceptable voltage levels at the local 69 kV distribution substation buses. Therefore, about 56 MW of load would remain interrupted for an extended period of time until repairs could be completed. This load drop would violate PPL Electric's RP&P guideline for maximum allowable load loss for a single-circuit line outage, which only allows 30 MW. (PPL Electric St. 2, pp. 16-17; PPL Electric Ex. 1, Att. 2, pp. 18-19)

PPL Electric's updated analysis determined the violation due to a single-circuit outage of the Peckville-Jackson 138/69 kV circuit, originally expected to occur winter 2014-2015, will not occur until winter of 2024-2025 because of alternative switching methods. (PPL Electric St. 2-R, pp. 4-5)

### v. Single-Circuit Outage of the East Palmerton-Wagners #2 138/69 kV Circuit

PPL Electric's initial analysis determined that, under peak winter conditions, PPL Electric projects that, by the winter of 2014-2015, an outage of the East Palmerton-Wagners #2 138/69 kV circuit on the double circuit East Palmerton-Wagners #1 & #2 138/69 kV Transmission Line occurring outside the East Palmerton 230-69 kV Substation would interrupt 31 MW of customer load. Transferring load between East Palmerton and Jackson Substations is limited due to the resulting unacceptable low voltage that would occur along the abnormally sectionalized[19] East Palmerton-Wagners #2 138/69 kV Transmission circuit. If load restoration was attempted from the Jackson 138-69 kV Substation, customer load served by distribution substations located at Weissport, Lehighton Boro (customer), and Little Gap would remain interrupted in order to maintain acceptable voltage levels on the transmission circuit. (PPL Electric St. 2, p. 19; PPL Electric Ex. 1, Att. 2, p. 20)

Given the limitations on restoring load from the Jackson 138-69 kV Substation, approximately 31 MW of load would remain interrupted for an extended period of time to maintain acceptable voltage levels at the local 69 kV distribution substation buses. This amount of interrupted load would violate the RP&P guideline for maximum allowable load loss for a single transmission circuit outage, which only allows 30 MW or less to be interrupted until overhead line repairs can be completed. (PPL Electric St. 2, pp. 19-20; PPL Electric Ex. 1, Att. 2, p. 20)

PPL Electric's updated analysis determined that the violation due to a single-circuit outage on the East Palmerton-Wagners #2 circuit could be resolved through alternative switching methods. (PPL Electric St. 2-R, p. 5)

[19] "Sectionalizing" involves electric switches on transmission line facilities use to create normally open and normally closed points. *See* Footnote 17, *supra.*

### vi. Normal Line Loading on the Blooming Grove-Jackson Circuit

Under peak winter conditions, PPL Electric projects that the 2015-2016 peak winter load on the Blooming Grove-Jackson 138/69 kV circuit will be 61 MW. The projected normal line loadings on the Blooming Grove-Jackson 138/69 kV circuit violate PPL Electric's RP&P, which recommends that the load on a single-circuit 138/69 kV line not exceed 60 MW. (PPL Electric St. 2, p. 20) If a circuit is loaded above 60 MW, PPL Electric is restricted in its ability to restore load from the interruption of a neighboring circuit while keeping within the emergency rating of the conductor and within acceptable voltage limits. Further, when a circuit is long and heavily loaded, such as the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV circuits, the low voltage condition is exacerbated when trying to restore interrupted load from a neighboring circuit. These violations of the RP&P reliability criteria will worsen each year as customer load grows. (PPL Electric St. 2, pp. 13-14, 20; PPL Ex. 1, Att. 2, p. 21)

PPL Electric's updated analysis confirmed that the projected normal line loadings on the Blooming Grove-Jackson 138/69 kV circuit will result in a violation by winter 2015-2016. (PPL Electric St. 2-R, p. 5)

### vii. Normal Line Loadings on the Peckville-Jackson 138/69 kV Circuit

PPL Electric projects that the 2014-2015 peak winter load on the Peckville-Jackson 138/69 kV Transmission Line will be 64 MW. The projected normal line loadings on the Peckville-Jackson 138/69 kV circuit violate PPL Electric's RP&P, which recommends that the load on a single-circuit 138/69 kV line not exceed 60 MW. (PPL Electric St. 2, p. 20) If a circuit is loaded above 60 MW, PPL Electric is restricted in its ability to restore load from the interruption of a neighboring circuit while keeping within the emergency rating of the conductor and within acceptable voltage limits. Further, when a circuit is long and heavily loaded, such as

the Peckville-Jackson 138/69 kV circuit, the low voltage condition is exacerbated when trying to restore interrupted load from a neighboring circuit. These violations of the RP&P reliability criteria will worsen each year as customer load grows. (PPL Electric St. 2, pp. 13-14, 20; PPL Ex. 1, Att. 2, p. 21)

PPL Electric's updated analysis confirmed that the projected normal line loadings on the Peckville-Jackson 138/69 kV circuit will result in a violation by the winter of 2014-2015. (PPL Electric St. 2-R, p. 5)

### viii. Other RP&P Concerns and Issues

As explained above, the Jackson 138-69 kV Substation receives 230 kV supply from the 230 kV bulk power network through the Monroe and Siegfried 230-138 kV Substations, which transform the voltage from 230 kV down to 138 kV. The Jackson 138-69 kV Substation, in turn, transforms the voltage from 138 kV down to 69 kV. The Jackson 138-69 kV Substation has two 138/69 kV transformers. (PPL Electric St. 2, p. 21)

PPL Electric's RP&P provides that, for the forced outage of a power transformer, the loading of the remaining transformer(s) should be restricted to the two hour emergency rating[20] and, for succeeding days, the load shall be further reduced to correspond with the applicable one-month and normal ratings. It takes approximately one month to install a replacement transformer. PPL Electric's RP&P also provides that a new non-BES substation should be added when the minimum normal load at a substation exceeds the one-month emergency rating of the remaining transformer when one transformer is out of service. (PPL Electric St. p. 21)

[20] The two hour emergency rating is used for the initial loss of one transformer. The remaining transformers must be below the two hour emergency rating after the loss of the first transformer.

Each of the 138/69 kV transformers at the Jackson 138-69 kV Substation has a one month winter emergency rating of 240 MVA.[21] PPL Electric projects that, by the winter of 2026-2027, the loss of one of the 138/69 kV transformers at the Jackson 138-69 kV Substation for an extended period of time would cause the remaining transformer to supply a total load of 243 MVA, which would exceed its one month winter emergency rating of 240 MVA. This load would be a violation of PPL Electric's RP&P. The load would increase each year as customer load grows. (PPL Electric St. p. 21; PPL Electric Ex. 1, Att. 2, pp. 21-22)

**e. The Need for Reinforcement is Uncontested**

As explained above, PPL Electric's transmission system planning studies reveal that the system serving the Northeast Pocono region needs to be reinforced to address the long, heavily-loaded transmission lines and the lack of 230 kV sources within the area. PPL Electric's transmission system planning process also determined that the system serving the Northeast Pocono region needs to be reinforced to resolve certain violations of the system planning and reliability practices set forth in the RP&P. The long 69 kV transmission lines, heavy line loadings, the lack of a 230 kV source within the study area, and the violations of the RP&P demonstrate that the 138/69 kV lines serving the Northeast Pocono region need to be reinforced.

Significantly, no party has presented any expert testimony opposing the need for reinforcement of the transmission system in the Northeast Pocono region. Indeed, the OCA's expert witness on need testified that such reinforcement is necessary:

> My conclusion is that reinforcement of the transmission system in Northeast Pocono Pennsylvania is required, although much of the justification initially presented by the Company has been eliminated or deferred. The remaining transmission planning violations and heavy facilities loading still indicate a need for reinforcement.

[21] MVA stands for megavolt ampere.

(OCA St. 1, p. 3) PPL Electric has met its burden to demonstrate that the transmission system in the Northeast Pocono region needs to be reinforced. *See, e.g., Application of Pennsylvania Power & Light Co.*, Docket Nos. A-110500F0196, et al.; 1994 Pa. PUC LEXIS 65 (Oct. 21 1994) (holding that the company met its burden to prove that there was an immediate need for the reinforcement of the power supply where the need for the project was uncontested and no party presented any evidence challenging the need for the project). PPL Electric proposes the Northeast-Pocono Reliability Project as a long-term plan to reinforce the Northeast Pocono region.

### 2. The Proposed Electrical Solution for the Northeast Pocono Region

#### a. Selection of the Best Overall Electrical Solution

As explained above, PPL Electric uses the RP&P criteria to identify electric power system weaknesses that require reinforcement. The RP&P criteria do not identify or address the optimal solution to address these weaknesses. Identifying the optimal solution to address the violations is a separate process that takes many other considerations into account. (PPL Electric St. 2-R, p. 21)

Once PPL Electric's planning process has identified facilities that require reinforcement, the next step of the planning process is to analyze potential electrical solutions and select the solution that best resolves the underlying reliability issues. PPL Electric planning engineers evaluate multiple electrical solutions to identify the solution that best resolves the underlying reliability issues. After alternative solutions are identified, computer simulations of the system with the identified alternative solutions are completed to evaluate and selected the best overall electrical solution. (PPL Electric Ex. 1, Att. 2, p. 7)

PPL Electric's system planning engineers compare each potential electrical solution and select the electrical solution that best meets customers' electric needs in a reliable manner over

the planning horizon. As a preliminary matter, an alternative must solve the underlying reliability problem. If an alternative electrical solution does not solve the underlying problem, it is rejected and no further consideration is given to the rejected alternative.

If there are two or more feasible electrical solutions, PPL Electric's system planning engineers evaluate the ability of each solution to solve the original reliability problem and the ability and flexibility to meet future system needs. The system planning engineers also evaluate the operational and constructability concerns of each solution, and the lead times to implement each solution. Finally, the system planning engineers will evaluate the cost of each solution. However, it is important to note that these factors are only used to compare two or more different solutions that are both viable and able to resolve the underlying problems or need for the project. (PPL Electric St. 2, pp. 5-6; PPL Electric St. 2-R, pp. 22; PPL Electric St. 2-RJ, p. 4)

Here, PPL Electric initially considered and evaluated 69 kV, 138 kV, and 230 kV alternative electrical solutions, including the proposed Northeast-Pocono Reliability Project, to reinforce the Northeast Pocono region. (PPL Electric St. 2-R, p. 16; OCA St. 1, pp. 12-19) Using the analysis described above, PPL Electric concluded that the proposed Northeast-Pocono Reliability Project is the best overall solution to provide a long-term plan to reinforce the Northeast Pocono region.[22]

PPL Electric submitted the proposed Northeast-Pocono Reliability Project to PJM for review and inclusion in the RTEP. The Project was presented before stakeholders at the Mid-Atlantic Sub-Regional RTEP meetings, approved by the PJM Board, and included in the 2011 RTEP Report as a series of baseline projects. (PPL Electric St. 2, p. 8) As explained above,

[22] The reasons that PPL Electric rejected the 69 kV, 138 kV, and 230 kV alternative electrical solutions are described below. (*See* Section VI.B.4, *infra*)

once a project is included in a PJM-approved RETP, the transmission owners are then obligated to go forward to implement the project. (PPL Electric St. 2, pp. 7-8)

**b. Description of the Proposed Project**

PPL Electric proposes to construct the Northeast-Pocono Reliability Project to resolve the RP&P violations explained above and to reinforce the system serving the Northeast Pocono region by bringing the much needed 230 kV supply into the area, which will reduce the length of and number of customers served by the existing 138/69 kV lines and improve the ability to transfer load from one source to another in the event of a facility outage. This new 230 kV network will be created by strategically locating two 230-69 kV substations, the new West Pocono and North Pocono 230-69 kV Substations, central to the loads they will serve.[23] (PPL Electric St. 2, pp. 22-23, 24-15) Further, the new West and North Pocono 230-69 kV Substation will be located in close proximity to the existing local 138/69 kV systems, which will minimize the length of transmission lines needed to connect the two new Substations to the electric grid, as well as minimize the costs and environmental impacts of the lines needed to connect to the 138/69 kV systems. (PPL Electric St. 2, p. 23)

To connect the new substations to the existing 230 kV transmission system, PPL Electric proposes to construct a new 58-mile 230 kV transmission line. PPL Electric also proposes to construct five new 138/69 kV transmission lines, collectively approximately 11.3 miles, to connect the new North Pocono and West Pocono 230-69 kV Substations to the existing local 138/69 kV transmission system. (PPL Electric St. 2, p. 23) An area map of the existing and proposed transmission lines is provided in Appendix C. (PPL Electric Ex. 1, Att. 2, p. 25, Figure

[23] Currently, the distance between the 230 kV sources in the Northeast Pocono study area is 45 miles between the existing Jenkins and Bushkill Substation, and 55 miles between the Peckville and Siegfried Substations. (PPL Electric St. 2-R, p. 39; PPL Electric Ex. LRK-2)

2-3) The design and engineering for the proposed 230 kV and 138/69 kV transmission lines are described below.

The most current cost estimate to site, design, and construct the Northeast-Pocono Reliability Project is approximately $247 million.[24] (PPL Electric St. 5-RJ, p. 4) This cost includes the construction of the proposed new 230 kV and 138/69 kV transmission lines, the West and North Pocono Substations, and the acquisition costs for the needed rights-of-way. (PPL Electric St. 2, p. 24) The Northeast-Pocono Reliability Project has a scheduled construction start date of spring 2014 to meet staged in-service dates from November 2015 to November 2017. (PPL Electric St. 1, p. 10; PPL Electric St. 4-R-2, p. 5)

**i. The Proposed 230 kV Transmission Line**

The proposed West and North Pocono Substation will be connected to the existing 230 kV system by a 58-mile 230 kV transmission line that is divided into three segments: the Jenkins-West Pocono Segment; the West Pocono-North Pocono Segment; and the North-Pocono Paupack Segment. (PPL Electric St. 2, p. 23; PPL Electric St. 5, p. 5) The Jenkins-West Pocono Segment will extend approximately 15 miles southeast from the existing Jenkins 230-69 kV Substation to the proposed new West Pocono 230-69 kV Substation. The West Pocono-North Pocono Segment will extend approximately 21 miles northeast from the new West Pocono 230-69 kV Substation to the new North Pocono 230-69 kV Substation. Finally, the North-Pocono Paupack Segment will extend approximately 22 miles northeast from the North-Pocono 230-69

[24] The cost estimate for the Northeast-Pocono Reliability Project is not final. The final cost estimate for the proposed Northeast-Pocono Reliability Project cannot be known until the line routes, the constructability of the project, design of the project, locations of wetlands and bodies of water, terrain, geology of the soils, land acquisition issues, sequence of construction, need to coordinate construction with construction of other projects, and many other factors that affect cost are all identified and analyzed. Identifying and addressing these factors requires in-depth analyses and field investigations, which analyses and investigations are developed as a project progresses. (PPL Electric St. 5-RJ, pp. 3-4)

kV Substation to the Paupack 230-69 kV Substation. (PPL Electric St. 5, pp. 6-8; PPL Electric Ex. 1, Att. 5, pp. 2-7)

The new 230 kV segments of the Northeast-Pocono Reliability Project will each be designed for 230 kV double circuit capability, but initially only one 230 kV circuit will be installed until load growth in the area makes it appropriate to add the second 230 kV circuit.[25] (PPL Electric St. 5, p. 5) The new 230 kV segments of the Northeast-Pocono Reliability Project will consist of approximately 199 self-weathering tubular steel tangent mono-pole structures, and approximately 111 angle structures that will consist of one or two pole steel structures depending on the line angle.[26] The structures will have an average height of 150 feet, and the spans between structures will be approximately 1,000 feet. (PPL Electric St. 5, pp. 6-8; PPL Electric Ex. 1, Att. 5, pp. 2-7)

**ii. The Proposed 138/69 kV Connecting Lines**

The new West and North Pocono 230-69 kV Substations will be tied into the existing 69 kV system to allow for a system configuration with shorter 138/69 transmission circuit lengths and the improved ability to transfer load from one source to another in the event of a facility outage. (PPL Electric St. 2, p. 4) To do so, PPL Electric proposes to construct two new double-circuit 138-69 kV transmission lines, collectively approximately 6.0 miles, to connect the West Pocono 230-69 kV Substation to the existing 69 kV system. PPL Electric also proposes to construct three new 138-69 kV transmission lines, collectively approximately 5.3 miles, to

[25] The 230 kV double-circuit design will utilize six power conductors and two overhead ground wires. The power conductors will be 1590 kcmil 45/7 ACSR conductors. The overhead ground wires will be 48 count single mode fiber optical ground wires which will provide lightning protection and communication between circuit breakers that remove the line from service should a fault in the line be detected.

[26] Although these structures are being designed to be self-supporting on concrete caisson foundations, some of the angle structures may require the use of guy wires.

connect the North Pocono 230-69 kV Substation to the existing 69 kV system. (PPL Electric St. 5, pp. 5-6)

The new double-circuit 138/69 kV connecting lines from the West Pocono 230-69 kV Substation will require the installation of approximately 48 structures with an average height of 105 feet. The spans between structures will be approximately 650 feet. The structures for the new 138/69 kV connecting lines will consist of approximately 34 self-weathering tubular steel tangent mono-pole structures equipped with arms, approximately 14 angle structures that will consist of one or two pole steel structures depending on the line angle.[27] (PPL Electric St. 5, p. 9; PPL Electric Ex. 1, Att. 5, pp. 8-10)

The three new 138/69 kV transmission lines to connect the new North Pocono 230-69 kV Substation to the existing 138/69 kV system will consist of two new single-circuit 138/69 kV lines and a new double-circuit 138/69 kV line. These three new 138/69 kV connecting lines initially will share a common 200 foot wide right-of-way for approximately 1.1 miles where the two single-circuit connecting lines will split and tie into the existing single-circuit Peckville-Jackson 138/69 kV Transmission Line. Thereafter the double circuit connecting line will continue on a new 100 foot wide right-of-way for approximately 2 miles where it will tie into the existing Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines near the Gouldsboro Substation. (PPL Electric St. 5, pp. 9-13; PPL Electric Ex. 1, Att. 5, pp. 10-13)

The new 138/69 kV connecting lines will be designed and constructed for future 138 kV double circuit operation, but initially will be operated at 69 kV until load growth in the area makes it appropriate to increase the operating voltage.[28] (PPL Electric St. 5, p. 6) The new

[27] Although these structures are being designed to be self-supporting on concrete caisson foundations, some of the angle structures may require the use of guy wires.

[28] The 138/69 kV design will utilize six power conductors and two overhead ground wires. The power conductors will be 556 kcmil 24/7 ACSR conductors. The overhead ground wires will be 48 count single mode fiber optical

138/69 kV connecting lines will consist of approximately 28 self-weathering tubular steel tangent mono-pole structures, and approximately 10 angle/dead end structures that will consist of one or two pole steel structures depending on the line angle. These structures will either be direct embedded or installed on concrete caisson foundations, and maybe guyed as necessary. The structures will have an average height of 110 feet, and the spans between structures will be approximately 650 feet. (PPL Electric St. 5, pp. 9-13; PPL Electric Ex. 1, Att. 5, pp. 10-13)

### 3. Benefits of the Northeast-Pocono Reliability Project

#### a. Overview

The Northeast-Pocono Reliability Project will provide a major improvement to the transmission system serving the Northeast Pocono region. As explained above, because there are no 230 kV sources located within the Northeast Pocono region, the power supply is too distant to reliably and effectively serve that customer load. Further, electricity is delivered into the Northeast Pocono region by means of long and heavily loaded transmission lines operated at 69 kV. The Northeast-Pocono Reliability Project will fundamentally alter the manner in which the Northeast Pocono region is served.

A new, major 230 kV transmission line will bring electricity to the heart of the area, central to the load it serves. The new 230 kV Transmission Line will supply two new 230-69 kV substations. The construction of the West Pocono and North Pocono Substations reduces the east-west and north-south distances between transmission substations, thereby reducing the length of 69 kV lines that serve the customers. These two new transmission substations bring the sources of bulk power closer to the customer load. As a result, electric service in the area will no longer depend exclusively on 230 kV transmission sources that are outside of and do not enter

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ground wire which will provide lightning protection and communication between circuit breakers that remove the line from service should a fault in the line be detected. (PPL Electric St. 5, p. 6)

the areas of population density, nor will electric service in the area depend on long and heavily-loaded 69 kV transmission lines. (PPL Electric St. 2-R, pp. 2-3)

In addition to resolving the issues related to the long, heavily-loaded 69 kV transmission lines and the lack of a 230 kV source within the Northeast Pocono region, the Northeast-Pocono Reliability Project also will resolve the projected violations of the reliability practices in PPL Electric's RP&P. It will do so by resolving the underlying weakness of the transmission system presently serving the Northeast Pocono region. It will create a new source of 230 kV supply that will deliver electricity to two new substations in the central part of the Northeast Pocono region, where load growth has occurred and is expected to continue. The new sources of supply will enable PPL Electric to shorten the 69 kV lines in the region, and reduce the number of customers and load served from each line. These benefits are summarized below.

**b. Reduction in the Number of Customers and Load Served by the Existing System**

The two new Substations and associated new transmission lines will reduce the distances between the supply of power and the homes and businesses they supply. This proposed arrangement also will provide an alternate source of power to the Northeast Pocono region in the event that the normal sources are interrupted, which will improve power restoration times and provide operating flexibility and improved reliability for customers in the region. The Northeast-Pocono Reliability Project will reduce the number of customers affected by a single facility outage and shorten the duration of the outage. (PPL Electric St. 2, pp. 24-25)

The Northeast-Pocono Reliability Project will bring a strong 230 kV source into the study area. Currently the distance between 230 kV sources in the Northeast Pocono study area is 45 miles between Jenkins and Bushkill and 55 miles between Peckville and Siegfried Substations. With the implementation of the proposed Northeast-Pocono Reliability Project, including the

new West Pocono and North Pocono 230-69 kV Substations and 230 kV transmission lines, the distances between the transmission substations is greatly reduced to less than 20 miles. (PPL Electric St. 2-R, p. 39; PPL Electric Exs. LRK-2 and LRK-3)

The new regional West Pocono 230-69 kV Substation will be constructed and located between the existing East Palmerton 230-69 kV Substation and the existing Jackson 138-69 kV Substation. The proposed location for the new West Pocono 230-69 kV Substation is central to the load it will serve. The West Pocono 230-69 kV Substation will tie into the East Palmerton-Wagners #1 & #2 and Jackson-Wagners #1 & #2 138/69 kV Transmission Lines, which will (1) reduce the load on these lines by providing a new 230 kV source, and (2) reduce the length of each 138/69 kV line through re-sectionalizing,[29] that is, changing the normally open point. The West Pocono 230-69 kV Substation also will provide a backup source to the East Palmerton 230-69 kV and Jackson 138-69 kV Substations using interconnected 138/69 kV lines. (PPL Electric Ex. 1, Att. 2, p. 26)

The new regional North Pocono 230-69 kV Substation will be constructed and located centrally with respect to the existing Jackson 138-69 kV, Blooming Grove 230-69 kV, and Lackawanna 230-69 kV substations. The proposed location for the North Pocono 230-69 kV Substation also is central to the load it will serve. The North Pocono 230-69 kV Substation will tie into the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines, which will (1) reduce the load on these lines by providing a new 230 kV source, and (2) reduce the length of each 138/69 kV line through re-sectionalizing. The North Pocono 230-69 kV Substation also will provide a backup source to the Blooming Grove 230-69 kV, Lackawanna

[29] Sectionalizing is the use of an electrical "switch" within transmission line facilities. The switch can be open, which stops power from flowing past the open point, or the switch can be closed, which allows the power to continue to flow past the switch point. *See* Footnote 17, *supra*.

230-69 kV and Jackson 138-69 kV Substations using interconnected 138/69 kV lines. (PPL Electric Ex. 1, Att. 2, pp. 26-27)

Following the completion of the Northeast-Pocono Reliability Project, the number of customers served, the length, and the peak loading on each line will be greatly reduced. The number of customers served by each line, the length of each line and the peak loading on each line after the Northeast-Pocono Reliability Project has been completed is provide below:

| Circuit Name (Source) | Number of Customers | Total Length of Circuit (miles) | Normal Peak Loading of Circuit (MW) |
|---|---|---|---|
| North Pocono-Jackson #2 (Jackson) | 3329 | 9 | 33 |
| North Pocono-Jackson (North Pocono) | 7257 | 19 | 44 |
| Blooming Grove-North Pocono (Blooming Grove) | 5630 | 12 | 19 |
| Blooming Grove-North Pocono (North Pocono) | 3265 | 20 | 17 |
| North Pocono-Jackson #1 (Jackson) | 728 | 10 | 25 |
| North Pocono-Jackson #1 (North Pocono) | 5186 | 16 | 40 |
| Lackawanna-North Pocono (Lackawanna) | 10638 | 20 | 36 |
| Lackawanna-North Pocono North Pocono | 6834 | 16 | 29 |
| East Palmerton-West Pocono #1 (East Palmerton) | 7093 | 12 | 25 |
| East Palmerton-West Pocono #1 (West Pocono) | 4455 | 18 | 22 |
| East Palmerton-West Pocono #2 (East Palmerton) | 5075 | 14 | 32 |
| East Palmerton-West Pocono #2 (West Pocono) | 2899 | 26 | 13 |
| West Pocono-Jackson #1 (West Pocono) | 2702 | 8 | 11 |
| West Pocono-Jackson #1 (Jackson) | 2736 | 16 | 28 |
| West Pocono-Jackson #2 (West Pocono) | 4335 | 19 | 22 |
| West Pocono-Jackson #2 (Jackson) | 2931 | 9 | 7 |

(PPL Electric Ex. LRK-6)

The reductions in number of customers served, length, and load on each line will have the following practical benefits. First, each line will be much shorter, which means that each line will have less exposure to causes of outages. Second, the number of customers served by any line will be greatly reduced. Therefore, in the event of an outage, fewer customers will be affected. Third, each line will be much less heavily loaded. This, coupled with the new substations, will enable PPL Electric to restore service promptly to many customers by sectionalizing the line and transferring load to other circuits through switching moves. Fourth, PPL Electric will be able to locate the cause of an outage and make appropriate repairs more quickly. (PPL Electric St. 2-R, pp. 39-40)

Basically, the existing long and heavily loaded 69 kV transmission lines will be transformed from a backbone system providing the only sources of supply into a large geographic area with many customers and growing load to local transmission lines each serving much less load and fewer customers over shorter distances with much greater operating flexibility. These reinforcements will enable PPL Electric to restore service to many more customers much more rapidly in the event of an outage. The Northeast-Pocono Reliability Project will make major improvements to the reliability of service in the area.

**c. Resolves the Violations of the RP&P**

In addition to reinforcing the existing transmission system by bringing a new 230 kV supply closer to the growing load center and reducing the number of customers and load served by the existing lines, the Northeast-Pocono Reliability Project also will resolve the projected violations of the RP&P that were identified by PPL Electric's transmission planning process summarized above.

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

After the Project is complete, all load initially interrupted after an outage of the double-circuit Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line (future North Pocono-Jackson #1 & #2 Transmission Line) occurring near the Jackson 138-69 kV Substation, would be restored in a short period of time after switching is completed. The new North Pocono 230-69 kV Substation and connecting lines will accommodate the restoration of the load interrupted from the outage of the double circuit Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line occurring near the Jackson 138-69 kV Substation. (PPL Electric St. 2, p. 25)

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

After the Project is complete, all load initially interrupted after an outage of the double-circuit East Palmerton-Wagners #1 & #2 138/69 kV Transmission Line (future East Palmerton-West Pocono #1 & #2) occurring near the East Palmerton 230-69 kV Substation, would be restored in a short period of time after switching is completed. The new West Pocono 230-69 kV Substation and connecting lines will accommodate the restoration of the load interrupted from the outage of the double circuit East Palmerton-Wagners #1 & #2 138/69 kV Transmission Line occurring near the East Palmerton 230-69 kV Substation. (PPL Electric St. 2, pp. 26-27)

### iii. Single-Circuit Outage of the Blooming Grove-Jackson 138/69 kV Circuit

After the project is complete, all load initially interrupted after a single-circuit outage of the Blooming Grove-Jackson 138/69 kV circuit (future North Pocono-Jackson #2) occurring near the Jackson 138-69 kV Substation, would be restored in a short period of time after switching is completed. The new North Pocono 230-69 kV Substation through the new North Pocono-

Jackson #2 138/69 kV circuit will accommodate the restoration of the load interrupted from the single circuit outage of the Blooming Grove-Jackson 138/69 kV Transmission circuit occurring near the Jackson 138-69 kV Substation. (PPL Electric St. 2, p. 26)

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

After the Project is complete, all load initially interrupted after a single-circuit outage of the Peckville-Jackson 138/69 kV Transmission circuit (future North Pocono-Jackson #1) occurring near the Jackson 138-69 kV Substation, would be restored in a short period of time after switching is completed. The new North Pocono 230-69 kV Substation through the new North Pocono-Jackson #1 138/69 kV circuit will accommodate the restoration of the load interrupted from the single circuit outage of the Peckville-Jackson 138/69 kV Transmission circuit occurring near the Jackson 138-69 kV Substation. PPL Electric St. 2, pp. 25-26

**v. Single-Circuit Outage of the East Palmerton-Wagners #2 138/69 kV Circuit**

As explained above, PPL Electric's updated analysis determined that the violation due to a single-circuit outage on the East Palmerton-Wagners #2 circuit could be resolved through alternative switching methods. (See Section VI.B.1.d.v, *supra*)

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

After the Project is complete, the load of the Blooming Grove-Jackson 138/69 kV Transmission circuit will be split between two circuits, the future North Pocono-Jackson #2 and the future North Pocono-Blooming Grove 138/69 kV circuits. Those two circuits will be further sectionalized with normally open points between the Blooming Grove and North Pocono Substations and between the North Pocono and Jackson Substations. As a result, the load on the new North Pocono-Jackson #2 and the North Pocono-Blooming Grove 138/69 kV circuits will

be within the RP&P guidelines to accommodate load restoration for the interruption of a neighboring circuit. (PPL Electric St. 2, p. 28)

#### vii. Normal Line Loading on the Peckville-Jackson 138/69 kV Circuit

After the Project is complete, the load of the Peckville-Jackson 138/69 kV circuit will be split between two circuits, the future North Pocono-Jackson #1 and the future Lackawanna-North Pocono 138/69 kV circuits. Those two circuits will be further sectionalized with normally open points between the Lackawanna and North Pocono Substations and between the North Pocono and Jackson Substations. As a result, the load on the new North Pocono-Jackson #1 and the Lackawanna-North Pocono 138/69 kV circuits will be within the RP&P guidelines to accommodate load restoration for the interruption of a neighboring circuit. (PPL Electric St. 2, pp. 27-28)

#### viii. Other RP&P Concerns and Issues

Although a loss of a transformer at the Jackson 138-69 kV Substation is not projected to violate the RP&P until 2026-2027, this contingency demonstrates that the expected future load growth in the area will eventually result in a violation of the RP&P unless PPL electric reinforces the Northeast Pocono region. The Northeast-Pocono Reliability Project will also resolve this future RP&P violation making an additional project by 2026-2027 unnecessary. Although it is not necessary to resolve the violation at this time, the resolution of this future issue is an additional benefit of the Northeast-Pocono Reliability Project. (PPL Electric Ex. 1, Att. 2, pp. 21-22)

### 4. There is No Viable Alternative Electrical Solution

As explained above, PPL Electric initially considered and evaluated 69 kV, 138 kV, and 230 kV alternative electrical solutions, including the proposed Northeast-Pocono Reliability

Project, to reinforce the Northeast Pocono region. (PPL Electric St. 2-r, p. 16; OCA St. 1, pp. 12-19) PPL Electric and the OCA agreed that the 69 kV and 230 kV alternative electrical solutions would not resolve the reliability violations and/or would be more difficult and costly to implement.[30] The OCA did not reach a conclusion with respect to the 138 kV alternative electrical solution. Rather, the OCA simply concluded that the Northeast-Pocono Reliability Project and the 138 kV option both have benefits and detriments, and that both should be considered. (OCA St. 1, p. 18) For the reasons explained below, the 138 kV alternative electrical solution was rejected because it would not solve the underlying reliability problems, would create new reliability problems, and because PPL Electric expects to encounter significant technical, economic, and operational/constructability obstacles if the 138 kV alternative electrical solution were to be implemented. (PPL Electric St. 2-R, p. 20-21)

As a preliminary matter, it must be noted that PPL Electric is not proposing, nor is it seeking Commission approval of the rejected 138 kV alternative electrical solution. There is nothing in the Commission's siting regulations that require PPL Electric to present and the Commission to consider rejected electrical solutions. *Board of Supervisors of Springfield Township v. Pa. PUC*, 41 A.3d. 142, 148-50 (Pa. Cmwlth. 2012). PPL Electric has no plans to build the 138 kV alternative electrical solution for the many reasons state below and, moreover, has not presented it in its filing for the Commission's review. For this reason alone, the 138 kV alternative electrical solution should be rejected.

[30] PPL Electric explained, and OCA agreed, that the 69 kV alternative electrical solution will not resolve all of the reliability violations identified in the Northeast Pocono region. (PPL Electric St. 2-R, pp. 16-17; OCA St. 1, p. 12) Further, PPL Electric explained, and OCA agreed, that the 230 kV alternative electrical solution is less desirable than the proposed Project, is more expensive than the proposed Project, requires construction of a new 500 kV substation, and requires the coordination of line outages to facilitate the construction with the operation of the Susquehanna nuclear plant. (PPL Electric St. 2-R, p. 19; OCA St. 1, p. 13)

As part of the Transmission Planning analysis for any RP&P violation, alternative reinforcements are evaluated. Those alternatives are then ranked based on technical, economic, and operational/constructability issues. PPL Electric identified and rejected the 138 kV alternative electrical solution during the initial study. This initial study was provided to OCA in response to discovery. However, as explained below, the initial identification of the 138 kV alternative electrical solution, does not mean it is a reasonable, effective, practical or cost effective reinforcement option. (PPL Electric St. 2-R, pp. 20-21)

**a. Description of the 138 kV Alternative Electrical Solution**

PPL Electric initially conducted a 138 kV study to resolve reliability and planning criteria violations identified in both the Blooming Grove and the Northeast Pocono areas. Under this alternative study, PPL Electric considered converting all of the existing 69 kV transmission lines and distribution substations in both the Blooming Grove and the Northeast Pocono areas to 138 kV operation. (PPL Electric St. 2-R, pp. 18, 37)

Subsequently, PPL Electric filed and received Commission approval for three separate transmission line projects related to the new Paupack Transmission Substation that are designed to resolve the reliability and planning criteria violations identified in the Blooming Grove area. These projects involve: (i) the reconstruction of a large section of the existing Peckville-Varden-Honesdale 69 kV Line for initial single-circuit 69 kV, future double-circuit 138 kV operation, Docket No. A-2012-2301698; (ii) the construction of the single-circuit Peckville-Paupack 230 kV Line and the single-circuit Paupack-Blooming Grove 230 kV Line, Docket No. A-2012-2309315; and (iii) the construction of the proposed Paupack-Honesdale #1 & #2 138/69 kV Transmission Lines for initial 69 kV, future 138 kV operation, Docket No. A-2012-231550. These three separate transmission line projects and the new Paupack Substation fully address the violations discovered in the Blooming Grove area, while enabling PPL Electric to connect a 230

kV source into the existing lines located in the northern part of the Blooming Grove area and to continue operating those existing transmission lines at 69 kV. (PPL Electric St. 2-R, pp. 17-18)

Because the Paupack-related projects are currently being implemented, PPL Electric would need only a subset of the initial 138 kV conversion alternative to address the remaining violations in the Northeast Pocono region. This 138 kV alternative electrical solution would require conversion of the existing 69 kV lines and 69-12 kV substations in the western half of the Northeast Pocono project area to 138 kV operation. (PPL Electric St. 2-R, pp. 17-18)

In order for this subset of the 138 kV option to address the remaining violations in the Northeast Pocono area, all the transmission lines in the area must be operated in a "networked" configuration[31] from East Palmerton to Jackson, Jackson to North Pocono, North Pocono to Lackawanna, and North Pocono to Blooming Grove. This is in addition to the existing networked 138 kV lines from Siegfried to Jackson and from Jackson to Monroe. North Pocono and Jackson would be a substation and a switchyard, respectively, in this alternative. Because there are no 230 kV sources to those two stations, the lines that are terminated into those yards must operate in a networked configuration. (PPL Electric St. pp. 18-19)

As explained below, the 138 kV alternative electrical solution was rejected because it would not solve the underlying problems, would create new problems, and cause significant technical, economic, and operational/constructability obstacles. Significantly, no party supported the 138 kV alternative electrical solution and, moreover, no party questioned, refuted, or opposed PPL Electric's analysis of the problems inherent in the 138 kV alternative electrical solution.

[31] In a "networked" configuration, the transmission line has a voltage source and power supply available at each end of the line and power can flow from either end of the line to serve customer load. In contrast, in a "radial" configuration, the transmission line has a voltage source and power supply available at only one end of the line. (PPL Electric St. 2-R, p. 23)

### b. The 138 kV Alternative Electrical Solution Does Not Address the Underlying Reliability Problem of the Current Electrical System

While the 138 kV alternative electrical solution resolves the projected violations of the RP&P, it does not address the underlying reliability problem -- long 69 kV transmission lines, heavy line loading, and no 230 kV source of power within the Northeast Pocono region. (PPL Electric St. 2-R, p. 21) As explained above, because there are no 230 kV sources located within the Northeast Pocono region, the power supply is too distant to reliably and effectively serve that customer load. Further, electricity currently is delivered into the Northeast Pocono region by means of long and heavily loaded transmission lines operated at 69 kV.

Under the 138 kV alternative electrical solution, the existing 69 kV lines and substations would be rebuilt, in place, for 138 kV operation. Importantly, the 138 kV alternative electrical solution will not bring the 230 kV source closer to the load being served. As a result, electric service in the area will continue to depend on 230 kV transmission sources that are outside of and do not enter the areas of population density.

The 138 kV alternative electrical solution also will not reduce the length of the existing transmission lines. As explained above, shorter lines offer significant benefits because fewer customers will be affected by a transmission outage and restoration time is decreased due to the fact that there are less line miles to patrol in order to identify the fault location. Under the 138 kV alternative electrical solution, however, these reliability benefits will not be achieved because electric service in the area will continue to depend on long and heavily-loaded transmission lines.

The 138 kV alternative electrical solution is not a viable technical option to resolve the criteria violations in the Northeast Pocono Study Area because it does not resolve the underlying problems. It address the "symptoms" but does not provide a "cure" for the underlying reliability problems. That fact, coupled with the reliability, operations, construction, and economic

concerns discussed below, demonstrates that the 138 kV alternative electrical solution is not a reasonable solution.

### c. Reliability Issues with the 138 kV Alternative Electrical Solution

The 138 kV networked system would have a lower reliability level than the preferred Northeast-Pocono Reliability Project. The reliability issues associated with the 138 kV option are due to the fact that PPL Electric would be forced to operate this portion of its system in a network configuration as opposed to a radial configuration.[32] This is not PPL Electric's preferred method of operation for its 69 kV and 138 kV transmission system and would cause several very serious problems that would prevent PPL Electric from providing reliable service to customers in this area.

Specifically, any single fault anywhere on the networked system would cause all customers served by the networked system to experience severe voltage drops, which interfere with service and can damage electrical equipment of both customers and the Company connected to the system. Further, a fault anywhere on a networked system can interfere with service throughout the networked system. These reliability issues with the 138 kV option are discussed below.

#### i. Voltage Drops in a Networked Configuration

When a fault occurs on a transmission line, the transmission line and the bus[33] connected to that line experience a large voltage drop. In a networked configuration, the transmission lines are interconnected with other buses. Therefore, if a fault occurs on any networked transmission line, which the 138 kV alternative electrical solution requires, the resulting voltage deviation

[32] The terms "networked" and "radial" configuration are defined above. *See* Footnote 31, *supra*.

[33] A bus is an electrical structure inside the transmission substation where one or more transmission lines are terminated and interconnected.

(drop) would be experienced by all customers connected to the networked lines. (PPL Electric St. 2-R, pp. 29-30)

PPL Electric performed an analysis of the networked configuration under the 138 kV alternative electrical solution and the impact on voltages at Siegfried, Monroe, Blooming Grove, North Pocono, Jackson, and Lackawanna substations and switchyards. These transmission stations are all part of the network that would be created by the 138 kV alternative electrical solution. (PPL Electric St. 2, p. 30) Based on this analysis, PPL Electric determined that if a fault occurs on any of the buses in the networked configuration under the 138 kV option, all customers connected to the networked system would experience a significant voltage drop. (PPL Electric Ex. LRK-5)

For example, nominal voltage at a 138 kV substation under normal operating conditions is approximately 80 kV when measured between any one of the three phases that comprise the transmission line and the ground, and that value is referred to as the phase-to-ground voltage. For a three phase fault that occurs at the Siegfried 138 kV station bus, the phase-to-ground bus voltage at Siegfried substation drops to zero as a result of the fault. However, because the 138 kV option requires networked operation, the nominal 80 kV phase-to-ground bus voltage at the networked substations also would drop: the Jackson 138 kV substation would drop to 41.74 kV, which is a 47.61 percent voltage drop; the Monroe 138 kV substation would drop to 55.04 kV, which is a voltage drop of 30.92 percent; the North Pocono 138 kV substation would drop to 56.21 kV, which is a voltage drop of 28.85 percent; and the Lackawanna 138 kV substation would drop to 65.10 kV, a voltage drop of 18.29 percent.[34] (PPL Electric St. 2-R. pp. 30-31) Thus, in a networked configuration, as required by the 138 kV alternative electrical solution, a

[34] The Blooming Grove 69 kV bus, which was not included in the analysis, will also experience a voltage drop because of the fault. (PPL Electric St. 2-R, p. 31)

the three phase fault that occurs at the Siegfried 138 kV substation bus will be experienced, to a varying degree, at the other networked 138 kV station buses located in the Northeast Pocono region.

The voltage deviations caused by faults on a networked system can have significant impacts to customers. When analyzing motor starting for large industrial customers, PPL Electric allows no more than a 5% voltage drop if the customer's motor is intended to be started across-the-line (using full voltage).[35] This requirement is used to control the severity of lamp flicker and the annoyance that all customers on that circuit would experience. Generally, any fault that produces over a 10% voltage drop will cause customers to complain, especially customers with large motors such as the large industrial customers in the Tannersville/Mount Pocono area.[36] (PPL Electric St. 2-R, p. 32)

For example, PPL Electric's analysis showed that the bus voltages would be so low in this area that the customers' motors would likely be interrupted automatically by their protective equipment. Voltage deviations also negatively affect the computerized equipment that control manufacturing processes. If the manufacturing process is interrupted, lost production or damaged product can occur. The voltage drops which would be experienced under the 138 kV alternative electrical solution are far greater than the voltage standards referenced above. (PPL Electric St. 2-R, p. 32) The magnitude of these voltage drops is not acceptable to PPL Electric, nor would it be acceptable to customers.

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[35] *See also* 52 Pa. Code § 57.14(b) (the allowable variation in voltage measured at the service terminals of the customer may not exceed, for a longer period than 1 minute in each instance, 5% above or below the standard nominal service voltage for service rendered primarily for lighting purposes).

[36] *See also* 52 Pa. Code § 57.14(c) (allowable variation in voltage measured at the service terminals of the customer may not exceed, for a longer period than 1 minute in each instance, 10% above or below the standard nominal service voltage for service rendered primarily for power purposes).

If the preferred Northeast-Pocono Reliability Project is constructed, only the customers on the shortened transmission line and the bus serving those customers would experience a voltage drop when the transmission line is faulted. Overall, faults occurring on the transmission system constructed under the Northeast-Pocono Reliability Project will affect fewer customers than under the 138 kV networked option. (PPL Electric St. 2-R, pp. 32-33)

**ii. Number of Customers Affected by a Fault on a Networked Configuration**

The 138 kV alternative electrical solution would require that all the existing 69 kV transmission lines in the area, approximately 100 miles, be converted to 138 kV and operated in a networked configuration. A fault occurring anywhere on this networked system would interfere with service to all customers served from these networked transmission lines. (PPL Electric Exs. LRK-1 and LRK-6)

An example of this problem would be a failure of the Peckville-Jackson 69 kV line outside the Jackson Substation. If the lines were operating in a networked configuration at 138 kV, approximately 6,000 customers would be interrupted during an outage of the line. The preferred Northeast-Pocono Reliability Project, which would permit a radial configuration of the 69 kV lines, will interrupt only approximately 700 customers during an outage of this same line segment. Further, instead of interrupting 66 MVA of customer load in the 138 kV networked option, only 25 MVA of customer load on the 69 kV line would be interrupted using the 230 kV preferred option. (PPL Electric St. 2-R, p. 25)

Because the Northeast-Pocono Reliability Project will use a radial configuration for the 69 kV lines within the Study Area, the 18.54 mile main line segment of the Peckville-Jackson 69 kV line, from Jackson to the normally open switch, will be divided into two independent and

electrically separated line segments of 7.24 and 13.8 miles.[37] Consequently, service to fewer customers is interrupted during a line outage, and restoration time is reduced because there are fewer line miles to patrol in order to locate the fault. (PPL Electric St. 2-R, p. 26)

### d. Operational Issues with the 138 kV Alternative Electrical Soluton

The 138 kV networked system has significant operational issues that are not present for the preferred Northeast-Pocono Reliability Project. Similar to the reliability issues discussed above, the operational issues associated with the 138 kV option are due to the fact that PPL Electric would be forced to operate this portion of its system in a network configuration as opposed to a radial configuration. Specifically, it is much more difficult to maintain normal operations during maintenance outages because it is necessary to analyze the settings of every switch and every relay in the electrical protective system throughout the networked system. Further, an outage on the BES can cause an overload on a networked 69 kV system.

In order to minimize outages, ensure the safety of customers and the communities served, and to maintain the integrity and reliability of the electrical system, PPL Electric's transmission system is designed with a protective relaying scheme. PPL Electric uses a protective relaying scheme to identify, isolate and clear faults, and to communicate between transmission facilities. The protective relaying scheme opens and closes switches in the transmission facilities when a fault is detected.[38] (PPL Electric St. 2-R, p. 28)

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[37] The total line miles under the preferred Northeast-Pocono Reliability Project alternative are different from the length of the line before it was divided because the new North Pocono Substation is located north of the normally open switch, and lengths of new transmission line are needed to connect the substation.

[38] Like a circuit breaker on household electric lines, the protective relaying scheme opens an electric switch and shuts off power when a fault occurs. Where a household circuit breaker remains shut off until it is manually reset, the protective relaying scheme tests the electrical line to determine whether the fault has been removed. If the fault is only temporary, the protective relaying scheme closes the switch and restores electric power. (PPL Electric St. 2-R, p. 29)

With a radial configuration, the protective relaying scheme is basic in design and configuration, and the Transmission Operators can be confident that the line is well protected from faults. For lines operated in a networked configuration, the protective relaying scheme is more complicated. Protective settings, recloser preference switches, and relay communication circuits must be changed to properly protect the abnormally configured line. For these reasons, the protective relaying becomes more complicated in a network configured system in order to continue to provide adequate and reliable service under different scenarios. (PPL Electric St. 2-R, p. 28)

Further, due to the nature of the protection schemes in networked systems, circuit breaker clearing times can be slower on networked lines than on radially configured lines. With slower clearing times on the transmission system, transient voltage dips last for a longer period of time with networked transmission lines than if the lines were operated radially. Slower clearing times and extended periods of transient voltage dips will increase the risk of harm to the public and possible damage to equipment that is connected to the networked transmission lines. (PPL Electric St. 2-R, p. 29)

In addition to the protective relaying scheme, there are additional operational concerns when the 69 kV or 138 kV transmission system is operated in a networked configuration. When an outage occurs on the BES, the flow of electricity seeks alternate paths to reach the load. In some instances, the alternate path could be a lower voltage networked transmission line on the 69 kV or 138 kV system, which is not designed to accommodate BES network power flows. (PPL Electric St. 2-R, p. 26)

In addition, system generation is dispatched such that no single contingency failure will overload a PJM-monitored BES facility. PJM, however, does not generally model 69 kV, non-

BES facilities. Therefore, system conditions may exist such that a loss of a BES line could overload a networked 69 kV line. Because PJM does not take into account the 69 kV, non-BES system, PJM does not redispatch generation to alleviate a 69 kV line overloads. Therefore, PPL Transmission Operations would have to open a 69 kV line before a contingency occurs and operate radially or shed load, *i.e.*, interrupt customer service, post-contingency. Further, when operating networked 69 kV lines in a radial configuration during maintenance, significant additional switching and relay changes generally must occur to assure correct operations. (PPL Electric St. 2-R, p. 26)

**e. Constructability Issues with the 138 kV Alternative Electrical Solution**

As recognized by the OCA, under the 138 kV alternative electrical solution, some of the existing 69 kV transmission lines, which were initially built for 138 kV operation, may need to be rebuilt due to changing design and construction standards for 138 kV transmission lines. (OCA St. 1, pp. 13, 17) PPL Electric has undertaken a preliminary review of the construction of each of the existing 69 kV lines that would need to be converted under the 138 kV alternative electrical solution. Based upon this initial review, PPL Electric estimates that at least 86 miles of existing transmission line under the 138 kV alternative electrical solution would need to be reconstructed to meet the current 138 kV design standards. In addition, approximately 26 miles of the existing 69 kV lines in the 138 kV alternative electrical solution would need to have other issues addressed, such as polymer insulator replacements, prior to operation at 138 kV. Thus, the 138 kV option would require the rebuild of approximately 112 miles of transmission line. (PPL Electric St. 5-R, p. 4)

The need to rebuild the existing 138/69 circuits to current standards has significant ramifications. Originally, construction of this 138 kV option was estimated to take six years

instead of three years with the preferred 230 kV option. However, this six-year time estimate for the 138 kV option did not take into account potential right-of-way concerns that may arise as engineering design progresses or other related issues, *i.e.*, siting regulations and Commission approval, that could arise when trying to rebuild/upgrade 112 miles of transmission line for 138 kV operation. As a result, the construction time period would be extended even longer than the original estimated six years. A prolonged construction time period also would increase the overall project cost for the 138 kV option. Moreover, the 138 kV alternative electrical solution could not be completed in time to address the reliability violations at issue in this proceeding. (PPL Electric St. 2-R, pp. 33-34)

Further, reliability of service to customers also would be reduced during this conversion because a portion of the transmission lines and distribution substations would have to be removed from service during the conversion to 138 kV operation. To ameliorate this reliability concern, construction would require a very short "return-to-service" time. A return-to-service time is a specific time period, in hours, by which the construction crew must be able to re-establish the circuit to supply customers. Short return to service times increase the difficulty for construction crews during the line rebuilding process by requiring special work methods and the creation of temporary facilities. Even with an aggressive schedule, construction of this 138 kV option would likely exceed the six-year estimate. To maintain electric service, the outage sequencing of the different line segments that would need to be converted from 69 kV to 138 kV would likely extend the time to construct the project, as well as increase the construction costs. (PPL Electric St. 2-R, pp. 34-35)

Where return to service times cannot be met, the only option to construct a project without reducing reliability of service is for the line to remain energized during construction, *i.e.*,

hot line work. Using a highly specialized workforce with the proper training, hot line work can be done safely. However, hot line work can cause construction delay and increased construction costs. (PPL Electric St. 2-R, pp. 35-36)

In addition, PPL Electric does not expect to be able to perform rebuild work concurrently on the Peckville-Jackson and Blooming Grove-Jackson 69 kV lines, both of which need to be rebuilt with the 138 kV alternative electrical solution. In addition, construction of any lines in the Northeast Pocono region cannot occur in the period from December 1st through February 28th because the winter peak loading usually occurs during this timeframe. Facing significant limitations and obstacles with not being able to run work concurrently on different lines having short return-to-service times and not being able to perform construction in the winter months, PPL Electric expects the implementation period for the conversion of 69 kV transmission lines to 138 kV operation in the 138 kV alternative electrical solution to extend from the original six year estimate to nearly 10 years.[39] (PPL Electric St. 2-R, pp. 36-37)

Conversion of the distribution substations from 69-12 kV to 138-12 kV also would require coordination with the line work and substation work at both the transmission (69 and 138 kV) and distribution (12 kV) level voltages. When converting a distribution power transformer at a 69-12 kV distribution substation, load must be transferred away to other sources to avoid service interruptions during the construction period. Approximately twenty-four substations including thirty-seven distribution power transformers would require conversion under the 138 kV option. Not all stations can be taken out at the same time for construction, and no

[39] OCA notes that neither the Northeast-Pocono Reliability Project nor the 138 kV alternative electrical solution will be in service by the first RP&P violation in the winter of 2014-2015. (OCA St. 1SR, pp.7-8) OCA is factually correct but its point is misplaced for two principal reasons. First, parts of the Northeast-Pocono Reliability Project will be completed in stages from November 2015 through November 2017. Second, the earliest possible in-service date for the 138 kV option is 2020, with a strong possibility that the construction period could be extended another four years to 2024. (PPL Electric St. 2-RJ, p. 5) In service dates from November 2015 through November 2017 are more timely to meet projected RP&P violations than in service dates ranging from 2020 through 2024.

construction can occur during the winter so that PPL Electric will be able to meet peak customer loads. There may also be restrictions due to lower distribution circuit and transformer ratings during the summer months of May through August. These restrictions leave only about six months of the year when PPL Electric could perform the construction at the substations. Given these restrictions, the substation conversion work alone would likely take up to 8 years to complete, depending on the construction sequence and manpower levels used in the conversion. (PPL Electric St. 2-R, p. 38)

For the reasons explained above, the 138 kV alternative electrical solution would be extremely difficult to construct and could not be completed to resolve the numerous RP&P violations in a timely manner. Significantly, no party criticized, questioned, or opposed PPL Electric's analysis of the constructability problems inherent in the 138 kV alternative electrical solution. Thus, it is uncontested that the Northeast-Pocono Reliability Project is superior to the 138 kV alternative electrical solution from a constructability standpoint.

**f. Cost of the 138 kV Alternative Electrical Solution**

The estimated cost for the 138 kV alternative electrical solution at the time of the filing, December 28, 2012, was approximately $443 million. (PPL Statement 5-R, p. 2) PPL Electric's most current cost estimate for the Northeast-Pocono Reliability Project is $247 million. (PPL Electric St. 5-RJ, p. 4) Thus, the 138 kV alternative electrical solution will cost far more than the Northeast-Pocono Reliability Project.

The OCA criticized the cost estimate of the 138 kV alternative electrical solution on the grounds that the estimated costs have changed significantly since the initial 2011 estimate. (OCA St. 1SR, pp. 4-7) The OCA's criticism is largely focused on the fact that the cost estimate for the 138 kV alternative electrical solution increased from early 2011 to the estimate provided

in discovery using 2012 cost data. The OCA's criticisms of the 138 kV option alternative electrical solution estimate are without merit and should be rejected.

As a preliminary matter it must be noted that, although cost is a factor to consider when selecting a proposed solution to a transmission reliability problem, the cost difference between two solutions is only relevant if the two different solutions are both viable and able to resolve the underlying problems or need for the project. As explained above, the 138 kV alternative electrical solution does not solve the underlying problems that cause the relevant RP&P violations and further, would create new problems that would result in less reliable service to customers. For this reason alone, the cost estimate for the 138 kV alternative electrical solution simply is not relevant. (PPL Electric St. 5-RJ, p. 2)

Further, the OCA overlooks the fundamental reason why the cost estimate for the 138 kV alternative electrical solution increased substantially from the initial estimate of approximately $141 million in early 2011, to approximately $443 million in late 2012. As acknowledged by the OCA, some of the existing 69 kV transmission lines, which were initially built for 138 kV operation, may need to be rebuilt due to changing design and construction standards for 138 kV transmission lines. (OCA St. 1, pp. 13, 17) However, because the 138 kV alternative electrical solution was rejected in early 2011, no in-depth analysis of the 138 kV alternative electrical solution was prepared at that time. Consequently, PPL Electric did not initially analyze or determine the number of miles of 69 kV lines that would need to be reconstructed to meet the current 138 kV design standards.

In response to discovery, PPL Electric undertook a preliminary review of the construction of each of the existing 69 kV lines that would need to be converted under the 138 kV alternative electrical solution. Based upon this initial review, PPL Electric estimated that at least 86 miles

of existing transmission line under the 138 kV alternative electrical solution would need to be reconstructed to meet the current 138 kV design standards. PPL Electric also estimated that approximately 26 additional miles of the existing 69 kV line in the 138 kV alternative electrical solution would need to have other issues addressed, such as polymer insulator replacements, prior to operation at 138 kV. (PPL Electric St. 5-R, p. 4) The identification of the need to reconstruct and rebuild at least 112 miles of existing transmission line is the key factor that caused the significant increase in estimated costs for the 138 kV alternative electrical solution.

In addition, PPL Electric explained that the difference between the 2011 and 2012 estimates for the 138 kV alternative electrical solution can be attributed to four other factors. First, the 2011 estimate was an order-of-magnitude estimate that was developed, without an in-depth filed review, to provide a rough approximation of costs. Such estimates are developed using averages of recent costs for similar projects. (PPL Electric St. 5-R, pp. 2-3) Second, the revised 2012 estimate reflects a more in-depth analysis of what activities would be required to design and construct a 138 kV option. As a project progresses and PPL Electric continues to work on it, many factors are identified and information regarding them is developed and refined. All of these factors can affect the overall cost of the project and their impacts will be reflected in future cost estimates prepared by the Company. (PPL Electric St. 5-R, pp. 2-3) Third, the revised 2012 cost estimate reflects significant increases in material, labor, and equipment costs between 2011 and 2012. (PPL Electric St. 5-R, p. 3) And fourth, the revised estimate includes a return-to-service time for each 69 kV transmission circuit that must be converted to 138 kV operation. (PPL Electric St. 5-R, p. 3)

### 5. Other Need Issues from the Public Input Hearing

One of the witnesses at the public input hearing criticizes PPL Electric's projected load growth in the Northeast Pocono region, arguing that PPL Electric failed to account for the impact

of energy efficiency and demand response programs of Act 129 (Tr. p. 197) PPL Electric explained that due to the voluntary nature of the demand response and energy efficient measures, these resources often are not under the control or direction of local system operators and cannot be relied upon to reduce loading on facilities in a particular PPL Electric region. If demand response and energy efficiency programs are used for transmission planning purposes and the reductions in usage do not occur, the consequence is reduced reliability of the transmission system and customers' lights go out. (PPL Electric St. 2-R, pp. 11-12)

Several of the witnesses cite the poor economy as a reason to forego or delay the construction of the Northeast-Pocono Reliability Project (Tr. 79-80, 111-13) If the current state of the economy in the region were on a downward spiral, the current load levels and future forecasted load levels would indicate that downward trend. However, as explained above, the load forecasts from PJM do not show that trend. Further, PPL Electric should not and cannot assume that a recession will continue forever. PPL Electric has an obligation to deliver supply to customer loads as they develop. It is PPL Electric's statutory duty to provide reliable service, which requires that it anticipate future load growth and not simply defer the addition of new facilities on the assumption that a recessionary period will be sustained indefinitely. (PPL Electric St. 2-R, p. 13)

Witnesses at the public input hearing suggested that PPL Electric should focus on improving existing structures and/or better vegetation management instead of constructing the Northeast-Pocono Reliability Project (Tr. 77, 80, 113, 189-90) PPL Electric explained that even if it were to undertake these measures, improving structures and more aggressive vegetation management will not protect the lines from ever experiencing another outage in the future. PPL Electric is still required to test the transmission system by simulating outages of various elements

(lines, breakers, buses, transformers, etc.) of the power system in order to determine whether the power system meets the RP&P criteria under any unplanned facility outage during peak load conditions. (PPL Electric St. 2-R, p. 15)

Finally, certain witnesses at the public input hearing argue that the true purpose of the Northeast-Pocono Reliability Project is to provide power to New York and New Jersey (Tr. 103, 189-90). This contention must be rejected. First, in *Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line, et al.*, Docket Nos. A-2009-2082652, *et al.*, 2010 Pa. PUC LEXIS 434 (Feb. 12, 2010), the Commission expressly recognized that the need for utility projects must be evaluated on a regional basis, even if Pennsylvania is not directly or primarily served by the project. Second, the Northeast-Pocono Reliability Project is not designed to address or resolve reliability issues in New York or New Jersey. Rather, the purpose of this Project is to resolve reliability violations and to reinforce the 69 kV systems in Monroe, Carbon, Wayne, Lackawanna, Luzerne, and Pike Counties by bringing a new 230 kV source of supply into the area. (PPL Electric St. 2-R, pp. 15-16)

### 6. Summary of the Reasons Why the Northeast Pocono Project Is the Superior Option

PPL Electric has evaluated alternatives to reinforce this area and has determined that the proposed Northeast-Pocono Reliability Project is the best transmission system reinforcement for the area to provide the most reliable service to the customers at the least cost. Although the 138 kV alternative electrical solution may resolve the identified violations, this solution does not address the underlying causes of the violations -- long 69 kV transmission lines, heavy line loadings, and the lack of a 230 kV source within the study area.

The Northeast-Pocono Reliability Project will bring a strong 230 kV source into the study area. Currently the distance between 230 kV sources in the Northeast Pocono study area is 45 miles between Jenkins and Bushkill and 55 miles between Peckville and Siegfried Substations. (PPL Electric Ex. LRK-2) With the implementation of the proposed Northeast-Pocono Reliability Project, including the new 230 kV transmission line, the new West Pocono and North Pocono 230-69 kV substations and 138/69 kV connecting lines, the distances between the transmission substations is greatly reduced to less than 20 miles. (PPL Electric Ex. LRK-1 and LRK-3)

The Northeast-Pocono Reliability Project will reduce of the length of the existing 69 kV transmission lines. In many instances, the line lengths are reduced to half of their current length. The benefits of shorter lines are that each line has less exposure to the causes of outages, fewer customers will be affected by a transmission outage, and restoration times are decreased because there are fewer line miles to patrol in order to locate the fault.

With the 138 kV alternative electrical solution, however, the line lengths are not reduced. Further, the network configuration of the 138 kV alternative electrical solution essentially ties together approximately 100 miles of transmission line from Lackawanna to North Pocono to Jackson to Blooming Grove to East Palmerton. A fault anywhere along that path would affect service to all customers served from that network-configured system.

The Northeast-Pocono Reliability Project, which uses the existing 69 kV transmission lines, will enable Transmission Operators to restore all load interrupted if there is an outage without concerns of thermal overloads or low voltage. The Transmission Operators will also have improved operating flexibility if load needs to be transferred to an alternate source in order to perform maintenance (pre-arranged outage) work.

The 138 kV alternative electrical solution is not practicable, is technically inferior, has serious constructability and operational concerns, could not be completed in a timely fashion to address the reliability violations PPL Electric has identified, and would cost more. The Northeast-Pocono Reliability Project, in contrast, has no significant constructability concerns, can be implemented in a reasonable timeframe to address the reliability violations, will reduce the number of customers that are affected by a particular transmission facility outage, and will allow for the restoration of customers more quickly to improve customer satisfaction.

### C. HEALTH AND SAFETY

The second requirement under Section 57.76 of the Commission's regulations for approval of the siting and construction of transmission lines is that the project will not create an unreasonable risk of danger to the health and safety of the public. As described above, PPL Electric proposes to construct a new 58-mile 230 kV transmission line and approximately 11.3 miles of new 138/69 kV transmission lines needed to connect the West Pocono and North Pocono 230-69 k Substations with the existing 69 kV system. PPL Electric also proposes to construct five new 138/69 kV transmission lines, collectively approximately 11.3 miles, to connect the new North Pocono and West Pocono 230-69 kV Substations to the existing local 138/69 kV transmission system. (*See* Section VI.B.2.b, *supra*) As explained below, the proposed transmission lines will be designed, constructed, and maintained to ensure the health and safety of the public.

#### 1. The Transmission Lines Will Meet and Exceed NESC Standards

Each of the transmission lines associated with the proposed Northeast-Pocono Reliability Project has been designed to meet or surpass all requirements specified by the NESC. (PPL Electric St. 5, pp. 3-4; PPL Electric Ex. 1, Att. 5, p. 14) The Commission has held in numerous

cases that transmission lines that meet or exceed the NESC requirements do not create an unreasonable risk of danger to the health and safety of the public.[40]

In addition to the safety features incorporated by designing the line in accordance with the NESC, PPL Electric has additional, more stringent design standards. PPL Electric design loading conditions for structures, wires, and clearances exceed NESC standards. Relay protection systems are also employed to automatically de-energize the line in the unlikely event of a failure on the line in which the line contacts the ground or a grounded object. The line is also designed for conductor-to-conductor clearances and conductor-to-ground clearances which support live-line maintenance and inspections practices. Work procedures and tooling have been developed to allow work to be performed in a safe manner on energized facilities. Personnel are furnished with appropriate protective equipment for the performance of construction or maintenance activities in a safe manner. (PPL Electric St. 5, pp. 13-14)

### 2. Electric and Magnetic Fields

Certain witnesses at the public input hearing raised concerns regarding electric and magnetic fields ("EMFs") (Tr. 92, 144, 217-18.) There is no evidence of record to suggest that EMFs from the proposed Northeast-Pocono Reliability Project will cause or contribute to adverse health effects.

Preliminarily, it should be noted that, in conjunction with seeking Commission approval for the siting and construction of the Susquehanna-Roseland 500 kV Transmission Line, Docket Number A-2009-2082652, PPL Electric presented extensive independent expert testimony on

[40] *See Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line*, Docket Nos. A-2009-2082652, et al., 2010 Pa. PUC LEXIS 434 at *166 (Feb. 12, 2010); *Investigation on Commission Motion of the Safety of the Cabett-Wylei Ridge 500 kV Transmission Line*, I.D. 236 (Sept. 18, 1981); *Application of PP&L for Approval to Locate and Construct a 138 kV Transmission Line Between West Allentown and Salisbury Substations*, Docket No. A-00104160 (July 20, 1984); *Application of PP&L for Authorization to Locate and Construct its Hamlin 138 kV Electric Transmission Line*, Docket No. A-00101826 (Apr. 3, 1981); *Larken v. Philadelphia Electric Co.*, 39 Pa. PUC 777 (1961).

EMF issues. Based on this extensive evidence, the Commission adopted the Administrative Law Judge's finding that there is no reliable scientific basis to conclude that exposure to EMFs from electric power lines causes or contributes to adverse health effects in people. *See Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500-kV Transmission Line in Portions of Lackawanna, Luzerne, Monroe, Pike and Wayne Counties, Pennsylvania*, Docket Number A-2009-2082652, 2010 Pa. PUC LEXIS 434 at *167-80 (Feb. 12, 2010), *affirmed sub nom., Susquehanna-Roseland*, 25 A.3d 440 (Pa. Cmwlth. 2011). Similar conclusions have been reached in other cases where the utility presented evidence that transmission lines are not common sources of significant EMF exposure. *See, e.g., Application of Pennsylvania Electric Company For Approval to Locate and Construct the Bedford North-Osterburg East 115 kV HV Transmission Line Project Situated in Bedford and East St. Clair Townships, Bedford County, Pennsylvania*, Docket Nos. A-2011-2247862, *et al.*, 2012 Pa. PUC LEXIS 298 at *60 (Initial Decision Feb. 9, 2012) (concluding that, based on the exhaustive expert testimony, the proposed line will not cause an unreasonable risk from exposure to EMFs).[41]

Furthermore, PPL Electric has taken EMF mitigation into account by designing the proposed lines to reduce EMFs and to maximize the distance from the centerline to any residences. To reduce EMFs, PPL Electric has adopted a Magnetic Field Management Program. (PPL Electric Ex. 1, Att. 11) Under this Program, to lower EMF exposure, PPL Electric uses a line design that provides ground clearances five feet higher than the minimum clearances required by the NESC. PPL Electric also employs reverse phasing of new double circuit lines

[41] The Initial Decision was adopted by the Commission in an Opinion and Order issued on June 7, 2012.

where it is feasible to do so at low or no cost. PPL Electric will use these measures for the proposed Northeast-Pocono Reliability Project to mitigate the effects of EMFs. (PPL Electric St. 5, p. 15)

### 3. Proximity to Pipeline Facilities

Transco raises concerns regarding the proximity of the proposed transmission lines to Transco's existing and future natural gas pipelines. These concerns are without merit and provide no basis for rejecting PPL Electric's applications. It is unrefuted that PPL Electric and other electric utilities own and operate existing electric facilities that, for many years, have safely coexisted, ran near, and traversed natural gas lines. (PPL Electric St. 1-R, p. 6; PPL Electric St. 8) There simply is no basis to suggest any conflicts or issues between electric facilities and pipeline facilities, as suggested by Transco. Indeed, the opportunity to use or parallel an existing utility corridor is one of the factors considered when siting a high voltage transmission line because it helps to minimize the impacts to the natural and human environments. (PPL Electric Ex. 1, Att. 4, p. 5) Further, PPL Electric has successfully worked with many different pipeline owners to ensure that there are no conflicts between the two companies' operations. (PPL Electric St. 1-R, pp. 6-7)

Notwithstanding, PPL Electric understands the importance of ensuring that its high voltage transmission lines can safely coexist with natural gas pipelines when required to do so. To that end, PPL Electric has agreed to fund an impact study to determine what, if any, impact the proposed transmission lines may have on Transco's facilities. However, as explained below, PPL Electric cannot blindly agree to fund any and all mitigation measures identified by the study without knowing what measures will be required and the estimated costs. (Tr. 342-43)

Before addressing Transco's concerns, it is important to understand the three areas in question: the two Transco parcels (Parcels 32 and 33); the two parcels adjoining the Transco

parcels (Parcels 30 and 31), and the PPL Electric-owned parcel (Parcel 36). (See PPL Electric Ex. 1, Att. 4-Figures, Map Extents 2 and 3; PPL Electric Exs. DLH-3 and DLH-4) Each of these parcels and the relation to Transco's concerns are summarized below.

Before the proposed route enters the two Transco properties, the route parallels the existing Transco easement on adjoining properties (Parcels 30 and 31), using an existing 100-foot wide PPL Electric easement acquired in the early 1970's that is currently being expanded to 150 feet through right of way negotiations. Initially, the easement was located approximately 15 feet from the edge of the Transco right-of-way; however, PPL Electric adjusted approximately 4.5 miles of its proposed route on these properties (Parcels 30 and 31) to allow for 25 feet to 50 feet of separation between the PPL Electric and Transco easements. (PPL Electric St. 1-RJ, pp. 5-6) Transco is concerned with current induction and electromagnetic interference with the existing Transco facilities on Parcels 30 and 31. (Transco St. 1-SR, pp. 1-2)

With respect to Transco's concerns regarding current induction and electromagnetic interference on Parcels 30 and 31, PPL Electric understands the importance of ensuring that high voltage transmission lines and natural gas pipelines can safely coexist in close proximity when required to do so. (PPL Electric St. 5-RJ, p. 3) However, it must be noted that PPL Electric and many other electric public utilities have facilities that currently run near, parallel, and/or traverse gas lines. PPL Electric is not aware of, nor did Transco identify, any issues or conflicts between electric facilities or the pipeline facilities. Further, PPL Electric has successfully worked with many different pipeline owners to ensure that there are no conflicts between the two companies' operations. (PPL Electric St. 1-R, pp. 6-7)

Notwithstanding the foregoing, PPL Electric has agreed to fund an impact study to determine what, if any, impact the proposed transmission lines may have on Transco's natural

gas pipelines. PPL Electric and Transco have not reached an agreement on the terms of the impact study. (PPL Electric St. 5-R, pp. 7-9; Tr. 342) As part of the impact study, Transco wants PPL Electric to agree up front to fund any and all mitigation measures that may be identified by the impact study. (Transco St. 1, p. 2; Transco St. 1-SR, pp. 2-3) However, as explained in PPL Electric's rebuttal testimony, it would not be reasonable or prudent for PPL Electric to agree to provide Transco with a "blank check" for mitigation measures when it is entirely unknown what those measures are or whether such measures are truly attributable to PPL Electric's proposed transmission line. Indeed, PPL Electric is not the only utility that will be constructing facilities; Transco also will be constructing a new pipeline near the proposed route as part of the Leidy Southeast Project. For these reasons, PPL Electric believes that the more prudent and appropriate course would be for PPL Electric and Transco to cooperate to complete the impact study, and then address the responsibility for the costs of any needed mitigation measures. (PPL Electric St. 5-RJ, p. 5; Tr. 342-43)

With respect to the Transco-owned Parcels 32 and 33, PPL Electric filed an eminent domain application seeking approval to condemn a right-of-way across these two parcels, Docket No. A-2013-2341208. (PPL Electric Ex. 30) The proposed right-of-way across Transco's property is located at the north end of Parcels 32 and 33 near the property line. The Transco facilities are located near the middle and southern portions of Parcels 32 and 33 (See PPL Electric Ex. DLH-3) Thus, the proposed route across Parcels 32 and 33 is not in close proximity to the Transco facilities. Indeed, as stated by Transco, PPL Electric agreed to adjust the proposed route across Parcels 32 and 33 so that the transmission line will parallel to the northern boundary of the Transco property rather than paralleling the Transco pipeline. (Transco St. 1-

SR, p. 1) Therefore, Transco's safety concerns are not applicable to the Transco-owned Parcels 32 and 33.

The proposed route proceeds southeast on land owned in fee by PPL Electric (Parcel 36) where it will parallel an existing Transco easement. (PPL Electric St. 1-R, p. 6) In late 2012, Transco notified PPL Electric of future plans to construct a new fourth gas pipeline (Transco Leidy Southeast Project) on the north side of the Transco easement, *i.e.*, on the side closest to the proposed route for the transmission line. The future Transco Leidy Southeast Project will parallel the proposed route for approximately three-quarters of a mile. (PPL Electric St. 1-R, p. 8) Initially, Transco asserted that it had concerns regarding current induction and electromagnetic interference where the proposed transmission line will parallel Transco's natural gas pipelines or the land owned in fee by PPL Electric (Parcel 36). (Transco St. 1, pp. 2-3) However, in surrebuttal, Transo indicated that it has now adjusted the alignment across PPL Electric's property so that the proposed Leidy Southeast Project "will not conflict with the proposed PPL [Electric] easement except in one area where there is a necessary crossing of the easements, and where there may be a conflict if both projects are constructed at the same time." (Transco St. 1-SR, p. 2) In any event, PPL Electric has agreed to fund an impact study to determine what, if any, impact the proposed transmission lines may have on Transco's natural gas pipelines as explained above.

Transco also raised concerns regarding the construction of PPL Electric's proposed transmission line and Transco's Leidy Southeast Project on Parcel 36. There currently are approximately 50 feet between the right-of-way for the proposed route and the Transco easement. PPL Electric believes that this separation will provide sufficient room for the construction activities of both companies. (PPL Electric St. 1-RJ, p. 6) Notwithstanding, if both

the Northeast-Pocono Reliability Project and Transco Leidy Southeast Project are approved and additional work space is needed for construction, PPL Electric will agree to temporary work space for construction of the Leidy Southeast project within its proposed easement and on PPL Electric-owned property (Parcel 36). (PPL Electric St. 1-R, p. 9)

**4. Access to Covington Industrial Park**

The Covington Industrial Park is located off of State Route 435 in Covington Township and is partially surrounded by the private communities of Big Bass Lake and Eagle Lake. The segment of the Northeast-Pocono Reliability Project that traverses the Covington Industrial Park is approximately 2.1 miles of the 230 kV line that is located along the West Pocono-North Pocono segment. The proposed route through the Covington Industrial Park crosses State Road 435 near the entrance to the Covington Industrial Park and parallels First Avenue, which is the access road owned by FR First, for approximately 1,740 feet along the property line that separates the Art Mortgage and FR First properties. (PPL Electric St. 1-R, p. 2; PPL Electric St. 1-RJ, p. 3; PPL Electric Ex. DLH-1)

FR First contends that the portion of the proposed route that will parallel the access road to the Covington Industrial Park will create traffic obstructions and interfere with access to the Industrial Park. (FR First St. 1, p. 2; FR First St. 1-SR, p. 2) However, the record evidence demonstrates that the portion of the proposed route that will parallel the access road to the Covington Industrial Park will not have any impact to the ingress or egress of the Covington Industrial Park.

The proposed route crosses State Route 435 and enters the Covington Industrial Park on the property of Art Mortgage. The proposed route is located approximately 175 feet north of the entrance to the Covington Industrial Park. The only steel mono-pole proposed near the entrance to the Covington Industrial Park will be located approximately 50 feet from the edge of State

Road 435. The location of the proposed structure near the entrance to the Covington Industrial Park will not obstruct views of on-coming traffic for motorists entering or exiting the Industrial Park. (PPL Electric St. 2-R, p. 3; PPL Electric Ex. No. DLH-2)

The monopoles for the portion of the proposed route that parallels the FR First property will be located entirely on the property of Art Mortgage, for which PPL Electric has secured an easement for the proposed route. None of the monopoles will be located on property of FR First. Further, of the three proposed monopoles, the closest pole will be 36 feet from the edge of the existing pavement of the access road to the Covington Industrial Park. (PPL Electric St. 1-RJ, p. 2)

Finally, although a portion of the 150-foot wide easement will overlap the FR First property, the right-of-way across the FR First property will be an easement only for the aerial crossing. This aerial crossing of FR First property will not impact the access road for the Covington Industrial Park. (PPL Electric St. 1-RJ, pp. 3-4; PPL Electric Ex. DLH-1)

Based on these unrefuted facts, it cannot reasonably be maintained that the aerial right-of-way across the FR First property will create traffic obstructions and interfere with access to the Covington Industrial Park.

### D. COMPLIANCE WITH STATUTES AND REGULATIONS REGARDING THE ENVIRONMENT

The third requirement under Section 57.76 of the Commission's regulations for approval of the siting and construction of transmission lines is that the project is in compliance with applicable statutes and regulations, providing for the protection of the natural resources of this Commonwealth. Although not an environmental permitting agency, the Commission is required, under 57 Pa. Code §§ 57.72(e)(7) and (8), to consider environmental impacts of proposed transmission lines. *Re: Interim Guidelines for the Filing of Electric Transmission Line Siting*

*Applications*, Docket No. M-2009-2141293, 2010 Pa. PUC LEXIS 2069 at *56 (Nov. 5, 2010). To that end, the Commission has adopted Interim Siting Guidelines that require, among other things, an applicant for the siting of an electric transmission line to file a matrix or list that shows all expected federal, state, and local government regulatory permits and approvals that may be required for the project, at the time of the application, and the current status of permit applications that may be required by those agencies. 52 Pa. Code §§ 69.3105, 69.3106.[42]

Consistent with the Commission's Interim Guidelines, the attachments to PPL Electric's filing include information on the regulatory permit requirements and agency coordination regarding cultural and environmental resources. (PPL Electric Ex. 1, Att. 7) This detailed information effectively addresses and, in most cases, exceeds all the requirements of the Commission's siting regulations.

As explained below, PPL Electric has undertaken a highly detailed and extensive evaluation of the environmental and social impacts of the available alternative routes for the Northeast-Pocono Reliability Project. There is no perfect route and all transmission lines will have some impact to the natural and/or human environment. PPL Electric selected preferred routes for the Northeast-Pocono Reliability Project that will minimize these impacts when compared to all the other feasible alternatives. (*See* Section VI.E, *infra*; *see also* PPL Electric Ex. 1, Atts. 3 and 4; PPL Electric Sts. 4, 4-R, and 4-R-2)

PPL Electric has constructed 118 transmission projects over the last 15 years. In each case, PPL Electric has obtained and complied with all necessary environmental permits. Further, PPL Electric maintains approximately 5,000 miles of transmission lines operating at 69 kV or higher, approximately 375 substations with a capacity of 10 MVA or more, and approximately

[42] The Commission has explained that the purpose of this information is to "inform the Commission, the ALJ and the parties of potential impacts of other needed regulatory approvals," and that this information "need only be supplied on a best efforts basis." *Re: Interim Guidelines*, at *55-57.

43,000 miles of distribution lines. There is no evidence to suggest that PPL Electric cannot and will not construct and maintain the proposed transmission lines in compliance with applicable environmental laws or regulations. (PPL Electric St. 4-R-2, p. 22)

Every major high voltage transmission line project requires many, many permits and approvals from local, state, and federal agencies. Project planning necessitates close coordination with construction schedules to ensure that the appropriate time frames of in-service dates and potential line outage dates are considered as part of the planning process. As a result, permitting must be prioritized to focus on the required environmental studies and engineering to be completed for the sections and substation to be constructed first. (PPL Electric St. 4-R-2, pp. 5-6) The management of obtaining those approvals while completing the project in sufficient time to avoid blackouts or other reliability issues is a complex and difficult process. (PPL Electric St. 4-R-2, p. 7)

Here, PPL Electric has committed to obtain all required permits for construction of the Northeast-Pocono Reliability Project, and will comply with any and all conditions placed on such permits by those agencies that have appropriate jurisdiction over environmental matters. (PPL Electric St. 4-R-2, pp. 4, 24; Tr. 479) As a general matter, the Commission has found compliance with the applicable environmental statutes and regulations where the applicant agrees to obtain any and all necessary environmental permits and to comply with any conditions on those permits during construction.[43] There is nothing in the record to suggest that PPL

[43] *See, e.g., Application of Pennsylvania Electric Company For Approval to Locate and Construct the Bedford North-Osterburg East 115 kV HV Transmission Line Project Situated in Bedford and East St. Clair Townships, Bedford County, Pennsylvania*, Docket Nos. A-2011-2247862, et al., 2012 Pa. PUC LEXIS 298 at *61 (Initial Decision February 9, 2012); *Application of Trans-Allegheny Interstate Line Company for the Approval to locate, construct, operate and maintain certain high voltage electric transmission line facilities and to exercise the power of eminent domain to construct and to install the proposed aerial electric transmission line facilities along the proposed route, being a 138 kV transmission line and related facilities collectively, the Osage-Whiteley Line Facilities or Project, in portions of Dunkard Township, Perry Township, and Whiteley Township, Greene County in Southwestern Pennsylvania*, Docket Nos. A-2010-2187540, et al., 2011 Pa. PUC LEXIS 2028 (Recommended

Electric will not be able to secure the necessary permits or that those permits will be inadequate to prevent compliance with applicable statutes and regulations, or provide for the protection of the natural resources of this Commonwealth.

### E. MINIMUM ADVERSE ENVIRONMENTAL IMPACT, CONSIDERING THE ELECTRIC POWER NEEDS OF THE PUBLIC, THE STATE OF THE AVAILABLE TECHNOLOGY AND THE AVAILABLE ALTERNATIVES

The fourth requirement under Section 57.76 of the Commission's regulations for approval of the siting and construction of transmission lines is that the project will have minimum adverse environmental impact, considering the electric power needs of the public, the state of the available technology and the available alternatives. In reaching its determination on whether a proposed route will have minimum adverse environmental impacts, the Commission will consider the impact and the efforts that have been and will be made to minimize the impact, if any, of the proposed line upon the following: (i) land use; (ii) soil and sedimentation; (iii) plant and wildlife habitats; (iv) terrain; (v) hydrology; (vi) landscape; (vii) archeological areas; (viii) geologic areas; (ix) historic areas; (x) scenic areas; (xi) wilderness areas; and (xii) scenic rivers. 52 Pa. Code § 57.75(d)(3). Further, the Commission will consider the availability of reasonable alternative routes in reaching a conclusion as to whether the proposed route will have minimum adverse environmental impacts. 52 Pa. Code §§ 57.75(d)(4), 57.76(a)(4).

There is no perfect route, and all transmission lines will have some impact to the natural and/or human environment. (PPL Electric St. 4-R-2, p. 3) Selecting a route for a high voltage transmission line is a complex, multi-faceted analysis that requires the careful balancing of functional requirements, environmental factors, social factors, and cost considerations. (PPL

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Decision March 28, 2011); *Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line,* Docket Nos. A-2009-2082652, et al., 2010 Pa. PUC LEXIS 434 at *191-201 (February 12, 2010).

Electric St. 1-R-2, p. 2) Selecting a route that minimizes impacts to these many, and often competing, factors requires a careful balancing assessment to limit the burden of potential impacts. (PPL Electric St. 4-R-2, p. 3)

The Commonwealth Court recently held that a utility's route for a proposed high voltage transmission line should be approved where the record evidence shows that the utility's route-selection process was reasonable and that the utility properly considered the factors relevant to siting a transmission line:

> [I]t is settled law that the designation of the route for a HV line is a matter for determination by [a utility's] management in the first instance, and the utility's conclusion will be upheld unless shown to be wanton or capricious. Thus, where the record establishes that the utility's route selection was reasonable, considering all the factors, its route will be upheld. The mere existence of an alternative route does not invalidate the utility's judgment. This reasoning is equally sound when considering whether a utility has complied with 52 Pa. Code § 57.72(c)(10), as the information required by this section goes towards establishing the reasonableness of the utility's route selection.

*Susquehanna-Roseland*, at 449-50 (quoting *Trailco*, 995 A.2d 465, 479-80).

As explained below, PPL Electric has undertaken an extensive evaluation of the environmental and social impacts of the available alternative routes. The routes selected by PPL Electric will have significantly less overall impacts to the natural and human environment than the other feasible alternative routes.

### 1. Overview of the Siting Process

The ultimate goal of the Northeast-Pocono Reliability Project siting study was to identify an overhead electric transmission line alignment that minimizes the impact to the built and natural environments to the maximum extent practicable, while still maintaining the technical and economic viability of the Project. (PPL Electric St. 4, p. 6) To achieve that goal, PPL

Electric retained the services of URS Corporation to facilitate its analysis of the route selection.[44] (PPL Statement No. 1, p. 19) URS Corporation provides engineering, construction and technical services for, among other things, electric transmission and gas pipeline siting. (PPL Electric St. 4, p. 1) URS Corporation uses a siting methodology adapted from a protocol developed by the Electric Power Research Institute and the Georgia Transmission Corporation (EPRI-GTC). This "opportunity and constraint" methodology was developed with collaboration and feedback from utility companies; federal, state and local government agencies; and other key stakeholders, such as private landowners. The EPRI-GTC process has been tested and calibrated against previously approved transmission line siting projects that have been successfully completed. The approach formalizes many of the methods and principles used in the industry and by consultants over the last several years. (PPL Electric St. 4, p. 7)

PPL Electric, in conjunction with URS Corporation, conducted a detailed siting analysis to determine the routes for the transmission lines associated with the Northeast-Pocono Reliability Project that best balance social, environmental, engineering and economic considerations. That analysis included the determination of a Study Area, the compilation of an environmental inventory, identification and analysis of alternative line routes and, finally, selection of a preferred line route corridor. (PPL Electric St. 4, pp. 5-6)

The Study Area for the Northeast-Pocono Project was intended to encompass all reasonable potential routes between the existing Jenkins 230-69 kV Substation in Plains Township, Luzerne County and the Paupack 230-69 kV Substation in Paupack Township, Wayne County. The identified Study Area encompasses approximately 385 square miles

[44] URS provides comprehensive, life cycle services for transmission and distribution projects, from alternative route analyses, licensing and permitting, conceptual engineering, right-of way services, and public involvement to detailed engineering and design, geotechnical engineering and subsurface investigation, site preparation, construction management, and regulatory compliance. (PPL Electric St. 4, p. 1)

(246,000 acres) in parts of Carbon, Lackawanna, Luzerne, Monroe, Pike, and Wayne Counties. (PPL Electric St. 4, pp. 5-6)

Consistent with the factors to be considered by the Commission pursuant to section 57.75(d)(3) of the siting regulations, 52 Pa. Code § 57.75(d)(3), a wide variety of data were compiled and mapped within the Study Area to assist the siting team in identifying the most reasonable alternative route for the construction of the Northeast-Pocono Reliability Project. Specifically, for each segment of the proposed Project, PPL Electric prepared an inventory of the following natural environment factors and impacts: physiographic provinces and terrain; geologic areas; soil characteristics; hydrology, including streams, 100-year floodplains, lakes, and wetlands; plant and wildlife habitats; vegetation; wildlife, including rare, threatened, and endangered species; and special use areas. Further, PPL Electric prepared an inventory of the following human environment factors and impacts: land use; linear features, including roadways, railroads, utility corridors; historic, cultural, and archaeological resources; historic architecture; and archaeology. In addition, consistent with the Commission's policy statement regarding the consideration of local comprehensive plans and zoning ordinances, 52 Pa. Code §§ 69.1101(2)(3) and 69.3104(1), PPL Electric also reviewed and evaluated the local zoning ordinances, comprehensive plans, and proposed development for the municipalities and counties that would be affected by the proposed Project. (PPL Electric St. 1, p. 17; PPL Electric Ex. 1, Att. 3, *passim*; PPL Electric Ex. 1, Att. 4, pp. 4-16)

Next, using the above information, PPL Electric began identification of potential routes. The process for identifying potential transmission line routes produced a network of links that could be considered to reach from the existing Jenkins 230-69 kV Substation in Plains Township, Luzerne County to the Paupack 230-69 kV Substation in Paupack Township, Wayne

County, as well as the new West Pocono and North Pocono Substations. Those links were combined into a number of initial potential routes for the Northeast-Pocono Reliability Project. (PPL Electric St. 1, p. 17; PPL Electric Ex. 1, Att. 4, pp. 16-22) After the initial potential routes were identified, key members of the routing team conducted field inspections of the routes. The field investigations resulted in changes to the potential route alignments to reduce impacts on constrained areas. As a result, some potential routes were eliminated from further consideration. (PPL Electric St. 1, p. 17)

After carefully analyzing and evaluating the potential routes, PPL Electric selected alternative routes for detailed examination. These alternative routes provide the necessary connections between the Jenkins, West Pocono, North Pocono, and Paupack Substations, while minimizing potential social, cultural, and natural environment impacts, and still being technically feasible to construct. (PPL Electric St. 1, p. 18; PPL Electric St. 4, p, 8; PPL Electric Ex. 1, Att. 4, pp. 22-23)

After identifying the alternative routes, PPL Electric conducted an extensive public outreach program to provide information and seek input from the public and government officials, including:

> [C]alls, E-mails and meetings with government officials; informational letters to more than 33,000 residents and businesses within the Project study area; informational letters to residents within the 1,000-foot corridor and to open house attendees after the proposed transmission line routes were defined; a fact sheet that was developed to provide the public with an overview of the Project and a detailed description of the line routes; a Project-specific Web Site with several innovative features, including a way for an interested person to enter their address and find out how close the project would be to their property, a "contact us" button for a member of the public to send us an E-mail comment or question, and an interactive map that allows a member of the public to mark points of interest on a map and submit comments about them; news releases on February 9, 2011, June 23, 2011 and

> October 11, 2011 to a wide range of news media throughout the Project area; and one-on-one and group meetings with interested residents, businesses, and elected officials near the Project area.
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> In addition, PPL Electric placed 33 advertisements in local newspapers to announce a series of open houses. In March, July, and October 2011, PPL Electric conducted a total of 13 different public open houses at several locations within the Project Study Area.

(PPL Electric St. 1, pp. 24-25; PPL Electric Ex. 1, Att. 4, pp. 140-43) Specific adjustments to the alternative routes for the Northeast-Pocono Reliability Project were made as a direct result of PPL Electric's public outreach efforts. (PPL Electric St. 1, pp. 23-25; PPL Electric Ex. 1, Att. 4, pp. 23-24)

Based on the adjustments made as a result of the public outreach program, the following alternative routes for the Northeast-Pocono Reliability Project were identified: Routes A and B were identified within the Jenkins-West Pocono Segment;[45] Routes C, D, and D-1 were identified within the West Pocono-North Pocono Segment;[46] and Routes E, F, and F-1 were identified within the North Pocono-Paupack Segment.[47] Additionally, two alternative routes for the 138/69 kV lines required to connect the West Pocono and North Pocono 230-69 kV Substation to the existing 138/69 kV system were identified.[48] (PPL Electric St. 1, p. 18; PPL Electric St. 4 pp. 17, 22, 28, 35, 38)

After the alternative routes were identified, PPL Electric evaluated and compared the alternative routes to select a preferred route. The evaluation of the alternative routes included a

[45] The Alternative Routes A and B for the Jenkins-West Pocono Segment are fully described in PPL Electric St. 4, pp. 17-20; PPL Electric Ex. 1, Att. 4, pp. 24-27.

[46] The Alternative Routes C, D, and D-1 for the West Pocono-North Pocono Segment are fully described in PPL Electric St. 4, pp. 22-26; PPL Electric Ex. 1, Att. 4, pp. 51-55.

[47] The Alternative Routes E, F, and F-1 for the North Pocono-Paupack Segment are fully described in PPL Electric St. 4, pp. 28-33; PPL Electric Ex. 1, Att. 4, pp. 74-78.

[48] The Alternative Routes for the West Pocono 138/69 kV connecting lines are fully described in PPL Electric St. 4, pp. 35-36; PPL Electric Ex. 1, Att. 4, pp. 44-45. The Alternative Routes for the North Pocono 138/69 kV connecting lines are fully described in PPL Electric St. 4, pp. 37-39; PPL Electric Ex. 1, Att. 4, pp. 67-68

combination of quantitative analysis based on weighted metrics, as well as a qualitative review by PPL Electric's siting team. (PPL Electric St. 4, pp. 8-9, 21)

The quantitative analysis included using weighted metrics to assess the potential impacts of each alternative route in accordance with the following four perspectives:

> (1) Built Environment Perspective – protecting human and cultural resource areas by reducing potential Project conflicts with existing residential neighborhoods and other community-valued features. This includes consideration of the location of the route relative to: schools, day cares, churches, cemeteries, or parks (within 1,000 feet); residences (within 300 feet) and curtilages; proposed housing developments (within 300 feet); commercial and buildings (within 300 feet); and miles of state-owned or conserved land.
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> (2) Natural Environment Perspective – protecting plants, animals, aquatic, and other natural resources by minimizing the Project impact to ecological resources and natural habitat. This includes consideration of: natural forests; stream and river crossings; wetlands; and floodplains.
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> (3) Engineering Considerations Perspective – maximizing the co-location and minimizing cost and schedule challenges for the Project by seeking the shortest path or using existing right-of-way, while avoiding areas that pose significant construction obstacles, such as steep slopes or those used for unique agricultural practices. This includes consideration of: miles of future-use right-of-way; miles of co-location with other utility corridors; number of road and railroad crossings; number of turn greater than 60 degrees; proximity to and opportunity to use existing roads for access roads; and estimated costs.
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> (4) Simple Composite Perspective – this perspective uses the same data as the other three, but offers equal consideration and weighting to the three perspectives noted above.

(PPL Electric Ex. 1, Att. 3, pp. 6-7) The use of the four perspectives allowed for a comparison of the social, environmental, and engineering costs and benefits of the different alternative routes.

The qualitative analysis performed by the Siting Team included an assessment of the following for each alternative route: visual concerns; community concerns; risk of schedule delay; special permit requirements; and construction, maintenance, and accessibility issues specific to each alternative route. The qualitative evaluation is an essential step because not all criteria can be counted and scored. For example, permitting requirements will be different for alternative routes that cross Exceptional Value ("EV") streams or major highways compared to potential routes that avoid those specific features. Similarly, community and visual concerns will vary between different alternatives based on their proximity to residential neighborhoods, socially sensitive areas, or public open spaces. (PPL Electric St. 4, pp. 8-9; PPL Electric Ex. 1, Att. 3, p. 7)

Using the quantitative and qualitative review discussed above, the siting team reviewed and compared the merits and detriments of each of the alternative routes. Based on these evaluation processes, the Siting Team chose a preferred route for the proposed 230 kV transmission line: Alternative Route B was the Selected Route for the Jenkins-West Pocono Segment; Alternative Route D-1 was the Selected Route for the new West Pocono-North Pocono Segment; and Alternative Route F-1 was the Selected Route for the new North Pocono-Paupack Segment. The Siting Team also chose a preferred route for each of the 138/69 kV lines needed to connect the West and North Pocono Substations to the 138/69 kV system: alternative route Connector Line 2 was the Selected Route for the West Pocono 138/69 kV Connector Line; and alternative route Connector Line 4 was the Selected Route for the North Pocono 138/69 kV Connector Line.

The unrefuted record evidence demonstrates that the routes selected by PPL Electric will have significantly less impact to the natural and human environment than the other feasible

alternative routes. Further, the record evidence demonstrates that PPL Electric has taken extensive measures to mitigate the impacts of the selected routes. The evaluation and selection of preferred route for each segment of the Northeast-Pocono Reliability Project is discussed below.

### 2. Selection of the Preferred Routes

#### a. Jenkins to West Pocono Segment

After carefully analyzing and evaluating the potential routes, PPL Electric identified two feasible alternative routes within the Jenkins-West Pocono Segment, Alternative Route A and Alternative Route B. Alternative Routes A and B were evaluated and compared against each other, using the quantitative analysis and qualitative review discussed above, to determine the selected route for the Jenkins-West Pocono Segment.

A review of the results of the quantitative analysis for the Jenkins-West Pocono Segment indicated that Alternative Route B would produce significantly fewer impacts relative to Alternative Route A and be less challenging to construct. Alternative Route A would have a greater impact on the built environment because it would be in close proximity to 15 homes and within the curtilage of one house. Although Route B would cross more acres of wetlands and floodplains, Alternative Route A would traverse more acres of forested lands and cross a greater number of streams. Alternative Route B would use considerably more future-use right-of-way. Alternative A also is longer in length and would involve more road crossings and complex angle structures, which would increase the cost for Alternative A. Based on the results of the quantitative assessment, the Siting Team concluded that Alternative Route B would have the overall combined lowest impacts to the built, natural and engineering environments. (PPL Electric Ex. 1, Att. 4, pp. 34-36)

The results of the qualitative review indicated that Alternative Routes A and B would have substantially similar permitting requirements. However, Alternative Route A would have greater visual impacts because it is near residential homes, crosses more residential-lined roads, and crosses the heavily traveled SR 115 corridor. Alternative A also would have greater social and community impacts due to the presence of one non-condemnable property and the close proximity to a retreat destination and residential development. Alternative A would have a greater risk of schedule delay due to anticipated community opposition, need to acquire property, and construction complexity. Alternative Route B would use more future-use right-of-way and have a shorter overall length. Based on the results of the qualitative review, the Siting Team concluded that Alternative Route B would have the overall combined fewest visual, community, permit, construction/maintenance, and delay concerns. (PPL Electric Ex. 1, Att. 4, pp. 36-43)

Based on the quantitative assessment and qualitative review of the Alternative Routes, PPL Electric selected Alternative Route B for the Jenkins-West Pocono Segment of the Northeast-Pocono Reliability Project. Although the environmental impacts would be approximately equal for both Alternative Routes A and B, Alternative Route B would have significantly less impacts on the social and human environments. (PPL Electric Ex. 1, Att. 4, pp. 43-44) No parties opposed the selection of Route B as the preferred route for the Jenkins-West Pocono Segment.

**b. West Pocono to North Pocono Segment**

After carefully analyzing and evaluating the potential routes, PPL Electric identified three feasible alternative routes within the West Pocono-North Pocono Segment, Alternative Route C,

Alternative Route D, and Alternative Route D-1.[49] Alternative Routes C, D, and D-1 were evaluated and compared against each other, using the quantitative analysis and qualitative review discussed above, to determine the selected route for the West Pocono-North Pocono Segment.

The results of the quantitative analysis for the West Pocono-North Pocono Segment indicated that Alternative Route D-1 would produce the lowest overall impacts. Although Route D-1 would be located in the vicinity of a church/cemetery and would traverse state-owned and conserved lands, Alternatives C and D would have the greatest impact on the built environment given their proximity to residential areas. All three Alternatives would have environmental impacts, and cross a similar number of EV streams, wetlands, and floodplain areas that are relatively narrow and may be spanned. Alternative Route D-1 would traverse more acres of forested land, span more streams, and cross more floodplains, while Alternative Route C would have the greatest impact on wetlands and floodplains. The elevated environmental impacts of Alternative Route D-1 are the result of the need to avoid social conflicts and reduce the potential effects of the alignment on conserved lands. Based on the results of the quantitative assessment, the Siting Team concluded that Alternative Route D-1 would have the overall combined lowest impacts to the built, natural and engineering environments. (PPL Electric Ex. 1, Att. 4, pp. 57-59)

The results of the qualitative review indicated that Alternative Route C would involve more environmental permitting issues than Alternative Routes D and D-1, because it crosses through longer portions of state-conserved lands. Alternative Route D-1 would have slightly more permitting requirements than Alternative Route D due mostly to its longer length. Although Alternative Route D-1 would have slightly more environmental permitting

[49] Alternative Route D-1 was developed following additional public open houses and agency coordination meeting, and combines significant components of Alternative D with specific aspects of Alternative Route C. (PPL Electric St. 4, p. 22)

requirements than Alternative Route D, Alternative Route D-1 would have the lowest impact for visual concerns, community concerns, construction issues, and schedule delay risk. Based on the results of the qualitative review, the Siting Team concluded that Alternative Route D-1 would have the overall combined fewest visual, community, permit, construction/maintenance, and delay concerns. (PPL Electric Ex. 1, Att. 4, pp. 59-65)

Based on the quantitative assessment and qualitative review of the Alternative Routes, PPL Electric selected Alternative Route D-1 for the West Pocono-North Pocono Segment of the Northeast-Pocono Reliability Project. Although Alternative Route D-1 would have slightly greater impacts to forested land, streams, and floodplains, it would have substantially less impacts to the social and human environments than Alternative Routes C and D. Importantly, the elevated environmental impacts of Alternative Route D-1 are the direct result of the need to avoid social conflicts and reduce the potential effects of the alignment on conserved lands. Further, Alternative Route D-1 was developed with direct input from landowners, local officials, and state representatives. (PPL Electric Ex. 1, Att. 4, pp. 65-66)

Certain witnesses at the public input hearing opposed Alternative Route D-1 and recommended that the Commission adopt the "Citizens Route" alternative. NPCARE also opposed Alternative Route D-1, essentially arguing for a "no build" alternative. These alternatives are separately addressed below. NPCARE also recommended certain modifications to Alternative Route D-1 in the event the Commission approved the Northeast-Pocono Reliability Project. As explained below, PPL Electric has been able to further mitigate the impacts of the route proposed for the West Pocono-North Pocono Segment by adopting certain modifications proposed by NPCARE.

### c. North Pocono to Paupack Segment

After carefully analyzing and evaluating the potential routes, PPL Electric identified three feasible alternative routes within the North Pocono-Paupack Segment, Alternative Route E, Alternative Route F, and Alternative Route F-1. Alternative Routes E, F, and F-1 were evaluated and compared against each other, using the quantitative analysis and qualitative review discussed above, to determine the selected route for the North Pocono-Paupack Segment.

A review of the results of the quantitative analysis for the North Pocono-Paupack Segment indicated that Alternative Route F-1 would produce fewer overall impacts. All three alternatives would have relatively similar impacts to the built environment, natural environment, and engineering consideration. Alternative Route F-1 would have the least impact to the built environment, due largely to the proximity of Alternative Routes E and F to residential areas. Alternative E would have the lowest impact to forests and the fewest stream crossings, but would have the highest impact to wetlands. Although both Alternative Routes F and F-1 would have similar impacts to forested lands and number of streams, Alternative Route F has a greater impact to wetlands. Engineering impacts were the highest for Alternative Route E because Alternative Routes F and F-1 used future-use right-of-way for more than half their alignments. Based on the results of the quantitative assessment, the Siting Team concluded that Alternative Route F-1 would have the overall combined lowest impacts to the built, natural and engineering environments. (PPL Electric Ex. 1, Att. 4, pp. 80-83)

The results of the qualitative review indicated that Alternative Route F and F-1 would have substantially similar permitting requirements due to the extensive co-location of these two alternatives. However, the assessment indicated that Alternative Route F-1 would have less visual concerns, community concerns, construction issues, and risk of schedule delay than the other two alternatives. Based on the results of the qualitative review, the Siting Team concluded

that Alternative Route F-1 would have the overall combined fewest visual, community, permit, construction/maintenance, and delay concerns. (PPL Electric Ex. 1, Att. 4, pp. 83-90)

Based on the quantitative assessment and qualitative review of the Alternative Routes, PPL Electric selected Alternative Route F-1 for the North Pocono-Paupack Segment of the Northeast-Pocono Reliability Project. Alternative Route F will have greater environmental impacts than Alternative Route F-1, and Alternative F-1 will have greater environmental impacts than Alternative Route E. However, Alternative Route F-1 will have fewer impacts to the social and human environments. (PPL Electric Ex. 1, Att. 4, pp. 91) No parties opposed the selection of Route F-1 as the preferred route for the North Pocono-Paupack Segment.

**d. The 138/69 kV Connecting Lines**

**i. The West Pocono 138/69 kV Connecting Lines**

A pair of new parallel 138/69 kV transmission lines are required to connect the proposed West Pocono Substation to the nearest existing 138/69 kV transmission line. The 138/69 kV transmission lines nearest to the site proposed for the West Pocono Substation are the existing East Palmerton-Wagners #1 & #2 and the Jackson-Wagners #1 & #2 138/69 kV Transmission Lines in Tobyhanna Township, Monroe County. These transmission lines are located approximately three miles east of the site of the proposed West Pocono Substation. (PPL Electric Ex. 1, Att. 4, p. 44)

After carefully analyzing and evaluating the potential routes, PPL Electric identified two feasible alternative routes to connect the West Pocono Substation with the existing 138/69 kV network, Connector Line 1 and Connector Line 2. Connector Line 1 and Connector Line 2 were evaluated and compared against each other, using the quantitative analysis and qualitative review discussed above, to determine the selected route.

A review of the results of the quantitative analysis for the West Pocono Connector Lines indicated that Connector Line 2 would produce fewer overall impacts. Connector Line 1 would be within 300 feet of one home and would cross over more state-owned and conserved lands than Connector Line 2. Although Connector Line 2 would involve more stream crossings, Connector Line 1 would have greater impacts to forested areas. Finally, Connector Line 1 would require a more complex engineering design, crosses more roads, does not co-locate with any existing linear utility corridors, and would be more costly to construct. (PPL Electric Ex. 1, Att. 4, p. 46-48)

The results of the qualitative review indicated that Connector Line 2 would have greater permitting requirements. However, Connector Line 2 would have substantially less visual and community impacts than Connector Line 1. Given its more complex design and number of road crossings, Connector Line 1 would have greater construction concerns and risk of schedule delay. Based on the results of the quantitative assessment, the Siting Team concluded that Connector Line 1 would have the overall combined lowest impacts to the built, natural and engineering environments. (PPL Electric Ex. 1, Att. 4, pp. 49-51)

Based on the quantitative assessment and qualitative review of Connector Lines 1 and 2, PPL Electric selected Connector Line 2 to connect the proposed West Pocono Substation to the existing 138/69 kV network. Although Connector Line 2 will have slightly more environmental impacts that Connector Line 1, Connector Line 2 will have less impacts to the social and human environments. Further, Connector Line 2 has a significant advantage of having a sizable portion located along an existing transmission line right-of-way, which will minimize the impacts of access and construction. Based on the results of the qualitative review, the Siting Team

concluded that Connector Line 2 would have the overall combined fewest visual, community, permit, construction/maintenance, and delay concerns. (PPL Electric Ex. 1, Att. 4, pp. 51)

**ii. The North Pocono 138/69 kV Connecting Lines**

Three new parallel 138/69 kV transmission lines are required to connect the proposed North Pocono Substation to the nearest existing 138/69 kV transmission line. The 138/69 kV transmission lines nearest to the site proposed for the North Pocono Substation are the existing Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines in Sterling Township, Wayne County. These transmission lines are located approximately one mile southeast of the site of the proposed North Pocono Substation. (PPL Electric Ex. 1, Att. 4, p. 66)

After carefully analyzing and evaluating the potential routes, PPL Electric identified two feasible alternative routes to connect the North Pocono Substation with the existing 138/69 kV network, Connector Line 3 and Connector Line 4. Connector Line 3 and Connector Line 4 were evaluated and compared against each other, using the quantitative analysis and qualitative review discussed above, to determine the selected route.

A review of the results of the quantitative analysis for the North Pocono Connector Lines indicated that Connector Line 4 would produce fewer overall impacts. Connector Line 3 would be within 300 feet of one home. Although Connector Line 4 would traverse relatively more floodplain and forest areas, Connector Line 3 would have greater impacts to wetlands. Finally, Connector Line 3 would require a more complex engineering design and would be more costly to construct. Based on the results of the quantitative assessment, the Siting Team concluded that Connector Line 4 would have the overall combined lowest impacts to the built, natural and engineering environments. (PPL Electric Ex. 1, Att. 4, p. 70-71)

The results of the qualitative review indicated that Connector Line 3 would have greater visual and community impacts due to its location relative to nearby residential areas. Both

Connector Lines 3 and 4 would have special permitting requirements. However, Connector Line 3 would involve more wetland crossings and potential impacts to the preferred habitat for the state-endangered northern flying squirrel (*Glaucomys sabrinus*). Connector Line 3 would be constructed using an existing 69 kV right-of-way for most of the alignment, but it also would involve a more complex engineering design, which could result in the risk of schedule delay. Based on the results of the qualitative review, the Siting Team concluded that Connector Line 4 would have the overall combined fewest visual, community, permit, construction/maintenance, and delay concerns. (PPL Electric Ex. 1, Att. 4, pp. 73-74)

Based on the quantitative assessment and qualitative review of Connector Lines 3 and 4, PPL Electric selected Connector Line 4 to connect the proposed North Pocono Substation to the existing 138/69 kV network. Connector Line 4 will have less environmental, social, and human impacts than Connector Line 3. (PPL Electric Ex. 1, Att. 4, pp. 74) No parties opposed the selection of Connector Line 4 as the preferred route to connect the North Pocono Substation to the existing 138/69 kV network.

### 3. Mitigation Measures

PPL Electric strives to minimize the impacts of transmission lines upon property owners and the environment. Mitigation efforts begin in the siting stage where efforts were made during the transmission line siting process to minimize impacts on existing and future land uses, as well as avoid sensitive natural resources such as wetlands and streams.[50] (PPL Electric St. 4, p. 40) In a further effort to minimize the impacts of the proposed transmission lines, PPL Electric engaged in an extensive outreach program to provide information and seek input on the Project

[50] A detailed discussion of the Company's efforts to minimize the anticipated impacts and potential permit and mitigation requirements of the proposed Northeast-Pocono Reliability Project is provided in Section 3.3 of Attachment 4 to the Siting Application, including potential impacts to: land use; natural features; rare, threatened, and endangered species; cultural resources; community features and conserved lands; and agency requirements and permits. (PPL Electric Ex. 1, Att. 4, pp. 130-139)

from the public and government officials. (PPL Electric St. 1, pp. 24-25) Through these efforts, PPL Electric was able to develop new alternative route alignments (Alternative Routes D-1 and F-1) and select routes for the transmission lines to mitigate the effects of the transmission lines. (PPL Electric St. 4, pp. 22, 28; PPL Electric St. 6, pp. 8-9)

As explained above, based on the results of the quantitative and qualitative assessments, the routes selected by PPL Electric for the Northeast-Pocono Reliability Project will have the overall combined lowest impacts to the built, natural and engineering environments and the overall combined fewest visual, community, permit, construction/maintenance, and delay concerns. However, there is no perfect route and all transmission lines will have some impact on the natural, social, and human environments. Where potential impacts are unavoidable, mitigating factors will be employed. Below is a summary of some of the mitigation measures that PPL Electric will implement to minimize the impact of the proposed route.

Strategic alignment siting and pole placement have resulted in a route that has no poles within the floodplain of a stream and only ten poles (out of 241) that would be located within the 150-foot riparian buffer of a stream, but generally at least 100-feet from the stream edge. (PPL Electric St. 4-R, p. 14) Further, PPL Electric identified pole locations and their associated work pad areas in regards to potential erosion and sedimentation ("E&S") impacts. (PPL Electric St. 4-R, p. 14)

One of the initial measures PPL Electric undertook to minimize the impact to the EV classified streams was to identify alternatives during the siting process that would limit the number of stream crossings. PPL Electric also made minor modifications in the orientation of the alignment so that all but one of the stream crossings are generally perpendicular to the

alignment of the stream corridor.[51] Crossing perpendicular to the stream channel reduces the total area of forest canopy that will be required to be removed for safe use of the right-of-way. (PPL Electric St. 4-R, pp. 16, 19-20) Further, temporary stream crossings at these locations will be developed using methods approved by the Pennsylvania Department of Environmental Protection ("DEP") and the county conservation district and will be removed upon completion of the construction phase. (PPL Electric St. 4-R, pp. 14-15)

As part of the required environmental studies and permitting process, full wetland and waterway delineations are conducted that will define these features as well as any additional low-order perennial or intermittent streams that are not identified in the Geographic Information Systems ("GIS") stream data. (PPL Electric St. 8-R, p. 12) As part of the permitting process, PPL Electric will be required to adhere to the regulations administered by federal, state, and county officials, which will include measures for preventing specific or cumulative negative effects to the water quality of these EV waters. (PPL Electric St. 4-R, p. 16)

Work in any special protection, High Quality ("HQ") or EV, watershed will require applying for an Individual National Pollutant Discharge Elimination System ("NPDES") permit, which will involve more rigorous Best Management Practices ("BMPs") and detailed E&S control plans to protect the current level of water quality from being degraded. (PPL Electric St. 4-R, pp. 14-15) Most of the actual soil disturbance will be limited to the work pad areas around the proposed monopole locations, which are required for a safe and stable surface from which to construct the foundations and erect the monopoles. The level of water quality in the surrounding

[51] The transmission line will briefly parallel within 150 feet of one EV stream on Parcel 43. This alignment on Parcel 43 is the result of a specific request by the landowner that the route follow the property line. The right-of-way will parallel a section of the stream but appropriate erosion and sedimentation measures will be used to limit any potential impacts to this stream. (PPL Electric St. 4-R-2, p. 14)

stream networks will be maintained through the use of strategically located BMPs and the minimization of soil disturbance during the construction stage. (PPL Electric St. 4-R, p. 15)

To mitigate impacts to the local trout population, PPL Electric will incorporate state and county approved E&S control measures and will adhere to the seasonal restrictions that may be placed on the streams to protect the ecological processes and recreational aspects of the trout. PPL Electric will apply the approved E&S control measures as needed at the stream crossings and coordinate the project schedule to account for any seasonal restrictions. (PPL Electric St. 4-R, p. 18)

Although PPL Electric initially will remove all vegetation, except grasses and herbaceous or non-woody plants, to establish the right-of-way and to accommodate construction activities, the compatible species will be permitted to regrow in the Wire Zone and Border Zone.[52] In addition, mitigation measures for vegetation clearing near certain stream crossings may be required as part of the federal and state permitting process. (PPL Electric St. 7-R, p. 4; PPL Electric St. 8-R, p. 13) To address impacts to the riparian buffers of EV streams located within the segment of the route that extends from the West Pocono to North Pocono Substation, PPL Electric will, to the extent practical, selectively clear the Border Zone within 150 feet of any EV stream crossing, and will not remove any stumps in the right-of-way that are within 150 feet of any EV stream crossing except in those limited instances where pole structures and/or foundations are located. (PPL Electric St. 7-RJ, pp. 5-6)

[52] The "Wire Zone" is defined as the area within the right-of-way that includes the area underneath the conductor and extends ten (10) feet outward from the outer-most conductor on both sides of the transmission line. Areas within the Wire Zone are cleared of all woody vegetation leaving only grasses. Ferns and other herbaceous plants are permitted to grow back over time and remain in the Wire Zone. The "Border Zone" is defined as the "the remainder of the right-of-way," or the area within the right-of-way that extends from the edge of the Wire Zone, as defined above, to the outer-most edge of the right-of-way. In the Border Zone, vegetative species identified as compatible are permitted to grow back over time and remain in the Border Zone. (PPL Electric St. 7-R, p. 3)

PPL Electric will complete field surveys of the proposed routes, documenting all threatened and endangered species, while recording all species of special concern and major habitats in the study area. Reports will be prepared, documenting the findings, and submitted to the appropriate agencies, including the Department of Conservation and Natural Resources ("DCNR"), the Pennsylvania Game Commission ("PGC"), the Pennsylvania Fish & Boat Commission ("PFBC"), and the U.S. Fish & Wildlife Service. In the event that any of these agencies require additional studies, PPL Electric will coordinate with these agencies and develop appropriate solutions. (PPL Electric St. 9-R, p. 6)

It also should be noted that PPL Electric funded the acquisition of 3,393 acres of property for the PGC. The new parcels acquired by the PGC fill gaps in a stretch of health forest open to the public. Game land, state forest, state parks, and land trust holdings make up the swath that runs from Butler Township, Luzerne County, in a northeasterly direction to Clifton Township, Lackawanna County. As with all state game land, the property will remain open to the public for hunting, fishing, and hiking. (PPL Electric St. 1-R-2, p. 8)

Finally, PPL Electric will have to obtain all environmental permits necessary for the construction of the Project, and will be required to comply with all of the terms and conditions placed on those permits, including surveys for pull pads, pad areas, and access roads before tree clearing, construction activities, and any required mitigation measures commence. (PPL Electric St. 9-R, p. 15)

### 4. Siting Issues from the Public Input Hearings

#### a. Citizens Route

Certain witnesses that testified at the public input hearing opposed the selected route for the West Pocono-North Pocono Segment and requested that the Commission adopt the "Citizens

Route" alternative.[53] Under the Citizens Route, the West Pocono 230-69 kV Substation would be located approximately 4.7 linear miles northwest, and would move the route for the 230 kV transmission line away from Thornhurst Township and through the north-central section of the Lackawanna State Forest in a direct alignment and then turn to the northeast and cross two additional sections of the Lackawanna State Forest located in Clifton Township. (PPL Electric St. 4-R, pp. 4, 8; PPL Electric Ex. BAB-1) However, as explained below, the Citizens Route does not accomplish the same objectives as the Northeast-Pocono Reliability Project, and it would have its own additional impacts on the natural and built environments.

The members of the public that advocated for the Citizens Route overlook the fact that the location of the new West Pocono Substation was strategically selected so that the Substation would be in close proximity to the load center, central to the 230 kV sources, and within close proximity to the existing 138/69 kV network, which will minimize the length of the transmission lines needed to connect the Substation to the electric grid, as well as minimize the costs and environmental impacts of the lines needed to connect the Substation to the 138/69 kV network. (PPL Electric St. 1, p. 16) The Citizens Route would move the West Pocono Substation further from the load center, would not reduce the line lengths of the existing 69 kV lines, and would require the construction of approximately 5.2 miles of additional transmission lines to electrically connect the Substation to the existing 138/69 kV network. (PPL Electric St. 4-R, pp. 4-5) Thus, the Citizens Route would not accomplish the purpose and same reliability benefits as PPL Electric's proposed location for the new West Pocono Substation.

Further, the members of the public that that support the Citizens Route fail to account for the impacts that it would cause to the surrounding forests, public lands, local conservation

[53] The Citizens Route initially was proposed by NPCARE. Although NPCARE proposed some minor modifications to the route proposed for the West Ponoco-North Pocono Segment, NPCARE no longer supports the Citizens Route and has not asked the Commission to adopt the Citizens Route. (Tr. 480-81; PPL Electric St. 4-R, pp. 1-2)

efforts, the stream network (including wild trout streams), sensitive habitats that support rare, threatened, or endangered species, the local infrastructure, and the local economy. Many of these environmental impacts of the Citizens Route would be substantially similar, and in some cases more severe, than the impacts from PPL Electric's proposed route.

Preliminarily, it does not appear the Citizen's Route was developed with any field reviews to determine the actual environmental features present and consideration of the real constructability and associated potential impacts. The alignment of the Citizens Route depicts a series of straight lines across the landscape, that are shorter than the alignment for Route D-1. However, the Citizens Route has been developed with no regard to the potential conflicts the route may have relative to the expectations of the private and public landowners over which their alignment would travel. Coordination with these landowners would undoubtedly result in a more complex Citizens Route. (PPL Electric St. 4-R, p. 7)

From a quantitative perspective, a GIS comparison of the Citizens Route and Route D-1 alignments indicated that Route D-1 would span more streams relative to the Citizens Route. However, the number of streams that may actually be crossed by the Citizens Route may exceed the GIS analysis value because the alignment will be located in a landscape position that contains intermittent and low-order streams that are not identified on the publically available GIS data. Based on these observations, there is a high probability that the number of high value streams spanned by the Citizens Route would equal or exceed the number of high value streams spanned by Route D-1. (PPL Electric St. 4-R, pp. 6-7)

From a general forest fragmentation perspective, the effect of PPL Electric's Route D-1 is less detrimental compared to the Citizens Route. Review of the Citizens Route alternative indicates that the right-of-way would cross through the north-central section of the Lackawanna

State Forest in a direct alignment and then turn to the northeast and cross two additional sections of the Lackawanna State Forest located in Clifton Township. Ultimately the Citizen's Route directly cuts in half and effectively creates a significant forest impact through the very center of the Lackawanna State Forest lands. In addition, the Citizen's Route would still require the clearing of a 150-foot right-of-way from their substation location to the existing 69-kV infrastructure. Assessment of the Citizens Route indicates that the length within state forest lands would be longer than Route D-1 and would result in forest fragmentation of the north-central section of the Lackawanna State Forest, as well as fragmentation of the two sections in Clifton Township. (PPL Electric St. 4-R, pp. 8-9)

Route D-1 will be located in close proximity to other man-influenced land uses that currently fragment the surrounding forest such as areas of concentrated residential development, a network of public and forest roads, and a golf course at the Thornhurst Country Club. Aside from two forest roads, the alignment of the Citizens Route would traverse though isolated sections of forest that are presently much less fragmented by man-influenced land uses. (PPL Electric St. 4-R, p. 9)

During the siting process for the Northeast-Pocono Reliability Project, PPL Electric proactively worked with individual landowners to define alignments across their properties that provided for the best long-term use of the land, often by mirroring property lines. This process resulted in a more acceptable and functional route to the landowners. The impact that the Citizens Route would have on the public and private lands over which it would pass does not appear to have been extensively evaluated. The Citizens Route would require coordination between DCNR and PGC, and may result in a less direct alignment that follows the boundary lines between the two state lands. The Citizens Route also would bisect several private

properties in ways that would result in isolated portions of property that landowners would be unable to effectively subdivide in the future. (PPL Electric St. 4-R, pp. 9-10)

Finally, the Citizen's Route does not account for the need to create access roads for constructing the transmission line. PPL Electric's siting process actively considered the need to build access roads. PPL Electric's proposed Route D-1 makes extensive use of existing roads and tracks in certain areas to further reduce the need for additional clearing and to address potential erosion and sediment concerns. Indeed, of the approximately 28-miles of non-right-of-way access roads for the Northeast-Pocono Reliability Project, approximately 22 miles will use existing roadways. The Citizen's Route is so remote that extensive development of new access roads would be required resulting in even more forest impacts through largely undisturbed areas. (PPL Electric St. 4-R, p. 10)

For the reasons explained above, the Citizens Route does not accomplish the same objectives as the Northeast-Pocono Reliability Project, and it would have its own additional impacts on the natural and as built environments.

**b. Other Concerns from the Public Input Hearings**

Certain witnesses at the public input hearing stated that all the reliability issues could be resolved if the transmission lines were placed underground. (Tr. 189-90, 206-07, 224, 240, 248) Burying high voltage transmission lines is extremely expensive and generally costs 6 to 10 times more than constructing overhead transmission lines. It also is uncertain how well 58 miles of buried double circuit 230 kV transmission line would function. (PPL Electric St. 5-R, p. 5) Further, repairing and maintaining underground transmission lines present additional difficulties. (PPL Electric St. 5-R, p. 5) Finally, burying the transmission line would not eliminate any of the environmental concerns raised by NPCARE or the public input hearing witnesses. (PPL Electric St. 5-R, p. 5)

Several witnesses at the public input hearing suggested that PPL Electric failed to take into account the public comments and feedback when it selected the proposed routes for the Northeast-Pocono Reliability Project. (Tr. 130) However, this assertion is contrary to the record. As explained above, PPL Electric undertook an extensive public outreach program to provide information and seek input on the Project from the public and government officials. (*See* Section VI.E.1, *supra*) PPL Electric considered all the public comments when it selected the substation locations and the proposed line routes. Further, even after the proposed line route was selected, PPL Electric worked with affected landowners and made adjustments to the proposed routes to address landowner concerns. (PPL Electric St. 4-R, pp. 10-11)

Certain witnesses at the public input hearing raised concerns regarding the impact that the West Pocono-North Pocono Segment will have the Big Bass Lake Private Community ("Big Bass Lake") and Elm Park, a grassy area located within the Big Bass Lake. (Tr. 67, 98-99) However, the proposed route does not traverse Big Bass Lake or Elm Park. Given the distance between Big Bass Lake and the proposed route, approximately a quarter of a mile, and the fact that Big Bass Lake and the Park are surrounded by heavily wooded areas, the proposed route for the for the Northeast-Pocono Reliability Project will have little if any impact to Big Bass Lake or Elm Park. (PPL Electric St. 1-R, pp. 9-10)

A few witnesses at the public input hearing, as well as NPCARE, raised concerns regarding the impact to Choke Creek Falls. (Tr. 61-62, 108; NPCARE St. 2, pp. 8, 13-14) PPL Electric explained that the property on the northern bank of the Choke Creek, which includes the site of the Choke Creek Falls, was acquired by DCNR in 2010 and merged into the adjacent Lackawanna State Forest. PPL Electric assessed the location of the proposed right-of-way for

the West Pocono-North Pocono Segment, Route D-1, relative to Choke Creek Falls with the guidance of Lackawanna State Forest officials. As a result, PPL Electric made route adjustments to move the preferred route further away so as not to affect the site's aesthetic value. (PPL Electric St. 4-R-2, p. 20) Further, given the distance between the proposed route and Choke Creek Falls (approximately 0.3 miles), the topographic barrier of the surrounding hills, and the dense forested vegetation, it does not appear that the proposed transmission line will be visible from Choke Creek. (PPL Electric St. 4-R, p. 11; PPL Electric Ex. BAB-2)

Certain witnesses at the public input hearing, as well as NPCARE, raised concerns that the West Pocono to North Pocono segment of the Northeast-Pocono Reliability Project will have a negative impact on tourism and outdoor activities in the area. (Tr. 108, 121, 130, 141-42, 206; NPCARE St. 2, pp. 12-14) The proposed route for the West Pocono-North Pocono Segment, Route D-1, would primarily mirror the boundary of Lackawanna State Forest around the southeastern edge of the state forest, which zigzags in an irregular fashion to follow the boundaries of adjacent private lands. PPL Electric explained, however, that the use of the state forest lands in this general area was necessary to avoid the residential development on the private lands that are located to the southeast of Lackawanna State Forest. Further, most of the extensive recreational sites and trails enjoyed by the public are located in the central and northern portions of the forest and well north of the proposed Route D-1. (PPL Electric St. 4-R, pp. 12-13; PPL Electric St. 4-R-2, pp. 20-22)

One of the witnesses at the public input hearing asserted that the proposed route for the West Pocono-North Pocono Segment will cross many farms, including ones that are subject to Agricultural Conservation Easements. (Tr. 147-49) Although the proposed route does parallel a one-acre feed lot maintained by the PGC on State Game Lands #135, it does not cross any

actively farmed parcels of land. Further, the closest preserved farms are located near Moscow, approximately a mile north of the proposed alignment. (PPL Electric St. 4-R, p. 22)

One of the witnesses at the public input hearing, Mrs. June Ejk, proposed a line route that would parallel Ash Creek for approximately one mile along an abandoned railroad bed. (Tr. 90-91) PPL Electric explained that this proposal was not acceptable because: (1) it would require that entire tree canopy for Ash Creek be removed; (2) it may also require poles and access roads to be located with the floodplain of Ash Creek, which represents significant concerns from a permitting perspective and is unlikely to be approved give the availability of better alternatives; (3) it bisects more of State Game Lands 135 and adds approximately one additional mile onto the game lands in this section; and (4) it impacts preserved land by bisecting approximately 1.3-miles of the southern portion of a conserved land parcel preserved by the Pocono Heritage Land Trust located to the northeast of Lake Champagne. (PPL Electric St. 4-R, pp. 22-23)

Finally, several witnesses at the public input hearing expressed concerns regarding the impact that the Northeast-Pocono Reliability Project may have on property values. (Tr. 59, 92, 154, 238, 241) The public input testimony has provided no factual basis to conclude that the Northeast-Pocono Reliability Project will have a negative impact on their property values. Further, PPL Electric's expert, with over 17 years' experience in evaluating right-of-way and real estate values, concluded that, based on her experience and the professional literature, the proposed transmission lines for the Northeast-Pocono Reliability Project are not likely to have a significant adverse impact to property values. (PPL Electric St. 6-R, pp. 7-9) Moreover, even assuming, *arguendo*, that transmission lines may have a substantial adverse impact to property values, relocating the routes for the Northeast-Pocono Reliability Project would not resolve the issue, it would just move the problem to some else's property.

## F. NPCARE'S ISSUES WITH THE WEST POCONO-NORTH POCONO SEGMENT

NPCARE was the only active party to oppose any of the routes selected for the Northeast-Pocono Reliability Project. NPCARE did not put any evidence into the record regarding the need for the proposed Northeast-Pocono Reliability Project. Rather, NPCARE only challenges the route selected for the West Pocono-North Pocono Segment, Route D-1, and the associated North Pocono 138 kV connecting lines. (Tr. 482; NPCARE St. 2-R, p. 1) NPCARE contends that the West Pocono-North Pocono Segment should not be constructed because it will potentially have environmental impacts. (NPCARE St. 2, p. 14; NPCARE St. 2-R, p. 2) In essence, NPCARE is advocating for a "no build" alternative.

As explained below, NPCARE has failed to apply the proper legal standard for the siting of high voltage transmission lines. In essence, NPCARE seeks a whole new set of environmental safeguards, regulations, and standards, above and beyond those required by the applicable environmental agencies. However, there is nothing in the record to suggest that PPL Electric will not be able to secure the necessary environmental permits or that those permits will be inadequate to prevent and mitigate environmental issues. Further, there is nothing in the record to suggest that PPL Electric will not be able to mitigate any harm to environmentally sensitive areas. Finally, NPCARE largely ignores the many mitigation measures that PPL Electric will employ to minimize the impacts of the proposed Project.

### 1. NPCARE Applies an Incorrect Legal Standard

NPCARE argues that PPL Electric has failed to meet its burden to demonstrate that the West Pocono-North Pocono Segment will have minimal adverse environmental impacts. According to NPCARE, construction of the West Pocono-North Pocono Segment will have some adverse environmental impacts and, therefore, the Commission should not approve the siting and

construction of the West Pocono-North Pocono Segment. (NPCARE St. 2, pp. 14-15; NPCARE St. 2-R, pp. 3, 5) NPCARE's conclusion is based on an incorrect application of Section 57.76(a)(4).

In order to approve the siting and construction of a high voltage transmission line, the Commission must find, among other things, that the proposed transmission lines will have minimum adverse environmental impact, considering the need for the project, the state of the available technology, and the available alternatives. 52 Pa. Code § 57.76(a)(4) (emphasis added). Section 57.76(a)(4) clearly requires a balancing of the environmental impact with both the need for the project and the available alternative routes. The Commonwealth Court explained that Section 57.76(a)(4) requires the applicant to demonstrate reasonable efforts to minimize adverse environmental impacts of the proposed route when compared to the available alternative routes, but the utility need not consider all possibilities. *Susquehanna-Roseland*, 25 A.3d 440, 451-52, 448-49 (Pa. Cmwlth. 2011); *Trailco*, 995 A.2d 465, 479-80, 483 (Pa. Cmwlth. 2010). Moreover, the applicant is not required to choose a route that has no adverse impacts. *Id.*

NPCARE ignores this balancing requirement and, instead, focuses exclusively on whether the proposed route will have any adverse environmental impacts. Under NPCARE's application of Section 57.76(a)(4), however, no high voltage transmission lines would ever be built because all transmission lines will have some impact to the natural environment. (PPL Electric St. 4-R-2, p. 3) This clearly is not the intent of the Section 57.76(a)(4) and, moreover, would lead to absurd results, particularly where the need for a project is unrefuted, as is the case here.

NPCARE concedes that it has not undertaken any analysis to compare Route D-1 with any of the other available alternatives for the West Pocono-North Pocono Segment, nor does

NPCARE support any of these alternative routes. (Tr. 480) NPCARE's failure to compare the impacts of Route D-1 with the other available alternatives is contrary to requirements of Section 57.76(a)(4), which clearly requires the impacts of a proposed route to be compared to the impacts of the available alternative routes. *Susquehanna-Roseland*, at 448-49. Indeed, the requirement to consider the other alternative routes is consistent with Section 57.75(e)(4), which provides that the Commission will consider, among other things, the "availability of reasonable alternative routes." 52 Pa. Code § 57.75(e)(4).[54] NPCARE cannot simply ignore this requirement.[55]

As explained above, PPL Electric undertook an extensive and detailed analysis of the alternative routes for the Northeast-Pocono Reliability Project, including the alternative routes for the West Pocono-North Pocono Segment. Based on results of this analysis, PPL Electric concluded that Route D-1 will have the lowest overall combined impacts to the built, natural and engineering environments and the fewest overall combined visual, community, permit, construction/maintenance, and delay concerns when compared to the other available alternatives for the West Pocono-North Pocono Segment. (PPL Electric Ex. 1, Att. 4, pp. 51-65) NPCARE fails to give due and appropriate consideration to all the environmental, social, and engineering issues and concerns that PPL Electric must consider and address under the Commission's transmission line siting regulations. Moreover, NPCARE concedes that it has no reason to

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[54] *See Wheeling-Pittsburgh Steel Corp. v. Department of Environmental Protection*, 979 A.2d 931, 937 (Pa. Cmwlth. 2009) (regulations or parts of regulations are *in pari material* when they relate to the same persons or things and must be construed together if possible) (citing 1 Pa.C.S. § 1932).

[55] Clear and unambiguous words in statutes and regulations must not be disregarded. *Middletown Township v. Lands of Stone*, 959 Pa. 607, 616, 939 A.2d 331, 337 (2007) (citing 1 Pa.C.S. § 1921). Further, a statute or regulation must be construed to give effect to all of its provisions so that no provision is mere surplusage. 1 Pa.C.S. § 1921(a); *see also Commonwealth v. Ostosky*, 589 Pa. 437, 909 A.2d 1224, 1232 (2006) (a presumption also exists that the legislature placed every word, sentence, and provision in a statute for some purpose and therefore courts must give effect to every word). *See also Wheeling-Pittsburgh Steel Corp. v. Department of Environmental Protection*, 979 A.2d 931, 937 (Pa. Cmwlth. 2009) ("Statutory construction rules apply equally to the interpretation of administrative regulations.").

believe that any of the other alternative routes for the West Pocono-North Pocono Segment will have lesser impacts than Route D-1 selected by PPL Electric. (Tr. 480)

Other than offering a few minor modifications to Route D-1, NPCARE has not proposed *any* other alternative route for PPL Electric or the Commission to consider. (Tr. 480) Instead, NPCARE simply contends that the West Pocono-North Pocono Segment should not be constructed because it will potentially have environmental impacts. (NPCARE St. 2, p. 14; NPCARE St. 2-R, p. 2) NPCARE's failure to offer *any* other feasible alternative is essentially a "no build" alternative, which has expressly been rejected by the Commonwealth Court. *See Susquehanna-Roseland*, at 448-49 (holding that the applicant is not required to choose a route that has no adverse impacts).

Further, NPCARE's failure to offer *any* feasible alternative for PPL Electric and the Commission to consider is particularly problematic where no party has presented any expert testimony opposing the need for reinforcement of the transmission system in the Northeast Pocono region. NPCARE has not evaluated the need for reinforcement of the transmission system in the Northeast Pocono region. (NPCARE St. 2-R, p. 1; Tr. 483-84) Although NPCARE states that it agrees with OCA's position on the need for the project, NPCARE completely disregards that OCA's expert witness in fact agrees that there is a need to resolve reliability violations and to reinforce the system in the Northeast Pocono region.[56] (OCA St. 1, pp. 3) The failure to offer *any* feasible alternative, *i.e.*, a "no build" alternative, simply is not

[56] To the extent that NPCARE contends that it supports the 138 kV alternative electrical solution discussed in the OCA's direct testimony, NPCARE ignores that PPL Electric is not proposing to build the 138 kV subset option. Further, as explained above, the record evidence clearly demonstrates that the 138 kV alternative electrical solution would not solve the underlying problems that cause the reliability violations, would create new problems that would result in less reliable service to customers, and that PPL Electric would to encounter significant technical, economic, and operational/constructability obstacles if the 138 kV alternative electrical solution were to be implemented. (*See* Section VI.B.4, *supra*) Finally, NPCARE disregards that the OCA's expert witness does not dispute these shortcomings of the 138 kV alternative electrical solution.

feasible given the undisputed need to reinforce the transmission system in the Northeast Pocono region.

Under Section 57.76(a)(4), PPL Electric is not required to choose a route that has no adverse impacts, as suggested by NPCARE. Rather, PPL Electric must make reasonable efforts to minimize and mitigate any impacts and ensure that any harm to the environment is outweighed by the benefits of the project. *Susquehanna-Roseland*, at 448-49. It is undisputed that the Northeast-Pocono Reliability Project will provide substantial benefits to electric customers in the Northeast Pocono region as discussed above. Further, it cannot reasonably be disputed that PPL Electric has made substantial efforts to minimize and mitigate the impacts of the proposed route. Through the siting process, PPL Electric identified alternative routes for the West Pocono-North Pocono Segment that would avoid or minimize impacts to environmentally sensitive areas. The routes selected by PPL Electric, including Route D-1, have the lowest overall combined impacts to the built, natural and engineering environments and the fewest overall combined visual, community, permit, construction/maintenance, and delay concerns. Where potential impacts are unavoidable, PPL Electric will implement mitigation measures to minimize the impact of the proposed route as discussed above in Section VI.E.3.

Based on the foregoing, NPCARE's opposition to Route D-1 is based on an incorrect application of Section 57.76(a)(4). NPCARE's failure to compare the impacts of Route D-1 with the other available alternatives is contrary to requirements of Section 57.76(a)(4), which clearly requires the impacts of a proposed route to be compared to the impacts of the available alternative routes. Further, given that NPCARE has failed to offer *any* feasible alternative to Route D-1, that PPL Electric will implement mitigation measures to minimize the impact of the proposed route, and that Route D-1 will have less overall impacts than the other feasible

alternatives, the Commission should find that, on the balance of the many competing factors that must be considered in siting a high voltage transmission line, Route D-1 is a reasonable and appropriate route between the West Pocono and North Pocono Substations.

### 2. NPCARE's Modifications to the West Pocono-North Pocono Segment

In its direct testimony, NPCARE initially proposed four modifications to the West Pocono-North Pocono Segment if the Commission approves PPL Electric's application: (1) relocating the route away from Phelps Road on Parcel 38; (2) relocating the route 75 feet west of the proposed route on parcel 35 to allow for a more perpendicular stream crossing; (3) relocating the line south on Parcel 37 and installing an angle structure to allow for a more perpendicular stream crossing; and (4) relocating the route on Parcel 43 to minimize the impacts to a riparian buffer. (NPCARE St. 1, pp. 8-10; NPCARE St. 2, p. 15)

Regarding the first proposal (No. 1 above), PPL Electric explained that representatives from the Department of Conservation and Natural Resources, Lackawanna State Forrest requested, and PPL Electric agreed, to move the proposed route across Parcel 38 300 feet southeast from the property line. The proposed realignment on Parcel 38 creates a 300 foot visual buffer between the proposed route and Phelps Road. (PPL Electric St. 1-R-2, pp. 4-5; PPL Electric Ex. DLH-5) This modification is acceptable to NPCARE and resolves its concerns with respect to Parcel 38. (Tr. 481)

Regarding the second proposal (No. 2 above), PPL Electric explained that the proposed modification to Parcel 35 was not acceptable because it would place the proposed route within a wetland on Parcel 35. (PPL Electric St. 1-R-2, pp. 8-9; PPL Electric Ex. DLH-7) In response, NPCARE proposed another modification to the route on Parcel 35. The second proposed modification to Parcel 35 would extend the line approximately 75 west at the northern portion of the route on Parcel 35 and then continue south to tie into the location for the proposed route at

the southern part of Parcel 35. (NPCARE St. 1-R, p. 2; PPL Electric Ex. DLH-8) This change would allow for a more perpendicular stream crossing, while avoiding the wetland on Parcel 35. PPL Electric has contacted the underlying landowners, who have indicated that they do not object to the proposed modification. This modification is acceptable to PPL Electric provided that it is acceptable to the underlying landowners. (PPL Electric St. 1-RJ-2, pp. 2-3) Further, this modification is acceptable to NPCARE and resolves its concerns with respect to Parcel 35. (Tr. 481) This modification will further help mitigate the impacts of the proposed route for the West Pocono-North Pocono Segment.

Regarding the third proposal (No. 3 above), PPL Electric explained that the proposed modification to Parcel 37 was not acceptable because it would add an additional angle structure to Parcel 37, which would require a concrete-embedded foundation and possibly a larger structure and/or guy wires, and would require approximately 200 feet of additional line to be built resulting in approximately 0.5-acres more forest clearing on Parcels 35 and 37 than the route proposed by PPL Electric. (PPL Electric St. 1-R-2, pp. 5-6)

Finally, regarding the fourth proposal (No. 4 above), PPL Electric explained that the alignment on Parcel 43 is the result of a specific request by the landowner that the route follow the property line. Relocating the route on Parcel 43 farther southeast away from the stream would cause additional impacts to the property owner, and would cause the route to have a greater impact to Parcel 44, which crosses a non-condemnable property owned by a church. The only other alternative would be to move the route northwest. However, this alternative simply is not feasible. Such relocation would move the route off Parcel 43 and put the transmission line in a residential area, Thornhurst Country Club Estates, who would likely oppose this relocation. (PPL Electric St. 1-R-2, pp. 6-8)

Based on the foregoing, the two modifications proposed by NPCARE (Nos. 1 and 2 above) and agreed to by PPL Electric will help to further mitigate the impacts of the route proposed for the West Pocono-North Pocono Segment by creating a 300 foot visual buffer between the proposed route and Phelps Road, and by allowing for a more perpendicular stream crossing on Parcel 35.[57]

### 3. Environmental Requirements

The vast majority of NPCARE's testimony is dedicated to identifying the potential environmental impacts of Route D-1, discussing the applicable regulations, and the requirements for the needed environmental permits. NPCARE acknowledges that PPL Electric has been and is actively in the process of conducting the associated environmental studies and impact statements, and applying for and obtaining the necessary environmental permits. (Tr. 479) However, NPCARE contends that going through the federal and state review and permitting process after the Commission has approved the route does not satisfy environmental considerations enunciated in Article I, Section 27 of the Pennsylvania Constitution and *Payne v. Kassab*, 312 A.2d 86 (Pa. Cmwlth. 1973). (NPCARE St. 2-R, p. 4) NPCARE therefore recommends that the Commission adopt adequate safeguards, above and beyond those required by the applicable environmental agencies, to reduce the environmental impacts of the project. (NPCARE St. 2, p. 11) NPCARE's arguments are without merit and should be rejected.

#### a. PPL Electric is Not Required to Obtain All Permits Prior to Commission Approval of the Project

NPCARE criticizes PPL Electric for not completing all the necessary permit applications and for not providing all the information necessary to complete the permit applications. NPCARE contends that going through the federal and state review and permitting process after

[57] These modification are within the 1,000-foot corridor approved under 52 Pa. Code § 57.76(b).

the Commission has approved the route does not satisfy environmental considerations enunciated in Article I, Section 27 of the Pennsylvania Constitution and *Payne v. Kassab*, 312 A.2d 86 (Pa. Cmwlth. 1973).[58] In essence, NPCARE contends that PPL Electric should be required to complete all the environmental studies and impact statements and obtain all necessary environmental permits before the Commission can find that the Northeast-Pocono Reliability Project will have a minimal adverse environmental impact. This argument must be rejected for several reasons.

First, NPCARE disregards that the Commission's siting regulations were promulgated to meet the requirement for a consideration of environmental impacts mandated by Article I, Section 27 of the Pennsylvania Constitution, and to apply the test enunciated in *Payne v. Kassab*, to determine whether a proposal having environmental impacts should be approved. *See Trailco*, 995 A.2d at 477-78 ("These regulations, and 52 Pa. Code § 57.76 in particular, represent a codification of the review required by article I, section 27 of the Pennsylvania Constitution."); *see also Re Proposed Electric Regulation*, 1976 Pa. PUC LEXIS 114, 49 Pa. P.U.C. 709, 712 (Mar. 2, 1976) (stating that the "review required by article I, section 27 is being incorporated into our siting regulations").

Second, NPCARE misunderstands the required federal and state permitting processes necessary to acquire multiple approvals from various agencies to construct a new transmission lines. The route that will ultimately be used for the proposed line, as well as the permits that will ultimately be required for construction of the proposed line, is uncertain until the Commission

[58] With respect to environmental issues, the Commonwealth Court developed the three-part Payne v. Kassab test, which requires consideration of the following questions: (1) Was there compliance with all applicable statutes and regulations relevant to the protection of the Commonwealth's public natural resources? (2) Does the record demonstrate a reasonable effort to reduce the environmental incursion to a minimum? And (3) Does the environmental harm which will result from the challenged decision or action so clearly outweigh the benefits to be derived therefrom that to proceed further would be an abuse of discretion? *Payne v. Kassab*, at 94.

has finally approved a route for the line. Consequently, as a matter of practice, public utility companies generally seek and obtain permits necessary for construction of a high voltage transmission line in a carefully balanced time frame because obtaining all permits prior to receiving Commission approval of project could result in the public utility wasting time and resources, to the detriment of customers, to obtain permits for a project or route that may never be built. (PPL Electric St. 4-R-2, pp. 4-5)

Third, NPCARE ignores the need to prioritize permitting and construction based on the required in-service dates of the other Project sections. Project planning necessitates close coordination with construction schedules to ensure that the appropriate time frames of in-service dates and potential line outage dates are considered as part of the planning process. As a result, field studies and permitting must be prioritized to focus on the required environmental studies and engineering to be completed for the sections and substation to be constructed first. Here, NPCARE focuses on only one section of the total project, the West Pocono-North Pocono Segment. However, the West Pocono-North Pocono Segment is the last section to be constructed and, as such, has the last priority from a plan development and permitting perspective. (PPL Electric St. 4-R-2, pp. 5-6)

Fourth, NPCARE disregards that access to every property may not be available for a significant period of time, which can further delay some studies. As permission to access private and public lands is obtained, field planning is initiated to conduct the required environmental studies, based on consultation feedback from federal and state agencies. For example, although PPL Electric has been ready to complete the required environmental studies since the summer of 2012, permission to survey on Lackawanna State Forests land for the West Pocono-North

Pocono Segment and the North Pocono-Paupack Segment was only secured in the middle of May 2013. (PPL Electric St. 4-R-2, pp. 6-7)

Fifth, NPCARE's position that PPL Electric is required to complete the required environmental studies and obtain all required permits before the Commission may approve a project is contrary to its own expert testimony. NPCARE offered the expert testimony of Ms. Alker, who has 27 years experience in various environmental engineering and planning projects. Ms. Alker has significant experience in preparation of environmental impact statements and environmental permit applications. (NPCARE St. 1, Ex. DA-4; Tr. 443) According to Ms. Alker, "[i]t makes sense to obtain PUC approval of the route prior to initiating detailed design and completion of State permit applications." (NPCARE St. 1-R, p. 7; Tr. 443)

Finally, NPCARE's position that PPL Electric is required to complete the required environmental studies and obtain all required permits before the Commission may approve a project and before PPL Electric may begin construction on other portions of the Project is contrary to established law. The Commonwealth Court recently considered and rejected this very same argument, holding:

> [T]here is nothing in the PUC's siting regulations that requires receipt of all necessary permits before construction of the proposed line begins.
>
> * * *
>
> The PUC also agreed with PPL that requiring PPL to wait for the National Park Service permit improperly injects the PUC into managing utility planning and construction of transmission projects, particularly since the PUC has no jurisdiction over lands within a national park. In addition, the PUC determined that, even if the subject permit were not obtained, no portion of that segment of the proposed line will have to be modified and no investment will have been wasted. Finally, the PUC stated that prior PUC proceedings for the siting and construction of transmission lines do not support a condition that construction may not commence until all permits for the line are obtained.

* * *

> Based upon the foregoing, we hold that the PUC did not commit errors of law, act arbitrarily and capriciously, violate Article I, Section 27, of the Pennsylvania Constitution, and/or abuse its discretion by approving PPL's application to construct a new 500 kV transmission line and substation in Pennsylvania, or by allowing construction to begin on the proposed line before a permit is received from the National Park Service for the Wallenpaupack to Bushkill segment.

*Susquehanna-Roseland*, 25 A.3d 440, 452-53 (Pa. Cmwlth. 2011).

Here, PPL Electric has explained that all required studies, plans, and permits will be completed, submitted, and authorizations obtained prior to construction required by federal and state law; however, they need to be obtained based on appropriate in-service and construction schedules. There is nothing in the record to suggest that PPL Electric will not be able to secure the necessary permits or that those permits will be inadequate to prevent compliance with applicable statutes and regulations, or provide for the protection of the natural resources of this Commonwealth.

**b. The Commission is Without Authority to Develop or Enforce Environmental Regulations and Standards**

NPCARE recommends that the Commission adopt environmental safeguards, above and beyond those required by the applicable environmental agencies, to reduce the environmental impacts of the project. NPCARE's request disregards that the Commission is without authority to develop or enforce environmental regulations and standards. For this reason, as further explained below, NPCARE's request should be denied.

This Commission is a creature of statute, and its power to act in any particular case must be clear. *City of Philadelphia v. Philadelphia Electric Company*, 504 Pa. 312, 473 A.2d 997 (1984). There is nothing in the Public Utility Code, siting regulations, Article I, Section 27 of the Pennsylvania Constitution, or *Payne v. Kassab* that authorizes the Commission to regulate

environmental impacts or develop environmental safeguards. Indeed, it is well settled that the Commission lacks jurisdiction to regulate environmental impacts and, instead, must defer to those agencies that have appropriate jurisdiction over those matters. *See O'Connor v. Pa. PUC*, 582 A.2d 427 (Pa. Cmwlth. 1990) (holding that the Commission is obligated to defer to the Pennsylvania Department of Environmental Resources on environmental impacts within its jurisdiction) (discussing *Del-Aware, Unlimited, Inc. v. Pa. PUC*, 513 A.2d 593 (Pa. Cmwlth. 1986)); *Rovin v. Pa. PUC*, 502 A.2d 785 (Pa. Cmwlth. 1986) (holding that the Commission must defer to the Pennsylvania Department of Environmental Resources and the Federal Environmental Protection Agency on water quality issues).

For example, in *Pickford v. Pa. PUC*, 4 A.3d 707 (Pa. Cmwlth. 2010), the petitioners argued that the Commission abused its discretion when it denied them the opportunity to present evidence of the adverse effects of water treatment alternatives. The Commonwealth Court held that adverse effects of water treatment alternatives is under the exclusive jurisdiction of the DEP as it has primacy over the enforcement of the Safe Drinking Water Act. *Id.* at 714. The Court explained that:

> Even if Petitioners sought merely to demonstrate that other treatment methods did not have the adverse impacts of chloramines, the Commission, in order to make this determination would have to supplant the water quality standards established pursuant to the Pennsylvania Safe Drinking Water Act for chloramines and conduct its own evaluation of the comparative safety of these DEP-approved water treatment chemicals. Such an undertaking was beyond the jurisdiction of the Commission.

*Id.*

Further, as NPCARE concedes, the Commission does not have the requisite technical and scientific expertise in environmental issues to develop reasonable and effective safeguards. (Tr. 440, 478) For example, in *Country Place Waste Treatment Company Inc. v. Pa. PUC*, 654 A.2d

72 (Pa. Cmwlth. 1995), the Commission entered an order concluding, among other things, that it had authority to regulate odors emitted by a waste treatment facility. In reversing the Commission, the Commonwealth Court reiterated that nowhere in the law is there any grant of authority to the Commission by the Legislature, either directly or indirectly, to regulate environmental issues, such as air pollution emanating from a public utility. Indeed, quoting the Commission's own order, the Court explained that:

> This recognition by the courts that the environmental agencies, as opposed to the Commission, possess jurisdiction over air quality makes sense from both pragmatic and regulatory standpoints. The Commission has no standards, staff, or equipment to regulate odors in the air. This alone would cause constitutional due process and notice deprivations for [the waste treatment company] if the Commission is to enforce remedial relief based upon its determinations of air suitability; in contrast, DER has the requisite expertise pursuant to the Pennsylvania Air Pollution Control Act and regulations thereunder. Accordingly, the [petitioners'] request in their complaint for an adjudication as to whether the alleged odor is contrary to law is a determination which is beyond the Commission's statutory ability and expertise, and must be made in the first instance by environmental regulators.

*Id.* at 74-75.

Although NPCARE states that meeting the permitting requirements is not enough to satisfy PPL Electric's obligation to provide minimum adverse environmental impact (NPCARE St. 2-R, p. 5), there is nothing in the record to support NPCARE's suggestion that the existing environmental regulations, review, and permitting processes are inadequate to prevent or mitigate harm to environmentally sensitive areas. Moreover, to the extent that NPCARE believes that the existing environmental regulations and standards are inadequate to protect the environment, such broad concerns should be addressed to state and federal policy makers having the authority to address them.

Undoubtedly, PPL Electric will have to obtain many permits prior to construction of the Northeast-Pocono Reliability Project, including Route D-1, and will fully comply with any and all conditions placed on such permits by those agencies that have appropriate jurisdiction over those matters. (PPL Electric St. 4-R-2, p. 2) There is nothing in the record to suggest that PPL Electric will not be able to secure the necessary permits, or that PPL Electric will not fully comply with any the conditions placed on those permits. (Tr. 439) In fact, the record suggests to the contrary. PPL Electric has constructed 118 transmission projects over the last 15 years and, in each case, PPL Electric obtained and complied with all necessary environmental permits. Further, PPL Electric has successfully maintained and operated approximately 5,000 miles of transmission lines operating at 69 kV or higher, approximately 375 substations with a capacity of 10 MVA or more, and approximately 43,000 miles of distribution lines operating at less than 69 kV without any significant history of citations or violations that would suggest that PPL Electric cannot construct and maintain the transmission line in compliance with applicable environmental laws or regulations. (PPL Electric St. 4-R-2, p. 22)

**4. Vegetation Management**

NPCARE is critical of PPL Electric's plan to remove the vegetation to establish the extent of the new right-of-way for the Northeast-Pocono Project and to accommodate the construction activities, as well as PPL Electric's plan to maintain the right-of-way after the initial clearing. NPCARE raises a number of concerns regarding vegetation removal and management within the right-of-way. NCPARE's concerns are largely based on a misunderstanding of PPL Electric's vegetation management plan and the fundamental difference between maintaining existing transmission line rights-of-way and establishing a new transmission line right-of-way.

### a. Initial Clearing

NPCARE contends that clearing the entire width of a new right-of-way is not needed to establish the extent of the right-of-way. (NPCARE St. 1-R, p. 6) NPCARE therefore recommends the Commission prohibit the initial clearing of the right-of-way and, instead, "only permit PPL [Electric] to clear vegetation as necessary to maintain the Wire Safety Zone and allow for estimated growth before the next vegetation management work." (NPCARE St. 1, p. 12) NPCARE also recommends that PPL Electric be required to provide property owners subject to the right-of-way the opportunity to negotiate individual vegetation management plans. (NPCARE St. 1, pp. 13) NPCARE's recommendations are without merit and should be rejected.

PPL Electric must comply with the NERC Standard FAC-003-1 - Transmission Vegetation Management Program approved by FERC on March 15, 2007. The NERC Standard FAC-003-1 was adopted in response to the largest power blackout in North American history, which occurred on August 14, 2003, and affected an area with a population of approximately 50 million people in the states of Ohio, Michigan, Pennsylvania, New York, Vermont, Massachusetts, Connecticut, and New Jersey and the Canadian province of Ontario. The NERC Standard FAC-003-1 requires that transmission facility owners, such as PPL Electric, adopt and keep current a formal transmission vegetation management program that has been reviewed and approved by NERC. The plan is required to specify clearances between vegetation and transmission conductors that must be maintained during all operating conditions. The NERC Standard FAC-003-1 is mandatory and binding on owners and operators of transmission systems, such as PPL Electric, and failure to comply can result in penalties of up to $1 million per day per violation. (PPL Electric St. 7-R, p. 2)

Pursuant to the NERC Standard FAC-003-1, PPL Electric self-reported certain vegetation encroachments around transmission lines that were not permitted under PPL Electric's initially

approved transmission line vegetation management plan. As part of a settlement with ReliabilityFirst Corporation,[59] PPL Electric agreed to pay a fine and agreed to revise its vegetation management plan to implement the Wire Zone/Border Zone method of managing vegetation.[60] (PPL Electric St. 7-R, p. 3) The Wire Zone/Border zone method is an industry best practice that was developed from the Bramble & Byrnes study.[61] (Tr. 430) PPL Electric explained that the Wire Zone/Border Zone vegetation management practices, as well as the underlying Bramble and Byrnes study, are applied to existing rights-of-way that have initially be cleared. (Tr. 430)

For new rights-of-way, such as those required for the Northeast-Pocono Reliability Project, PPL Electric initially removes all vegetation except for grasses and herbaceous or non-woody plants in both the wire and Border Zones. This is necessary to both establish the extent of the new right-of-way and to accommodate the many construction activities that will occur within the right-of-way to install new foundations, tower structures, and conductors. (PPL Electric St. 7-R, p. 4; PPL Electric Ex. 1, Att. 16) After the initial clearing of a new right-of-way, compatible species are allowed to grow back and PPL Electric then maintains the right-of-way by (i) selectively removing vegetation except grasses and herbaceous or non-woody plants in the Wire Zone and (ii) removing only non-compatible species in the Border Zone.[62] (PPL Electric St. 7-R, p. 4)

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[59] ReliabilityFirst Corporation is the Regional Entity that addresses NERC issues in the region in which the PPL Electric transmission facilities are located.

[60] *See* Footnote 52, *supra.*

[61] The Bramble and Byrnes study is a study that identified the best practices for vegetation management of electric utility transmission line rights-of-way. The Wire Zone/Border Zone method was developed directly from the Bramble and Byrnes study. (Tr. 430)

[62] There are two exceptions to PPL Electric's Wire Zone/Border Zone method. The first exception applies to non-compatible trees growing in ravines, gullies, low lying areas, or on sides of hills, where topography is such that the existing species at full mature maximum height will not encroach the required clearances. In these areas, the non-compatible species, which generally are not removed during the initial clearing, are allowed to remain. The second

NPCARE contends that PPL Electric should not be permitted to initially clear the entire width of the new right-of-way because it is not consistent with the clearing procedures identified in Attachment 12 to the Siting Application.[63] (NPCARE St. 1-R, pp. 2-4) However, Attachment 12 does not describe, nor was it ever intended to describe, the methods or extent of clearing that should be applied to a new right-of-way for the construction of a new high voltage transmission line. PPL Electric explained that prior to 2010, much of PPL Electric's existing transmission line rights-of-way were not cleared to the extent required by the NERC Standard FAC-003-1 or the settlement with ReliabilityFirst Corporation described above. Therefore, as part of its revised vegetation management policies, PPL Electric adopted and implemented the specifications set forth in Attachment 12. The purpose of Attachment 12 is to provide specifications to PPL Electric and its foresters and contractors on the re-clearing of the existing rights-of-way to obtain compliance with NERC Standard FAC-003-1 and the settlement with ReliabilityFirst Corporation, as well as explain how the existing rights-of-way should be maintained after the re-clearing. (PPL Electric St. 7-RJ, pp. 2-3; Tr. 422, 425)

NPCARE overlooks the fact that the entire width of an existing right-of-way previously has been cleared of vegetation. Thereafter, the Wire Zone/Border Zone method of vegetation management is applied to the entire width of the right-of-way. By contrast, the vegetation on a new right-of-way has not been cleared for the entire width of the right-of-way, nor has it been maintained under the Wire Zone/Border Zone method. Removal of all vegetation, except grass

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exception applies when mitigation measures for vegetation clearing are required by applicable federal or state permits. (PPL Electric St. 7-R, p. 4)

[63] NPCARE's lack of understanding of vegetation management practices is further demonstrated by its assertion that Attachment 12 to the Siting Application has been approved by NERC and FERC. (NPCARE St. 1-R, p. 2) However, Attachment 12 is not filed with NERC or FERC, and is not reviewed or approved by NERC or FERC. Rather, Attachment 12 is a specification document based on the NERC-approved transmission vegetation management plan that provides specifications to PPL Electric and its foresters and contractors on the removal of vegetation within existing rights-of-way. (PPL Electric St. 7-RJ, p. 2)

and herbaceous or non-woody plants, for the entire width of a new right-of-way establishes the right-of-way. (PPL Electric St. 7-RJ, p. 4) In addition, the removal of all vegetation, except grass and herbaceous or non-woody plants, will facilitate a safer environment for the construction activities. If selective or restricted clearing was applied to a new right-of-way, this could significantly increase the cost of the project and, more importantly, could create safety hazards during construction, delay the construction activities, and jeopardize the in-service date of a project. (PPL Electric St. 7-RJ, p. 5)

Clearing the entire width of a new right-of-way for the construction of a new high voltage transmission line is an industry best practice, and is PPL Electric's standard practice for the construction of a new high voltage transmission line. PPL Electric's practice of initially clearing the entire width of a new right-of-way for the construction of a new high voltage transmission line and then allowing compatible species to re-grow and remain within the right-of-way is much less aggressive than the approach taken by some other utilities. (PPL Electric St. 7-RJ, p. 5)

NPCARE also overlooks the benefits of initially clearing a new right-of-way. The removal of the vegetation on a new right-of-way may promote the establishment of compatible species within the right-of-way, which would not otherwise grow without the removal of the overstory. Most compatible species are not shade tolerant and, therefore, removal of the overstory allows light to reach the right-of-way and promote the growth and re-growth of compatible species. (PPL Electric St. 7-RJ, p. 4; Tr. 425) In addition, the removal of the vegetation on a new right-of-way will facilitate vegetation management with respect to invasive, aggressive, and other undesirable species. It also will help reduce the total amount of herbicide that must be applied over time within a right-of-way. Further, the removal of the vegetation on a new right-of-way will help sustain compliance during the time in between vegetation clearing

activities by maintaining PPL Electric's three-year cycle vegetation management plan. (PPL Electric St. 7-RJ, pp. 4-5)

**b. Growth Rate and Compatible Species**

NPCARE criticizes PPL Electric for assuming a five feet per-year growth in its vegetation management plan. NPCARE states that PPL Electric should be required to separately evaluate each species present within a right-of-way and make a specific determination as to potential growth. NPCARE also recommends that PPL Electric be required to provide property owners subject to the right-of-way the opportunity to negotiate individual vegetation management plans. (NPCARE St. 1, pp. 13; NPCARE St. 2, p. 17; NPCARE St. 3, p. 15) NPCARE's recommendations are without merit and should be rejected.

PPL Electric must ensure that it provides safe, adequate and reliable service, and it must meet its mandatory obligation to comply with the NERC Standard FAC-003-1, as well as the NERC-approved and FERC-accepted settlement with ReliabilityFirst Corporation. Using the minimum clearances proscribed by Institute of Electrical and Electronics Engineers ("IEEE") guidelines, PPL Electric's engineers developed clearances to accommodate the unique topography and dense vegetation encountered specifically within PPL Electric's service territory. (PPL Electric St. 7-R, p. 6) PPL Electric also retained the services of an outside independent contractor to measure growth rates across PPL Electric's entire service territory. Based on this data, PPL Electric adopted a five-foot growth rate assumption that would ensure the vegetation that is common in PPL Electric's service territory would not encroach the required clearances between vegetation management cycles. However, it should be noted that there have been several cases where trees have grown more than five feet in a single growing season following vegetation management activities. (PPL Electric St. 7-R, pp 6-7)

It is important that PPL Electric have a consistent approach to maintaining the vegetation within its rights-of-way to ensure reliable service to customers and to comply with requirements of NERC Standard FAC-003-1, as well as the NERC-approved and FERC-accepted settlement with ReliabilityFirst Corporation. If PPL Electric was required to evaluate and determine a specific growth rate for every single species within the rights-of-way or was required to make major individual adjustments to its vegetation management practices for each and every affected landowner, the result would be customized vegetation management for each tract of land crossed by transmission lines. Such an approach to vegetation management would be extremely difficult for PPL Electric to administer across its more than 5,000 miles of transmission lines and approximately 43,000 miles of distribution lines, and would be very expensive to the detriment of all customers. (PPL Electric St. 7-R, pp. 5, 7)

Finally, NPCARE identifies a number of vegetative species that, according to NPCARE, would not pose a clearance threat to the proposed transmission line and should be added to the list of compatible species permitted to regrow and remain within a right-of-way. (NPCARE Ex. RLK-3) Given the miles and miles of transmission and distribution lines in PPL Electric's service territory, PPL Electric must have a consistent approach to maintaining the vegetation within its rights-of-way. (PPL Electric St. 7-R, p. 7) To that end, PPL Electric has developed and maintains a list of compatible Border Zone species that generally will not encroach the required clearances, based on the maximum sag of the applicable transmission line, or otherwise interfere with the safe and reliable operation of the transmission line. PPL Electric uses that list as a general guideline for compatible species across the entire transmission system. PPL Electric explained, however, that the ultimate determination of compatible species during vegetation management cycles is done on a case-by-case basis taking into account the maximum height,

growth rate, and invasiveness of the encountered species, as well as the location, topography, and maximum sag of the transmission line. (PPL Electric St. 7-R, p. 8; Tr. 426-27)

### 5. Impacts to Streams and Wetlands

A large portion of NPCARE's testimony is focused on the potential impacts to the intermittent and permanent waterbodies including streams, seeps, ponds, lakes and wetlands, located within the West Pocono-North Pocono Segment. NPCARE raises concerns regarding the thermal impacts to EV streams, wetlands, and vernal pools. (NPCARE St. 4, pp. 16-19) NPCARE also raises concerns regarding erosion and sedimentation due to construction related activities. (NPCARE St. 1, pp. 4-5, 18-20; NPCARE St. 4, p. 5) NPCARE therefore contends that vegetation clearing and disturbance to vegetation within the 150 foot riparian buffer areas of all EV streams, EV wetlands, and vernal pools should be avoided. (NPCARE St. 1-R, p. 5; NPCARE St. 4, p. 7) NPCARE also is concerned about the use of herbicides, placement of poles, and use of heavy machinery within 150 feet of EV streams, EV wetlands, and vernal pools. (NPCARE St. 1, pp. 16-17; NPCARE St. 4, p. 13) As explained below, NPCARE's concerns are largely dedicated to issues and concerns that will be fully considered, addressed, and resolved through the applicable permitting processes and consultation with associated federal and state agencies. Further, PPL Electric has agreed to measures to reduce the impacts to streams and wetlands.

#### a. Riparian Buffer and Thermal Impacts

PPL Electric is required through the federal and state permitting process to account for any impacts to streams and wetlands. The use of "GIS stream data" is only a starting point used during the siting study to identify the perennial streams along the proposed alignments. As part of the required environmental studies, full wetland and waterway delineations are conducted that will define these features as well as any additional low-order perennial or intermittent streams

that are not identified in the GIS stream data. (PPL Electric St. 4-R, pp. 12-13) Through this process, PPL Electric has identified a total of 24 stream crossings for the West Pocono-North Pocono Segment. (PPL Electric St. 4-R, p. 6)

PPL Electric is aware that many of the intermittent and perennial streams that will be spanned by the West Pocono-North Pocono Segment are classified as EV by DEP or are considered Wild Trout Waters (Naturally Reproducing or Class A) by PFBC, and that the wetlands located in the floodplains of these streams are considered EV wetlands due to their association with these special waters. (PPL Electric St. 4-R, p 25) Through the siting and landowner negotiations process, PPL Electric has defined an alignment for the West Pocono-North Pocono Segment that will result in no permanent encroachment upon any of the streams and only three monopoles located within two separate EV wetlands. (PPL Electric St. 4-R, pp. 9-10) Stream impacts will be limited to the removal of the riparian zone trees at all of the crossings and approximately six temporary stream crossings, which will be removed upon completion of the project. (PPL Electric St. 4-R-2, p. 26)

NPCARE makes general statements regarding the impacts of clearing vegetation from a stream and other waterbodies on long-term warming of stream temperatures and the potential impact to certain aquatic organisms in healthy streams that are sensitive to increases in temperature. (NPCARE St. 4, pp. 16-19) NPCARE states in very general terms that "Evidence from other stream crossings indicates that clearing the vegetation from a stream can alter water quality (total suspended solids, temperature, and flow)...." (NPCARE St. 4, p. 7) This broad-brush approach has little value in assessing the potential effects on specific streams and should be rejected for several reasons.

First, NPCARE's expert, Dr. Eldridge, visited only 3 of the 24 streams at issue on April 11, 2013, which is before or at the very beginning of the growing season, so any observations he made on vegetation would be of limited value. (Tr. 469; PPL Electric St. 8-RJ, p. 9) Further, NPCARE has not conducted any independent analysis of the actual streams and other water bodies that will be traversed by the West Pocono-North Pocono Segment. Based on field observations of 16 of the stream crossings and review of photos of 7 other stream crossings (23 of the total 24 stream crossings for the West Pocono-North Pocono Segment), PPL Electric estimated that approximately 60% of the shade canopy of the majority of the streams between the proposed West Pocono and North Pocono Substations would not be substantially affected by the proposed right-of-way because there already is a lack of shade canopy in those areas. (PPL Electric St. 8-R, pp. 4-5, 10-11; PPL Electric St. 8-RJ, pp. 7-9)

Second, NPCARE relies on studies that are not appropriate for characterizing effects of overhead transmission lines. NPCARE cites to Levesque and Dube, 2007, McGurk, B.J. 1989, and Brown et al., 1971 for the proposition that changing the vegetation within the right-of-way adjacent to a stream may result in long-term warming of stream temperatures. (NPCARE St. 4, p. 7; NPCARE St. 4-R, pp. 5-6, 12) However, The Levesque and Dube, 2007 paper does not describe effects of overhead transmission lines and instead deals with instream pipeline crossings, which involves clearing all streambank vegetation, as well as construction through the stream as the pipeline is buried in the streambed. (PPL Electric Stmt 8-R, p. 6) The examples provided in Brown et al., 1971 are from vegetation clearing over very small streams in the heavily-logged Cascades in the mountains of western Oregon, which is more than 2,800 miles away for the Project area. (PPL Electric St. 8-RJ, pp. 2-3) Further, the McGurk, B.J. 1989 study examined two streams in California where timber removal operations and a slash disposal burn

that got out of control produced a 380-meter section of the stream that had almost no shading. (Tr. 471-72)

In contrast, PPL Electric relied upon two studies that were directly related to the effects of right-of-way clearing on stream temperatures. One U.S. Forest Service study[64] on the effect of transmission line corridor clearance on stream habitat found that any impact on stream temperature quickly dissipated upon reentering the forest after exposure, and temperatures stabilized within 200 to 300 feet downstream. (PPL Electric St. 8-R, p. 8) Another study by Peterson (1993) investigated the impacts of transmission line rights-of-way on trout in forested headwater streams in south-central New York State, which would have applicability to streams in the Northeast-Pocono Reliability Project area. This study compared headwater streams in both forested areas and existing rights-of-way (these had been in place from 10 to 50 years and averaged 95 feet wide, ranging up to 148 feet wide) and found that streams within the rights-of-way actually had denser streambank vegetation (because of the exposure to more sunlight), water temperatures not significantly higher than the forested streams, and higher trout production than the forested streams. This study concluded that stream habitat in the rights-of-way actually improved after right-of-way clearing by allowing the right-of-way streams to become deeper with more stable streambanks due to the dense streambank vegetation. (PPL Electric St. 8-R, pp. 8-9)

Third, NPCARE largely ignores that PPL Electric has identified measures to minimize the impacts of temperature increases in stream and other waterbody crossings. (PPL Electric St. 8-R, p. 11) With the exception of one stream crossing, all stream crossings are generally perpendicular to the alignment of the stream corridor. The transmission line will briefly parallel

[64] Forest Service, 1978. Effects of Power Line Corridor Clearance and Maintenance on Stream Habitat. In, *Strategies for Protection and Management of Floodplain Wetlands and Other Riparian Ecosystems*. USDA Forest Service GTR-WO-12. December, 1978.

within 150 feet of one EV stream as a result of a specific landowner request that the route mirror the northern boundary line of the parcel. Further, to the extent practicable, PPL Electric has made every effort to stay outside the 150-foot buffers. The very few areas where this is not possible are related to transmission line engineering constraints and property constraints. In these areas, however, PPL Electric will employ appropriate erosion and sedimentation best management practices to minimize impacts to these areas. (PPL Electric St. 4-R-2, pp. 14-15)

As previously explained, it is PPL Electric's standard practice to clear the entire width of a new right-of-way for the construction of a new high voltage transmission line. After initial clearing, however, compatible species are permitted to regrow and remain in both the Wire Zone and Border Zone. Grasses, herbaceous plants, and other non-woody plants are permitted to grow back over time and remain in the Wire Zone. In the Border Zone, vegetative species identified compatible are permitted to grow back over time and remain in the Border Zone. These compatible species in the Wire Zone and Border Zone will help create a riparian buffer which will help to reduce the impacts of temperature increases and sedimentation runoff into waterways. (PPL Electric St. 7-R, p. 12)

Further, in an effort to address NPCARE's concerns regarding impacts to the riparian buffers of EV streams located within the segment of the route that extends from the West Pocono to North Pocono Substation, PPL Electric agreed, to the extent practical and subject to PPL Electric's present and future obligation to comply with all applicable reliability and safety standards and other legal or regulatory requirements or industry standards, to selectively clear the Border Zone within 150 feet of any EV stream crossing located within the segment of the route that extends from the West Pocono to North Pocono Substation. PPL Electric also has agreed to not remove any stumps in the right-of-way that are within 150 feet of any EV stream crossing

except in those limited instances where pole structures and/or foundations are located. (PPL Electric St. 7-RJ, p. 5-6) Although the Wire Zones located near stream crossings will continue to be cleared of all the vegetation, except grass and herbaceous or non-woody plants, selectively clearing the Border Zones within 150 feet of an EV stream crossing will significantly minimize the impacts to stream crossing.

In addition, PPL Electric will obtain all federal and state permits necessary prior to construction and will comply with all of the terms and conditions placed on those permits. (PPL Electric St. 7-R, p. 12) Importantly, as part of the permitting process, these agencies can, if necessary, put certain conditions on vegetation management, including mitigation measures for vegetation clearing. (Tr. 402)

Finally, NPCARE's one-sided analysis of the riparian buffers and thermal impacts is fundamentally flawed because it fails to provide a meaningful comparison as required by the siting regulations. As explained above, Section 57.76(a)(4) of the siting regulations clearly requires a balancing of the environmental impacts of a proposed route with, among other things, the available alternative routes. NPCARE ignores this balancing requirement and, instead, has focused exclusively on the riparian buffers and thermal impacts within the proposed Route D-1 for the West Pocono-North Pocono Segment. Indeed, NPCARE has not evaluated or undertaken any study of the riparian buffers and thermal impacts within any of the other available alternatives. (Tr. 469)

**b. Erosion and Sedimentation**

NPCARE raises concerns regarding erosion and sedimentation due to construction related activities. (NPCARE St. 1, pp. 4-5, 18-20; NPCARE St. 4, p. 5) Through the siting and landowner negotiations process, PPL Electric has defined an alignment for the West Pocono-North Pocono Segment that will result in no permanent encroachment upon any of the streams

and only three monopoles located within two separate EV wetlands. (PPL Electric St. 4-R, pp. 9-10) Most of the wetlands will be spanned by the proposed alignment, but the few areas that could not be avoided will result in minimal permanent loss of wetlands based on the fill associated with the monopole footer. (PPL Electric St. 4-R-2, p. 26) Further, prior to and during construction, PPL Electric will design the project to minimize earth disturbance associated with the project construction to the extent practicable, and temporary access roads and work areas will be restored following construction. (PPL Electric St. 4-R-2, p. 16)

With respect to soil erosion and sedimentation and crossings of jurisdictional waters, PPL Electric is required through the federal and state permitting process to account for any impacts to intermittent and perennial streams. As part of the required environmental studies and permitting process, full wetland and waterway delineations are conducted that will define these features as well as any additional low-order perennial or intermittent streams that are not identified in the GIS stream data. (PPL Electric St. 4-R-2, pp. 12-13) PPL Electric will prepare E&S control plans in accordance with DEP regulations found at Title 25, Chapter 102 of the PA Administrative Code and consistent with DEP's standards and guidance. The E&S control plans will present E&S BMP measures that will limit the potential for erosion and sediment migration for the specific work activities, including construction of monopoles, temporary workspace requirements/dimensions, and access roads. (PPL Electric St. 4-R-2, pp. 13-14) Following construction, PPL Electric will continue to inspect and maintain E&S BMP measures until disturbed areas are restored through vegetal stabilization in accordance with permit conditions. (PPL Electric St. 4-R-2, pp. 17, 25-27)

Further, the Project will be designed and constructed to minimize the duration of disturbance resulting from stream and wetland crossings and to satisfy any DEP timing

restrictions for working in the respective streams. In this regard, stream crossings will be designed in accordance with DEP guidance to allow for natural stream flow to continue through the crossing and to limit impact to the stream bed and banks. Crossings will be installed and maintained in accordance with the design requirements and all permit conditions. (PPL Electric St. 4-R-2, p. 27)

### c. Herbicides, Poles, and Heavy Machinery Near EV Streams and Wetlands

NPCARE recommends that herbicide application not be allowed within 150 feet of all EV streams, EV wetlands, and vernal pools. (NPCARE St. 1, pp. 16-17) NPCARE also is concerned about the placement of poles and use of heavy machinery within 150 feet of EV streams, EV wetlands, and vernal pools. (NPCARE St. 4, p. 13)

PPL Electric explained that the use of herbicides is a key component of PPL Electric's vegetation management program to effectively manage undesirable vegetation conditions within rights-of-way. (PPL Electric St. 7-R, p. 10) PPL Electric's vegetation management contractors are licensed by the Pennsylvania Department of Agriculture as Certified Commercial Pesticide Applicators and only apply herbicide products which have been approved for use on utility rights-of-way by the U.S. Environmental Protection Agency. PPL Electric does not use any aerial herbicide application techniques. Herbicides are applied manually by trained professionals. (PPL Electric St. 7-R, p. 11)

Importantly, only those species that require control are treated, *i.e.*, non-compatible and invasive species. The diligent and prudent use of herbicides on utility rights-of-way promotes compatible and desirable plant communities. Over time, as desirable species populate the right-of-way, increased competition for space and sunlight naturally reduces the number of non-compatible and invasive plant seedlings. Additionally, the scientific research suggests that the

meadow like environment of a well-managed right-of-way increases the habitat for wildlife, which feed on the seeds and seedlings of non-compatible woody plants thus naturally reducing woody plant density as well as reducing the volume of herbicides applied during future treatment cycles. (PPL Electric St. 5-R, pp. 10-11)

PPL Electric does not apply herbicides in the following areas or situations: pastures within 50 feet of any body of water, except that PPL Electric will use herbicides approved for watershed/aquatic use for stump treatments; within any actively maintained orchard or cultivated planting; near susceptible crops or other non-target vegetation where drift, runoff, or vapors can cause injury; where weather conditions create excessive drift; on rights-of-way under jurisdiction of the DCNR, PGC, PFBC, and the U. S. Park Service unless prior approval is granted by these agencies; on watershed properties, or in the vicinity of springs, irrigation ditches, or other potable water sources, unless prior approval is granted by the property owner for use of a watershed/aquatic approved herbicide; in gullies or ravines where tree clearing is minimal. (PPL Electric Ex. 1, Att. 12, pp. 15-16) Finally, PPL Electric will only use watershed/aquatic approved herbicide near watershed areas, and will comply with all federal and state requirements regarding the use of herbicides, including in areas near EV streams, EV wetlands, and vernal pools. (PPL Electric St. 7-R, p. 11)

With respect to the location of monopoles, PPL Electric has gone to great efforts to minimize the impacts of the monopole locations on wetlands and around streams. Of the 477 total monopoles for the entire Project, only 16 (3%) would be in a wetland and only 14 (3%) would infringe upon a riparian zone around a stream. For the West Pocono-North Pocono segment (including the North Pocono 138 kV Connector lines) of the 183 total poles for this Segment, only 3 poles are located in a wetland (less than 2%) and only 4 within a stream riparian

area (approximately 2%). Given the extremely complex diversity of the landscape in this region, these numbers provide direct evidence of the extraordinary effort PPL Electric has made to minimize environmental impacts. (PPL Electric St. 4-R-2, pp. 9-10; PPL Electric St. 4-RJ, p. 7)

With respect to the use of heavy machinery or equipment near EV streams and wetlands, prior to and during construction, PPL Electric will design the project to minimize earth disturbance associated with the project construction, including equipment operation, and its encroachment into riparian buffers to the extent practicable. In addition, as explained above, appropriate E&S BMP measures will be implemented and temporary access roads and work areas will be restored following construction. (PPL Electric St. 4-R-2, p. 16)

**6. Species of Special Concern**

NPCARE asserts that PPL Electric has not completed or provided reports of any of its own surveys or studies of species or habitats that exist within the West Pocono-North Pocono Segment. NPCARE states that it is concerned that Pennsylvania Species of Special Concern may occur and be impacted by the proposed Project. (NPCARE St. 3, pp. 2-3) In support, NPCARE states that it identified 17 Pennsylvania Species of Special Concern, with the possibility of three additional species, six plant Pennsylvania Species of Special Concern, four plant communities of Pennsylvania Species of Special Concern within the West Pocono-North Pocono Segment. (NPCARE St. 3, pp. 3, 8, 9)

Pennsylvania has identified physical and biological entities as "Species of Special Concern," including biological species, plant communities and geologic formations found in Pennsylvania. However, not all entities are afforded the same protection under Pennsylvania law. Only threatened and endangered amphibians, birds, fish (including trout), mammals, mussels, snails, reptiles and vascular plants are protected by the Commonwealth. Thus, PPL Electric is only required to obtain clearances from DCNR, PFBC, PGC, and U.S. Fish and

Wildlife Service for threatened or endangered species prior to receiving any DEP permits. Species of Special Concern that are not threatened or endangered are not protected by the Commonwealth. Although the Commonwealth may request actions to mitigate negative impacts to others species, such requests are voluntary, not mandatory. (PPL Electric St. 9-R, pp. 4-5)

NPCARE is critical of PPL Electric for not surveying and identifying all Pennsylvania Species of Special Concern at the time it filed the Siting Application. In essence, NPCARE contends that PPL Electric should be required to complete all the environmental surveys before the Commission can approve a project. This argument must be rejected for the reasons explained above. (*See* Section VI.F.3, *supra*)

Moreover, PPL Electric explained that it is required to conduct a survey of Species of Special Concern, including for the West Pocono-North Pocono Segment. (PPL Electric St. 9-R, p. 5) NPCARE ignores that the West Pocono-North Pocono Segment is the last section to be constructed and, as such, has the last priority from a plan development and permitting perspective. (PPL Electric St. 4-R-2, pp. 5-6) PPL Electric explained that, as of the time it submitted rebuttal, it had completed the research, field survey, and report preparation for the North Pocono-Paupack section of the line and is expected to complete the West Pocono-North Pocono field survey and report in the near future. (PPL electric St. 9-R, p. 2)

NPCARE also overlooks that an applicant is only required to survey and identify "target species." The Pennsylvania Natural Diversity Inventory ("PNDI") provides a list of target Species of Special Concern known to occur in the vicinity of the study area. (PPL Electric St. 9-R, p. 2) However, not every Species of Special Concern is identified by the applicable regulatory agencies as a "target species" for a particular project area. If Species of Special

Concern are known locally, then the applicant is provided with a list of target species for which the applicant is required by the responsible agency to survey. (PPL Electric St. 9-RJ, pp. 4-5)

Here, DCNR requested surveys for eleven species of plants for the West Pocono-North Pocono Segment, two communities of special concern if found, and two invertebrates of special concern if their habitat or host plants are found. These requests will be fulfilled in the near future, and no permits will be procured until PPL Electric completes its obligations to the agencies. (PPL Electric St. 9-RJ, 8)

By identifying certain Species of Special Concern, NPCARE seeks to expand the list of "target species," as well as the inclusion area of the target list. (PPL Electric St. 9-RJ, pp. 4-5) The Species of Special Concern list and the selection of target species to be protected need to be based on the best available scientific information, not unilateral decisions by individuals or by the Commission. Current procedures classify species based on the current scientific data and give this information to the environmental regulatory agencies with jurisdiction over such matters, who then utilize the data to balance all interests and avoid or mitigate any proposed impacts. (PPL Electric St. 9-RJ, pp. 2-3) To the extent that NPCARE believes additional species should be added to a specific target list, or that the existing environmental regulations and regulations are inadequate to protect certain species, such broad concerns should be addressed to state and federal policy makers having the authority to address them. Notably, NPCARE has failed to provide its concerns for the Species of Special Concern that purportedly will be impacted by the West Pocono-North Pocono Segment to DCNR, which has jurisdiction over such matters. (Tr. 452)

Further, NPCARE's contention that it identified Species of Special Concern within the right-of-way is misleading for several reasons. First, term "Pennsylvania Species of Special

Concern" is somewhat misleading as it can erroneously convey the idea that any species on the list has been determined to be threatened enough to be protected by Pennsylvania law. In actuality, many species on the lists are common and secure and have no need for protection. (PPL Electric St. 9-R, p. 4) Indeed, none of the species identified by NPCARE are listed as Pennsylvania Threatened or Pennsylvania Endangered, and the vast majority of the species were listed as either G4 Globally Apparently Secure or G5 Globally Secure. (Tr. 458-61) Second, only 9 of the species identified by NPCARE were actually found near the right-of-way. (Tr. 458) Third, as explained above, the fact that a species is listed as a Species of Special Concern does not mean that it is rare, threatened, or endanger, nor does it mean that it is on the list of "target species" for a project.

Finally, NPCARE's one-sided analysis of the Species of Special Concern is fundamentally flawed because it fails to provide a meaningful comparison as required by the siting regulations. As explained above, Section 57.76(a)(4) of the siting regulations clearly requires a balancing of the environmental impacts of a proposed route with, among other things, the available alternative routes. NPCARE ignores this balancing requirement and, instead, has focused exclusively on Species of Special Concern within the proposed Route D-1 for the West Pocono-North Pocono Segment. Indeed, NPCARE has not evaluated or undertaken any study of the Species of Special Concern within any of the other available alternatives. (Tr. 449)

## VII. ZONING PETITIONS

On December 28, 2012, PPL Electric filed the North Pocono Zoning Petition, seeking a finding that a building to shelter control equipment at the North Pocono 230-69 kV Substation in Covington Township, Lackawanna Township is reasonably necessary and, therefore, exempt for local zoning ordinances. (PPL Electric Ex. 2) On December 28, 2012, PPL Electric filed the

West Pocono Zoning Petition seeking a finding that a building to shelter control equipment at the West Pocono 230-69 kV Substation in Buck Township, Luzerne County is reasonably necessary and, therefore, exempt from local zoning ordinances. (PPL Electric Ex. 3) As a general matter, public utility facilities are exempt from local regulation.[65] A limited exception to this general rule is that a municipality may apply local zoning rules to a public utility "building" unless the Commission finds that the location of the building is reasonably necessary for the convenience or welfare of the public. For the reasons explained below, the control equipment buildings at the North and West Pocono Substations are reasonably necessary and, therefore, should be exempt for local zoning.

### A. NORTH POCONO ZONING PETITION

The North Pocono Substation will be located on PPL Electric property in Covington Township, Lackawanna County. The proposed North Pocono Substation will be 900 feet by 450 feet or approximately 7.55 acres. The entire area will be fenced in, gated and locked to prevent unauthorized access. (PPL Electric St. NP-2, p. 5)

The new North Pocono Substation will be constructed and located centrally with respect to the Jackson 138-69 kV, Blooming Grove 230-69 kV, and Lackawanna 230-69 kV Substations. The proposed location for the North Pocono 230-69 kV Substation is central to the load it will serve. The North Pocono 230-69 kV Substation will tie into the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Lines, which will (1) reduce the load on these lines by providing a new 230 kV source and (2) reduce the length of each 138/69 kV line through re-sectionalizing. The North Pocono 230-69 kV Substation also will provide a backup source to the Blooming Grove 230-69 kV, Lackawanna 230-69 kV and Jackson 138-69 kV Substations using

[65] See Footnote 7, *supra.*

interconnected 69 kV lines. (PPL Electric St. NP-1, pp. 4-5) PPL Electric provided a detailed explanation of how the site for the proposed North Pocono Substation was selected. (PPL Electric St. 4, pp. 12-13, 15-16; PPL Electric Ex. 1, Att. 4, p. 13)

The new North Pocono Substation will include a Control Equipment Building. The North Pocono Substation must include certain switches, relays, and other control equipment to control the flow of electricity into, within, and from the substation. In order to function properly, much of this equipment must be protected from the elements. The purpose of the Control Equipment Building is to protect the control equipment at the proposed North Pocono Substation from the elements so that the control equipment, and the entire substation, can function properly. (PPL Electric Stmt NP-1, p. 9) The control equipment building will be contained within the fenced-in area of the Substation. The building will be 40 feet by 70 feet and constructed with corrugated aluminum set upon a concrete foundation. The building will not contain water, sewer, or any other municipal service. Heating and air conditioning will be provided to the extent required by the sensitive electric equipment contained within, without which, the substation could not function. (PPL Electric St. NP-2, pp. 5-6)

As explained above, the Northeast-Pocono Reliability Project, including the North Pocono Substation, is necessary to resolve violations of PPL Electric's RP&P and reinforce the existing 138/69 kV systems in Monroe, Carbon, Wayne, Lackawanna, and Pike Counties by creating a 230 kV line to bring a new 230 kV supply into the area. The North Pocono Substation must include certain equipment in order to operate properly, and said equipment must be protected from the elements. The most efficient and appropriate means of protecting the equipment at this Substation is construction of a Control Equipment Building on the site proposed for the new North Pocono 230-69 kV Substation.

Because the Northeast-Pocono Reliability Project, including the North Pocono Substation, is reasonably necessary for the public convenience and welfare, and the North Pocono Substation must include certain equipment that must be protected from the elements to operate properly, the Commission should find that the Control Equipment Building is reasonably necessary and, therefore, exempt from the Covington Township's local zoning ordinance pursuant to Section 619 of the MPC.

Consistent with the Commission's policy statement, PPL Electric reviewed the zoning ordinance of Covington Township. (PPL Electric NP-2, p. 6) The Covington Township zoning ordinance classifies the substation site as SC, Special Conservation. Although electric facilities that do not require buildings are a permitted use in every zoning district, the Control Equipment Building associated with the North Pocono Substation is not permitted in a Special Conservation district under the Covington Township zoning ordinance. Further, the Covington Township zoning ordinance requires a building and/or zoning permit prior to the erection, construction, or use of any building, structure, or portion thereof. A building and/or zoning permit is also required prior to the use or change in land. (PPL Electric NP-2, pp. 6-7)

In the absence of an exemption, it is unlawful under the Covington Township zoning ordinance for PPL Electric to commence work on and begin use of the North Pocono 230-69 kV Substation and Control Equipment Building. Further, even assuming that a Control Equipment was a permitted, conditional, or special exception use, PPL Electric would still be required to obtain a building and/or zoning permit for the North Pocono 230-69 kV Substation and Control Equipment Building. (PPL Electric NP-2, pp. 6-7) If PPL Electric were required to obtain such approvals prior to the construction of the Control Equipment Building, the process, including appeals from adverse determinations, could consume substantial time, which could delay the

construction of the North Pocono Substation, which is reasonably necessary for the convenience of welfare of the public.

Based on the foregoing, PPL Electric respectfully requests that the ALJ and the Commission find that the Control Equipment Building at the proposed North Pocono Substation is reasonably necessary for the convenience or welfare of the public and, therefore, exempt from local zoning regulations.

**B. WEST POCONO ZONING PETITION**

The West Pocono Substation will be located on PPL Electric property in Buck Township, Luzerne County. The proposed West Pocono Substation will be 900 feet by 450 feet or approximately 7.55 acres. The entire area will be fenced in, gated and locked to prevent unauthorized access. (PPL Electric St. WP-2, p. 5)

The new West Pocono Substation will be constructed and located between the East Palmerton 230-69 kV Substation and the Jackson 138-69 kV Substation. The proposed location for the new West Pocono Substation is central to the load it will serve. The West Pocono Substation will tie into the East Palmerton-Wagners #1 & #2 and Jackson-Wagners #1 & #2 139/69 kV Transmission Lines, which will (1) reduce the load on these lines by providing a new 230 kV source and (2) reduce the length of each 138/69 kV line through re-sectionalizing (changing the normally open point). The West Pocono Substation also will provide a backup source to the East Palmerton 230-69 kV and Jackson 138-69 kV Substations using interconnected 69 kV lines. (PPL Electric St. WP-1, pp. 4-5) PPL Electric provided a detailed explanation of how the site for the proposed West Pocono Substation was selected. (PPL Electric St. 4, pp. 12-14; PPL Electric Ex. 1, Att. 4, p. 13)

The new West Pocono Substation will include a Control Equipment Building. The West Pocono Substation must include certain switches, relays, and other control equipment to control

the flow of electricity into, within, and from the substation. In order to function properly, much of this equipment must be protected from the elements. The purpose of the Control Equipment Building is to protect the control equipment at the proposed West Pocono Substation from the elements so that the control equipment, and the entire substation, can function properly. (PPL Electric Stmt WP-1, p. 9) The control equipment building will be contained within the fenced-in area of the Substation. The building will be 40 feet by 70 feet and constructed with corrugated aluminum set upon a concrete foundation. The building will not contain water, sewer, or any other municipal service. Heating and air conditioning will be provided to the extent required by the sensitive electric equipment contained within, without which, the substation could not function. (PPL Electric St. WP-2, pp. 5-6)

As explained above, the Northeast-Pocono Reliability Project, including the West Pocono Substation, is necessary to resolve violations of PPL Electric's RP&P and reinforce the existing 138/69 kV systems in Monroe, Carbon, Wayne, Lackawanna, and Pike Counties by creating a 230 kV line to bring a new 230 kV supply into the area. The West Pocono Substation must include certain equipment in order to operate properly, and said equipment must be protected from the elements. The most efficient and appropriate means of protecting the equipment at this Substation is construction of a Control Equipment Building on the site proposed for the new West Pocono Substation.

Because the Northeast-Pocono Reliability Project, including the West Pocono Substation, is reasonably necessary for the public convenience and welfare, and the West Pocono Substation must include certain equipment that must be protected from the elements to operate properly, the Commission should find that the Control Equipment Building is reasonably necessary and,

therefore, exempt from the Buck Township's local zoning ordinance pursuant to Section 619 of the MPC.

Consistent with the Commission's policy statement, PPL Electric reviewed the zoning ordinance of Buck Township. The Buck Township zoning ordinance classifies the substation site as C-1, Conservation. According to the Buck Township zoning ordinance, any electric substation or associated facilities are an "essential services-closed" that is only permitted by special exception in every zoning district in Buck Township. (PPL Electric St. WP-2, p. 6) In order to obtain a special exception, an applicant must comply with numerous conditions and requirements. (PPL Electric St. WP-2, pp. 6-7) Further, the Buck Township Zoning Hearing Board retains broad discretion to impose additional conditions or requirements for special exceptions. (PPL electric St. WP-2, p. 8)

Although there is not a complete ban on substations in C-1 Conservation Districts, the Zoning Ordinance appears to provide numerous conditions and restrictions that must be met for PPL Electric to commence work on and begin use of the West Pocono Substation and Control Equipment Building. Further, PPL Electric would be required to obtain a building and/or zoning permit for the West Pocono Substation and Control Equipment Building. In order to obtain such approvals, PPL Electric must follow the permitting procedures set forth in the Zoning Ordinance, including the payment of fees. If PPL Electric were required to obtain such approvals prior to the construction of the Control Equipment Building, the process, including appeals from adverse determinations, could consume substantial time, which could delay the construction of the West Pocono Substation, which is reasonably necessary for the convenience of welfare of the public.

Based on the foregoing, PPL Electric respectfully requests that the ALJ and the Commission find that the Control Equipment Building at the proposed West Pocono Substation

is reasonably necessary for the convenience or welfare of the public and, therefore, exempt from local zoning regulations.

## VIII. EMINENT DOMAIN APPLICATIONS

In this proceeding, PPL Electric is seeking a finding, under 15 Pa.C.S. § 1511, that the service to be provided through the acquisition of rights-of-way and easements for the construction, operation, and maintenance of the proposed Northeast-Pocono Reliability Project over the lands identified in the Condemnation Applications is necessary or proper for the service, accommodation, convenience, or safety of the public. Pennsylvania Appellate Courts have interpreted Section 1511 as requiring a condemning utility to show that the proposed transmission line is necessary and that it has not acted wantonly, capriciously, or arbitrarily in selecting the proposed right-of-way. *Department of Environmental Resources v. Pa. PUC*, 335 A.2d 860 (Pa. Cmwlth. 1975), *aff'd.*, 473 Pa. 378, 374 A.2d 693 (1977); *Dickson v. Public Service Commission*, 89 Pa. Super. 126 (1926). Further, the selection of the right-of-way is a matter for the public utility in the first instance and, while the route selection must be reasonable, it need not be the "best alternative" in terms of reducing or eliminating inconvenience to particular landowners. *Stone v. Pa. PUC*, 162 A.2d 18 (Pa. Super. 1960).

PPL Electric initially filed with the Commission thirty-seven applications for a finding and determination that the service to be furnished by PPL Electric through its proposed exercise of the power of eminent domain to acquire rights-of-way and easements for the construction, operation, and maintenance of the proposed Northeast-Pocono Reliability Project is necessary or proper for the service, accommodation, convenience, or safety of the public. During the course of the proceeding, PPL Electric petitioned to withdraw eight of the applications because it was

able to reach agreements with these eight property owners.[66] Consequently, PPL Electric now seeks sufficient land rights for an aerial crossing of the following twenty-nine properties:

> Margaret G. Arthur and Barbara A. Saurman, Trustees of the Residuary Trust of James C. Arthur in Sterling Township, Wayne County, Pennsylvania, Docket No. A-2012-2341115;
>
> Clifton Acres, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341236;
>
> Sylvester J. Coccia in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341267;
>
> Dietrich Hunting Club in Lehigh Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341237;
>
> Lawrence Duda in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341271;
>
> FR E2 Property Holding LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341263;
>
> FR First Avenue Property Holding, LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2012-2341123;
>
> Donald W. Henderson and Louis V. Bellucci in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341262;
>
> Bradley D. Hummel in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341220;
>
> International Consolidated Investment Company in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341216;
>
> John F. and Veronica B. Iskra in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341233;

[66] PPL Electric reached right-of-way agreements with the following eight property owners: (1) Merel J. and Arlene J. Swingle, Docket No. A-2013-2341250; (2) Christopher Maros and Melinda Maros, Docket No. A-2013-2341213; (3) ART Mortgage Borrower Propco 2010-5, LLC, Docket No. A-2013-2341238; (4) Mark M. Mack, J. Dean Mack, and Heather K. Mack, Docket No. A-2012-2340872; (5) Roberta Searfoss a/k/a Judy Searfoss, Executrix of the Estate of Euylla Hughes a/k/a Eylla Hughes in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341232; (6) Blue Ridge Real Estate in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341277; (7) Dianne L. Doss in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341214; and (8) James L. and Michaelene J. Butler in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344353.

Donald Januszewski in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341215;

John C. Justice and Linda S. Justice in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341107;

Anthony J. Lupas, Jr. and Lillian Lupas, John Lupas and Judy Lupas, Grace Lupas, Eugene A. Bartoli and Robert J. Frankelli in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341118;

Michael A. Mitch and Sue K. Mitch in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341234;

NLMS, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341239;

Michael Palermo and Joanne Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341221;

Peter Palermo and Francine Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341211;

William Petrouleas and Joanna Petrouleas in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341209;

Edward R. Schultz in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341253;

Ronald G. Sidovar and Gloria J. Sidovar in Salem Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341120;

Ronald Solt in Plains Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341249;

Three Griffins Enterprises, Inc. in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341114;

Transcontinental Gas Pipe Line Corporation in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341208; and

US Industrial Reit II in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341241.[67]

[67] On June 28, 2013, Duke Realty 400 First Avenue Gouldsboro Holding, LLC (Duke) filed a motion to substitute as a party for US Industrial REIT II (US REIT). Duke's motion alleges that it has purchased US REIT's property located in Covington Township, Lackawanna County that is the subject of PPL Electric's eminent domain application at A-2013-2341241. Duke's motion states that it adopts the pleadings filed in this proceeding by its

Susan Butler Living Trust in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344604;

Grumble Knot, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344612;

Pennsylvania Glacial Till, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344616; and

Blueberry Mountain Realty, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344605.

For the reasons set forth below, PPL Electric requests that the ALJ find, and the Commission approve, that the acquisition of the rights-of-way and easements for the aerial crossing of the aforementioned properties is necessary and proper for the service, accommodation, convenience, or safety of the public, and grant PPL Electric's Condemnation Applications.

As explained above, the Northeast-Pocono Reliability Project is necessary to resolve violations of PPL Electric's RP&P and reinforce the existing 138/69 kV systems in Monroe, Carbon, Wayne, Lackawanna, and Pike Counties by creating a 230 kV line to bring a new 230 kV supply into the area. (*See* Section VI.B.1, *supra*) The Northeast-Pocono Reliability Project will shorten the length of the existing 138/69 kV transmission circuits, which will reduce the distance between the supply of power and the homes and businesses that use the electricity. It also will provide an alternate supply of power to the Northeast-Pocono area in the event that the normal supply are interrupted, which will improve power restoration times and provide operating flexibility and improved reliability for customers in the area. In short, the Northeast-Pocono Reliability Project will reduce the number of customers affected by a single facility outage, as well as the duration of the outage. (*See* Section VI.B.3, *supra*)

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predecessor in interest, US REIT. Duke's motion was unopposed and was granted in Prehearing Order No. 11, issued on July 9, 2013.

As explained above, the Northeast-Pocono Reliability Project includes the construction of a new 58-mile 230 kV transmission line and approximately 11.3 miles of new 138/69 kV transmission lines needed to connect the West Pocono and North Pocono 230-69 kV Substations with the existing 69 kV system. (*See* Section VI.B.2.b, *supra*) The proposed routes for the Project were selected after extensive public input and a detailed analysis, which included a comprehensive environmental inventory, identification and analysis of alternative routes, and selection of the preferred route. Factors considered in the siting analysis included functional requirements, environmental impacts, social impacts, public input, cost, and other factors identified in the Commission's siting regulations. (*See* Section VI.E, *supra*)

PPL Electric seeks to exercise the power of eminent domain to acquire rights-of-way for the construction, operation, and maintenance of the Northeast-Pocono Reliability Project 238 kV and 138/69 kV transmission lines over and across the properties identified in the Condemnation Applications. The proposed rights-of-way and easements over the properties identified in the Condemnation Applications do not interfere or require the condemnation of any place of public worship, burying ground, dwelling or its reasonable curtilage.[68] *See* 15 Pa.C.S. § 1511(b).

PPL Electric must be able to route the Northeast-Pocono Reliability Project over and across the above-mentioned properties in order to site, construct, and operate that transmission lines at the selected routes. The service to be provided by PPL Electric through the proposed transmission lines and related facilities is necessary or proper for the service, accommodation, convenience or safety of the public for the reasons set forth above. (*See* Section VI.B.3, *supra*) Accordingly, PPL Electric's proposed exercise of the power of eminent domain to acquire rights-of-way and easements for the proposed Northeast-Pocono Reliability Project over the lands

[68] (PPL Electric Exs. 4, 6-36)

identified in the Condemnation Applications is necessary or proper for the service, accommodation, convenience, or safety of the public and, therefore, should be approved.

Property owners Hummel, Justice, Sidovar, Duda, US Industrial Reit II/Duke Realty, PA Glacial Till, Iskra, and International Consolidated Investment Company all intervened, protested, or entered a notice of appearance. However, these parties were not active in this proceeding, nor did they file any testimony opposing the proposed Northeast-Pocono Reliability Project. The only property owners that actively participated in this proceeding and opposed the Northeast-Pocono Reliability Project were Transco, FR First, and FR E2. The concerns and issues of these active property owners will be separately addressed below.

### A. TRANSCO EMINENT DOMAIN ISSUES

The proposed route enters the Transco property on the very northern end of the property following an easement acquired by PPL Electric more than 40 years ago. The original easement turns south and runs through the center of Transco's property (Parcel Nos. 32 and 33). However, despite holding an existing easement, PPL Electric adjusted its proposed route to avoid traversing the center of Transco's property. PPL Electric relocated the proposed route to avoid Transco's compressor station at that location. As a result, the proposed route continues east along the northern end of the Transco property (Parcel Nos. 32 and 33) and then through State owned lands (Parcel No. 34). (PPL Electric St. 1-R, pp. 5-6; PPL Electric Ex. DLH-3)

Transco's concerns are largely related to the safety of siting the high voltage transmission lines in close proximity to natural gas pipelines. PPL Electric fully addressed these concerns above. (*See* Section VI.C.3, *supra*)

Transco proposes that the proposed route be relocated closer to the Transco property line (Parcel Nos. 32 and 33). Transco also suggests that the proposed route be relocated to avoid environmentally sensitive areas on the Transco property (Parcel Nos. 32 and 33). (Transco St. 1,

p. 2) However, moving the proposed route closer to the property line would impact a wetland on this property. The proposed route will allow the transmission line to easily span the wetlands without the need to place a tower structure in the wetland or floodplain areas. Further, the environmentally sensitive area discussed by Transco will be avoided pursuant to the plans received from and discussions with Transco. Pole locations and access roads have been designed and reviewed with Transco to avoid any impacts to this area. Finally, PPL Electric will apply for, obtain, and comply with all environmental permits and approval requirements. (PPL Electric St. 1-R, pp. 7-8)

**B. FR FIRST EMINENT DOMAIN ISSUES**

The Covington Industrial Park is located off of State Route 435 in Covington Township and is partially surrounded by the private communities of Big Bass Lake and Eagle Lake. The segment of the Northeast-Pocono Reliability Project that traverses the Covington Industrial Park is approximately 2.1 miles of the 230 kV line that is located along the West Pocono-North Pocono segment. The proposed route through the Covington Industrial Park crosses State Road 435 near the entrance to the Covington Industrial Park and parallels First Avenue, which is the access road owned by FR First, for approximately 1,740 feet along the property line that separates the Art Mortgage and FR First properties. (PPL Electric St. 1-R, p. 2; PPL Electric St. 1-RJ, p. 3; PPL Electric Ex. DLH-1) The monopoles for the portion of the proposed route that parallels the FR First property will be located entirely on the property of Art Mortgage, for which PPL Electric has secured an easement for the proposed route. None of the monopoles will be located on property of FR First. Further, of the three proposed monopoles, the closest pole will be 36 feet from the edge of the existing pavement of the access road to the Covington Industrial Park. (PPL Electric St. 1-RJ, p. 2)

The issues raised by FR First are largely related to whether the aerial right-of-way will create traffic obstructions and interfere with access to the Industrial Park. PPL Electric fully addressed these concerns above. (*See* Section VI.C.4, *supra*)

FR First contends that PPL Electric has not made any offers for the easement over property of FR First. (FR St. 1-SR, p. 3) PPL Electric explained that it has made repeated attempts to discuss the right-of-way across the FR First property and has made an offer for the right-of-way. However, PPL Electric did not receive a response from FR First or its representatives. (PPL Electric St. 6-RJ, pp. 2-4)

FR First also argues that, if PPL Electric condemns an easement of the FR First property, it will have condemned the only access road into the Covington Industrial Park. (FR St. 1-SR, p. 2) FR First appears to misunderstand the nature of the right-of-way and easement that PPL Electric is seeking across the property of FR First. The right-of-way that PPL Electric is seeking across the property of FR First extends for 1,740 feet along the property line that separates the Art Mortgage and FR First properties. (PPL Electric Ex. DLH-1) Although a portion of the 150-foot wide easement will overlap the FR First property, the centerline of the right-of-way will be on the Art Mortgage property and, therefore, the no poles will be located on the FR First property as explained above. (PPL Electric 1-RJ, pp. 3-4) Importantly, if granted, the right-of-way will be an easement only for the aerial crossing of the proposed transmission line across the FR First property. PPL Electric will not condemn or take the property in fee; rather, PPL Electric will only own an easement for an aerial crossing of FR First property. Further, this easement will not materially interfere with the current or future use of the property as an access road into the Covington Industrial Park, which is a compatible use under PPL Electric's right-of-way agreements. (Tr. 327-28)

## C. FR E2 EMINENT DOMAIN ISSUES

The FR E2 property is located in what is known as the Covington Industrial Park. The segment of the Northeast-Pocono Project that traverses the Covington Industrial Park is approximately 2.1 miles of the 230 kV line that is located along the West Pocono-North Pocono line section. The proposed route crosses State Road 435 near the entrance to the Covington Industrial Park, follows the Industrial Park road, and then turns to situate the line behind the buildings located at the Industrial Park. Thereafter, the route follows some of the Industrial Park property lines before turning into the center of the FR E2 Property where it traverses an existing conservation easement area located in the Industrial Park. (PPL Electric St. 1-R, p. 2; PPL Electric Ex. DLH-1)

FR E2 contends that the proposed route conflicts with the Covington Industrial Park because the route traverses the center of the FR E2 property rather than following the property line or going through undeveloped land on the west side of State Route 435. (FR St. 1, p. 2) PPL Electric explained that if the route were realigned to follow the property line of the Covington Industrial Park, it would put the proposed transmission line in close proximity to residential homes that abut the Industrial Park. Although PPL Electric initially considered routing the transmission line along the property line of the Covington Industrial Park, the Company received concerns from several residential home owners that adjoin the Industrial Park. Based on these concerns, and after several field reviews, it was determined that the least overall impact would be to locate the proposed route farther away from these residential dwellings and closer to the existing industrial buildings located in the Covington Industrial Park. (PPL Electric St. 1-R, pp. 3-4)

FR E2 also criticizes PPL Electric for siting the proposed route through the conservation easement located behind the industrial buildings on the FR E2 property. (FR St. 1, p. 2)

However, locating the route through the conservation easement was necessary to avoid locating the proposed route in close proximity to a property that currently contains underground ammunition bunkers. (PPL Electric St. 1-R, p. 4) PPL Electric was advised by the property owner that the agreement with the Department of Defense for the underground ammunition bunker requires a setback to high voltage electric facilities. Further, moving the location of the proposed route, and the associated construction, core boring, foundation, and installation activities farther away from the location of an underground ammunition bunker will further ensure the safety of the nearby property owners and the crews constructing the line. For these reasons, PPL Electric determined that it would prudent to move the proposed route away from the property line between FR E2 and this property. (PPL Electric St. 1-RJ, p. 5) Further, siting the proposed route through the conservation easement located on the FR E2 property will not impede development of structures on the lot because no further expansion of new or existing buildings can occur within the conservation easement. (PPL Electric St. 1-R, pp. 4-5)

To the extent that FR E2 asserts that PPL Electric is without authority to condemn the proposed route on the FR E2 property because it will violate the covenants of the conservation easement, this issue is not properly before the Commission. First, the Commonwealth Court has explained that the Commission's only role under 15 Pa.C.S. § 1511 is to consider if the project is necessary or proper for the benefit of the public, and that the Commission is expressly barred from considering the power of the utility to condemn. *SEPTA v. Pa. PUC*, 991 A.2d 1021, 1023 (Pa. Cmwlth. 2010).[69] Whether PPL Electric has the authority to condemn property subject to a conservation easement is an issue that is beyond the Commission's jurisdiction under Section 1511. Second, FR E2 is the grantor of the easement, and the benefits of an easement flow to the

[69] "Once there has been a determination by the [Commission] that the proposed service is necessary and proper, the issues of scope and validity and damages must be determined by a Court of Common Pleas exercising equity jurisdiction." *Fairview Water Co. v. Pa. PUC*, 509 Pa. 384, 393, 502 A.2d 162, 167 (1985).

grantee or the holder of the easement. Therefore, even if the proposed route through the conservation easement will violate the covenants of the easement, the injured party is the easement holder, not FR E2. In any event, PPL Electric has been in contact with and will continue to work with the conservation easement holder to mitigate any concerns they may have for the line route in this location. (PPL Electric St. 1-R, pp. 4-5)

Finally, FR E2 contends that it never received an offer for the revised route across the FR E2 property, and that the proposed alignment on the northern part of the FR E2 property was not provided to FR E2. (FR St. 1-SR, p. 3) PPL Electric explained that, following a meeting with the Senior Regional Director/Market Leader for FR E2, PPL Electric prepared and sent a package, including a revised drawing and written offer, but the package was not accepted. As a result, PPL Electric sent the package to the corporate office in Chicago, but it is unknown whether the package was forwarded to the Senior Regional Director/Market Leader. Further, the proposed alignment on the northern part of the FR E2 property was included in the eminent domain application that was filed at Docket No. A-2013-2341263 and served on the Senior Regional Director/Market Leader for FR E2. The fact that FR E2 has intervened and been active in this proceeding clearly indicates that it received the proposed alignment on the northern part of the FR E2 property. (PPL Electric St. 6-RJ, pp. 4-5)

## IX. CONCLUSION

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that Administrative Law Judge David A. Salapa and the Pennsylvania Public Utility Commission approve the Application of PPL Electric Utilities Corporation filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of Transmission Lines

Associated with the Northeast-Pocono Reliability Project in Portions of Luzerne, Lackawanna, Monroe, and Wayne Counties, Pennsylvania at Docket No. A-2012-2340872.

PPL Electric Utilities Corporation requests specifically that Administrative Law Judge David A. Salapa and the Pennsylvania Public Utility Commission approve future operation of the transmission lines associated with the Northeast-Pocono Reliability Project at the highest voltage for which the lines are designed and constructed and the addition of the second circuit in those segments described above where the structures are designed to accommodate two circuits but only one circuit will be installed initially.

PPL Electric Utilities Corporation respectfully requests that Administrative Law Judge David A. Salapa and the Pennsylvania Public Utility Commission approve the Petition of PPL Electric Utilities Corporation for a Finding that a Building to Shelter Control Equipment at the North Pocono 230-69 kV Substation in Covington Township, Lackawanna County, Pennsylvania is Reasonably Necessary for the Convenience or Welfare of the Public at Docket No. P-2012-2340871.

PPL Electric Utilities Corporation respectfully requests that Administrative Law Judge David A. Salapa and the Pennsylvania Public Utility Commission approve the Petition of PPL Electric Utilities Corporation for a Finding that a Building to Shelter Control Equipment at the West Pocono 230-69 kV Substation in Buck Township, Luzerne County, Pennsylvania is Reasonably Necessary for the Convenience or Welfare of the Public at Docket No. P-2012-2341105.

PPL Electric Utilities Corporation respectfully requests that Administrative Law Judge David A. Salapa and the Pennsylvania Public Utility Commission approve the twenty-nine applications under 15 Pa.C.S. §1511(c) seeking findings and determination that the service to be

furnished by the Company through its proposed exercise of the power of eminent domain to acquire rights-of-way and easements over the following lands for the siting and construction of transmission lines associated with the proposed Northeast-Pocono Reliability Project is necessary or proper for the service, accommodation, convenience or safety of the public:

Margaret G. Arthur and Barbara A. Saurman, Trustees of the Residuary Trust of James C. Arthur in Sterling Township, Wayne County, Pennsylvania, Docket No. A-2012-2341115;

Clifton Acres, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341236;

Sylvester J. Coccia in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341267;

Dietrich Hunting Club in Lehigh Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341237;

Lawrence Duda in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341271;

FR E2 Property Holding LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341263;

FR First Avenue Property Holding, LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2012-2341123;

Donald W. Henderson and Louis V. Bellucci in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341262;

Bradley D. Hummel in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341220;

International Consolidated Investment Company in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341216;

John F. and Veronica B. Iskra in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341233;

Donald Januszewski in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341215;

John C. Justice and Linda S. Justice in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341107;

Anthony J. Lupas, Jr. and Lillian Lupas, John Lupas and Judy Lupas, Grace Lupas, Eugene A. Bartoli and Robert J. Frankelli in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341118;

Michael A. Mitch and Sue K. Mitch in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341234;

NLMS, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341239;

Michael Palermo and Joanne Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341221;

Peter Palermo and Francine Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341211;

William Petrouleas and Joanna Petrouleas in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341209;

Edward R. Schultz in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341253;

Ronald G. Sidovar and Gloria J. Sidovar in Salem Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341120;

Ronald Solt in Plains Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341249;

Three Griffins Enterprises, Inc. in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341114;

Transcontinental Gas Pipe Line Corporation in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341208; and

US Industrial Reit II in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341241.

Susan Butler Living Trust in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344604;

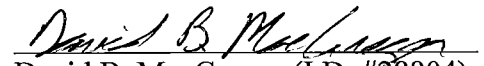
Grumble Knot, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344612;

Pennsylvania Glacial Till, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344616; and

Blueberry Mountain Realty, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344605.

PPL Electric Utilities Corporation respectfully requests that Administrative Law Judge David A. Salapa and the Pennsylvania Public Utility Commission grant such other approvals as are necessary or appropriate under all of the circumstances.

Respectfully submitted,

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Date: August 26, 2013

# APPENDIX "A"

## APPENDIX A

## GLOSSARY OF TERMS AND ACRONYMS

| | |
|---|---|
| 138/69 kV | The term "138/69 kV" indicates that the transmission line currently operates at 69 kV but was initially designed and built to accommodate 138 kV operation. |
| ACSR | Aluminum conductor steel reinforced |
| Alternative Switching Methods | Changing the switch on a sectionalized line from "normally open" to "abnormally closed" or vice versa. |
| BES | Bulk Electric System. The BES includes transmission facilities operated at voltages of 100 kV or higher. |
| BMPs | Best Management Practices |
| Border Zone | The "border zone" is defined as the "the remainder of the right-of-way," or the area within the right-of-way that extends from the edge of the wire zone, as defined above, to the outer-most edge of the right-of-way. In the border zone, vegetative species identified as compatible are permitted to grow back over time and remain in the border zone. |
| DCNR | Department of Conservation and Natural Resources |
| DEP | Pennsylvania Department of Environmental Protection |
| Duke Realty | US Industrial Reit II |
| E&S | Erosion and sedimentation |
| EMFs | Electric and magnetic fields |
| EPRI-GTC | Electric Power Research Institute and the Georgia Transmission Corporation. An "opportunity and constraint" transmission line siting methodology that was developed with collaboration and feedback from utility companies; federal, state and local government agencies; and other key stakeholders, such as private landowners. The EPRI-GTC process has been tested and calibrated against previously approved transmission line siting projects that have been successfully completed. The approach formalizes many of the methods and principles used in the industry and by consultants over the last several years. |
| EV | Exceptional Value |

| | |
|---|---|
| FERC | Federal Energy Regulatory Commission |
| FR E2 | FR E2 Property Holding, LP |
| FR First | FR First Avenue Property Holding, LP |
| GIS | Geographic Information Systems |
| HQ | High Quality |
| HV | High voltage |
| Kcmil | 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 on thousandth (0.001) of an inch. |
| kV | Kilovolt |
| Two hour Emergency rating | The two hour emergency rating is used for the initial loss of one transformer. The remaining transformers must be below the two hour emergency rating after the loss of the first transformer. |
| MPC | Municipalities Planning Code |
| MVA | Megavolt ampere |
| MW | Megawatt |
| NERC | North American Electric Reliability Corporation |
| NESC | National Electric Safety Code |
| Networked Configuration | In a "networked" configuration, the transmission line has a voltage source and power supply available at each end of the line. Power can flow from either end of the line to serve customer load. |
| Non-BES | Non-Bulk Electric System. The non-BES includes transmission facilities that are operated at voltages less than 100 kV. |
| NPCARE | North Pocono Citizens Alert Regarding the Environment |
| NPDES | National Pollutant Discharge Elimination System |
| PFBC | Pennsylvania Fish & Boat Commission |

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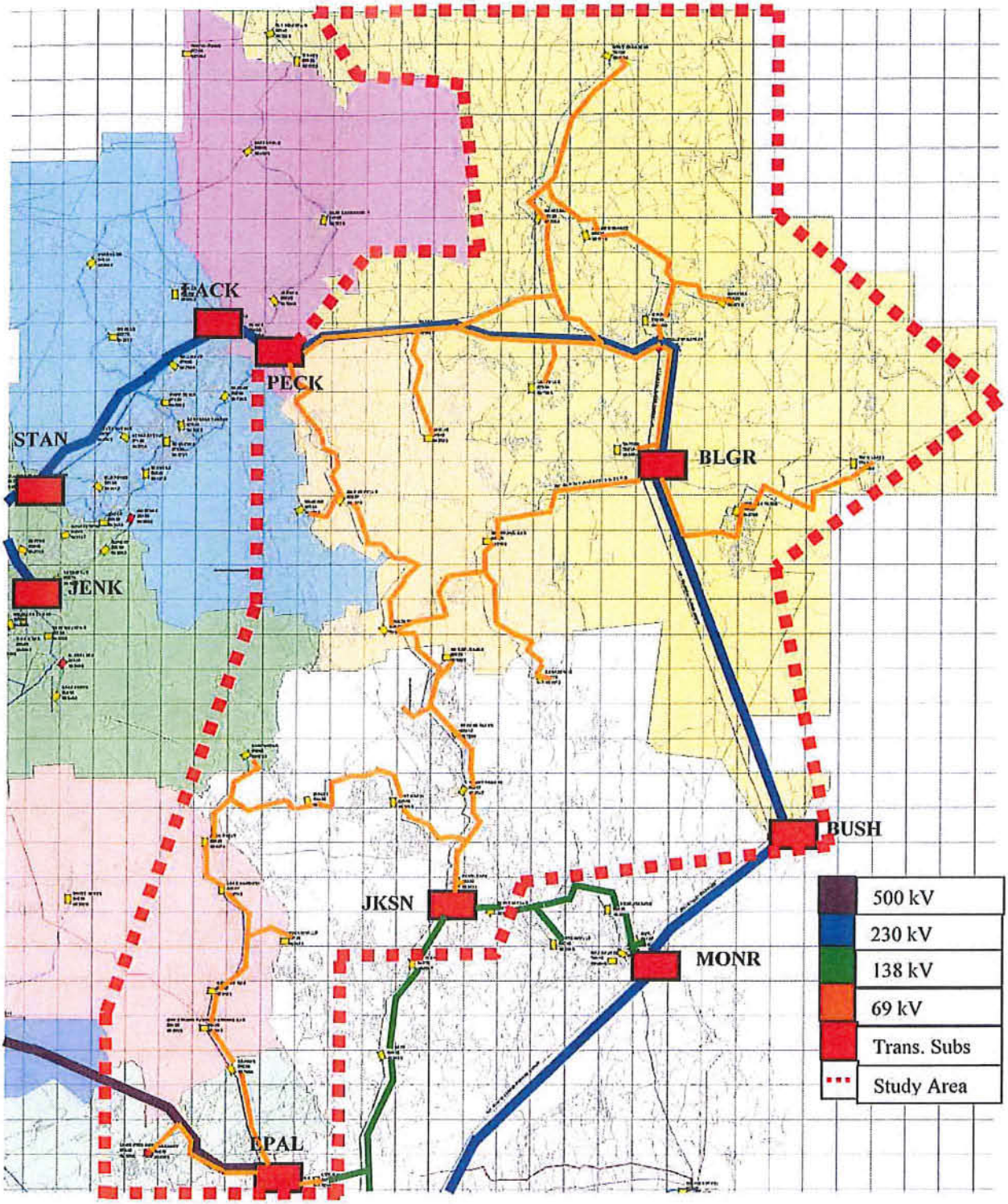
|---|---|
| PGC | Pennsylvania Game Commission |
| PJM | PJM Interconnection, L.L.C. |
| PNDI | Pennsylvania Natural Diversity Inventory |
| Protective Relaying Scheme | Opens and closes switches in the transmission facilities when a fault is detected. Like a circuit breaker on household electric lines, the protective relaying scheme opens an electric switch and shuts off power when a fault occurs. Where a household circuit breaker remains shut off until it is manually reset, the protective relaying scheme tests the electrical line to determine whether the fault has been removed. If the fault is only temporary, the protective relaying scheme closes the switch and restores electric power. |
| Radial Configuration | In a "radial" configuration, the transmission line has a voltage source and power supply available at only one end of the line. Power will flow from the transmission substation (230-69 kV) source to the loads along the line. |
| Riparian Buffer | Vegetation within the 150 feet of all EV streams, EV wetlands, and vernal pools. |
| RP&P | Reliability Principles & Practices |
| RTEP | Regional Transmission Expansion Plan |
| Sectionalized | Transmission line facilities are "sectionalized" with electrical switches. When the switch is "closed," the electric current flows across the switch and the transmission line operates as one single transmission line. When the switch is "open," the electric current is disrupted and the transmission line is sectionalized at the open point. |
| Species of Special Concern | Include biological species, plant communities and geologic formations found in Pennsylvania. Only threatened and endangered amphibians, birds, fish (including trout), mammals, mussels, snails, reptiles and vascular plants are protected by the Commonwealth. Species of Special Concern that are not threatened or endangered are not protected by the Commonwealth. Although the Commonwealth may request actions to mitigate negative impacts to others non-threatened and non-endangered species, such requests are voluntary, not mandatory. |
| Step Down Transformer | Decreases the operating voltage. |
| Step Up Transformer | Increases the operating voltage. |

| | |
|---|---|
| Switchyard | An electrical connection at a transmission substation that does not "step up" or "step down" the voltage. |
| Target species | The PNDI provides a list of target Species of Special Concern known to occur in the vicinity of the study area. If Species of Special Concern are known locally, then the applicant is provided with a list of target species for which the applicant is required by the responsible agency to survey. |
| Transco | Transcontinental Gas Pipe Line Company, LLC |
| Wire Zone | The "wire zone" is defined as the area within the right-of-way that includes the area underneath the conductor and extends ten (10) feet outward from the outer-most conductor on both sides of the transmission line. Areas within the wire zone are cleared of all woody vegetation leaving only grasses. Ferns and other herbaceous plants are permitted to grow back over time and remain in the wire zone. |

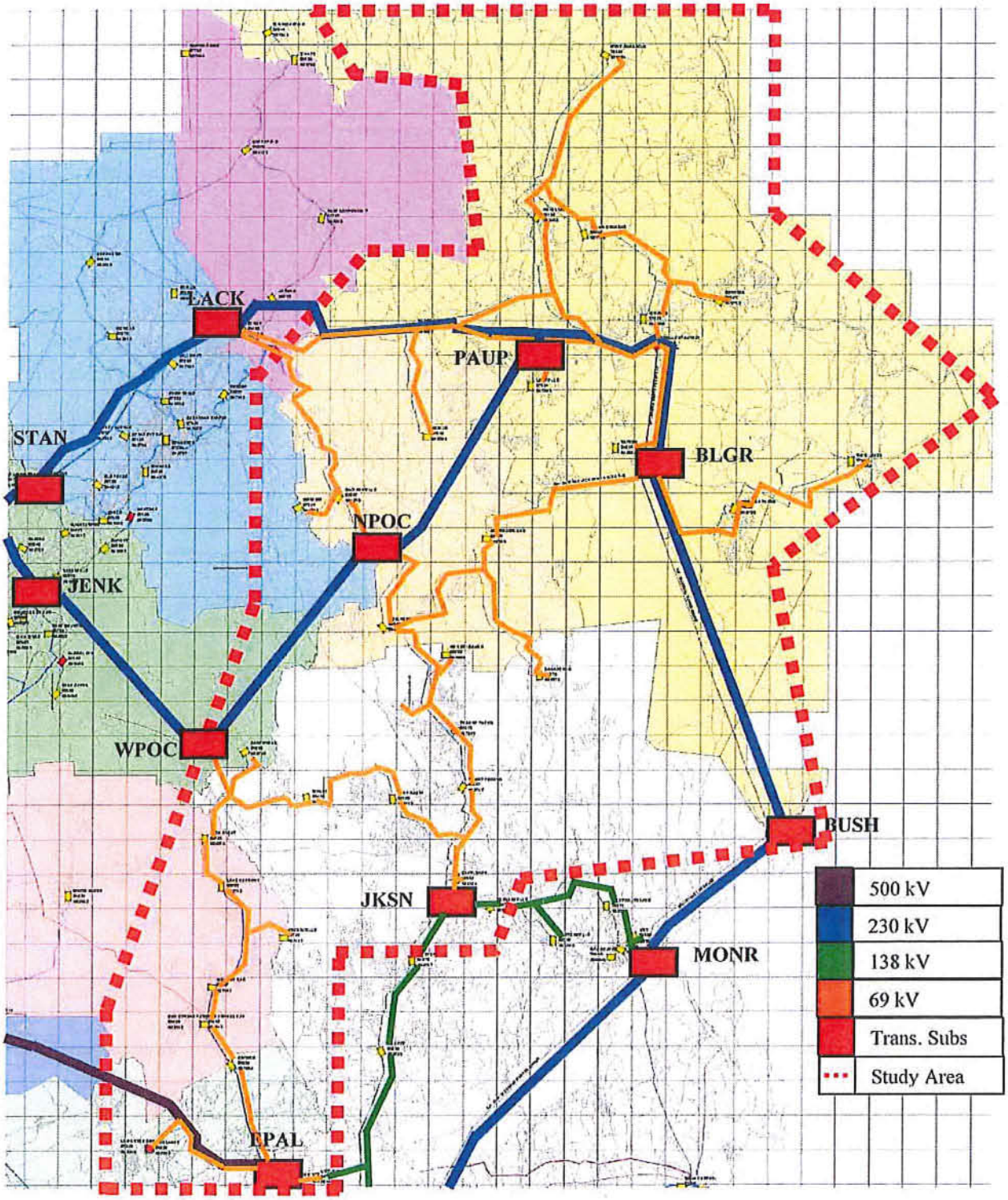
# APPENDIX "B"

## FIGURE 2-1 – FUNCTIONAL AREA MAP OF EXISTING FACILITIES IN THE NORTHEAST POCONO AREA



# APPENDIX "C"

## FIGURE 2-3: FUNCTIONAL AREA MAP OF NORTHEAST/POCONO AREA WITH PROPOSED TRANSMISSION FACILITIES



# APPENDIX "D"

**APPENDIX D**

**PROPOSED FINDINGS OF FACT**

PPL Electric Utilities Corporation ("PPL Electric") proposes the following findings of fact:

## I. INTRODUCTION

1. PPL Electric is a public utility that provides electric distribution, transmission, and provider of last resort services in Pennsylvania subject to the regulatory jurisdiction of the Commission. (PPL Electric Ex. 1, p. 2)

2. PPL Electric furnishes electric service to approximately 1.4 million customers throughout its certificated service territory, which includes all or portions of twenty-nine counties and encompasses approximately 10,000 square miles in eastern and central Pennsylvania. PPL Electric is a "public utility" and an "electric distribution company" as defined in Sections 102 and 2803 of the Pennsylvania Public Utility Code, 66 Pa.C.S. §§ 102, 2803. (PPL Electric Ex. 1, p. 4)

3. 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. (PPL Electric Ex. 1, p. 4)

4. On December 28, 2013, when PPL Electric filed the "Application of PPL Electric Utilities Corporation filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of Transmission Lines Associated with the Northeast-Pocono Reliability Project in Portions of Luzerne, Lackawanna, Monroe, and Wayne Counties,

Pennsylvania" ("Siting Application"), which was docketed at Docket No. A-2012-2340872. (PPL Electric Ex. 1)

5. On December 28, 2012, PPL Electric filed two zoning exemption petitions: (1) the "Petition of PPL Electric Utilities Corporation for a Finding that a Building to Shelter Control Equipment at the North Pocono 230-69 kV Substation in Covington Township, Lackawanna County, Pennsylvania is Reasonably Necessary for the Convenience or Welfare of the Public" ("North Pocono Zoning Petition"), which was docketed at Docket No. P-2012-2340871 (PPL Electric Ex. 2); and (2) the "Petition of PPL Electric Utilities Corporation for a Finding that a Building to Shelter Control Equipment at the West Pocono 230-69 kV Substation in Buck Township, Luzerne County, Pennsylvania is Reasonably Necessary for the Convenience or Welfare of the Public" ("West Pocono Zoning Petition"), which was docketed at Docket No. P-2012-2341105 (PPL Electric Ex. 3)

PPL Electric also filed the twenty-nine applications under 15 Pa.C.S. §1511(c) seeking findings and determination that the service to be furnished by the Company through its proposed exercise of the power of eminent domain to acquire rights-of-way and easements over the following lands for the siting and construction of transmission lines associated with the proposed Northeast-Pocono Reliability Project is necessary or proper for the service, accommodation, convenience or safety of the public:

> Margaret G. Arthur and Barbara A. Saurman, Trustees of the Residuary Trust of James C. Arthur in Sterling Township, Wayne County, Pennsylvania, Docket No. A-2012-2341115;
>
> Clifton Acres, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341236;
>
> Sylvester J. Coccia in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341267;

Dietrich Hunting Club in Lehigh Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341237;

Lawrence Duda in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341271;

FR E2 Property Holding LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341263;

FR First Avenue Property Holding, LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2012-2341123;

Donald W. Henderson and Louis V. Bellucci in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341262;

Bradley D. Hummel in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341220;

International Consolidated Investment Company in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341216;

John F. and Veronica B. Iskra in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341233;

Donald Januszewski in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341215;

John C. Justice and Linda S. Justice in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341107;

Anthony J. Lupas, Jr. and Lillian Lupas, John Lupas and Judy Lupas, Grace Lupas, Eugene A. Bartoli and Robert J. Frankelli in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341118;

Michael A. Mitch and Sue K. Mitch in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341234;

NLMS, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341239;

Michael Palermo and Joanne Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341221;

Peter Palermo and Francine Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341211;

William Petrouleas and Joanna Petrouleas in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341209;

Edward R. Schultz in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341253;

Ronald G. Sidovar and Gloria J. Sidovar in Salem Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341120;

Ronald Solt in Plains Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341249;

Three Griffins Enterprises, Inc. in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341114;

Transcontinental Gas Pipe Line Corporation in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341208; and

US Industrial Reit II in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341241.

Susan Butler Living Trust in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344604;

Grumble Knot, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344612;

Pennsylvania Glacial Till, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344616; and

Blueberry Mountain Realty, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344605.

(PPL Electric Exs. 4, 6-36)

## II. SITING APPLICATION

### A. NEED FOR THE NORTHEAST POCONO PROJECT

6. The Northeast Pocono region is located in portions of Carbon, Lackawanna, Monroe, Pike and Wayne counties in Northwestern Pennsylvania. The region is loosely bounded on the west by several 230 kV lines, on the north and east by a single 230 kV line, and on the south by a double-circuit 138 kV line. (PPL Electric St. 2, p. 8)

7. The distance between 230 kV sources in the Northeast Pocono study area is 45 miles between Jenkins and Bushkill Substations, and 55 miles between Peckville and Siegfried

Substations. Because these 230 kV sources are not located within the areas of higher population density, the power supply is too distant to reliably and effectively serve that customer load. (PPL Electric St. 2-R, pp. 2-3, 39; PPL Electric Ex. LRK-2)

8. All of the local transmission lines that presently serve customers in the Northeast Pocono region are operated at 69 kV. (PPL Electric Ex. 1, p. 9) The existing 138/69 kV lines serving the Northeast Pocono region are very long in length and heavily loaded. (PPL Electric Ex. LRK-6)

9. There have been no significant improvements to the local electric transmission systems serving this area since the early 1980s – approximately 30 years ago. (PPL Electric Ex. 1, p. 9)

10. From 2003 through 2012, the peak load in the area has increased from 565 MW to 635 MW. During the same period, the number of customers has increased from approximately 119,000 to 128,000. From 2000 through 2010, population of the area increased from 824,000 to 880,000. (PPL Electric Ex. 1, Att. 2, pp. 14-15; PPL Electric St. 2-R, pp. 7-8)

11. PPL Electric expects the load growth on these long, already heavily-loaded lines to continue. PJM projects that winter peaks in the PPL Electric Zone will increase by approximately 1.1 percent annually. (PPL Electric St. 2-R, p. 10)

12. Numerous residential, commercial, and industrial development projects are planned for the area, which will further increase customer load. (PPL Electric St. 2-R, pp. 8-9)

13. Although future load growth in the area is important, reinforcement of the transmission system in the Northeast Pocono region is required regardless of future growth. (OCA St. 1, p. 10)

14. Because the transmission lines serving the area are so heavily loaded, there is only a limited ability to transfer load in the event of an outage of one line to other lines. Further, because the lines now serving the area are long, they serve many customers. (PPL Electric St. 4-R, p. 8)

15. The transmission system in the Northeast Pocono region experiences load transfer limitations during peak winter loading periods. (PPL Electric St. 2, p. 12)

16. To ensure the reliable and economical operation of PPL Electrics BES and non-BES transmission system facilities, PPL Electric has adopted planning practices set forth in PPL Electric's Reliability Principles and Practices ("RP&P"). (PPL Electric St. 2, pp. 4-5)

17. PPL Electric's RP&P plays a critical role in establishing the foundation of reliability standards and planning criteria for maintaining its electric system so that PPL Electric can provide reliable service to its customers. (PPL Electric St. 3, pp. 12-13). PPL Electric's RP&P is consistent with good utility practice, with the reliability criteria and standards used by other transmission system operators, and with PJM Interconnection, L.L.C. ("PJM") transmission planning policies. (PPL Electric St. 3, pp. 8-10)

18. In addition to the long, heavily loaded 69 kV transmission lines, and the lack of a 230 kV source within the Northeast Pocono region, PPL Electric also initially determined that following seven violations of the system planning and reliability practices set forth in the RP&P would occur if the transmission system serving the Northeast Pocono region is not reinforced:

(i) A double-circuit outage of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line would violate the RP&P guideline for maximum allowable load loss;

(ii) A double-circuit outage of the East Palmerton-Wagners #1 & #2 138/69 kV Transmission Line would violate the RP&P guideline for maximum allowable load loss;

(iii) A single-circuit outage of the Blooming Grove-Jackson 138/69 kV circuit would violate the RP&P guideline for maximum allowable load loss;

(iv) A single-circuit outage of the Peckville-Jackson 138/69 kV circuit would violate the RP&P guideline for maximum allowable load loss;

(v) Single-circuit outage of the East Palmerton-Wagners #2 138/69 kV circuit would violate the RP&P guideline for maximum allowable load loss;

(vi) The normal line loading on the Blooming Grove-Jackson 138/69 kV circuit will exceed the normal line loading guideline set forth in the RP&P by the winter of 2015-2016; and

(vii) The normal line loading on the Peckville-Jackson 138/69 kV circuit will violate the loading guideline in the RP&P by the winter of 2014-2015.

(PPL Electric St. 2, pp. 13-15, 21-22)

19. Through an updated evaluation of each of these violations, PPL Electric confirmed that 4 of the 7 original violations have not changed as to need or timing, 2 have been confirmed but the required in-service has been delayed, and 1 has been resolved through alternate switching methods. (PPL Electric St. 2-R, p. 4)

20. PPL Electric's updated analysis confirmed that a double-circuit outage of the Blooming Grove-Jackson and Peckville-Jackson 138/69 kV Transmission Line will result in a violation of the RP&P by winter 2014-2015. (PPL Electric St. 2-R, p. 5)

21. PPL Electric's updated analysis confirmed that a double-circuit outage of the East Palmerton-Wagners #1 & #2 138/kV Transmission Line will result in a violation of the RP&P by winter 2024-2025. (PPL Electric St. 2-R, p. 5)

22. PPL Electric's updated analysis determined that the violation due to a single-circuit outage of the Blooming Grove-Jackson 138/69 kV circuit, originally expected to occur by winter 2021-2022, will not occur until after winter 2029-2030 because of alternative switching methods. (PPL Electric St. 2-R, p. 5)

23. PPL Electric's updated analysis determined the violation due to a single-circuit outage of the Peckville-Jackson 138/69 kV circuit, originally expected to occur winter 2014-2015, will not occur until winter of 2024-2025 because of alternative switching methods. (PPL Electric St. 2-R, pp. 4-5)

24. PPL Electric's updated analysis determined that the violation due to a single-circuit outage on the East Palmerton-Wagners #2 circuit could be resolved through alternative switching methods. (PPL Electric St. 2-R, p. 5)

25. PPL Electric's updated analysis confirmed that the projected normal line loadings on the Blooming Grove-Jackson 138/69 kV circuit will result in a violation by winter 2015-2016. (PPL Electric St. 2-R, p. 5)

26. PPL Electric's updated analysis confirmed that the projected normal line loadings on the Peckville-Jackson 138/69 kV circuit will result in a violation by the winter of 2014-2015. (PPL Electric St. 2-R, p. 5)

27. In addition to the seven violations of the RP&P, PPL Electric also determined that, by the winter of 2026-2027, the loss of one of the 138/69 kV transformers at the Jackson 138-69 kV Substation for an extended period of time would cause the remaining transformer to

exceed its one month winter emergency rating. This load would be a violation of PPL Electric's RP&P. The load would increase each year as customer load grows. (PPL Electric St. p. 21; PPL Electric Ex. 1, Att. 2, pp. 21-22)

28. The violations of the RP&P will occur because the existing transmission system in the Northeast Pocono region does not have sufficient capacity to restore load interrupted under contingency situations within acceptable limits as specified within the RP&P. (PPL Electric St. 2, pp. 12-13; PPL Electric St. 2-R, p. 8)

29. Given the load growth in the Northeast Pocono region, PPL Electric anticipates that the severity of each violation will continue to increase each year if the transmission system serving the Northeast Pocono region is not reinforced. (PPL Electric St. 2, pp. 11-12)

30. Due to the voluntary nature of the demand response and energy efficient measures, these resources often are not under the control or direction of local system operators and cannot be relied upon to reduce loading on facilities in a particular PPL Electric region. (PPL Electric St. 2-R, pp. 11-12)

31. PPL Electric should not and cannot assume that a recession will continue forever. It is PPL Electric's statutory duty to provide reliable service, which requires that it anticipate future load growth and not simply defer the addition of new facilities on the assumption that a recessionary period will be sustained indefinitely. (PPL Electric St. 2-R, p. 13)

32. The Office of Consumer Advocate ("OCA"), the only other party to present expert testimony on the need for the Project, agreed that the 69 kV transmission system in the Northeast Pocono region requires reinforcement. (OCA St. 1, pp. 10-11)

**B. PROPOSED PROJECT**

33. Once PPL Electric's planning process has identified facilities that require reinforcement, the next step of the planning process is to analyze potential electrical solutions

and select the solution that best resolves the underlying reliability issues. (PPL Electric Ex. 1, Att. 2, p. 7)

34. PPL Electric proposes to construct the Northeast-Pocono Reliability Project to resolve the RP&P violations explained above and to reinforce the system serving the Northeast Pocono region by bringing the much needed 230 kV supply into the area, which will reduce the length of and number of customers served by the existing 138/69 kV lines and improve the ability to transfer load from one source to another in the event of a facility outage. This new 230 kV network will be created by strategically locating two 230-69 kV substations, the new West Pocono and North Pocono 230-69 kV Substations, central to the loads they will serve. (PPL Electric St. 2, pp. 22-23, 24-15)

35. With the implementation of the proposed Northeast-Pocono Reliability Project, including the new 230 kV transmission line, the new West Pocono and North Pocono 230-69 kV substations and 138/69 kV connecting lines, the distances between the transmission substations is greatly reduced to less than 20 miles. (PPL Electric Ex. LRK-1 and LRK-3)

36. The new West and North Pocono 230-69 kV Substation will be located in close proximity to the existing local 138/69 kV systems, which will minimize the length of transmission lines needed to connect the two new Substations to the electric grid, as well as minimize the costs and environmental impacts of the lines needed to connect to the 138/69 kV systems. (PPL Electric St. 2, p. 23)

37. To connect the new substations to the existing 230 kV transmission system, PPL Electric proposes to construct a new 58-mile 230 kV transmission line that is divided into three segments: the Jenkins-West Pocono Segment; the West Pocono-North Pocono Segment; and the North-Pocono Paupack Segment. (PPL Electric St. 2, p. 23; PPL Electric St. 5, p. 5)

38. The Jenkins-West Pocono Segment will extend approximately 15 miles southeast from the existing Jenkins 230-69 kV Substation to the proposed new West Pocono 230-69 kV Substation. The West Pocono-North Pocono Segment will extend approximately 21 miles northeast from the new West Pocono 230-69 kV Substation to the new North Pocono 230-69 kV Substation. Finally the North-Pocono Paupack Segment will extend approximately 22 miles northeast from the North-Pocono 230-69 kV Substation to the Paupack 230-69 kV Substation. (PPL Electric St. 5, pp. 6-8; PPL Electric Ex. 1, Att. 5, pp. 2-7)

39. The new 230 kV segments of the Northeast-Pocono Reliability Project will each be designed for 230 kV double circuit capability, but initially only one 230 kV circuit will be installed until load growth in the area makes it appropriate to add the second 230 kV circuit. (PPL Electric St. 5, p. 5)

40. The new 230 kV segments of the Northeast-Pocono Reliability Project will consist of approximately 199 self-weathering tubular steel tangent mono-pole structures, and approximately 111 angle structures that will consist of one or two pole steel structures depending on the line angle. The structures will have an average height of 150 feet, and the spans between structures will be approximately 1,000 feet. (PPL Electric St. 5, pp. 6-8; PPL Electric Ex. 1, Att. 5, pp. 2-7)

41. PPL Electric also proposes to construct five new 138/69 kV transmission lines, collectively approximately 11.3 miles, to connect the new North Pocono and West Pocono 230-69 kV Substations to the existing local 138/69 kV transmission system. (PPL Electric St. 2, p. 23)

42. PPL Electric proposes to construct two new double-circuit 138-69 kV transmission lines, collectively approximately 6.0 miles, to connect the West Pocono 230-69 kV

Substation to the existing 69 kV system. PPL Electric also proposes to construct three new 138-69 kV transmission lines, collectively approximately 5.3 miles, to connect the North Pocono 230-69 kV Substation to the existing 69 kV system. (PPL Electric St. 5, pp. 5-6)

43. The new double-circuit 138/69 kV connecting lines from the West Pocono 230-69 kV Substation will require the installation of approximately 48 structures with an average height of 105 feet. The spans between structures will be approximately 650 feet. The structures for the new 138/69 kV connecting lines will consist of approximately 34 self-weathering tubular steel tangent mono-pole structures equipped with arms, approximately 14 angle structures that will consist of one or two pole steel structures depending on the line angle. (PPL Electric St. 5, p. 9; PPL Electric Ex. 1, Att. 5, pp. 8-10)

44. The most current cost estimate to site, design, and construct the Northeast-Pocono Reliability Project is approximately $247 million. (PPL Electric St. 5-RJ, p. 4) This cost includes the construction of the proposed new 230 kV and 138/69 kV transmission lines, the West and North Pocono Substations, and the acquisition costs for the needed rights-of-way. (PPL Electric St. 2, p. 24)

45. The Northeast-Pocono Reliability Project has a scheduled construction start date of spring 2014 to meet staged in-service dates from November 2015 to November 2017. (PPL Electric St. 1, p. 10; PPL Electric St. 4-R-2, p. 5)

46. PPL Electric submitted the proposed Northeast-Pocono Reliability Project to PJM for review and inclusion in the RTEP. The Project was presented before stakeholders at the Mid-Atlantic Sub-Regional RTEP meetings, approved by the PJM Board, and included in the 2011 RTEP Report as a series of baseline projects. (PPL Electric St. 2, p. 8). As explained above,

once a project is included in a PJM-approved RETP, the transmission owners are then obligated to go forward to implement the project. (PPL Electric St. 2, pp. 7-8)

47. The construction of the Northeast-Pocono Reliability Project will bring the sources of bulk power closer to the customer load. As a result, electric service in the area will no longer depend exclusively on 230 kV transmission sources that are outside of and do not enter the areas of population density, nor will electric service in the area depend on long and heavily-loaded 69 kV transmission lines. (PPL Electric St. 2-R, pp. 2-3, 39; PPL Electric Exhibit LRK-2 and LRK-3)

48. The Northeast-Pocono Reliability Project will reduce the number of customers affected by a single facility outage and shorten the duration of the outage. (PPL Electric St. 2, pp. 24-25)

49. In addition to resolving the issues related to the long, heavily-loaded 69 kV transmission lines and the lack of a 230 kV source within the Northeast Pocono region, the Northeast-Pocono Reliability Project also will resolve the projected violations of the reliability practices in PPL Electric's RP&P. (PPL Electric St. 2, pp. 25-28)

50. PPL Electric initially considered and evaluated 69 kV, 138 kV, and 230 kV alternative electrical solutions, including the proposed Northeast-Pocono Reliability Project, to reinforce the Northeast Pocono region. (PPL Electric St. 2-R, p. 16; OCA St. 1, pp. 12-19)

51. PPL Electric and the OCA agreed that the 69 kV and 230 kV alternative electrical solutions would not resolve the reliability violations and/or would be more difficult and costly to implement. (PPL Electric St. 2-R, pp. 16-17, 19; OCA St. 1, pp. 12-13)

52. The 138 kV alternative electrical solution would require conversion of the existing 69 kV lines and 69-12 kV substations in the western half of the Northeast Pocono

project area to 138 kV operation. (PPL Electric St. 2-R, pp. 17-18) In order for the 138 kV option to address the remaining violations in the Northeast Pocono area, all the transmission lines in the area must be operated in a networked configuration from East Palmerton to Jackson, Jackson to North Pocono, North Pocono to Lackawanna, and North Pocono to Blooming Grove. (PPL Electric St. pp. 18-19)

53. The 138 kV alternative electrical solution resolves the projected violations of the RP&P. However, it does not address the underlying problem -- long 69 kV transmission lines, heavy line loading, and no 230 kV source of power within the Northeast Pocono region. (PPL Electric St. 2-R, p. 21)

54. If a fault occurs on any networked transmission line, which the 138 kV alternative electrical solution requires, a severe voltage deviation (drop) would be experienced by all customers connected to the networked lines. The voltage deviations caused by faults on a networked system can have significant impacts to customers. (PPL Electric St. 2-R, pp. 29-32; PPL Electric Ex. LRK-5)

55. The 138 kV alternative electrical solution would require that all the existing 69 kV transmission lines in the area, approximately 100 miles, be converted to 138 kV and operated in a networked configuration. A fault occurring anywhere on this networked system would interfere with service to all customers served from these networked transmission lines. (PPL Electric St. 2-R, pp. 25-26; PPL Electric Exs. LRK-1 and LRK-6)

56. The 138 kV networked system has significant operational issues. Specifically, it is much more difficult to maintain normal operations during maintenance outages because it is necessary to analyze the settings of every switch and every relay in the electrical protective

system throughout the networked system. (PPL Electric St. 2-R, pp. 28-29) Further, an outage on the BES can cause an overload on the networked 69 kV system. (PPL Electric St. 2-R, p. 26)

57. Under the 138 kV alternative electrical solution, approximately 112 miles of the existing 69 kV transmission lines, which were initially built for 138 kV operation, will need to be rebuilt due to changing design and construction standards for 138 kV transmission lines. (OCA St. 1, pp. 13, 17; PPL Electric St. 5-R, p. 4)

58. The 138 kV alternative electrical solution would be extremely difficult to construct and could not be completed to resolve the numerous RP&P violations in a timely manner. (PPL Electric St. 2-R, pp. 33-38)

59. The 138 kV alternative electrical solution will cost far more than the Northeast-Pocono Reliability Project, largely due to the need to rebuild approximately 112 miles of the existing 69 kV transmission lines. (PPL Statement 5-R, p. 2-4; PPL Electric St. 5-RJ, p. 4)

**C. HEALTH AND SAFETY**

60. Each of the transmission lines associated with the proposed Northeast-Pocono Reliability Project has been designed to meet or surpass all requirements specified by the NESC. (PPL Electric St. 5, pp. 3-4; PPL Electric Ex. 1, Att. 5, p. 14)

61. In addition to the safety features incorporated by designing the line in accordance with the NESC; PPL Electric has additional, more stringent design standards, including relay protection schemes, design loading conditions for structures, wires, and clearances exceed NESC standards. (PPL Electric St. 5, pp. 13-14)

62. There is no evidence of record to suggest that EMFs from the proposed Northeast-Pocono Reliability Project will cause or contribute to adverse health effects.

63. PPL Electric has taken EMF mitigation into account by designing the proposed lines to reduce EMFs and to maximize the distance from the centerline to any residences. (PPL Electric St. 5, p. 15; PPL Electric Ex. 1, Att. 11)

64. PPL Electric and other electric utilities own and operate existing electric facilities that, for many years, have safely coexisted, ran near, and traversed natural gas lines. (PPL Electric St. 1-R, p. 6; PPL Electric St. 8) PPL Electric has successfully worked with many different pipeline owners to ensure that there are no conflicts between the two companies' operations. (PPL Electric St. 1-R, pp. 6-7) There is no basis to suggest any conflicts or issues between electric facilities and pipeline facilities, as suggested by Transcontinental Gas Pipe Line Company, LLC ("Transco").

65. PPL Electric has agreed to fund an impact study to determine what, if any, impact the proposed transmission lines may have on Transco's natural gas pipelines. PPL Electric and Transco have not reached an agreement on the terms of the impact study. (PPL Electric St. 5-R, pp. 7-9; Tr. 342)

66. As part of the impact study, Transco wants PPL Electric to agree up front to fund any and all mitigation measures that may be identified by the impact study. (Transco St. 1, p. 2; Transco St. 1-SR, pp. 2-3) It would not be reasonable or prudent for PPL Electric to agree to provide Transco with a "blank check" for mitigation measures when it is entirely unknown what those measures are or whether such measures are truly attributable to PPL Electric's proposed transmission line. (PPL Electric St. 5-RJ, p. 5; Tr. 342-43)

67. If both the Northeast-Pocono Reliability Project and Transco Leidy Southeast Project are approved and additional work space is needed for construction, PPL Electric will

agree to temporary work space for construction of the Leidy Southeast project within its proposed easement and on PPL Electric-owned property (Parcel 36). (PPL Electric St. 1-R, p. 9)

68. The record evidence demonstrates that the portion of the proposed route that will parallel the access road to the Covington Industrial Park will not have any impact to the ingress or egress of the Covington Industrial Park. The right-of-way across the FR First Avenue Property Holding, LP ("FR First") property will be an easement only for the aerial crossing. This aerial crossing of FR First property will not impact the access road for the Covington Industrial Park. (PPL Electric St. 2-R, p. 3; PPL Electric St. 1-RJ, pp. 2-4; PPL Electric Exhibit Nos. DLH-1 and DLH-2)

## D. COMPLIANCE WITH ENVIRONMENTAL STATUTES AND REGULATIONS

69. The attachments to PPL Electric's filing include information on the regulatory permit requirements and agency coordination regarding cultural and environmental resources. (PPL Electric Ex. 1, Att. 7) This detailed information effectively addresses and, in most cases, exceeds all the requirements of the Commission's siting regulations.

70. PPL Electric has constructed 118 transmission projects over the last 15 years. In each case, PPL Electric has obtained and complied with all necessary environmental permits. Further, PPL Electric maintains approximately 5,000 miles of transmission lines operating at 69 kV or higher, approximately 375 substations with a capacity of 10 MVA or more, and approximately 43,000 miles of distribution lines. There is no evidence to suggest that PPL Electric cannot and will not construct and maintain the proposed transmission lines in compliance with applicable environmental laws or regulations. (PPL Electric St. 4-R-2, p. 22)

71. PPL Electric has committed to obtain all required permits for construction of the Northeast-Pocono Reliability Project, and will comply with any and all conditions placed on

such permits by those agencies that have appropriate jurisdiction over environmental matters. (PPL Electric St. 4-R-2, pp. 4, 24; Tr. 479).

72. There is no perfect route, and all transmission lines will have some impact to the natural and/or human environment. (PPL Electric St. 4-R-2, p. 3)

**E. MINIMUM ADVERSE ENVIRONMENTAL IMPACT**

73. Selecting a route for a high voltage transmission line is a complex, multi-faceted analysis that requires the careful balancing of functional requirements, environmental factors, social factors, and cost considerations. (PPL Electric St. 1-R-2, p. 2) Selecting a route that minimizes impacts to these many, and often competing, factors requires a careful balancing assessment to limit the burden of potential impacts. (PPL Electric St. 4-R-2, p. 3)

74. PPL Electric retained the services of URS Corporation to facilitate its analysis of the route selection. (PPL Statement No. 1, p. 19)

75. URS Corporation uses a siting methodology adapted from a protocol developed by the Electric Power Research Institute and the Georgia Transmission Corporation (EPRI-GTC). The EPRI-GTC process has been tested and calibrated against previously approved transmission line siting projects that have been successfully completed. (PPL Electric St. 4, p. 7)

76. PPL Electric, in conjunction with URS Corporation, conducted a detailed siting analysis to determine the routes for the transmission lines associated with the Northeast-Pocono Reliability Project that best balance social, environmental, engineering and economic considerations. That analysis included the determination of a Study Area, the compilation of an environmental inventory, identification and analysis of alternative line routes and, finally, selection of a preferred line route corridor. (PPL Electric St. 4, pp. 5-6)

77. After carefully analyzing and evaluating the potential routes, PPL Electric selected alternative routes that provide the necessary connections between the Jenkins, West

Pocono, North Pocono, and Paupack Substations, while minimizing potential social, cultural, and natural environment impacts, and still being technically feasible to construct. (PPL Electric St. 1, p. 18; PPL Electric St. 4, p, 8; PPL Electric Ex. 1, Att. 4, pp. 22-23)

78. After identifying the alternative routes, PPL Electric conducted an extensive public outreach program to provide information and seek input from the public and government officials. (PPL Electric St. 1, pp. 24-25; PPL Electric Ex. 1, Att. 4, pp. 140-43) Specific adjustments to the alternative routes for the Northeast-Pocono Reliability Project were made as a direct result of PPL Electric's public outreach efforts. (PPL Electric St. 1, pp. 23-25; PPL Electric Ex. 1, Att. 4, pp. 23-24)

79. Based on the adjustments made as a result of the public outreach program, the following alternative routes for the Northeast-Pocono Reliability Project were identified: Routes A and B were identified within the Jenkins-West Pocono Segment; Routes C, D, and D-1 were identified within the West Pocono-North Pocono Segment; and Routes E, F, and F-1 were identified within the North Pocono-Paupack Segment. Additionally, two alternative routes for the 138/69 kV lines required to connect the West Pocono and North Pocono 230-69 kV Substation to the existing 138/69 kV system were identified. (PPL Electric St. 1, p. 18; PPL Electric St. 4 pp. 17-20, 22-26, 28-33. 35-39; PPL Electric Ex. 1, Att. 4, pp. 24-27, 44-45, 51-55, 67-68, 74-78)

80. After the alternative routes were identified, PPL Electric evaluated and compared the alternative routes to select a preferred route. The evaluation of the alternative routes included a combination of quantitative analysis based on weighted metrics, as well as a qualitative review by PPL Electric's siting team. (PPL Electric St. 4, pp. 8-9, 21)

81. Based on the quantitative assessment and qualitative review of the Alternative Routes, PPL Electric selected Alternative Route B for the Jenkins-West Pocono Segment of the Northeast-Pocono Reliability Project. Although the environmental impacts would be approximately equal for both Alternative Routes A and B, Alternative Route B would have significantly less impacts on the social and human environments. (PPL Electric Ex. 1, Att. 4, pp. 43-44) No parties opposed the selection of Route B as the preferred route for the Jenkins-West Pocono Segment.

82. Based on the quantitative assessment and qualitative review of the Alternative Routes, PPL Electric selected Alternative Route D-1 for the West Pocono-North Pocono Segment of the Northeast-Pocono Reliability Project. Although Alternative Route D-1 would have slightly greater impacts to forested land, streams, and floodplains, it would have substantially less impacts to the social and human environments than Alternative Routes C and D. Importantly, the elevated environmental impacts of Alternative Route D-1 are the direct result of the need to avoid social conflicts and reduce the potential effects of the alignment on conserved lands. Further, Alternative Route D-1 was developed with direct input from landowners, local officials, and state representatives. (PPL Electric Ex. 1, Att. 4, pp. 65-66)

83. Based on the quantitative assessment and qualitative review of the Alternative Routes, PPL Electric selected Alternative Route F-1 for the North Pocono-Paupack Segment of the Northeast-Pocono Reliability Project. Alternative Route F will have greater environmental impacts than Alternative Route F-1, and Alternative F-1 will have greater environmental impacts than Alternative Route E. However, Alternative Route F-1 will have fewer impacts to the social and human environments. (PPL Electric Ex. 1, Att. 4, pp. 91) No parties opposed the selection of Route F-1 as the preferred route for the North Pocono-Paupack Segment.

84. Based on the quantitative assessment and qualitative review of Connector Lines 1 and 2, PPL Electric selected Connector Line 2 to connect the proposed West Pocono Substation to the existing 138/69 kV network. Although Connector Line 2 will have slightly more environmental impacts that Connector Line 1, Connector Line 2 will have less impacts to the social and human environments. Further, Connector Line 2 has a significant advantage of having a sizable portion located along an existing transmission line right-of-way, which will minimize the impacts of access and construction. Based on the results of the qualitative review, the Siting Team concluded that Connector Line 2 would have the overall combined fewest visual, community, permit, construction/maintenance, and delay concerns. (PPL Electric Ex. 1, Att. 4, pp. 51)

85. Based on the quantitative assessment and qualitative review of Connector Lines 3 and 4, PPL Electric selected Connector Line 4 to connect the proposed North Pocono Substation to the existing 138/69 kV network. Connector Line 4 will have less environmental, social, and human impacts than Connector Line 3. (PPL Electric Ex. 1, Att. 4, pp. 74) No parties opposed the selection of Connector Line 4 as the preferred route to connect the North Pocono Substation to the existing 138/69 kV network.

86. Mitigation efforts begin in the siting stage where efforts were made during the transmission line siting process to minimize impacts on existing and future land uses, as well as avoid sensitive natural resources such as wetlands and streams. (PPL Electric St. 4, p. 40) PPL Electric has implemented mitigation measures to minimize the impacts of transmission lines upon property owners and the environment, including:

(a) PPL Electric engaged in an extensive outreach program to provide information and seek input on the Project from the public and government officials. (PPL

Electric St. 1, pp. 24-25) Through these efforts, PPL Electric was able to develop new alternative route alignments (Alternative Routes D-1 and F-1) and select routes for the transmission lines to mitigate the effects of the transmission lines. (PPL Electric St. 4, pp. 22, 28; PPL Electric St. 6, pp. 8-9)

(b) Strategic alignment siting and pole placement have resulted in a route that has no poles within the floodplain of a stream and only ten poles (out of 241) that would be located within the 150-foot riparian buffer of a stream, but generally at least 100-feet from the stream edge. (PPL Electric St. 4-R, p. 14)

(c) PPL Electric identified preliminary pole locations and their associated work pad areas in regards to potential erosion and sedimentation ("E&S") impacts. (PPL Electric St. 4-R, p. 14)

(d) One of the initial measures PPL Electric undertook to minimize the impact to the EV classified streams was to identify alternatives during the siting process that would limit the number of stream crossings. PPL Electric also made minor modifications in the orientation of the alignment so that all but one of the stream crossings are generally perpendicular to the alignment of the stream corridor. Crossing perpendicular to the stream channel reduces the total area of forest canopy that will be required to be removed for safe use of the right-of-way. (PPL Electric St. 4-R, pp. 16, 19-20)

(e) Temporary stream crossings will be developed using methods approved by the Pennsylvania Department of Environmental Protection ("DEP") and the county conservation district and will be removed upon completion of the construction phase. (PPL Electric St. 4-R, pp. 14-15)

(f) As part of the required environmental studies and permitting process, full wetland and waterway delineations are conducted that will define these features as well as any additional low-order perennial or intermittent streams that are not identified in the Geographic Information Systems ("GIS") stream data. (PPL Electric St. 8-R, p. 12)

(g) PPL Electric will be required to adhere to the regulations administered by federal, state, and county officials, which will include measures for preventing specific or cumulative negative effects to the water quality of these EV waters. (PPL Electric St. 4-R, p. 16)

(h) Work in any special protection, High Quality ("HQ") or EV, watershed will require applying for an Individual National Pollutant Discharge Elimination System ("NPDES") permit, which will involve more rigorous Best Management Practices ("BMPs") and detailed E&S Control Plans to protect the current level of water quality from being degraded. (PPL Electric St. 4-R, pp. 14-15)

(i) Most of the actual soil disturbance will be limited to the work pad areas around the proposed monopole locations, which are required for a safe and stable surface from which to construct the foundations and erect the monopoles. The level of water quality in the surrounding stream networks will be maintained through the use of strategically located BMPs and the minimization of soil disturbance during the construction stage. (PPL Electric St. 4-R, p. 15)

(j) To mitigate impacts to the local trout population, PPL Electric will incorporate state and county approved E&S control measures and will adhere to the seasonal restrictions that may be placed on the streams to protect the ecological processes and recreational aspects of the trout. PPL Electric will apply the approved E&S control measures as needed at the

stream crossings and coordinate the project schedule to account for any seasonal restrictions. (PPL Electric St. 4-R, p. 18)

(k) Although PPL Electric initially will remove all vegetation, except grasses and herbaceous or non-woody plants, to establish the right-of-way and to accommodate construction activities, the compatible species will be permitted to regrow in the wire zone and border zone. Non-compatible trees growing in low-lying areas generally are not removed during the initial clearing and are retained over the life of the transmission line. In addition, mitigation measures for vegetation clearing near certain stream crossings may be required as part of the federal and state permitting process. (PPL Electric St. 7-R, p. 4; PPL Electric St. 8-R, p. 13)

(l) To address impacts to the riparian buffers of EV streams located within the segment of the route that extends from the West Pocono to North Pocono Substation, PPL Electric will, to the extent practical, selectively clear the Border Zone within 150 feet of any EV stream crossing, and will not remove any stumps in the right-of-way that are within 150 feet of any EV stream crossing except in those limited instances where pole structures and/or foundations are located. (PPL Electric St. 7-RJ, pp. 5-6)

(m) PPL Electric will complete field surveys of the proposed routes, documenting all threatened and endangered species, while recording all species of special concern and major habitats in the study area. Reports will be prepared, documenting the findings, and submitted to the appropriate agencies, including the Department of Conservation and Natural Resources ("DCNR"), the Pennsylvania Game Commission ("PGC"), the Pennsylvania Fish & Boat Commission ("PFBC") ,and the U.S. Fish & Wildlife Service. In the event that any of these agencies require additional studies, PPL Electric will coordinate with these agencies and develop appropriate solutions. (PPL Electric St. 9-R, p. 6)

(n) PPL Electric funded the acquisition of 3,393 acres of property for the PGC. The new parcels acquired by the PGC fill gaps in a stretch of health forest open to the public. As with all state game land, the property will remain open to the public for hunting, fishing, and hiking. (PPL Electric St. 1-R-2, p. 8)

(o) Finally, PPL Electric will have to obtain all environmental permits necessary for the construction of the Project, and will be required to comply with all of the terms and conditions placed on those permits, including surveys for pull pads, pad areas, and access roads before tree clearing, construction activities, and any required mitigation measures commence. (PPL Electric St. 9-R, p. 15)

87. Certain witnesses that testified at the public input hearing opposed the selected route for the West Pocono-North Pocono Segment and requested that the Commission adopt the "Citizens Route" alternative. Under the Citizens Route, the West Pocono 230-69 kV Substation would be located approximately 4.7 linear miles northwest, and would relocate the route for the 230 kV line away from Thornhurst Township and through the north-central section of the Lackawanna State Forest in a direct alignment and then turn to the northeast and cross two additional sections of the Lackawanna State Forest located in Clifton Township. (PPL Electric St. 4-R, pp. 4, 8; PPL Electric Ex. BAB-1).

88. The Citizens Route would move the West Pocono Substation further from the load center, would not reduce the line lengths of the existing 69 kV lines, and would require the construction of approximately 5.2 miles of additional transmission lines to electrically connect the Substation to the existing 138/69 kV network. (PPL Electric St. 4-R, pp. 4-5)

89. Many of these environmental impacts of the Citizens Route would be substantially similar, and in some cases worse, than the impacts from PPL Electric's proposed route. (PPL Electric St. 4-R, pp. 6-10)

90. The Citizens Route has been developed with no regard to the potential conflicts the route may have relative to the expectations of the private and public landowners over which their alignment would travel. Coordination with these landowners would undoubtedly result in a more complex Citizens Route. (PPL Electric St. 4-R, p. 7)

91. Burying the transmission line is not a reasonably feasible alternative. Burying the transmission line lines is extremely expensive and would not eliminate any of the environmental concerns raised by North Pocono Citizens Alert Regarding the Environment ("NPCARE") or the public input hearing witnesses. (PPL Electric St. 5-R, p. 5)

92. The Northeast-Pocono Reliability Project will have little if any impact to Big Bass Lake or Elm Park. (PPL Electric St. 1-R, pp. 9-10)

93. Given the distance between the proposed route and Choke Creek Falls (approximately 0.3 miles), the topographic barrier of the surrounding hills, and the dense forested vegetation, it does not appear that the proposed transmission line will be visible from Choke Creek. (PPL Electric St. 4-R, p. 11; PPL Electric Ex. BAB-2)

94. Most of the extensive recreational sites and trails enjoyed by the public are located in the central and northern portions of the forest and well north of the proposed Route D-1. (PPL Electric St. 4-R, pp. 12-13; PPL Electric St. 4-R-2, pp. 20-22)

95. One of the witnesses at the public input hearing, Mrs. June Ejk, proposed a line route that would parallel Ask Creek for approximately one mile along an abandon railroad bed.

(Tr. 90-91) PPL Electric explained that this proposal was not acceptable because it would have a greater impact on the natural environment. (PPL Electric St. 4-R, p. 22-23)

96. There is no factual basis to conclude that the Northeast-Pocono Reliability Project will have a negative impact on their property values. PPL Electric's expert, with over 17 years' experience in evaluating right-of-way and real estate values, concluded that, based on her experience and the professional literature, the proposed transmission lines for the Northeast-Pocono Reliability Project are not likely to have a significant adverse impact to property values. (PPL Electric St. 6-R, pp. 7-9)

97. NPCARE was the only active party to oppose any of the routes selected for the Northeast-Pocono Reliability Project. NPCARE did not introduce any evidence into the record regarding the need for the proposed Northeast-Pocono Reliability Project. Rather, NPCARE only challenges the route selected for the West Pocono-North Pocono Segment, Route D-1, and the associated North Pocono 138 kV Connector Line. (Tr. 482; NPCARE St. 2-R, p. 1)

98. NPCARE concedes that it has not undertaken any analysis to compare Route D-1 with any of the other available alternatives for the West Pocono-North Pocono Segment, nor does NPCARE support any of these alternative routes. (Tr. 480)

99. NPCARE concedes that it has no reason to believe that any of the other alternative routes for the West Pocono-North Pocono Segment will have lesser impacts than Route D-1 selected by PPL Electric. (Tr. 480)

100. Other than offering a few minor modifications to Route D-1, NPCARE has not proposed any other alternative route for PPL Electric or the Commission to consider. (Tr. 480)

101. NPCARE has not evaluated the need for reinforcement of the transmission system in the Northeast Pocono region. (NPCARE St. 2-R, p. 1; Tr. 483-84)

102. NPCARE contends that the West Pocono-North Pocono Segment should not be constructed because it will potentially have environmental impacts. (NPCARE St. 2, p. 14; NPCARE St. 2-R, p. 2) NPCARE's failure to offer any other feasible alternative is essentially a "no build" alternative. (NPCARE St. 2, p. 14; NPCARE St. 2-R, p. 2)

103. NPCARE initially proposed four modifications to the West Pocono-North Pocono Segment if the Commission approves PPL Electric's application: (1) relocating the route away from Phelps Road on Parcel 38; (2) relocating the route 75 feet west of the proposed route on parcel 35 to allow for a more perpendicular stream crossing; (3) relocating the line south on Parcel 37 and installing an angle structure to allow for a more perpendicular stream crossing; and (4) relocating the route on Parcel 43 to minimize the impacts to a riparian buffer. (NPCARE St. 1, pp. 8-10; NPCARE St. 2, p. 15)

104. Regarding the first proposal (No. 1 above), PPL Electric explained that representatives from the Department of Conservation and Natural Resources, Lackawanna State Forrest ("LSF") requested, and PPL Electric agreed, to move the proposed route across Parcel 38 300 feet southeast from the property line. The proposed realignment on Parcel 38 creates a 300 foot visual buffer between the proposed route and Phelps Road. (PPL Electric St. 1-R-2, pp. 4-5; PPL Electric Ex. DLH-5)

105. Regarding the second proposal (No. 2 above), PPL Electric explained that the proposed modification to Parcel 35 was not acceptable because it would place the proposed route within a wetland on Parcel 35. (PPL Electric St. 1-R-2, pp. 8-9; PPL Electric Ex. DLH-7) In response, NPCARE proposed another modification to the route on Parcel 35, which would extend the line approximately 75 west at the northern portion of the route on Parcel 35 and then continue south to tie into the location for the proposed route at the southern part of Parcel 35.

(NPCARE St. 1-R, p. 2; PPL Electric Exhibit DLH-8) PPL Electric has contacted the underlying landowners, who have indicated that they do not object to the proposed modification. This modification is acceptable to PPL Electric. (PPL Electric St. 1-RJ-2, pp. 2-3)

106. Regarding the third proposal (No. 3 above), PPL Electric explained that the proposed modification to Parcel 37 was not acceptable because it would add an additional angle structure to Parcel 37, which would require a concrete-embedded foundation and possibly a larger structure and/or guy wires, and would require approximately 200 feet of additional line to be built resulting in approximately 0.5-acres more forest clearing on Parcels 35 and 37 than the route proposed by PPL Electric. (PPL Electric St. 1-R-2, pp. 5-6)

107. Regarding the fourth proposal (No. 4 above), PPL Electric explained that the alignment on Parcel 43 is the result of a specific request by the landowner that the route follow the property line. Relocating the route on Parcel 43 farther southeast away from the stream would cause additional impacts to the property owner, and would cause the route to have a greater impact to Parcel 44, which crosses a non-condemnable property owned by a church. (PPL Electric St. 1-R-2, pp. 6-8)

108. NPCARE acknowledges that PPL Electric has been and is actively in the process of conducting the associated environmental studies and impact statements, and applying for and obtaining the necessary environmental permits. (Tr. 479)

109. Public utility companies generally seek and obtain permits necessary for construction of a high voltage transmission line in a carefully balanced time frame because obtaining all permits prior to receiving Commission approval of project could result in the public utility wasting time and resources, to the detriment of customers, to obtain permits for a project or route that may never be built. (PPL Electric St. 4-R-2, pp. 4-5)

110. Project planning necessitates close coordination with construction schedules to ensure that the appropriate time frames of in-service dates and potential line outage dates are considered as part of the planning process. As a result, field studies and permitting must be prioritized to focus on the required environmental studies and engineering to be completed for the sections and substation to be constructed first. The West Pocono-North Pocono Segment is the last section to be constructed and, as such, has the last priority from a plan development and permitting perspective. (PPL Electric St. 4-R-2, pp. 5-6)

111. Access to every property may not be available for a significant period of time, which can further delay some studies. As permission to access private and public lands is obtained, field planning is initiated to conduct the required environmental studies, based on consultation feedback from federal and state agencies. (PPL Electric St. 4-R-2, pp. 6-7)

112. There is nothing in the record to support NPCARE's suggestion that the existing environmental regulations, review, and permitting processes are inadequate to prevent or mitigate harm to environmentally sensitive areas. There is nothing in the record to suggest that PPL Electric will not be able to secure the necessary permits, or that PPL Electric will not fully comply with any the conditions placed on those permits. (Tr. 439)

113. PPL Electric must comply with the NERC Standard FAC-003-1 - Transmission Vegetation Management Program approved by FERC on March 15, 2007. (PPL Electric St. 7-R, p. 2)

114. As part of a settlement with ReliabilityFirst Corporation, PPL Electric agreed to revise its vegetation management plan to implement the Wire Zone/Border Zone method of managing vegetation. (PPL Electric St. 7-R, p. 3)

115. The Wire Zone/Border zone method is an industry best practice that was developed from the Bramble & Byrnes study. (Tr. 430)

116. The Wire Zone/Border Zone vegetation management practices, as well as the underlying Bramble and Byrnes study, are applied to existing right-of-way that have initially be cleared. (Tr. 430)

117. For new rights-of-way, such as those required for the Northeast-Pocono Reliability Project, PPL Electric initially removes all vegetation except for grasses and herbaceous or non-woody plants in both the wire and border zones. This is necessary to both establish the extent of the new right-of-way and to accommodate the many construction activities that will occur within the right-of-way to install new foundations, tower structures, and conductors. (PPL Electric St. 7-R, p. 4; PPL Electric Ex. 1, Att. 16)

118. After the initial clearing of a new right-of-way, compatible species are allowed to grow back and PPL Electric then maintains the right-of-way by (i) selectively removing vegetation except grasses and herbaceous or non-woody plants in the wire zone and (ii) removing only non-compatible species in the border zone. (PPL Electric St. 7-R, p. 4)

119. Attachment 12 does not describe, nor was it ever intended to describe, the methods or extent of clearing that should be applied to a new right-of-way for the construction of a new high voltage transmission line. The purpose of Attachment 12 is to provide specifications to PPL Electric and its foresters and contractors on the re-clearing of the existing rights-of-way to obtain compliance with NERC Standard FAC-003-1 and the settlement with ReliabilityFirst Corporation, as well as explain how the existing rights-of-way should be maintained after the re-clearing. (PPL Electric St. 7-RJ, pp. 2-3; Tr. 422, 425)

120. The vegetation on a new right-of-way has not been cleared for the entire width of the right-of-way, nor has it been maintained under the Wire Zone/Border Zone method. Removal of all vegetation, except grass and herbaceous or non-woody plants, for the entire width of a new right-of-way establishes the right-of-way. (PPL Electric St. 7-RJ, p. 4)

121. The removal of all vegetation, except grass and herbaceous or non-woody plants, will facilitate a safer environment for the construction activities. If selective or restricted clearing was applied to a new right-of-way, this could significantly increase the cost of the project and, more importantly, could create safety hazards during construction, delay the construction activities, and jeopardize the in-service date of a project. (PPL Electric St. 7-RJ, p. 5)

122. Clearing the entire width of a new right-of-way for the construction of a new high voltage transmission line is an industry best practice, and is PPL Electric's standard practice for the construction of a new high voltage transmission line. (PPL Electric St. 7-RJ, p. 5)

123. The removal of the vegetation on a new right-of-way may promote the establishment of compatible species within the right-of-way, which would not otherwise grow without the removal of the overstory. (PPL Electric St. 7-RJ, p. 4; Tr. 425) In addition, the removal of the vegetation on a new right-of-way will facilitate vegetation management with respect to invasive, aggressive, and other undesirable species. It also will help reduce the total amount of herbicide that must be applied over time within a right-of-way. (PPL Electric St. 7-RJ, pp. 4-5)

124. Using the minimum clearances proscribed by Institute of Electrical and Electronics Engineers ("IEEE") guidelines, PPL Electric's engineers developed clearances to

accommodate the unique topography and dense vegetation encountered specifically within PPL Electric's service territory. (PPL Electric St. 7-R, p. 6)

125. PPL Electric retained the services of an outside independent contractor to measure growth rates across PPL Electric's entire service territory. Based on this data, PPL Electric adopted a five-foot growth rate assumption that would ensure the vegetation that is common in PPL Electric's service territory would not encroach the required clearances between vegetation management cycles. (PPL Electric St. 7-R, pp 6-7)

126. PPL Electric have a consistent approach to maintaining the vegetation within its rights-of-way to ensure reliable service to customers and to comply with requirements of NERC Standard FAC-003-1, as well as the NERC-approved and FERC-accepted settlement with ReliabilityFirst Corporation. (PPL Electric St. 7-R, pp. 5, 7)

127. PPL Electric has developed and maintains a list of compatible Border Zone species that generally will not encroach the required clearances, based on the maximum sag of the applicable transmission line, or otherwise interfere with the safe and reliable operation of the transmission line. PPL Electric uses that list as a general guideline for compatible species across the entire transmission system. The ultimate determination of compatible species during vegetation management cycles is done on a case-by-case basis. (PPL Electric St. 7-R, p. 8; Tr. 426-27)

128. As part of the required environmental studies, full wetland and waterway delineations are conducted that will define these features as well as any additional low-order perennial or intermittent streams that are not identified in the GIS stream data. (PPL Electric St. 4-R, pp. 12-13)

129. Through the siting and landowner negotiations process, PPL Electric has defined an alignment for the West Pocono-North Pocono Segment that will result in no permanent encroachment upon any of the streams and only three monopoles located within two separate EV wetlands. (PPL Electric St. 4-R, pp. 9-10)

130. Stream impacts will be limited to the removal of the riparian zone trees at all of the crossings and approximately six temporary stream crossings, which will be removed upon completion of the project. (PPL Electric St. 4-R-2, p. 26)

131. NPCARE's expert, Dr. Eldridge, visited only 3 of the 24 streams at issue on April 11, 2013, which is before or at the very beginning of the growing season, so any observations he made on vegetation would be of limited value. Further, NPCARE has not conducted any independent analysis of the actual streams and other water bodies that will be traversed by the West Pocono-North Pocono Segment. (Tr. 469; PPL Electric St. 8-RJ, p. 9)

132. Based on field observations of 16 of the stream crossings and review of photos of 7 other stream crossings (23 of the total 24 stream crossings for the West Pocono-North Pocono Segment), PPL Electric estimated that the shade canopy of the majority of the streams (60.9%) between the proposed West Pocono and North Pocono Substations would not be substantially affected by the proposed right-of-way because there already is a lack of shade canopy in those areas. (PPL Electric St. 8-R, pp. 4-5, 10-11; PPL Electric St. 8-RJ, pp. 7-9).

133. NPCARE relies on studies that are not appropriate for characterizing effects of overhead transmission lines. (NPCARE St. 4, p. 7; NPCARE St. 4-R, pp. 5-6, 12; PPL Electric Stmt 8-R, p. 6; PPL Electric St. 8-RJ, pp. 2-3; Tr. 471-72)

134. With the exception of one stream crossing, all stream crossings are generally perpendicular to the alignment of the stream corridor. The transmission line will briefly parallel

within 150 feet of one EV stream as a result of a specific landowner request that the route mirror the northern boundary line of the parcel. (PPL Electric St. 4-R-2, pp. 14-15)

135. To the extent practicable, PPL Electric has made every effort to stay outside the 150-foot buffers. The very few areas where this is not possible are related to transmission line engineering constraints and property constraints. In these areas, however, PPL Electric will employ appropriate erosion and sedimentation best management practices to minimize impacts to these areas. (PPL Electric St. 4-R-2, pp. 14-15)

136. After initial clearing, however, compatible species are permitted to regrow and remain in both the wire zone and border zone. These compatible species in the wire zone and border zone will help create a riparian buffer which will help to reduce the impacts of temperature increases and sedimentation runoff into waterways. (PPL Electric St. 7-R, p. 12)

137. In an effort to address NPCARE's concerns regarding impacts to the riparian buffers of EV streams located within the segment of the route that extends from the West Pocono to North Pocono Substation, PPL Electric agreed, to the extent practical and subject to PPL Electric's present and future obligation to comply with all applicable reliability and safety standards and other legal or regulatory requirements or industry standards, to selectively clear the Border Zone within 150 feet of any EV stream crossing located within the segment of the route that extends from the West Pocono to North Pocono Substation. PPL Electric also has agreed to not remove any stumps in the right-of-way that are within 150 feet of any EV stream crossing except in those limited instances where pole structures and/or foundations are located. (PPL Electric St. 7-RJ, p. 5-6)

138. With respect to soil erosion and sedimentation and crossings of jurisdictional waters, PPL Electric is required through the federal and state permitting process to account for

any impacts to intermittent and perennial streams. As part of the required environmental studies and permitting process, full wetland and waterway delineations are conducted that will define these features as well as any additional low-order perennial or intermittent streams that are not identified in the GIS stream data. (PPL Electric St. 4-R-2, pp. 12-13)

139. PPL Electric will prepare E&S control plans in accordance with DEP regulations found at Title 25, Chapter 102 of the PA Administrative Code and consistent with DEP's standards and guidance. The E&S control plans will present E&S BMP measures that will limit the potential for erosion and sediment migration for the specific work activities, including construction of monopoles, temporary workspace requirements/dimensions, and access roads. (PPL Electric St. 4-R-2, pp. 13-14)

140. Following construction, PPL Electric will continue to inspect and maintain E&S BMP measures until disturbed areas are restored through vegetal stabilization in accordance with permit conditions. (PPL Electric St. 4-R-2, pp. 17, 25-27)

141. PPL Electric's vegetation management contractors are licensed by the Pennsylvania Department of Agriculture as Certified Commercial Pesticide Applicators and only apply herbicide products which have been approved for use on utility rights-of-way by the U.S. Environmental Protection Agency. PPL Electric does not use any aerial herbicide application techniques. Herbicides are applied manually by trained professionals. (PPL Electric St. 7-R, p. 11)

142. Only those species that require control are treated, *i.e.*, non-compatible and invasive species. Over time, as desirable species populate the right-of-way, increased competition for space and sunlight naturally reduce the number of non-compatible and invasive plant seedlings. (PPL Electric St. 5-R, pp. 10-11)

143. PPL Electric does not apply herbicides in the following areas or situations: pastures within 50 feet of any body of water, except that PPL Electric will use herbicides approved for watershed/aquatic use for stump treatments; within any actively maintained orchard or cultivated planting; near susceptible crops or other non-target vegetation where drift, runoff, or vapors can cause injury; where weather conditions create excessive drift; on rights-of-way under jurisdiction of the DCNR, PGC, PFBC, and the U. S. Park Service unless prior approval is granted by these agencies; on watershed properties, or in the vicinity of springs, irrigation ditches, or other potable water sources, unless prior approval is granted by the property owner for use of a watershed/aquatic approved herbicide; in gullies or ravines where tree clearing is minimal. (PPL Electric Ex. 1, Att. 12, pp. 15-16)

144. PPL Electric will only use watershed/aquatic approved herbicide near watershed areas, and will comply with all federal and state requirements regarding the use of herbicides, including in areas near EV streams, EV wetlands, and vernal pools. (PPL Electric St. 7-R, p. 11)

145. PPL Electric has undertaken extensive efforts to minimize the impacts of the monopole locations on wetlands and around streams. Of the 477 total monopoles for the entire Project, only 16 (3%) would be in a wetland and only 14 (3%) would infringe upon a riparian zone around a stream. For the West Pocono-North Pocono segment (including the North Pocono 138 kV Connector lines) of the 183 total poles for this Segment, only 3 poles are located in a wetland (less than 2%) and only 4 within a stream riparian area (approximately 2%). (PPL Electric St. 4-R-2, pp. 9-10; PPL Electric St. 4-RJ, p. 7)

146. PPL Electric is required to conduct a survey of Species of Special Concern, including for the West Pocono-North Pocono Segment. (PPL Electric St. 9-R, p. 5)

147. PPL Electric is only required to obtain clearances from DCNR, PFBC, PGC, and U.S. Fish and Wildlife Service for threatened or endangered species prior to receiving any DEP permits. Species of Special Concern that are not threatened or endangered are not protected by the Commonwealth. (PPL Electric St. 9-R, pp. 4-5)

148. Not every Species of Special Concern is identified by the applicable regulatory agencies as a "target species" for a particular project area. If Species of Special Concern are known locally, then the applicant is provided with a list of target species for which the applicant is required by the responsible agency to survey. (PPL Electric St. 9-RJ, pp. 4-5)

149. None of the species identified by NPCARE are listed as Pennsylvania Threatened or Pennsylvania Endangered, and the vast majority of the species were listed as either G4 Globally Apparently Secure or G5 Globally Secure. (Tr. 458-61) Second, only 9 of the species identified by NPCARE were actually found near the right-of-way. (Tr. 458).

150. The fact that a species is listed as a Species of Special Concern does not mean that it is rare, threatened, or endanger, nor does it mean that it is on the list of "target species" for a project. (PPL Electric St. 9-RJ, pp. 2-5)

151. NPCARE has not evaluated or undertaken any study of the Species of Special Concern within any of the other available alternatives. (Tr. 449)

## III. ZONING PETITIONS

152. The Northeast-Pocono Reliability Project, including the North Pocono Substation and West Pocono Substation, is necessary to resolve violations of PPL Electric's RP&P and reinforce the existing 138/69 kV systems in Monroe, Carbon, Wayne, Lackawanna, and Pike Counties by creating a 230 kV line to bring a new 230 kV supply into the area.

153. The locations of the proposed new West Pocono and North Pocono Substations were determined prior to the development of the potential corridors for the transmission line routes through a process of land use and constraint analysis. (PPL Electric St. 4, p. 13)

154. Strategic locations were identified for the proposed new West Pocono and North Pocono Substations that would be central to the 230 kV source and within close proximity to the existing 138/69 kV network, which will minimize the length of transmission lines needed to connect the Substations to the electric grid, as well as minimize the costs and environmental impacts of the connecting the associated lines to the Substations. (PPL Electric St. 4, pp. 12-14; PPL Electric Ex. 1, Att. 4, p. 13)

155. The North Pocono Substation will be located on PPL Electric property in Covington Township, Lackawanna County. The proposed North Pocono Substation will be 900 feet by 450 feet or approximately 7.55 acres. The entire area will be fenced in, gated and locked to prevent unauthorized access. (PPL Electric St. NP-2, p. 5)

156. The North Pocono Substation must include certain equipment in order to operate properly, and said equipment must be protected from the elements. The most efficient and appropriate means of protecting the equipment at this Substation is construction of a Control Equipment Building on the site proposed for the new North Pocono 230-69 kV Substation.

157. The new North Pocono Substation will include a Control Equipment Building. The North Pocono Substation must include certain switches, relays, and other control equipment to control the flow of electricity into, within, and from the substation. In order to function properly, much of this equipment must be protected from the elements. The purpose of the Control Equipment Building is to protect the control equipment at the proposed North Pocono

Substation from the elements so that the control equipment, and the entire substation, can function properly. (PPL Electric Stmt NP-1, p. 9)

158. The control equipment building will be contained within the fenced-in area of the North Pocono Substation. The building will be 40 feet by 70 feet and constructed with corrugated aluminum set upon a concrete foundation. The building will not contain water, sewer, or any other municipal service. Heating and air conditioning will be provided to the extent required by the sensitive electric equipment contained within, without which, the substation could not function. (PPL Electric St. NP-2, pp. 5-6)

159. Because the Northeast-Pocono Reliability Project, including the North Pocono Substation, is reasonably necessary for the public convenience and welfare, and the North Pocono Substation must include certain equipment that must be protected from the elements to operate properly, the location of the Control Equipment Building is reasonably necessary.

160. The Covington Township zoning ordinance classifies the substation site as SC, Special Conservation. Although electric facilities that do not require buildings are a permitted use in every zoning district, the Control Equipment Building associated with the North Pocono Substation is not permitted in a Special Conservation district under the Covington Township zoning ordinance. Further, the Covington Township zoning ordinance requires a building and/or zoning permit prior to the erection, construction, or use of any building, structure, or portion thereof. A building and/or zoning permit is also required prior to the use or change in land. (PPL Electric NP-2, pp. 6-7)

161. In the absence of an exemption, it is unlawful under the Covington Township zoning ordinance for PPL Electric to commence work on and begin use of the North Pocono 230-69 kV Substation and building. Further, even assuming that a building was a permitted,

conditional, or special exception use, PPL Electric would still be required to obtain a building and/or zoning permit for the North Pocono 230-69 kV Substation and building. (PPL Electric NP-2, pp. 6-7)

162. The West Pocono Substation will be located on PPL Electric property in Buck Township, Luzerne County. The proposed West Pocono Substation will be 900 feet by 450 feet or approximately 7.55 acres. The entire area will be fenced in, gated and locked to prevent unauthorized access. (PPL Electric St. WP-2, p. 5).

163. The West Pocono Substation must include certain equipment in order to operate properly, and said equipment must be protected from the elements. The most efficient and appropriate means of protecting the equipment at this Substation is construction of a Control Equipment Building on the site proposed for the new West Pocono 230-69 kV Substation.

164. The new West Pocono Substation will include a Control Equipment Building. The West Pocono Substation must include certain switches, relays, and other control equipment to control the flow of electricity into, within, and from the substation. In order to function properly, much of this equipment must be protected from the elements. The purpose of the Control Equipment Building is to protect the control equipment at the proposed West Pocono Substation from the elements so that the control equipment, and the entire substation, can function properly. (PPL Electric Stmt WP-1, p. 9)

165. The control equipment building will be contained within the fenced-in area of the West Pocono Substation. The building will be 40 feet by 70 feet and constructed with corrugated aluminum set upon a concrete foundation. The building will not contain water, sewer, or any other municipal service. Heating and air conditioning will be provided to the

extent required by the sensitive electric equipment contained within, without which, the substation could not function. (PPL Electric St. NP-2, pp. 5-6)

166. Because the Northeast-Pocono Reliability Project, including the West Pocono Substation, is reasonably necessary for the public convenience and welfare, and the West Pocono Substation must include certain equipment that must be protected from the elements to operate properly, the location of the Control Equipment Building is reasonably necessary.

167. The Buck Township zoning ordinance classifies the substation site as C-1, Conservation. According to the Buck Township zoning ordinance, any electric substation or associated facilities are an "essential services-closed" that is only permitted by special exception in every zoning district in Buck Township. (PPL Electric St. WP-2, p. 6) In order to obtain a special exception, an applicant must comply with numerous conditions and requirements. (PPL Electric St. WP-2, pp. 6-7) Further, the Buck Township Zoning Hearing Board retains broad discretion to impose additional conditions or requirements for special exceptions. (PPL electric St. WP-2, p. 8)

## IV. EMINENT DOMAIN APPLICATIONS

168. The Northeast-Pocono Reliability Project is necessary to resolve violations of PPL Electric's RP&P and reinforce the existing 138/69 kV systems in Monroe, Carbon, Wayne, Lackawanna, and Pike Counties by creating a 230 kV line to bring a new 230 kV supply into the area.

169. The Northeast-Pocono Reliability Project will shorten the length of the existing 138/69 kV transmission circuits, which will reduce the distance between the supply of power and the homes and businesses that use the electricity. It also will provide an alternate supply of power to the Northeast-Pocono area in the event that the normal supply are interrupted, which will improve power restoration times and provide operating flexibility and improved reliability

for customers in the area. The Northeast-Pocono Reliability Project will reduce the number of customers affected by a single facility outage, as well as the duration of the outage.

170. The proposed routes for the Project were selected after extensive public input and a detailed analysis, which included a comprehensive environmental inventory, identification and analysis of alternative routes, and selection of the preferred route. Factors considered in the siting analysis included functional requirements, environmental impacts, social impacts, public input, cost, and other factors identified in the Commission's siting regulations.

171. PPL Electric's selection of the proposed routes for the Northeast-Pocono Reliability Project was reasonable, and PPL Electric properly considered the factors relevant to siting a transmission line:

172. PPL Electric seeks to exercise the power of eminent domain to acquire rights-of-way for the construction, operation, and maintenance of the Northeast-Pocono Reliability Project 238 kV and 138/69 kV transmission lines over and across the properties identified in the Condemnation Applications. The proposed rights-of-way and easements over the properties identified in the Condemnation Applications do not interfere or require the condemnation of any place of public worship, burying ground, dwelling or its reasonable curtilage. (PPL Electric Exs. 4, 6-36)

173. PPL Electric must be able to route the Northeast-Pocono Reliability Project over and across the above-mentioned properties in order to site, construct, and operate that transmission lines at the selected routes. The service to be provided by PPL Electric through the proposed transmission lines and related facilities is necessary or proper for the service, accommodation, convenience or safety of the public for the reasons set forth above.

174. The proposed route enters the Transco property on the very northern end of the property following an easement acquired by PPL Electric more than 40 years ago. The original easement turns south and runs through the center of Transco's property (Parcel Nos. 32 and 33). However, despite holding an existing easement, PPL Electric adjusted its proposed route to avoid traversing the center of Transco's property. PPL Electric relocated the proposed route to avoid Transco's compressor station at that location. As a result, the proposed route continues east along the northern end of the Transco property (Parcel Nos. 32 and 33) and then through State owned lands (Parcel No. 34). (PPL Electric St. 1-R, pp. 5-6; PPL Electric Ex. DLH-3)

175. Transco also suggests that the proposed route be relocated to avoid environmentally sensitive areas on the Transco property (Parcel Nos. 32 and 33). (Transco St. 1, p. 2)

176. Moving the proposed route closer to the property line would impact a wetland on this property. The proposed route will allow the transmission line to easily span the wetlands without the need to place a tower structure in the wetland or floodplain areas. Further, the environmentally sensitive area discussed by Transco will be avoided pursuant to the plans received from and discussions with Transco. Pole locations and access roads have been designed and reviewed with Transco to avoid any impacts to this area. Finally, PPL Electric will apply for, obtain, and comply with all environmental permits and approval requirements. (PPL Electric St. 1-R, pp. 7-8)

177. The Covington Industrial Park is located off of State Route 435 in Covington Township and is partially surrounded by the private communities of Big Bass Lake and Eagle Lake. The segment of the Northeast-Pocono Reliability Project that traverses the Covington Industrial Park is approximately 2.1 miles of the 230 kV line that is located along the West

Pocono-North Pocono segment. The proposed route through the Covington Industrial Park crosses State Road 435 near the entrance to the Covington Industrial Park and parallels First Avenue, which is the access road owned by FR First, for approximately 1,740 feet along the property line that separates the Art Mortgage and FR First properties. (PPL Electric St. 1-R, p. 2; PPL Electric St. 1-RJ, p. 3; PPL Electric Ex. DLH-1)

178. The monopoles for the portion of the proposed route that parallels the FR First property will be located entirely on the property of Art Mortgage, for which PPL Electric has secured an easement for the proposed route. None of the monopoles will be located on property of FR First. Further, of the three proposed monopoles, the closest pole will be 36 feet from the edge of the existing pavement of the access road to the Covington Industrial Park. (PPL Electric St. 1-RJ, p. 2)

179. PPL Electric explained that it has made repeated attempts to discuss the right-of-way across the FR First property and has made an offer for the right-of-way. However, PPL Electric did not receive a response from FR First or its representatives. (PPL Electric St. 6-RJ, pp. 2-4)

180. Although a portion of the 150-foot wide easement will overlap the FR First property, the centerline of the right-of-way will be on the Art Mortgage property and, therefore, the no poles will be located on the FR First property as explained above. (PPL Electric 1-RJ, pp. 3-4)

181. If granted, the right-of-way will be an easement only for the aerial crossing of the proposed transmission line across the FR First property. PPL Electric will not condemn or take the property in fee; rather, PPL Electric will only own an easement for an aerial crossing of FR First property. Further, this easement will not materially interfere with the current or future use

of the property as an access road into the Covington Industrial Park, which is a compatible use under PPL Electric's right-of-way agreements. (Tr. 327-28)

182. The FR E2 Property Holding, LP ("FR E2") property is located in what is known as the Covington Industrial Park. The segment of the Northeast-Pocono Project that traverses the Covington Industrial Park is approximately 2.1 miles of the 230 kV line that is located along the West Pocono-North Pocono line section. The proposed route crosses State Road 435 near the entrance to the Covington Industrial Park, follows the Industrial Park road, and then turns to situate the line behind the buildings located at the Industrial Park. Thereafter, the route follows some of the Industrial Park property lines before turning into the center of the FR E2 Property where it traverses an existing conservation easement area located in the Industrial Park. (PPL Electric St. 1-R, p. 2; PPL Electric Exhibit DLH-1)

183. If the route were realigned to follow the property line of the Covington Industrial Park, it would place the proposed transmission line in close proximity to residential homes that abut the Industrial Park. (PPL Electric St. 1-R, pp. 3-4)

184. FR E2 also criticizes PPL Electric for siting the proposed route through the conservation easement located behind the industrial building on the FR E2 property. (FR St. 1, p. 2) However, locating the route through the conservation easement was necessary to avoid locating the proposed route in close proximity to a property that currently contains underground ammunition bunkers. (PPL Electric St. 1-R, p. 4; PPL Electric St. 1-RJ, p. 5)

185. Siting the proposed route through the conservation easement located on the FR E2 property will not impede development of structures on the lot because no further expansion of new or existing buildings can occur within the conservation easement. (PPL Electric St. 1-R, pp. 4-5)

186. PPL Electric has been in contact with and will continue to work with the conservation easement holder to mitigate any concerns they may have for the line route in this location. (PPL Electric St. 1-R, pp. 4-5)

187. Following a meeting with the Senior Regional Director/Market Leader for FR E2, PPL Electric prepared and sent a package, including a revised drawing and written offer, but the package was not accepted. As a result, PPL Electric sent the package to the corporate office in Chicago. The proposed alignment on the northern part of the FR E2 property was included in the eminent domain application that was filed at Docket No. A-2013-2341263 and served on the Senior Regional Director/Market Leader for FR E2. (PPL Electric St. 6-RJ, pp. 4-5)

# APPENDIX "E"

## APPENDIX E

## PROPOSED CONCLUSIONS OF LAW

PPL Electric Utilities Corporation ("PPL Electric") proposes the following conclusions of law:

### I. BURDEN OF PROOF

1. PPL Electric, as the applicant seeking Commission approval of a siting application for new high voltage transmission lines, two zoning exemption petitions for control equipment buildings at two new substations, and 29 eminent domain applications, has the burden of proof. 66 Pa.C.S. § 332(a).

2. It is well established that "[a] litigant's burden of proof before administrative tribunals as well as before most civil proceedings is satisfied by establishing a preponderance of evidence which is substantial and legally credible." *Samuel J. Lansberry, Inc. v. Pa. PUC*, 578 A.2d 600, 602 (Pa. Cmwlth. 1990).

3. Any finding of fact necessary to support an adjudication of the Commission must be based upon substantial evidence. *Met-Ed Indus. Users Group v. Pa. PUC*, 960 A.2d 189, 193 n.2 (Pa. Cmwlth. 2008) (citing 2 Pa.C.S. § 704).

4. If the applicant sets forth a prima facie case, then the burden shifts to the opponent. *McDonald v. Pa. Railroad Co.*, 348 Pa. 558, 36 A.2d 492 (1940).

5. Once a prima facie case has been established, if contrary evidence is not presented, there is no requirement that the applicant produce additional evidence in order to sustain its burden of proof. *District of Columbia's Appeal*, 343 Pa. 65, 21 A.2d 883 (1941); *Application of Pennsylvania Power & Light Co.*, Docket Nos. A-110500F0196, et al.; 1994 Pa. PUC LEXIS 65 (Oct. 21 1994).

## II. SITING APPLICATION

6. Pursuant to Section 1501 of the Public Utility Code, an electric distribution company has a statutory obligation to provide safe, adequate, and reliable electrical service to its customers. 66 Pa.C.S. § 1501.

7. The Commission's regulations provide that an electric distribution company may not construct high voltage ("HV") transmission lines, *i.e.*, electrical lines with an operating voltage of 100 kV or higher, without prior Commission approval. 52 Pa. Code § 57.71.

8. The Commission's transmission line siting regulations set forth the following: (1) the procedures for applying for approval of an HV line -- 52 Pa. Code § 57.72; (2) the procedures for hearings on HV line applications -- 52 Pa. Code § 57.75; and (3) what the [Commission] will consider when deciding whether to approve or deny an HV line application -- 52 Pa. Code § 57.76(a). These regulations, and 52 Pa. Code § 57.76 in particular, represent a codification of the review required by article I, section 27 of the Pennsylvania Constitution. *Re Proposed Electric Regulation*, 1976 Pa. PUC LEXIS 114, 49 Pa. P.U.C. 709, 712 (March 2, 1976) (stating that the "review required by article I, section 27 is being incorporated into our siting regulations"). *Energy Conservation Council of Pennsylvania v. Pa. PUC*, 995 A.2d 465, 477-78 (Pa. Cmwlth. 2010) (hereinafter "*Trailco*").

9. In order to grant an application for the construction and siting of a HV transmission line, the Commission must find and determine the following as to the proposed line:

> (1) That there is a need for it.
>
> (2) That it will not create an unreasonable risk of danger to the health and safety of the public.
>
> (3) That it is in compliance with applicable statutes and regulations, providing for the protection of the natural resources of this Commonwealth.

> (4) That it will have minimum adverse environmental impact, considering the electric power needs of the public, the state of the available technology and the available alternatives.

52 Pa. Code § 57.76(a).

10. A public utility is not required to demonstrate a "need" for the installation of the transmission line from an "engineering" prospective. *Pennsylvania Power & Light Co. v. Pa. PUC*, 696 A.2d 248, 250 (Pa. Cmwlth. 1997).

11. The General Assembly has recognized the importance of ensuring the reliability of electric transmission systems, and the provision of sufficient electrical power at affordable rates. 66 Pa. C.S. §§ 2802(12), (20), and 2803.

12. PPL Electric has met its burden to demonstrate that the proposed Northeast-Pocono Reliability Project is necessary for the service, accommodation, convenience, or safety of the public.

13. There is no viable alternative electrical solution that will solve the underlying problem -- long 69 kV transmission lines, heavy line loading, and no 230 kV source of power within the Northeast Pocono region.

14. The 138 kV alternative electrical solution is not practicable, is technically inferior, has serious constructability and operational concerns, could not be completed in a timely fashion to address the reliability violations PPL Electric has identified, and would cost more.

15. PPL Electric has met its burden to demonstrate that the proposed Northeast-Pocono Reliability Project is the best overall solution to provide a long-term plan to reinforce the Northeast Pocono region.

16. Transmission lines that meet or exceed the National Electric Safety Code ("NESC") requirements do not create an unreasonable risk of danger to the health and safety of

the public. *Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line*, Docket Nos. A-2009-2082652, *et al.*, 2010 Pa. PUC LEXIS 434 at *166 (Feb. 12, 2010); *Investigation on Commission Motion of the Safety of the Cabett-Wylei Ridge 500 kV Transmission Line*, I.D. 236 (Sept. 18, 1981); *Application of PP&L for Approval to Locate and Construct a 138 kV Transmission Line Between West Allentown and Salisbury Substations*, Docket No. A-00104160 (July 20, 1984); *Application of PP&L for Authorization to Locate and Construct its Hamlin 138 kV Electric Transmission Line*, Docket No. A-00101826 (April 3, 1981); *Larken v. Philadelphia Electric Co.*, 39 Pa. PUC 777 (1961).

17. PPL Electric has met its burden to demonstrate that the proposed Northeast-Pocono Reliability Project will not create an unreasonable risk of danger to the health and safety of the public.

18. It would not be reasonable or prudent for PPL Electric to agree to provide Transco with a "blank check" for mitigation measures when it is entirely unknown what those measures are or whether such measures are truly attributable to PPL Electric's proposed transmission line.

19. The Commission's siting regulations were promulgated to meet the requirement for a consideration of environmental impacts mandated by Article I, Section 27 of the Pennsylvania Constitution, and to apply the test enunciated in *Payne v. Kassab*, to determine whether a proposal having environmental impacts should be approved. *See Trailco*, 995 A.2d at 477-78 ("These regulations, and 52 Pa. Code § 57.76 in particular, represent a codification of the review required by article I, section 27 of the Pennsylvania Constitution."); *see also Re Proposed Electric Regulation*, 1976 Pa. PUC LEXIS 114, 49 Pa. P.U.C. 709, 712 (March 2, 1976) (stating

that the "review required by article I, section 27 is being incorporated into our siting regulations").

20. The Commission is required, under 57 Pa. Code §§ 57.72(e)(7) and (8), to consider environmental impacts of proposed transmission lines. *Re: Interim Guidelines for the Filing of Electric Transmission Line Siting Applications*, Docket No. M-2009-2141293, 2010 Pa. PUC LEXIS 2069 at *56 (Nov. 5, 2010).

21. The Commission has adopted Interim Siting Guidelines that require, among other things, an applicant for the siting of an electric transmission line to file a matrix or list that shows all expected federal, state, and local government regulatory permits and approvals that may be required for the project, at the time of the application, and the current status of permit applications that may be required by those agencies. 52 Pa. Code §§ 69.3105, 69.3106.

22. PPL Electric's filing effectively addresses and, in most cases, exceeds all the requirements of the Commission's siting regulations.

23. The Commission has generally found compliance with the applicable environmental statutes and regulations where the applicant agrees to obtain any and all environmental permits necessary prior to construction and to comply with any conditions on those permits during construction. *See, e.g., Application of Pennsylvania Electric Company For Approval to Locate and Construct the Bedford North-Osterburg East 115 kV HV Transmission Line Project Situated in Bedford and East St. Clair Townships, Bedford County, Pennsylvania*, Docket Nos. A-2011-2247862, et al., 2012 Pa. PUC LEXIS 298 at *61 (Initial Decision February 9, 2012); *Application of Trans-Allegheny Interstate Line Company for the Approval to locate, construct, operate and maintain certain high voltage electric transmission line facilities and to exercise the power of eminent domain to construct and to install the proposed aerial electric*

*transmission line facilities along the proposed route, being a 138 kV transmission line and related facilities collectively, the Osage-Whiteley Line Facilities or Project, in portions of Dunkard Township, Perry Township, and Whiteley Township, Greene County in Southwestern Pennsylvania*, Docket Nos. A-2010-2187540, et al., 2011 Pa. PUC LEXIS 2028 (Recommended Decision March 28, 2011); *Application of PPL Electric Utilities Corporation Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line*, Docket Nos. A-2009-2082652, et al., 2010 Pa. PUC LEXIS 434 at *191-201 (February 12, 2010).

24. PPL Electric is not required to complete the required environmental studies and obtain all required permits before the Commission may approve a project or before PPL Electric may begin construction on other portions of the project. *Energy Conservation Council of Pennsylvania v. Pa. PUC*, 25 A.3d 440, 452 (Pa. Cmwlth. 2011) (hereinafter "*Susquehanna-Roseland*").

25. This Commission is a creature of statute, and its power to act in any particular case must be clear. *City of Philadelphia v. Philadelphia Electric Company*, 504 Pa. 312, 473 A.2d 997 (1984). There is nothing in the Public Utility Code, siting regulations, Article I, Section 27 of the Pennsylvania Constitution, or *Payne v. Kassab* that authorizes the Commission to regulate environmental impacts or develop environmental safeguards.

26. The Commission lacks jurisdiction to regulate environmental impacts and, instead, must defer to those agencies that have appropriate jurisdiction over those matters. *See Rovin v. Pa. PUC*, 502 A.2d 785 (Pa. Cmwlth. 1986) (holding that the Commission must defer to the Pennsylvania Department of Environmental Resources and the Federal Environmental

Protection Agency on water quality issues); *O'Connor v. Pa. PUC*, 582 A.2d 427 (Pa. Cmwlth. 1990) (holding that the Commission is obligated to defer to the Pennsylvania Department of Environmental Resources on environmental impacts within its jurisdiction) (discussing *Del-Aware, Unlimited, Inc. v. Pa. PUC*, 513 A.2d 593 (Pa. Cmwlth. 1986)).

27. The Commission does not have the requisite technical and scientific expertise in environmental issues to develop reasonable and effective safeguards. *Country Place Waste Treatment Company Inc. v. Pa. PUC*, 654 A.2d 72 (Pa. Cmwlth. 1995).

28. PPL Electric will obtain all required permits for construction of the Northeast-Pocono Reliability Project, and will comply with any and all conditions placed on such permits by those agencies that have appropriate jurisdiction over environmental matters.

29. PPL Electric has met its burden to demonstrate that the proposed Northeast-Pocono Reliability Project is in compliance with applicable statutes and regulations, providing for the protection of the natural resources of this Commonwealth.

30. A utility's route for a proposed transmission line should be approved where the record evidence shows that the utility's route-selection process was reasonable and that the utility properly considered the factors relevant to siting a transmission line:

> [I]t is settled law that the designation of the route for a HV line is a matter for determination by [a utility's] management in the first instance, and the utility's conclusion will be upheld unless shown to be wanton or capricious. Thus, where the record establishes that the utility's route selection was reasonable, considering all the factors, its route will be upheld. The mere existence of an alternative route does not invalidate the utility's judgment. This reasoning is equally sound when considering whether a utility has complied with 52 Pa. Code § 57.72(c)(10), as the information required by this section goes towards establishing the reasonableness of the utility's route selection.

*Susquehanna-Roseland*, at 449-50 (quoting *Trailco*, 995 A.2d 465, 479-80).

31. The route selected by the applicant must demonstrate reasonable efforts to minimize adverse environmental impacts when compared to the available alternative routes, but the utility need not consider all possibilities. *Susquehanna-Roseland*, at 448-49.

32. PPL Electric has met its burden to demonstrate that its route-selection process was reasonable.

33. PPL Electric has met its burden to demonstrate that the routes selected for the proposed Northeast-Pocono Reliability Project will a have minimum adverse environmental impact, considering the electric power needs of the public, the state of the available technology and the available alternatives.

34. PPL Electric has met its burden to demonstrate that it will implement appropriate measures to minimize adverse environmental impacts of the routes selected for the proposed Northeast-Pocono Reliability Project.

35. NPCARE has failed to apply the proper legal standard for the siting of high voltage transmission lines.

36. An applicant is not required to choose a route that has no adverse impacts. *Susquehanna-Roseland*, at 448-49.

37. A "no build" alternative has expressly been rejected by the Commonwealth Court. *Susquehanna-Roseland*, at 448-49.

## III. ZONING PETITIONS

38. The lack of authority for a local municipality to regulate the design, location, or construction of public utility facilities is consistent with the long line of cases holding that public utilities are exempt from local ordinances. *See Duquesne Light Company v. Monroeville Borough*, 449 Pa. 573, 580, 298 A.2d 252, 256 (1972) ("This Court has consistently held, however, that the Public Utility Commission has exclusive regulatory jurisdiction over the

implementation of public utility facilities") (citations omitted). *See, e.g., County of Chester v. Philadelphia Elec. Co.,* 420 Pa. 422, 218 A.2d 331 (1966) (holding that regulation by a multitude of jurisdictions would result in "twisted and knotted" public utilities with consequent harm to the general welfare); *Newtown Township v. Philadelphia Elec. Co.*, 594 A.2d 834, 837 (Pa. Cmwlth. 1991) (noting that "it is clear that no 'implied' power exists in the MPC which would allow the Township to regulate [the Philadelphia Electric Company] through its subdivision and land development ordinance"); *Heintzel v. Zoning Hearing Board of Millcreek Township*, 533 A.2d 832 (Pa. Cmwlth. 1987) (holding that township had no power to regulate, under its zoning ordinance, city's erection of water tower because that power was under the exclusive jurisdiction of the PUC); *South Coventry Township v. Philadelphia Elec. Co.*, 504 A.2d 368 (Pa. Cmwlth. 1986) (noting that to possibly subject [the Philadelphia Electric Company] to a miscellaneous collection of regulations upon its system would clearly burden and indeed disable it from successfully functioning as a utility); *Commonwealth v. Delaware and Hudson Railway Co.*, 339 A.2d 155 (Pa. Cmwlth. 1975) (holding that the MPC did not authorize local governments to regulate public utilities in any manner which infringes upon the power of the Commission to so regulate).

39. A municipality may apply local zoning rules to a public utility "building" unless the Commission finds that the location of the building is reasonably necessary for the convenience or welfare of the public. Section 619 of the Pennsylvania Municipalities Planning Code ("MPC"), 53 P.S. § 10619; *Del-AWARE Unlimited, Inc. v. Pa. PUC*, 513 A.2d 593, 596 (Pa. Cmwlth. 1986), *appeal denied*, 515 Pa. 587, 527 A.2d 547 (1987). If the Commission finds that the location is reasonably necessary for the convenience or welfare of the public, the building is exempt from local zoning ordinances under the MPC. *Id.*

40. Section 619 of the MPC does not require a utility to prove that the site it has selected is absolutely necessary or that it is the best possible site; rather, the utility must only demonstrate "reasonable necessity" for a particular location, not absolute need. *O'Connor v. Pa. PUC*, 582 A.2d 427, 433 (Pa. Cmwlth. 1990) (citing *Re Philadelphia Suburban Water Co.*, 54 Pa. PUC 127, 132 (1980)).

41. PPL Electric has met its burden to demonstrate that the location of the control equipment building for the North Pocono Substation is reasonably necessary for the public convenience or welfare.

42. PPL Electric has met its burden to demonstrate that the location of the control equipment building for the West Pocono Substation is reasonably necessary for the public convenience or welfare.

## IV. EMINENT DOMAIN APPLICATIONS

43. On an application for condemnation, the Commission must determine whether the service -- the transmission or distribution of electricity to or for the public that will be provided to the public if the subject property is condemned -- is necessary or proper for the service, accommodation, convenience, or safety of the public. 15 Pa. C.S. § 1511(c).

44. The Commission's only role under 15 Pa.C.S. § 1511 is to consider if the project is necessary or proper for the benefit of the public, and that the Commission is expressly barred from considering the power of the utility to condemn. *SEPTA v. Pa. PUC*, 991 A.2d 1021, 1023 (Pa. Cmwlth. 2010).

45. Pennsylvania Appellate Courts have interpreted Section 1511 as requiring a condemning utility to show that the proposed transmission line is necessary or proper and that it has not acted wantonly, capriciously, or arbitrarily in selecting the proposed right-of-way. *Department of Environmental Resources v. Pa. PUC*, 335 A.2d 860 (Pa. Cmwlth. 1975), *aff'd.*,

473 Pa. 378, 374 A.2d 693 (1977); *Dickson v. Public Service Commission*, 89 Pa. Super. 126 (1926). The selection of the right-of-way is a matter for the public utility in the first instance and, while the route selection must be reasonable, it need not be the "best alternative" in terms of reducing or eliminating inconvenience to particular landowners. *Stone v. Pa. PUC*, 162 A.2d 18 (Pa. Super. 1960).

46. PPL Electric has met its burden to demonstrate that the service to be furnished by PPL Electric through its proposed exercise of the power of eminent domain to acquire rights-of-way and easements across the following twenty-nine properties for the construction, operation, and maintenance of the proposed Northeast-Pocono Reliability Project is necessary or proper for the service, accommodation, convenience, or safety of the public:

> Margaret G. Arthur and Barbara A. Saurman, Trustees of the Residuary Trust of James C. Arthur in Sterling Township, Wayne County, Pennsylvania, Docket No. A-2012-2341115;
>
> Clifton Acres, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341236;
>
> Sylvester J. Coccia in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341267;
>
> Dietrich Hunting Club in Lehigh Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341237;
>
> Lawrence Duda in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341271;
>
> FR E2 Property Holding LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341263;
>
> FR First Avenue Property Holding, LP in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2012-2341123;
>
> Donald W. Henderson and Louis V. Bellucci in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341262;
>
> Bradley D. Hummel in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341220;

International Consolidated Investment Company in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341216;

John F. and Veronica B. Iskra in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341233;

Donald Januszewski in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341215;

John C. Justice and Linda S. Justice in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341107;

Anthony J. Lupas, Jr. and Lillian Lupas, John Lupas and Judy Lupas, Grace Lupas, Eugene A. Bartoli and Robert J. Frankelli in Bear Creek Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341118;

Michael A. Mitch and Sue K. Mitch in Paupack Township, Wayne County, Pennsylvania, Docket No. A-2013-2341234;

NLMS, Inc. in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341239;

Michael Palermo and Joanne Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341221;

Peter Palermo and Francine Palermo in Salem Township, Wayne County, Pennsylvania, Docket No. A-2013-2341211;

William Petrouleas and Joanna Petrouleas in Clifton Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341209;

Edward R. Schultz in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341253;

Ronald G. Sidovar and Gloria J. Sidovar in Salem Township, Luzerne County, Pennsylvania, Docket No. A-2012-2341120;

Ronald Solt in Plains Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341249;

Three Griffins Enterprises, Inc. in Salem Township, Wayne County, Pennsylvania, Docket No. A-2012-2341114;

Transcontinental Gas Pipe Line Corporation in Buck Township, Luzerne County, Pennsylvania, Docket No. A-2013-2341208; and

US Industrial Reit II in Covington Township, Lackawanna County, Pennsylvania, Docket No. A-2013-2341241.

Susan Butler Living Trust in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344604;

Grumble Knot, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344612;

Pennsylvania Glacial Till, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344616; and

Blueberry Mountain Realty, LLC in Tobyhanna Township, Monroe County, Pennsylvania, Docket No. A-2013-2344605.