POST & SCHELL PC
ATTORNEYS AT LAW

17 North Second Street
12th Floor
Harrisburg, PA 17101-1601
717-731-1970 Main
717-731-1985 Fax
www.postschell.com

John H. Isom

jisom@postschell.com
717-612-6032 Direct
717-731-1985 Fax
File #: 2507/140068

October 14, 2009

James J. McNulty
Secretary
PA Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
PO 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 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

Dear Secretary McNulty:

Enclosed for filing is the original and nine copies of the Reply Brief of PPL Electric Utilities Corporation in the above-referenced proceeding.

As indicated on the certificate of service, copies are being provided to the parties in the manner indicated.

Respectfully Submitted,

John H. Isom

JHI/jl
Enclosures
cc: Honorable Susan D. Colwell
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).

VIA E-MAIL & FIRST CLASS MAIL

Dianne E. Dusman, Esquire
Darryl Lawrence, Esquire
Shaun A. Sparks, Esquire
Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1923

Charles Daniel Shields, Esquire
Office of Trial Staff
PO Box 3265
Commonwealth Keystone Building
400 North Street, 2nd Floor West
Harrisburg, PA 17105-3265

Adeolu Bakare
Office of Trial Staff
Commonwealth Keystone Building
400 North Street, 2nd Floor West
PO Box 3265
Harrisburg, PA 17105-3265

Paul M. Schmidt, Esquire
Zarwin Baum DeVito Kaplan Schaer & Toddy P.C.
1515 Market Street
12th Floor
Philadelphia, PA 19102-1981

Edmund J. Berger, Esquire
Berger Law Firm, P.C.
2104 Market Street
Camp Hill, PA 17011

Shelby A. Linton-Keddie, Esquire
McNees Wallace & Nurick, LLC
P.O. Box 1166
100 Pine Street
Harrisburg, PA 17108-1166

Kent D. Murphy, Esquire
Senior Counsel
UGI Corporation
460 North Gulph Road
King of Prussia, PA 19406

Joseph Dominguez, Esquire
Exelon Generation
300 Exelon Way, Suite 340
Kennett Square, PA 19348

Michael F. Faherty, Esquire
Lavery Faherty Young & Patterson, P.C.
225 Market Street, Suite 304
P.O. Box 1245
Harrisburg, PA 17108-1245

Willard R. Burns, Esquire
Burns Law Firm, LLC
390 Oak Spring Road
Marianna, PA 15345

Peter Lanzalotta
Lanzalotta & Associates LLC
67 Royal Pointe Drive
Moss Creek Plantation
Hilton Head, SC 29926

Susan Simms Marsh, Esquire
800 West Hershey Park Drive
Hershey, PA 17033

Robert Fagan
Synapse Energy Economics, Inc.
22 Pearl Street
Cambridge, MA 02139

VIA FIRST CLASS MAIL

Cheryl L. Hamilton, MD
276 Saw Creek Estates
Bushkill, PA 18324

Etianna M. Hyman
576 Saw Creek Estates
Bushkill, PA 18324

Joseph and Maria Doe
2117 Fifth Street
East Meadow, NY 11554
(For 3134 Windgate Court
Sawcreek Estates
Bushkill, PA 18324)

Alix M. Mariette
63 Wickes Road
Bushkill, PA 18324

Beverly & Arthur Karten
155 At The Falls
Bushkill, PA 18324

Angelica Rovira
305 Woodville Court
Lot 305, Section 21
Saw Creek Estates
Bushkill, PA 18324

Annette & Ralph Seeley
52 Saw Creek Estates
Bushkill, PA 18324

Timothy and Debra Kocher
1184 Ridge Road
Bath, PA 18014

Sheryl A. Rosen
668 Saw Creek Estates
Bushkill, PA 18324

David Murphy and Marguerite T. Kranick
279 Faller Road
Lake Ariel, PA 18436

D&L Realty Company
400 Mill Street
Dunmore, PA 18512

Arlean K. Lilly
1260 Smith Gap Road
Bath, PA 18014-8738

Patrick J. Lavelle
1000 S. State Street
Clarks Summit, PA 18411

Diane and Larry Berger
205 Princeton Place
Williamstown, NJ 08094

Donna Davis, Esquire
PO Box 423
Dunmore, PA 18512

Rudolph Saporito and Maria Saporito
PO Box 434
Lake Ariel, PA 18436-0434

HaRa Corporation
c/o F. Andrew Wolf, Corporate Counsel
Bushkill Group
Route 209
PO Box 447
Bushkill, PA 18324

Date: October 14, 2009

John H. Isom

6512182v1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Application of PPL Electric Utilities	:	
Corporation Filed Pursuant to 52 Pa. Code	:	Docket Nos. A-2009-2082652;
Chapter 57, Subchapter G, for Approval of	:	A-2009-2082832; A-2009-2088297;
the Siting and Construction of the	:	A-2009-2088337; A-2009-2088327;
Pennsylvania Portion of The Proposed	:	A-2009-2088340; A-2009-2088359;
Susquehanna-Roseland 500 kV Transmission	:	A-2009-2088312; A-2009-2088360
Line in Portions of Lackawanna, Luzerne,	:	
Monroe, Pike and Wayne Counties,	:	
Pennsylvania, *et al.*	:	

REPLY BRIEF OF PPL ELECTRIC UTILITIES CORPORATION

Paul E. Russell (ID # 21643)
Jesse A. Dillon (ID # 47580)
PPL Services Corporation
Office of General Counsel
Two North Ninth Street
Allentown, PA 18106
Phone: 610-774-4254
Fax: 610-774-6726
E-mail: perussell@pplweb.com
E-mail: jadillon@pplweb.com

Curtis S. Renner
Watson & Renner
1400 16th Street, NW
Suite 350
Washington, DC 20036
Phone: 202-737-6302
E-mail: crenner@w-r.com

Of Counsel:

Post & Schell, P.C.

Date: October 14, 2009

David B. MacGregor (ID # 28804)
Post & Schell, P.C.
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103-2808
Phone: 215-587-1197
Fax: 215-320-4879
E-mail: dmacgregor@postschell.com

Michael W. Gang (ID # 25670)
John H. Isom (ID # 16569)
Andrew S. Tubbs (ID #80310)
Christopher T. Wright (ID # 203412)
Post & Schell, P.C.
17 North Second Street
12th Floor
Harrisburg, PA 17101-1601
Phone: 717-731-1970
Fax: 717-731-1985
E-mail: mgang@postschell.com
E-mail: jisom@postschell.com
E-mail: atubbs@postschell.com
E-mail: cwright@postschell.com

Attorneys for PPL Electric Utilities Corporation

TABLE OF CONTENTS

Page

I. INTRODUCTION 1

II. SUMMARY OF ARGUMENT 2

III. ARGUMENT 5

A. LEGAL STANDARDS 5

B. NEED 13

1. Need For The Proposed Transmission Line 13

a. Summary of Need Argument 13

b. OTS' Pennsylvania-Specific Position Should Be Summarily Rejected 16

c. The S-R Transmission Line Is Necessary To Address Present and Future Needs 19

d. NERC Category C Violations Must Be Resolved 23

e. The S-R Transmission Line Was Selected As The Best Alternative To Address The Identified Reliability Violations 27

f. A Further Retool Is Unnecessary 35

g. Requests To Forego The S-R Transmission Line In Favor Of A Collaborative Should Be Rejected 42

2. Need For The Lackawanna 500-230 kV Substation 44

C. SITING 45

1. The OCA's Objections To The Route Proposed By PPL Electric Are Without Merit And Should Be Rejected. 45

2. OCA's Contentions Regarding The Delaware Water Gap National Recreation Area Are Meritless 50

3. No Cost-Benefit Analysis Is Required For The S-R Transmission Line 53

4. Saw Creek's Contentions Should Be Rejected Because They Are Based On Misstatements Of The Evidence And Disregard Substantial Portions of the Evidentiary Record. 54

5. Saw Creek's Contentions Regarding Real Estate Values Are Meritless. 57

TABLE OF CONTENTS

Page

6. Saw Creek's Arguments About Electric And/Or Magnetic Fields Are Without Merit....60

a. Saw Creek Has Presented No Credible Scientific Evidence That EMF Cause Any Adverse Health Effects....61

b. Saw Creek's Argument About Potentially Higher EMF Levels From The S-R Transmission Line Is Both Unrealistic and Immaterial....63

c. Saw Creek's "Fear of EMF" Argument Is Without Merit....65

7. Saw Creek's Reliance On Cases Regarding Safety Hazards Is Misplaced.67

8. Saw Creek's Concern About The Effects Of The S-R Transmission Line On The Viewscapes Is Exaggerated. 69

9. ECC's Contentions Concerning the Siting of the S-R Transmission Line are Without Merit And Should Be Disregarded. 70

10. Route B Was Not "Preselected" By PPL Electric, And In Any Event, It Is The Most Appropriate Route. 76

IV. CONCLUSION....78

TABLE OF AUTHORITIES

Page

United States Court Decisions

Ogden Fire Co. v. Upper Chichester Township, 504 F.3d 370, 390, fn. 12 (3d Cir. 2007) 69

Pennsylvania Court Decisions

Brown v. Cmwlth., 940 A.2d 610, 614 (Pa. Cmwlth. 2008) 4

Dunk v. Pa. P.U.C., 210 Pa. Super. 183, 232 A.2d 231 (1967) 67, 68

Payne v. Kassab, 11 Pa. Cmwlth. 14, 312 A.2d 86 (1973) 11

Pennsylvania Power & Light Co. v. Pa. P.U.C., 696 A.2d 248 (Pa. Cmwlth. 1997) 7

Stone v. Pa. P.U.C., 192 Pa. Super. 573, 162 A.2d 18 (1960) 5, 16

West Penn v. Pa. P.U.C., 199 Pa. Super. 25 (1962) 9, 10, 66

Pennsylvania Administrative Agency Decisions

Application of Pennsylvania Power & Light Co., 1996 Pa. PUC Lexis 102 8

Application of PPL Electric Utilities Corporation for Approval of the Siting and Reconstruction of the Proposed Coopersburg # 1 and # 2 138/69 kV Tap in Upper Saucon Township, Lehigh County and Springfield and Richland Townships, Bucks County, Pennsylvania, Docket No. A-2008-2022941 (*Coopersburg Siting Proceeding*) 48

In re: Application of PPL Electric Utilities Corp., Docket No. A-2008-2022941 (July 24, 2009) 11

In re Trans-Allegheny Interstate Line Co., Docket No. A-110172 (order entered December 12, 2008) 16

Re: West Penn Power Co, 54 Pa. PUC 319 (1980) 8, 11

Pennsylvania Statutes

15 P.S. § 1192 66

15 Pa.C.S. § 1511 66

15 Pa.C.S. §§ 1511(c) 77

TABLE OF AUTHORITIES

Page

66 Pa.C.S. §§ 1102-03 4

66 Pa.C.S. § 2802(12) 16

66 Pa.C.S. § 2802(20) 16

66 Pa.C.S. § 2805 7

66 Pa.C.S. § 2805(a) 5, 16

Federal Statutes

47 U.S.C. § 332c07(B)(iii) 69

Regulations

52 Pa. Code §§ 57.71 - .77 11

52 Pa. Code Chapter 57, Subchapter G 77

Florida Department of Environmental Protection, "Electric and Magnetic Fields." Florida Administrative Code, Chapter 62-814 (effective 1/7/93) 63

I. INTRODUCTION

On October 5, 2009, pursuant to the schedule established by Administrative Law Judge Susan D. Colwell ("ALJ"), PPL Electric Utilities Corporation ("PPL Electric" or the "Company"), the Office of Trial Staff ("OTS"), the Office of Consumer Advocate ("OCA"), Saw Creek Estates Community Association ("Saw Creek") and the Energy Conservation Council ("ECC") filed initial briefs in these consolidated proceedings. PPL Electric, in its Initial Brief, explained its positions on the issues pending before the ALJ. In so doing, PPL Electric anticipated, and as a practical matter responded to, many of the arguments raised by other parties. Nevertheless, it is appropriate for PPL Electric to respond to certain contentions advanced by other parties in their initial briefs. In responding to other parties, PPL Electric will minimize repetition of explanations provided in its Initial Brief.

II. SUMMARY OF ARGUMENT

PPL Electric has demonstrated that the 500 kV Susquehanna-Roseland electric transmission line ("S-R Transmission Line") is needed to provide reliable service and that PPL Electric has chosen a reasonable route for the Pennsylvania portion of the line. To a large degree, these conclusions are uncontested.

Regarding need, the overwhelming record evidence demonstrates that the S-R Transmission Line is needed, beginning in 2012, to resolve 23 North American Electric Reliability Corporation ("NERC") Category B and C violations. The opposing parties do not challenge this conclusion directly, but rather present a series of alternative arguments that are not only in error, but fail to refute the fundamental need for the line.

First, OTS and OCA propose that the Pennsylvania Public Utility Commission ("Commission") simply ignore major portions of PPL Electric's need case. OTS contends that the Commission should look only at Pennsylvania reliability and ignore the rest of PJM Interconnection, L.L.C. ("PJM"). This approach is contrary to law, contrary to well-established public policy and ignores the many Pennsylvania benefits of the line. Under OTS' view of the world, Pennsylvania would receive all of the many benefits of regional planning and operation of the high voltage transmission system but refuse to accept responsibility for projects necessary to produce these benefits. OCA, by contrast, considers only the 13 NERC Category B violations and largely ignores the 10 NERC Category C violations. There is no factual or legal basis for OCA's position. Compliance with NERC criteria is equally mandatory for both Category B and Category C violations.

Second, apparently recognizing that all violations must be considered and resolved on a regional basis, the parties contend that the S-R Transmission Line is not the best solution and that other alternatives were not adequately considered. This contention also is without merit.

Regarding transmission alternatives, PJM considered over 30 alternatives, including a 230 kV alternative and concluded that these alternatives did not adequately address and resolve the NERC violations. Regarding generation alternatives, the record is clear that PJM considers generation to the maximum extent possible given that PJM has no authority to order generation to be built or to be sited at a particular location. Similarly, PJM fully considers demand response and energy efficiency programs to the extent that they are reasonably available to reduce peak demand for transmission line planning purposes. Opposing parties would have PJM rely on speculative and uncertain generation and demand response to delay the need for the S-R Transmission Line. The Commission should decline this invitation and approve the S-R Transmission Line in order to assure reliable service to customers.

Third, recognizing that the S-R Transmission Line is clearly needed based on the record evidence, including the March 2009 Retool, the parties propose that PJM should provide yet another update of its Regional Transmission Expansion Plan ("RTEP") analysis to reflect change in load growth and demand response. In addition, the OCA suggests that PPL Electric voluntarily extend the one-year deadline for decision of the case to permit this further update. The record demonstrates that there is no need for a further update at this time. The need for the S-R Transmission Line has been and remains clear over several years. PJM has already implemented over 130 interim projects to bolster the existing 230 kV system. A robust 500 kV solution is clearly required. Moreover, PJM has already updated its load forecast and concluded that it will have no effect on the S-R Transmission Line, and PJM has definitively explained that additional demand response and energy efficiency will not affect the need for the line in 2012. Any further delay for additional analysis will preclude any reasonable chance of completing the line on schedule. Moreover, in any event, PJM will update the RTEP early next year. If this

update shows that the need for the S-R Transmission Line should be deferred for a year or two, it will be deferred. This, however, provides no basis for rejecting PPL Electric's applications; rather, it would simply provide some additional brief breathing room to complete the line when it is needed.

Finally, OTS suggests that the Commission convene a collaborative so the parties can further discuss the need for the line. There is no basis for this suggestion. The need issue has been exhaustively litigated and the need for the S-R Transmission Line is clear. No purpose, other than needless delay, would be served by further postponing a Commission decision.

Regarding siting, the story is much the same. The Company has presented an exhaustive siting analysis which carefully considered three alternative routes and concluded that proposed Route B was the best available siting alternative. No party has even suggested that Route A or Route C should have been selected, nor has any party proposed an alternative route for consideration. Saw Creek and OCA identify a number of concerns with siting the line through Saw Creek Estates. PPL Electric has fully responded to each of these concerns. And, in any event, no party has presented any superior alternative route around Saw Creek.

For these reasons, and as more fully explained below and in PPL Electric's Initial Brief, the S-R Transmission Line should be approved.

III. ARGUMENT

A. LEGAL STANDARDS

The other parties to this proceeding have applied incorrect legal standards to PPL Electric's applications or have applied legal standards in an incorrect manner. The Commission should consider PPL Electric's several applications by applying the proper legal standards as set forth in PPL Electric's Initial Brief, pp. 16-23.

OCA contends that PPL Electric is required to meet all the standards that apply to applications for certificates of public convenience, citing, *inter alia*, Sections 1102 and 1103 of the Public Utility Code, 66 Pa.C.S. §§ 1102-03. *See, e.g.,* OCA Main Brief, pp. 9-10. OCA is not correct. Section 1102 of the Public Utility Code provides a list of those activities for which public utilities must obtain prior certificates of public convenience. Suffice it to say that constructing a transmission line is not a listed activity. Any special burdens that would apply to a party seeking a certificate of public convenience do not apply in this proceeding. Instead, PPL Electric, in order to obtain approval of the siting and construction of the S-R Transmission Line and related applications, need only carry its burden of proof by a preponderance of the evidence. *See, e.g., Brown v. Cmwlth.*, 940 A.2d 610, 614 (Pa. Cmwlth. 2008); PPL Electric Initial Brief, p. 16.

OTS contends that PPL Electric's application should be denied because it has not demonstrated that there are no less expensive projects that would resolve the reliability concerns in Pennsylvania. OTS contends that, if there are such less expensive projects, the Commission must disapprove the construction of the S-R Transmission Line and let New Jersey fend for itself. OTS Main Brief, p. 12. PPL Electric has explained that OTS' "Pennsylvania-only" standard is incorrect. PPL Electric Initial Brief, pp. 43-48. The principal statutory provision that

contravenes OTS' position is Section 2805(a) of the Electricity Generation Customer Choice and Competition Act, 66 Pa.C.S. § 2805(a) ("Electric Competition Act"), which provides that:

> The commission shall take all necessary and appropriate steps to encourage interstate power pools to enhance competition and to complement industry restructuring on a regional basis. The Commonwealth, the commission and Pennsylvania electric utilities shall work with the Federal Government, other states in the region and interstate power pools to accomplish the goals of restructuring and to establish independent system operators or their functional equivalents to operate the transmission system and interstate power pools. The commission, Pennsylvania electric utilities and all electricity suppliers shall work with the Federal Government, other states in the region, the North American Electric Reliability Council and its regional coordinating councils or their successors, interstate power pools, and with the independent system operator or its functional equivalent to ensure the continued provision of adequate, safe and reliable electric service to the citizens and businesses of this Commonwealth.

OTS' position is also contrary to well-established appellate court precedent. In *Stone v. Pa. P.U.C.*, 192 Pa. Super. 573, 162 A.2d 18 (1960), the Superior Court held that the exercise of the power of eminent domain by Philadelphia Electric Company to construct a transmission line to connect the Peach Bottom Nuclear Power Plant with the PJM grid was justified and in the public interest because it would provide needed reinforcement of the transmission line for the benefit not only of Philadelphia Electric Company's customers, but also the customers of Baltimore Gas and Electric Company and all customers served by these interconnected companies. Thus, the Court approved the consideration by the Commission of the interests of users of electricity in other states in approving the exercise of the power of eminent domain for a transmission line.

OTS also asserts that there is no "present need" for the S-R Transmission Line because reliability violations are not predicted to occur until 2012. OTS Main Brief, p. 12. OTS' view, if accepted, would mean that the process of transmission line siting could not commence until reliability violations had already occurred or were about to occur. Transmission line

construction requires substantial time. This proceeding before the Commission alone will consume at least one full year. Appeals may follow which will require additional time. OCA argues that the permitting process, particularly through DEWA, will require substantial additional time. OCA Main Brief, pp. 80-96. Although OCA's estimates of the time required by the permitting process may be exaggerated, there is no question that permitting will require significant additional time. Then, construction itself is expected to require an additional 27 months. PPL Electric St. 1-R, p. 26. OTS' "present need" standard, if applied, would cause customers to risk experience serious interruptions of service before facilities to alleviate the reliability violations could be constructed.

OTS' position also is contrary to Commission precedent. In Application of Trans-Allegheny Interstate Line Co., Docket No. A-110172, pp. 30-31 (Dec. 12, 2008), the Commission concluded:

> We are persuaded by TrAILCo's use of PJM's RTEP and the supporting testimony which detailed the system stress modeling and projections relating to **future NERC standard violations**. *See, e.g.,* TrAILCo Exh. SWG-1, relating to twelve **projected occurrences** resulting in NERC standard violations. We find the following statement by TrAILCo to be particularly compelling:
>
> > The RD erroneously rejected the correct application of operating and testing criteria that have been applied consistently in PJM system for many years and adopted an incorrect application of those criteria. [TrAILCo Main Brief at 9-16; TrAILCo R.B. at 10-13.] As PJM Vice President Herling testified, ECC's suggestion (which the RD adopted) that no criteria violation exists so long as there is some combination of redispatch available anywhere within PJM only invites a whole host of operational conditions that would not be controllable without load shedding. [TrAILCo Main Brief at 29; TrAILCo St. 3-RJ at 13-14.] Load shedding is a polite term for rolling blackouts, ... *The Commission, PJM, Allegheny Power and TrAILCo have an obligation to provide reliable electric service and act on that basis, rather than not acting*

> *on a theoretical possibility that the Pennsylvania 502 Junction Facilities might not be needed.*

TrAILCo Exc. at 14. Footnotes omitted. Emphasis added.

> There is no question that ECC has put forth a commendable effort in proposing alternatives and providing us with a very complete record in this proceeding. However, this Commission has an obligation to enhance regional reliability and mitigate transmission constraints in order to reduce congestion for ratepayers in Pennsylvania and adjacent jurisdictions. 66 Pa.C.S. § 2805. In our view, the record is clear that the Mount Storm to Doubs line is heavily congested and that alternatives, such as reconductoring, retensioning, or otherwise raising the height of the right-of-way (ROW) to improve clearance are likely to impose heavy congestion costs on consumers. Conversely, the record also indicates that the Pennsylvania 502 Junction Facilities will resolve all of the **projected overloads** in the southern portion of the Allegheny Power transmission zone in a cost-effective and timely manner. TrAILCo Main Brief at 21, citing TrAILCo St. 4 at 17-21.

(Emphasis added.) Electric transmission companies and the Commission properly rely on projected reliability violations to determine whether a transmission line is necessary.

OCA and ECC also contend that PPL Electric's Siting Application should be rejected because it presented a justification of the need for the S-R Transmission Line from an "engineering perspective, " citing *Pennsylvania Power & Light Co. v. Pa. P.U.C.*, 696 A.2d 248 (Pa. Cmwlth. 1997) ("*Pennsylvania Power & Light Co.*") in support of their argument. OCA Main Brief, pp. 17-18; ECC Main Brief, p. 8. In making this argument, OCA and ECC turn the Court's decision on its head. In *Pennsylvania Power & Light Co.*, the Commission considered a request for approval of a 69/138 kV transmission line based on the desire of the Borough of Lehighton, a wholesale customer of Pennsylvania Power & Light Company ("PP&L"), to receive electricity at 69 kV instead of 12 kV. PP&L proposed to proceed with the project based

on the Borough's preference, even though PPL believed that 12 kV service was adequate. The Commission rejected PP&L's application because the Company did not justify the proposed transmission line from an "engineering perspective." The Commission concluded that a transmission line could be justified only from an engineering perspective. *Application of Pennsylvania Power & Light Co.*, 1996 Pa. PUC Lexis 102.

On appeal, the Commonwealth Court reversed the Commission's decision and held that the a proposed transmission line could be justified by any proper consideration under the Public Utility Code and that engineering need was just one of many ways to justify a line. The Commonwealth Court, however, did **not** rule that a proposed transmission line could not be justified from an engineering perspective. There is no basis in either the Commonwealth Court's decision or the Commission's decision below for ECC's and OCA's contention. Here PPL Electric has demonstrated that the S-R Transmission Line is necessary for PPL Electric and PJM to continue to provide reliability service in the region. *Pennsylvania Power & Light Co.* provides no basis for rejecting the S-R Transmission Line; OCA's and ECC's argument is not correct and should be rejected.

OCA, OTS and ECC also rely on the Commission's decision in *Re: West Penn Power Co,* 54 Pa. PUC 319 (1980) ("*West Penn*"). OCA Main Brief, *passim*, ECC Main Brief, p. 7, OTS Main Brief, p. 7. In that proceeding, the Commission rejected an application of West Penn for approval of a transmission line. The basis for that decision, however, has no application to this proceeding. The West Penn Application was rejected because its evidence was unsound. The Commission stated:

> We find that the evidence submitted by West Penn with regard to engineering necessity is so incomplete, inadequate or inaccurate that it does not meet the "reliable, probative and substantial" standard. The specific deficiencies in West Penn's evidence are clearly detailed in the

> ALJ's initial decision and this order. We do not depend on any one flaw in West Penn's evidence in rejecting that evidence, but rather a combination of inaccuracies or inadequacies which, taken together, render the evidence presented as less than reliable, probative, and substantial.

West Penn, 54 Pa. PUC, *supra*, 327. PPL Electric's evidence cannot be fairly described in this manner.

OCA identified the principal shortcomings of West Penn's evidence on need. OCA Main Brief, p. 11. OCA's descriptions of the shortcomings are quoted below. None of these shortcomings apply to PPL Electric and the S-R Transmission Line.

- West Penn had not updated its load forecast, where the most recent data indicated a de-accelerated growth in peak load. OCA Main Brief, p. 11, citing *West Penn*, 54 Pa. PUC, *supra*, 321-322.

In contrast, PJM did update the load forecast during the course of this proceeding. Specifically, PJM used the January 2009 Peak Load Forecast in the March 2009 Retool, which included data representing the largest reduction in demand in PJM history. PPL Electric St. 7-RJ, pp. 8-9. PJM then further updated its forecast to reflect July 2009 data and concluded that this further update would have no effect on the need for the S-R Transmission Line in 2012.

- The load flows submitted failed to reflect additional generation that may become available to meet the forecasted peak loads when they occur. OCA Main Brief, p. 11, citing *West Penn*, *supra*, 322-23.

Here, new generation resources are included in PJM's RTEP process. Specifically, PJM models new generation once the generator has executed an Interconnection Service Agreement because this provides reasonable certainty that the new generation will ultimately go into service by the future date that is projected. PPL Electric St. 8, p. 9.

- The peak load data included all the loads of interruptible customers, even though those loads could have been used to reduce the forecasted peaks. OCA Main Brief, p. 11, citing *West Penn, supra*, 323.

Unlike *West Penn*, PJM's RTEP includes demand response when it is bid into and cleared through the RPM capacity auction as available capacity so that it is a viable committed source to reduce demand under emergency peak load conditions. PPL Electric St. 7, p. 43.

- The assumption in the load flows that *only* the most economic generation would be used, even though overloads or outages caused by the double contingencies might easily be resolved if slightly more expensive generation were used. OCA Main Brief, p. 11, citing *West Penn, supra*, 323.

This issue is irrelevant to the S-R Transmission Line proceeding. *West Penn* was decided nearly 30 years ago and at a time when electric utilities were fully integrated, and owned generation subject to Commission regulation. Moreover, PJM **does use** more expensive generation in response to transmission congestion. Tr. 1363.

The parties' reliance on *West Penn* as a basis for criticizing PPL Electric and the S-R Transmission Line is unfounded.

In summary, the process for obtaining approval the siting and construction of a transmission involves the following steps:

1. There must be a need to be addressed. The need can be based on the need to provide reliable service, *i.e.,* keep the lights on, economics, *i.e.,* to save money, or to promote competition in the wholesale electric market. *See, Pennsylvania Power & Light Co. v. Pa. P.U.C.*, 696 A.2d 248 (Pa. Cmwlth. 1997).

2. The project selected will address the demonstrated need in a reasonable manner. *Re: West Penn Power Co.*, 54 Pa. PUC 319 (1980).

3. Alternative projects were properly rejected based on their ability to resolve the need or their cost. *In re: Application of PPL Electric Utilities Corp.*, Docket No. A-2008-2022941 (July 24, 2009).

4. A route must be selected that reasonably balances all of the many interests that bear on route selection. 52 Pa. Code §§ 57.71 - .77; *In re: Application of PPL Electric Utilities Corp.*, Docket No. A-2008-2022941 (July 24, 2009).

5. Reasonable steps must be taken to mitigate adverse environmental impacts of the project on the selected route. *Payne v. Kassab*, 11 Pa. Cmwlth. 14, 312 A.2d 86 (1973).

As explained in PPL Electric's Initial Brief and below, PPL Electric has met all of the standards for approval of the S-R Transmission Line in Pennsylvania.

B. NEED

1. Need For The Proposed Transmission Line

a. Summary of Need Argument

PPL Electric has firmly established that the S-R Transmission Line is needed to resolve 23 violations of mandatory NERC Category B and C Reliability Standards in Pennsylvania and northern New Jersey. These violations are identified in the updated March 2009 Retool Study ("March 2009 Retool") analysis reflecting revised peak load projections prepared at the end of 2008. Rather than directly challenging the need for the S-R Transmission Line, the parties instead have offered arguments based upon a series of "what-ifs" and/or hypothetical future scenarios which may or may not occur. For example, the parties have asserted the following unsupported arguments against the need for the S-R Transmission Line:

- **The Economy**: **If** the recent economic downturn continues, it could further lower the peak load forecast which might obviate the current need for the S-R Transmission Line. OTS Main Brief, p. 13; OCA Main Brief, pp. 38-39; ECC Main Brief, p. 21.

- **Act 129**: **If** the proposed Pennsylvania electric distribution company ("EDC") Energy Efficiency and Conservation Plans successfully result in reducing peak demand, the resulting peak load reduction may negate the need for the S-R Transmission Line. OTS Main Brief, pp. 14-15; OCA Main Brief, pp.46; ECC Main Brief, p. 22.

- **New Jersey Energy Master Plan ("New Jersey EMP")**: **If** the New Jersey EMP results in significant peak load reductions, it could relieve stress on the transmission system and could lead to fewer transmission system upgrades. OCA Main Brief, p. 46; ECC Main Brief, p. 22.

- **New Generation Resources**: **If** the date of the identified reliability violations is pushed out another year or two, new additional generation resources may become available and could impact whether the S-R Transmission Line is needed in 2012. OCA Main Brief, p. 53.

- **RTEP Process**: **If** PJM were to alter its current FERC-approved regional transmission planning process to allow for a less conservative approach to including energy efficiency and demand reduction measures, such measures could reduce the need for increased transmission. OCA Main Brief, p. 60.

- **230 kV Transmission Options**: **If** PJM were to reconsider previously evaluated 230 kV options, it might determine that a 500 kV option is not required at this time. OCA Main Brief, p. 62; ECC Main Brief, p. 20.

- **Merchant Transmission Line**: **If** the proposed merchant transmission line from the Bergen Substation in New Jersey to New York City is rejected and a new transmission interconnection between the Bergen Substation and Roseland Substation is made, the S-R Transmission Line may not be required. ECC Main Brief, pp. 14-16.

- **Retool Study**: **If** an additional retool were undertaken, incorporating an updated load forecast, the results of the recent Reliability Pricing Model ("RPM") auction, state demand reduction initiatives and potential new generation resources, it may impact the need for the S-R Transmission Line. OCA Main Brief, pp. 37-54; ECC Main Brief, pp. 21 - 23.

- **NERC Category C Violations**: **If** the Commission ignores the existence of the identified NERC Category C.5 violations or discounts their importance in transmission planning, then the need for the S-R Transmission Line is not as profound. OCA Main Brief, pp. 65-69.

PPL Electric will explain in this Reply Brief why each of the "ifs" posited by the parties cannot be relied upon to solve the reliability violations identified in the March 2009 Retool and why that update obviates the request of OCA and ECC for yet a further update. The bottom line, however, is that the March 2009 Retool demonstrates the continued need for the S-R Transmission Line despite the dramatic reduction in demand forecasted at the end of 2008 during the recession and no further update is necessary. The basic argument presented by the opposing parties, reduced to its essence, appears to be that PPL Electric, PJM and the Commission should rely on the possibility of a series of uncertain future events to plan the high voltage transmission system. This is a dangerous and high risk strategy. If the Commission assumes that one or more of these "ifs" will come true, and such assumption is incorrect, reliable service will not be maintained. This is not appropriate public policy. PPL Electric and PJM have a statutory and public interest obligation to plan, design and build a reliable transmission system. PPL Electric and PJM cannot plan and build such a system on the basis that "someone else" may solve

reliability problems. As the Commission stated in the *TrAIL* case: "The Commission, PJM, Allegheny Power and TrAIL Co. have an obligation to provide reliable electric service and act on that basis, rather than not acting on theoretical possibility that the Pennsylvania 502 Junction facilities might not be needed." *TrAIL Order*, p. 31 (citing TrAIL Co. Exceptions). This conclusion applies equally to PPL Electric and the S-R Transmission Line.

OTS seeks to avoid the 23 NERC violations by contending that they are not present, but future violations and are not primarily Pennsylvania violations. OTS' arguments, if accepted, would ignore Pennsylvania's obligations to plan and build transmission facilities to avoid future deficiencies on a regional basis.

OCA, on the other hand, refuses to recognize that the 10 NERC Category C violations identified by the March 2009 Retool are just as important and mandatory as NERC Category A and B violations and must be resolved to maintain reliable service. Contrary to OCA's assertions, operator initiated "load shedding" is not permitted in response to NERC Category C.5 events, and NERC Category C.5 violations are **not** subject to a lesser enforcement standard by NERC. NERC Category C violations must be resolved under federal law and a failure to address an identified violation of NERC's Reliability Standards is subject to penalty regardless of whether it is NERC Category A, B or C violation. Tr. 1283. Equally important, if these identified violations are not addressed by PJM and its members, the result is a less reliable transmission system and a greater risk that adequate service will not be maintained. OCA also argues that the identified NERC Category C.5 violations should be given less weight due to the fact that such events are less likely to occur. PJM's RTEP process already reflects this fact by testing for NERC Category C.5 violations at average peak load conditions and not at emergency peak load conditions. Moreover, even **if** the OCA's assumed levels of demand response and

energy efficiency are achieved in Pennsylvania and New Jersey, these measures will **not** have any impact on the NERC Category C.5 because demand response is not available under these conditions. The OCA simply chooses to ignore this fact because NERC Category C.5 violations undercut all of its contentions that a further retool should be required.

b. OTS' Pennsylvania-Specific Position Should Be Summarily Rejected

OTS asserts that the Commission must determine the need for the S-R Transmission Line based upon solely a Pennsylvania-specific review. OTS Main Brief, p. 12. This narrow view of transmission planning was made abundantly clear in its main brief wherein OTS makes the following statements:

> PPL [Electric] has not demonstrated that the expected reliability criteria violations identified for Pennsylvania, **segregated from those outside Pennsylvania**, must be addressed here in 2009. OCA Main Brief, p. 12. (emphasis added)
>
> [T]he present record...fails to make this necessary distinction between Pennsylvania and non-Pennsylvania violations in their efforts to support the claimed rationale for constructing the line.

OCA Main Brief, p. 13. In this regard, OTS attempts to equate the term "regional" with PPL Electric's service territory. OTS Main Brief, p. 12, fn. 3. As addressed in detail in PPL Electric's Initial Brief, OTS' arguments are inconsistent with Pennsylvania law, with the manner by which the PJM transmission system has been planned and operated for many years, and with current federal and Pennsylvania policy supporting regional planning and construction of regional transmission facilities. PPL Electric Initial Brief, p. 44.

OTS offers no support for its Pennsylvania-specific position other than to rely on the direct testimony of OTS witness Yocca. However, PPL Electric has completely refuted Mr. Yocca's arguments throughout the course of this proceeding. PPL Electric has provided the ALJ and the Commission with clear statutory support in Pennsylvania's Electric Competition Act

demonstrating that Pennsylvania acknowledges the importance of, and supports maintaining, a reliable regional transmission system. *See* 66 Pa.C.S. §§ 2802(12), 2802(20) and 2805(a); PPL Electric Initial Brief, pp. 44-45. Moreover, these statutory provisions clearly evidence the importance of regional planning and the vital role that PJM, as the RTO, plays in successfully ensuring that the interconnected transmission system is operated both reliably and efficiently, including issues regarding "**repair and replacement standards and enforce[ment] [of] those standards**." 66 Pa.C.S. § 2802(20). Further, Section 2805(a) specifically identifies the importance of NERC to ensure the continued provision of reliable electric service in Pennsylvania. 66 Pa.C.S. § 2805(a). The Commission itself acknowledged in the *TrAIL* proceeding that it has "an obligation to enhance regional reliability."[1] The S-R Transmission Line will improve the reliability of the regional transmission system and result in improved voltage levels and stability limits of the transmission system. *See* PPL Electric Initial Brief, pp. 41-43. These are the same types of benefits that the Pennsylvania appellate courts have found to support the need for the construction of bulk electric transmission projects in Pennsylvania. *See Stone v. Pa. PUC*, 162 A.2d 18, 21 (Pa. Super. 1960).

In addition, PPL Electric witness Herling explained the substantial benefits that Pennsylvania's participation in PJM provides to the Commonwealth and its citizens, including a share of an estimated $2.3 billion per year in benefits and economic value. PPL Electric Initial Brief, pp. 45-46; PPL Electric St. 7, pp. 8-9. Neither OTS, nor any other party, has challenged the value derived from Pennsylvania's participation in PJM. Nevertheless, OTS would reject the results of a regional transmission plan that identified the need for the S-R Transmission Line

[1] *In re Trans-Allegheny Interstate Line Co.*, Docket No. A-110172 (order entered December 12, 2008), p. 31. ("*TrAIL Order*").

unless sufficient independent Pennsylvania benefits can be separately identified. OTS' argument must be rejected.

The record evidence in this proceeding demonstrates that the S-R Transmission Line has been identified through PJM's FERC-approved RTEP as the required solution to address numerous and persistent reliability violations both in Pennsylvania and New Jersey. In addition, absent the S-R Transmission Line, the identified reliability violations begin to occur as early as 2012. Contrary to OTS' assertions, Pennsylvania has and will continue to receive substantial benefits from a reliable and efficient operation of the regional transmission system operated by PJM.

Moreover, OTS' position is contrary to the Commission's stated policy of regional transmission planning. PPL Electric witness Kleha identified the Commission's stated support for regional transmission planning. PPL Electric St. 11-R, p. 4; PPL Electric Initial Brief, pp. 46-47. Importantly, the Commission has acknowledged that backbone facilities, like the S-R Transmission Line, provide benefits to the source region, the sink region and those regions in between.[2] In addition, the Commission acknowledged that, "backbone facilities are generally planned to address a unique and major long-term interregional flow problem, and no generalizations can be made that all regions share equally in the benefits and burdens of such projects." *Id.* These comments by the Commission are consistent with Pennsylvania statutes and confirm that the Commission does not subscribe to OTS' view of assessing the need for, or the benefits of, regional transmission lines such as the S-R Transmission Line on a Pennsylvania-only basis. Clearly, the Commission recognizes that the need for such lines must be evaluated on a regional basis, even if Pennsylvania is not directly or primarily served by the line. The

[2] Reply Comments of the Pennsylvania Public Utility Commission in Docket No. RM05-17-000; RM05-25-000, Preventing Undue Discrimination and Preference in Transmission Services (filed September 20, 2006), pp. 10-11.

Commission has recognized that Pennsylvania is not an island and cannot plan or operate its transmission system independent of regional considerations.

Finally, OTS states that "speaking quite frankly" the potential increase in demand in New Jersey for electricity produced in Pennsylvania may result in Pennsylvania ratepayers paying more for their electricity. OTS St. 1, p. 35; OTS Main Brief, p. 28. OTS provides absolutely no support for this argument, and "quite frankly," it must be rejected. Under OTS' view of the world, the Commission would refuse to accept responsibility to address and resolve the identified violations of NERC's Reliability Standards, and yet continue to accept all of the benefits of past and future regional planning. The PJM service area, including Pennsylvania, is highly integrated on an operational basis, and infrastructure planning must recognize that integration. PPL Electric St. 7-R, p. 5. It would be entirely improper for Pennsylvania to accept all the benefits identified above from its participation in PJM and then fail to resolve an identified need for the region based upon such a "Pennsylvania-only" perspective.

c. The S-R Transmission Line Is Necessary To Address Present and Future Needs

OTS suggests that PPL Electric has failed to demonstrate a present, *i.e.,* 2009, need for the S-R Transmission Line and states that PPL Electric's Applications for the S-R Transmission Line and related facilities are premature because the first reliability violation is not expected to occur until 2012. OTS St. 1, pp. 13-14; OTS Main Brief, pp. 12-13.

In addition, in its Main Brief, OCA goes to some length to explain that the NERC reliability violations identified in PJM's RTEPs are not presently occurring but instead are projected based upon specific testing undertaken by PJM to ensure that its system is in compliance with NERC's Reliability Standards. OCA Main Brief, pp. 26-29. OCA appears to be asserting that the fact that the identified reliability violations are projected to occur in the

future is a sufficient reason to delay approval of the S-R Transmission Line in order to allow for more studies to be conducted by PJM. Similar arguments are made by ECC. ECC Main Brief, pp. 9-10. Theses arguments are without merit, as they are not based in fact or supported by Pennsylvania law. In essence, they propose a "wait and see" approach, which if adopted, would require PJM or PPL Electric to wait until its too late to maintain a reliable system.

PPL Electric provided a thorough description of NERC Reliability Standards and PJM's FERC-approved transmission planning process to ensure compliance with the NERC Reliability Standards. PPL Electric Initial Brief, pp. 26-37. In short, to ensure reliable service, PJM and its stakeholders, including PPL Electric, engage in an ongoing transmission planning process that includes five and fifteen year planning horizons that tests the bulk electric system to determine whether reliable service can be maintained under various possible operating conditions. PPL Electric St. 7, p. 10. To accomplish this, PJM ensures compliance with NERC and regional transmission planning reliability standards through its RTEP process. PPL Electric Ex. 1, p. A-3. The NERC Reliability Standards **require** PJM to identify the "critical system conditions" against which the system must be evaluated to ensure that it meets the performance criteria specified in the standards. PPL Electric Ex. 1, p. A-7.

Specifically, PJM's use of both five and fifteen year planning processes enables PJM to assess and recommend transmission upgrades to meet forecasted load and the interconnection of new generation and merchant transmission projects as well as to identify developing trends that will require longer lead-time solutions and examine the long-term reliability impacts of economic growth and assumptions about generation resources. PPL Electric Ex. 1, p. A-6. Waiting for violations to occur would defeat the purpose of planning which is to avoid loss of facilities and loss of service to customers. Moreover, PJM's RTEP process is not a static

process, as PJM initiates a new analysis of its transmission system each year to ensure that the system is in compliance with NERC's Reliability Standards. By this continual evaluation of the transmission system, PJM and its stakeholders seek to identify potential new violations and to determine whether prior RTEP results remain valid based upon updated assumptions, including load forecast, development and retirement of generation, demand response resources, and electricity transfer levels between portions of the grid. PPL Electric Ex. 1, p. A-7.

As explained in PPL Electric's initial brief, the reliability violations that serve as the basis for the S-R Transmission Line were first identified in the 2006 RTEP. PPL Electric Initial Brief, pp. 38. The 2007 RTEP again identified numerous reliability violations and resulted in PJM and its members, including PPL Electric, examining various functional alternatives to address the identified reliability violations. PPL Electric Initial Brief, p. 37. Mr. Herling explained that prior to the 2007 RTEP, PJM had approved over 130 upgrades to address violations on lower voltage facilities in New Jersey. PPL Electric St. 7-R, p. 7. Further, Mr. Herling stated that it had become more and more difficult to find facilities that can readily be upgraded short of a complete tear-down and re-build. *Id.* Therefore, the scope and magnitude of the violations identified required the robust solution provided by the S-R Transmission Line. *Id.* at 8.

The reliability violations that served as the basis for the PJM Board's approval of the S-R Transmission Line in 2007 were reaffirmed in the 2008 RTEP. PPL Electric Initial Brief, p. 37. In addition, despite the largest reduction in demand in PJM history, PJM's most recent evaluation, its March 2009 Retool, once again identified numerous reliability violations requiring the need for the S-R Transmission Line. PPL Electric St. 7-RJ, pp. 8-9. Specifically, the March 2009 Retool identified that NERC Category B (*i.e.* single contingencies) reliability violations are

expected to occur in 2012 on the Whippany – Roseland 230 kV line and additional violations to occur in 2013 on the Portland – Kittatinny 230 kV line and the Kittatinny – Newton 230 kV line. PPL Electric Ex. PFM-2. Moreover, a number of NERC Category C violations are expected to occur in 2012 and 2013. PPL Electric Ex. PFM-3. The fact that the required in-service date for the S-R Transmission Line has not moved even one year, despite a significant reduction in projected peak demand, demonstrates the persistence of the NERC violations and the clear need for the line.

As explained by Mr. Herling, once reliability violations have been identified, PJM must develop specific solutions to resolve the violations, as its failure to address the planning criteria violations would result in a violation of NERC's mandatory Reliability Standards and would subject PJM to a potential fine of $1 million per day, per violation. PPL Electric St. 7, pp. 32-33. After determining that the S-R Transmission Line was the needed response to the identified reliability violations, PJM directed PPL Electric and PSE&G to construct the line with an in-service date of June 1, 2012. PPL Electric Ex. 1, p. A-1.

PPL Electric filed its Application for the S-R Transmission Line in January 2009 to meet the required in-service date of June 1, 2012. Pursuant to the procedural schedule in this proceeding, the Commission is scheduled to issue a decision in the proceeding in January 2010. It is unclear when OTS thinks would be the appropriate time for PPL Electric to file for the construction of a bulk transmission line like the S-R Transmission Line. Even if approved by the Commission in January of 2010, the current schedule provides PPL Electric with less than two years to obtain all necessary permits and to construct the required upgrade by June 1, 2012. OTS' argument that PPL Electric's Application for approval of S-R Transmission Line is premature is unsupportable and inconsistent with transmission planning practice. To suggest that

a 2009 filing to address identified violations expected to occur in 2012 is premature makes no sense. Indeed, accepting OTS' argument would undercut the fundamental purpose of long-term prudent transmission planning and would make it impossible for required facilities, such as the S-R Transmission Line, to be built in time to address identified reliability violations. Indeed, in the *TrAIL* proceeding, the Commission approved the 502 Junction facilities based upon the fact that these facilities were needed to resolve the 12 **future** NERC reliability violations identified by PJM's RTEP process.[3] *TrAIL* Order, pp, 30-31. OTS provides no argument as to why the 23 identified future reliability violations relative to the S-R Transmission Line are not sufficient to warrant Commission approval in this proceeding.

In addition, OTS asserts that PPL Electric has failed to undertake a reasonable cost-benefit analysis by which the Commission can properly evaluate the S-R Transmission Line. OTS Main Brief, pp. 23-28. OTS cites to no statutory or regulatory provision requiring that the PPL Electric provide such an analysis, and no such requirement exists. Indeed, such a requirement would be entirely inappropriate for projects like the S-R Transmission Line that are required in order to address identified reliability violations. In any event, the cost/benefit of the S-R Transmission Line is clear. The cost is approximately $1.2 billion; the benefit is that reliable service is maintained and the lights stay on.

d. NERC Category C Violations Must Be Resolved

OCA acknowledges the existence of the 10 NERC Category C violations, but argues that these violations do not support the need for the S-R Transmission Line. OCA requests instead that a further update analysis be completed to see if the 13 NERC Category B violations remain,

[3] TrAIL Co. filed its applications relative to the 502 Junction facilities in April 2007 to address reliability violations that would occur after June 2011. The Commission's approval of the 502 Junction facilities supports approval of the S-R Transmission Line, which was filed in January 2009 to address violations in June 2012.

thereby effectively ignoring the Category C violations. OCA's failure to adequately consider the 10 NERC Category C violations is a fundamental flaw in its analysis.

First, OCA goes to great lengths to describe its view of the timeline by which it received the results of PJM's March 2009 Retool and the impact the retool had on the number of identified reliability violations. OCA Main Brief, pp, 63-69. OCA acknowledges that it received the results of the March 2009 Retool in March. *Id.* at 64. In fact, OCA received access to the Transmission Expansion Advisory Committee ("TEAC") powerpoint presentation that revealed the results of the March 2009 Retool on March 16, 2009 – three days after the results were presented to the TEAC. It is to be noted that the TEAC presentation identified the 13 NERC Category B Reliability Standards (single contingency events) and the 10 NERC Category C standards (double circuit tower line contingency events) on 230 kV lines that are expected to be overloaded throughout the fifteen year planning horizon due to the outage of two lines that are located on a common structure. PPL Electric St. 8-R, pp. 4-5. Subsequently on June 25, 2009, at the request of OCA, PPL Electric supplied an updated PPL Electric Ex. PFM-1 to reflect the March 2009 Retool, and PPL Electric provided a one day extension for testimony at OCA's request. Further, in rebuttal testimony, Mr. McGlynn explained that the March 2009 Retool had identified 13 single contingency criteria violations and 10 double circuit tower line criteria violations as driving the need for the S-R Transmission Line. PPL Electric St. 8, pp. 3-4. The OCA's surrebuttal testimony, in turn, specifically addressed the Category C violations. OCA St. 1-S, pp. 3-4.

Based on the above, it is clear that OCA and the other parties in this proceeding were provided access to the results of the March 2009 Retool that detailed both the NERC Category B and NERC Category C violations on March 16, 2009. Subsequently, PPL Electric provided an

updated exhibit reflecting these results. In addition, PPL Electric provided further explanation of the identified reliability violations in its rebuttal testimony. The fact that full information regarding the NERC Category C violations was not provided in PPL Electric's initial filing proves nothing. The Category C violations were fully and completely identified during the course of the proceeding, and all parties had ample opportunity to address them.

On the merits, OCA incorrectly maintains that the NERC Category C.5 criteria violations identified by the March 2009 Retool should be ignored because NERC "permit[s] firm loads and firm power transfers to be curtailed [or "shed"], in an effort to maintain thermal loading and voltage performance on the elements remaining within specified limits." OCA Main Brief, pp. 66; OCA St. 1-S, p. 3.

OCA's argument that NERC Category C.5 violations may be resolved by load shedding is inconsistent with uniform practice of PJM and other power pools and contrary to common sense. First, the purpose of planning is to avoid loss of service to customers. Second, PPL Electric notes that OCA misstates PJM's position relative to load shedding. OCA claims that an inconsistency exists in PJM's position that no load loss is acceptable and PJM's apparent agreement with NERC standards allowing for a certain level of load shedding. OCA Main Brief, p. 67. Specifically, OCA states in its brief that,

> Mr. Herling testified that he was in agreement with what the NERC regulations provided as to load shedding for all Category C contingencies.

OCA Main Brief, p. 67. The OCA is mistaken. Mr. Herling was very clear in his testimony that NERC Category C standard violations **cannot** be resolved by an unplanned curtailment of load because the proposition is fundamentally contrary to NERC Reliability Standards and to PJM's planning processes. PPL Electric St. 7-RJ, p. 3. Mr. Herling explained that the NERC Category C events allow for **planned** loss of load, but such load loss must be a function of **system design,**

not operator action. *Id.* The NERC C.5 violations that support the S-R Transmission Line would result in unplanned loss of load if not resolved. PPL Electric St. 7-RJ, p. 4; Tr. 1310. Mr. Herling further explained the distinction between planned and unplanned loss of load relative to NERC Category C.5 criteria violations during cross-examination:

> [W]hen you have two lines on a tower, if a customer is connected only to those two lines, and we lose the tower, that customer will no longer have a source of electric service, so, that customer will be shed. That's called consequential load loss. It is a consequence of the outage of the tower.
>
> Operator implemented load loss is the operator observes an event, such as the loss of a tower, and then manually begins to open circuit breakers to shed customer load. That's operator implemented load shedding. That is not allowed by NERC category C events. It's not a function of system design, it's a function of operator action. This is the way everybody does this. I'm not aware of anybody who implements NERC category C in any other manner.

Tr. 1310. Therefore, as explained by Mr. Herling, in response to NERC Category C violations, customer load may be shed only due to consequential load loss. That is, load loss may occur as a result of the loss of the two circuits only by system design.[4] However, the NERC Reliability standards do **not** permit PJM or its operators to take actions to shed additional load in response to these violations. In the *TrAIL Order* the Commission confirmed Mr. Herling's analysis relative to load shedding, when it quoted the following statement by TrAIL Co.:

> The RD erroneously rejected the correct application of operating and testing criteria that have been applied consistently in PJM system for many years and adopted an incorrect application of those criteria. [internal cites omitted] As PJM Vice President Herling testified, ECC's suggestion (which the RD adopted) that no criteria violation exists so long as there is some combination of redispatch available anywhere within PJM only invites a whole host of operational conditions that would not be controllable without load shedding. [internal cites omitted] Load shedding is a polite term for rolling blackouts, ... The Commission, PJM, Allegheny Power and TrAILCo have an obligation to provide reliable electric service and act on that basis, rather than not acting on a

[4] As explained by Mr. Herling, PJM has established a limit of 300 MW for consequential load loss and has designs its system accordingly. Tr. 1307.

theoretical possibility that the Pennsylvania 502 Junction Facilities might not be needed.

TrAILCo. Order, pp. 31. The Commission went on to state that "we agree with TrAILCo's argument that the use of manual system adjustments (*i.e.*, operator load shedding) to alleviate the modeled violations simply invites a host of additional system problems with attendant negative economic impacts." *TrAILCo. Order*, p. 31. Despite OCA's arguments to the contrary, it is clear that PJM, other powerpools and the Commission agree that "load shedding" is not an appropriate transmission planning mechanism.

OCA also contends that the Commission should treat NERC Category C.5 violations differently because they are less likely to occur. OCA Main Brief, p. 67. OCA is correct that NERC Category C contingency events, which include double circuit tower line outages (Category C.5 events), are lower probability events. PPL Electric St. 7-SR, pp. 2-3. However, PJM's RTEP process addresses this fact by evaluating such events at a 50/50 summer peak load condition rather than the more severe emergency 90/10 load level.[5] *Id.*

OCA's argument that NERC Category C.5 violations may be ignored must be rejected.

e. The S-R Transmission Line Was Selected As The Best Alternative To Address The Identified Reliability Violations

Recognizing that there is a clear need to resolve the numerous and persistent violations, the parties attempt to defeat PPL Electric's application by suggesting that PJM failed to consider other alternatives to the S-R Transmission Line. Specifically, the parties assert that the S-R Transmission Line should be reevaluated because: (1) the Stanton to Roseland 230 kV option should have been reconsidered; OCA Main Brief, pp. 60-62; (2) potentially smaller (*i.e.*, 230 kV)

[5] A 50/50 peak load is based on "normal" summer weather conditions and has a 50% probability of being exceeded as a result of hotter than normal weather. A 50/50 load is not considered to represent an emergency condition. PPL Electric Initial Brief, p. 57.

options may be sufficient to address the NERC reliability violations; OTS Main Brief, pp. 12, 26-27; OCA Main Brief, pp. 60-61; ECC Main Brief, pp. 14-16.; (3) new generation resources were not properly considered; and (4) the potential exists for the construction of a transmission line between the Bergen Substation in northern New Jersey and the Roseland substation. ECC Main Brief, p. 16.

For the reasons previously addressed by PPL Electric in its Initial Brief and the reasons set forth below, the parties' arguments are without merit.

i. A Stanton to Roseland 230 kV Line Will Not Resolve The Identified Reliability Violations

The 2008 RTEP identified 23 NERC Category A and B violations projected to occur beginning in 2012 on critical circuits in eastern Pennsylvania and northern New Jersey and extending out through PJM's 15 year planning horizon to 2022. PPL Electric Initial Brief, p. 37. In addition, the 2008 RTEP analyses also identified 27 NERC Category C.5 violations. PPL Electric St. 7-RJ, pp. 1-2. Following a reduced forecasted peak demand prepared at the end of 2008, the March 2009 Retool continued to identify 23 NERC Category B and C violations. As explained by Mr. Herling, the existence of such a large number of identified reliability violations requires a robust solution. PPL Electric St. 7-R, pp. 7-8. OCA witness Lanzalotta, the only other expert need witness, agreed:

> If we assume that the March 2009 PJM Retool Study models the most up-to-date projected loads and other relevant planning assumptions, then the Study results show that there is a need for a transmission system reinforcement starting somewhere around 2012-2013. Under these assumptions, there are so many 230 kV system violations projected for the next ten years that reinforcement at the 500 kV voltage level is a reasonable approach to dealing with the projected violations.[6]

[6] In its main brief, OCA attempts to qualify this statement by Mr. Lanzalotta by suggesting that its witness had stated that the S-R Transmission Line made sense from an "engineering perspective" due to the large number of identified reliability violations. OCA Main Brief, p. 24. However, Mr. Lanzalotta made no such qualification in his testimony.

OCA St. 1, p. 14.

In this regard, several matters are worth noting. First, other than PPL Electric and PJM's witnesses, Mr. Lanzalotta is the only other transmission planning expert in this proceeding. Second, Mr. Lanzalotta appears to have been unaware of the additional 10 NERC Category C violations in the March 2009 Retool at the time of his direct testimony. Moreover, as explained by Mr. Herling, over 130 upgrades have already been approved by PJM in past RTEPs for lower voltage facilities (230 kV or lower) in New Jersey. PPL Electric St. 7-R, pp. 7-8. Further, Mr. Herling explained that it had become more and more difficult to find facilities that can readily be upgraded short of a complete tear-down and re-build and that the scope and magnitude of the identified NERC reliability violations require the robust solution provided by the S-R Transmission Line. *Id.*

However, the parties to this proceeding assert in briefs that the S-R Transmission Line is not needed to address the identified reliability violations. OCA criticizes PPL Electric and PJM for continuing to press forward with the S-R Transmission Line after the March 2009 Retool reduced the original number of NERC Category A and B violations from 23 to 13, without further action to determine whether either non-transmission solutions or 230 kV solutions were more appropriate responses to the "newly-identified need." OCA Main Brief, p. 57. Similarly, the ECC asserts that, predicated on the changes that have occurred since the 2007 RTEP, it is necessary to determine whether the S-R Transmission Line is still the appropriate response. ECC Main Brief, p. 16.

OCA's and ECC's principal contention is that PJM should have, and did not, reconsider the previously rejected Stanton to Roseland 230 kV option as part of the March 2009 Retool. OCA and ECC, however, provide **no** analysis to support this contention, but instead request that

the S-R Transmission Line be either denied or delayed so that PJM may conduct further analyses to determine whether a new Stanton to Roseland 230 kV line parallel to the existing line will resolve the identified reliability violations. OCA Main Brief, p. 62. As explained by Mr. Herling in rejoinder testimony, the Stanton to Roseland 230 kV option will not provide a sufficiently robust solution. PPL Electric St. 7-SR, p. 6. Although the number of criteria violations underlying the need for the S-R Transmission Line was reduced in the March 2009 Retool, it is clear from the remaining violations that the Stanton – Roseland option is still unsatisfactory. Specifically, the Stanton to Roseland 230 kV line would only delay NERC Category B (*i.e.* single contingencies) on specific facilities for a few years. However, the same circuits will remain overloaded in 2012 due to NERC Category C.5 violations.[7] PPL Electric St. 7-RJ, p. 6. Moreover, even if the NERC Category C violations were ignored, Mr. Herling explained that this proposal would use up one of the few remaining corridors where a robust backbone (500 kV) transmission solution can be placed in an existing right-of-way. Therefore, despite OCA's and ECC's assertions to the contrary, the record demonstrates that the Stanton – Roseland option is not a viable solution and would not provide reliable service.

ii. Numerous Other Alternatives Were Presented and Evaluated

As noted above, the parties attempt to rely on the reduced number of reliability violations in the March 2009 Retool to argue for further analyses. Specifically, the parties question whether upgrades to existing 230 kV lines may be sufficient in light of the March 2009 Retool.

[7] Specifically, Mr. Herling explained that in 2007, the Stanton – Roseland option backed off by three years an overload on the Kittatinny – Newton circuit but that the March 2009 Retool identified that the same circuit overloads in 2012 for a NERC Category C.5 violation and in 2021 for a single contingency. PPL Electric St. 7-SR, p. 6. Mr. Herling also detailed that in 2007 the Stanton – Roseland option backed off by three years an overload on the Portland – Martins Creek circuit but pursuant to the March 2009 Retool analysis, that same circuit overloads in 2013 for a NERC Category C.5 and in 2016 for a NERC Category B violation.

In addition, the parties assert that PJM's RTEP does not consider alternatives to previously identified RTEP projects in subsequent evaluations. These arguments are without merit.

As noted by Mr. Herling, PJM and its stakeholders considered 30 alternative transmission combinations in the 2007 RTEP analysis that resulted in the selection of the S-R Transmission Line submitted to and approved by the Board in 2007. PPL Electric St. 7, p. 26. In addition, as explained by Mr. McGlynn, during the course of the 2007 RTEP, consideration was given to installing new conductors on various 230 kV lines, so that the overloaded facilities were capable of transporting more power. PPL Electric St. 8, p. 26. However, this approach was dismissed given the number of facilities that would need to be upgraded, the significant number of prior upgrades that had already been performed on these facilities, and because it would not provide a long-term solution to the reliability issues that had been identified. *Id.*

In addition, as explained by Mr. Herling, PJM's RTEP process includes a continuing evaluation of the transmission system to identify potential reliability violations and to check whether previously approved projects, like the S-R Transmission Line, are still required. Tr. 1379. Subsequent RTEPs and "retools" test the transmission system, using updated assumptions, to identify potential reliability violations. Tr. 1377. Such an analysis was completed relative to the S-R Transmission Line in the 2008 RTEP and in the March 2009 Retool. As explained by Mr. Herling, both of these later studies again identified numerous reliability violations in northeastern Pennsylvania and northern New Jersey. Tr. 1381.

The results of the 2008 RTEP and the March 2009 Retool were presented to the members of PJM's TEAC for review and the opportunity to present other alternatives. Tr. 1384-85. No new alternatives were presented by PJM or any of the members of the TEAC. Therefore, both

the 2008 RTEP and the March 2009 Retool confirmed that the S-R Transmission Line was the best solution to address the identified reliability violations. Tr. 1379,1381.

Moreover, the OCA is simply wrong in its assertion that PJM's RTEP process disregards all other possible solutions following the approval of a particular transmission solution. OCA Main Brief, p. 62. As an example, Mr. Herling cited the Mid-Atlantic Power Pathway ("MAPP Line"). As part of an RTEP retool, new alternatives for this line were suggested and were fully analyzed. Tr. 1385. The fact that no new alternatives were suggested during the course of the 2008 RTEP or March 2009 Retool relative to the S-R Transmission Line does not prove that other alternatives were disregarded. Instead, it simply proves that the S-R Transmission Line has been evaluated in three consecutive RTEP analyses, integrating changing conditions since the original approval of the project in the 2007 RTEP, and that there is no other available solution. *Id.* Even under a wide range of changing system conditions since 2007, the S-R Transmission Line is still required to be in service by June 1, 2012 to address the identified reliability violations.[8] *Id.*

iii. New Generation Is A Significant Element of RTEP Evaluation

OCA also suggests that generation solutions were not considered as an alternative to the proposed S-R Transmission Line. OCA Main Brief, pp. 58-60. This argument is not correct. PJM models new generation once the generator has executed an Interconnection Service Agreement because this provides reasonable certainty that the new generation will ultimately go into service by the future date that is projected. PPL Electric St. 8, p. 9. Due to the low drop out rate of generators following the execution of an Interconnection Service Agreement

[8] OTS points to these ongoing analyses as evidence that changing conditions have resulted in the delayed need for the Potomac Appalachian Transmission Highline Project ("PATH Line"). OTS Main Brief, p. 15. However, OTS fails to acknowledge that the same analysis has not shown any delay in the need for the S-R Transmission Line.

(approximately 4%), PJM models all such generators in its subsequent baseline analyses. PPL Electric St. 8, pp. 10-11.

What PJM does not do is rely on speculative future generation that may or may not be completed. As Mr. Herling explained, the completion of generation projects is by no means assured. PPL Electric St. 7-R, p. 11. To date, approximately 85% of proposed generation capacity has dropped out of the interconnection queue. *Id.* The uncertainty associated with these projects makes it inappropriate to consider them as solutions until they are well advanced in the process, *i.e.*, they have executed an Interconnection Service Agreement. *Id.*

Moreover, as acknowledged by the parties in this proceeding, PJM is not able to direct that new generation be built let alone where it should be built. OCA Main Brief, p. 59. Therefore, PJM must reply on market forces to bring new generation online. After reaching a stage of development that PJM can reasonably rely upon these resources to be available to address the needs of the transmission system, PJM fully considers them as an alternative to transmission projects. Appropriate generation has been included in the RTEP process, and the S-R Transmission Line is still required by 2012.

iv. The Proposed Merchant Transmission Line Was Evaluated

ECC suggests that the reliability violations identified by PJM's RTEP process in northeastern Pennsylvania and northern New Jersey may be resolved if a proposed merchant transmission line from Bergen Substation in New Jersey to New York City is not completed. ECC Main Brief, p. 16. ECC also asserts that PJM did not consider the potential alternative of building a line from the Bergen Substation to Roseland. *Id.* Both of these arguments must be rejected.

First, the proposed merchant transmission line from Bergen Substation to New York City is being built by Hudson Transmission Partners based upon a Request For Proposal issued by the New York Power Authority. Tr. 1371. The proposed project is not a RTEP project required to address identified reliability violations. Tr. 1372. However, merchant transmission projects, like generators, are entitled to connect to the PJM system and to participate in the PJM markets. *Id.* Therefore, merchant transmission projects like the one proposed from the Bergen substation to New York City are not built under the direction of PJM but are evaluated by PJM to determine the potential impacts that they may have on the PJM system. Tr. 1373. PJM does not have the authority to deny the interconnection of merchant transmission lines. As long as a merchant transmission project remains in the PJM interconnection queue, PJM must design its transmission system to accommodate the project's transmission rights. Tr. 1375. Therefore, ECC's suggestion that the merchant transmission project somehow can be denied is baseless and must be disregarded.

Second, ECC's suggestion that a transmission line could be built between the Bergen Substation to Roseland to resolve the identified reliability violations (ECC Main Brief, p. 16) is pure speculation. ECC provides no support for its proposal, nor could it, as ECC filed no testimony in this proceeding and raises this proposal for the first time in its Main Brief. Moreover, as explained in Section 2.e. of this Reply Brief, once PJM's RTEP process identifies reliability violations, the issues are presented to the TEAC to identify potential solutions. Indeed, PJM evaluated over 30 solutions to the reliability violations supporting the need for the S-R Transmission Line. Three consecutive RTEP analyses have identified the S-R Transmission Line as the necessary solution to the numerous and persistent violations in Pennsylvania and New Jersey. There is no evidence in this proceeding to support the proposition that a Bergen to

Roseland line will correct these reliability violations. Mr. Herling succinctly stated that PJM's RTEP process identified that a 500 kV solution from Susquehanna to Roseland is required to address the identified reliability violations, but not to the Bergen Substation. Tr. 1419.

f. A Further Retool Is Unnecessary

OCA and ECC assert that the Commission should order that a further "retool" be performed prior to finding that the S-R Transmission Line is needed. OCA Main Brief, p. 70; ECC Main Brief, pp. 23-24. However, as extensively addressed by PPL Electric in its testimony, Initial Brief and again below, a further retool is unwarranted and, based on the latest information in the record, would not change the need for the S-R Transmission Line in 2012.

i. A New Peak Demand Forecast Is Not Required

OCA and the ECC criticize PJM's 2008 RTEP and March 2009 Retool analyses for not having the "most" current peak load forecast and further assert that PJM did not update its peak load forecasts. OCA Main Brief, pp. 38-40; ECC Main Brief, p. 20. These arguments should be rejected for two reasons: (1) PJM did in fact update the load forecast information during the course of this proceeding through the March 2009 Retool which reaffirmed the need for the S-R Transmission Line; and (2) in response to the OCA's concerns, PJM provided the results of the July 2009 update to its 2012 peak load forecast, which results continue to support the need for the S-R Transmission Line in 2012.

First, OCA mischaracterizes the March 2009 Retool, as PJM used the January 2009 Peak Load Forecast in preparing the March 2009 Retool PPL Electric St. 8-R, p. 2. In fact the January 2009 Peak Load Forecast used in the March 2009 Retool, represented the largest reduction in demand in PJM history. PPL Electric St. 7-RJ, pp. 8-9. However, OCA suggests that this fact is immaterial because PJM's January 2009 Peak Load Forecast was developed in the 4th quarter of 2008 which, according to OCA, "represented only a fraction of the [economic]

downturn that was developed in 2009." OCA Main Brief, p. 39. OCA cites to a chart relied upon by its witness Mr. Fagan that provides the Real Gross Domestic Product, updated as of May 29, 2009. *Id.* Based upon this table, OCA asserts that PJM's reliance on the 4th quarter of 2008 to perform its March 2009 Retool shows the "staleness" of the peak load forecast used in support of the S-R Transmission Line. *Id.* OCA's argument should be rejected for the following reasons.

As noted by OCA, PJM's January 2009 Peak Load Forecast included actual data up to and including the 4th quarter of 2008. A review of Mr. Fagan's Figure 1 reveals that the 4th quarter of 2008 was the second quarter of the current recession and the **worst** quarter of the recession. OCA has offered no evidence that the forecast does not accurately reflect the experience in Mr. Fagan's chart. Moreover, the U.S. Government has taken unprecedented steps in response to the recent recession and there is no record evidence indicating that these efforts will not result in improving the Nation's economy in future quarters. Indeed, OCA's witness Lanzalotta admitted on cross-examination that the potential exists for additional reliability violations to be identified due to an increase in the peak load forecast. Tr. 1828.

Second, the unrebutted record evidence demonstrates that an even further update at this time would not change the need for the S-R Transmission Line. Indeed, Mr. Herling explained that, as of the end of July 2009, the 2012 PJM peak load forecast for EMAAC decreased by only 118 MW as compared to the 2009 Load Forecast Report used in the March 2009 Retool. PPL Electric St. 7-R, p. 8. The 118 MW (0.3 percent) is substantially less than the 300 MW assumption included in Mr. Fagan's Table 7 and substantially less than the 1.75 percent decline in peak load already reflected in the March 2009 Retool. *Id.* at 8-9. Based on the above, Mr. Herling concluded that it is highly unlikely that this limited reduction in peak load will have any

impact in resolving the violations that would be resolved by the S-R Transmission Line in 2012. PPL Electric St. 7-R, p. 9. Therefore, OCA's and ECC's speculation relative to the potential results of a further update should be disregarded.

In any event, PJM performs annual (or more frequent) updates of the RTEP. If subsequent updates show that the in-service date for S-R Transmission Line can be deferred, it will be deferred. PPL Electric has fully explained the many difficulties and uncertainties it faces in completing the S-R Transmission Line by June 1, 2012. Any potential short-term delay in the need for the S-R Transmission Line will simply provide some "breathing room" to account for possible delays in the expected in-service date and provides no basis for denying PPL Electric's application.

(ii) Demand Response and Energy Efficiency Is Appropriately Considered In RTEP

The parties present interrelated arguments relative to PJM's incorporation of demand response resources bid into its RPM auction and future demand response resources and energy efficiency measures stemming from new state-based initiatives. Specifically, the parties assert that PJM did not adequately consider the effect of future demand response and energy efficiency as part of the solution to the identified reliability violations. OTS Main Brief, pp. 13-15; OCA Main Brief, pp. 40-52; 60; ECC Main Brief, pp. 22-24. These arguments are without merit.

The RTEP model reflects PJM's expectations for future system conditions based upon a number of assumptions, including demand response resources. PPL Electric Ex. 1, p. A-7. PJM's RTEP includes demand response when it is bid into and cleared through the Reliability Pricing Model ("RPM") capacity auction as available capacity so that it is a viable committed source to reduce demand under emergency peak load conditions. PPL Electric St. 7, p. 43.

OCA requests that PJM complete another "retool" to include demand response resources that cleared in the May 2009 RPM auction and to reflect the potential for new demand response resources in response to Pennsylvania Act 129 and the New Jersey EMP. OCA Main Brief, pp. 40-52. PPL Electric refuted these arguments in its Initial Brief, pp. 54-66. As explained therein, any increase in demand response resources will have no effect on the need for the S-R Transmission Line in 2012 because demand response cannot be relied upon to resolve the 10 NERC Category C.5 violations (*i.e.*, double circuit tower line contingencies) identified in the March 2009 Retool. PPL Electric St. 7-R, p. 10. Demand response is "irrelevant" as it relates to NERC Category C events as demand response is **only** available during **emergency** peak load conditions and PJM analyzes NERC Category C events under **normal** summer peak load conditions (*i.e.*, 50/50 load forecast). *Id.*

As Mr. Herling succinctly explained:

> Q. As we sit here today, we don't really know whether a further retool would change the need for the Susquehanna-Roseland line, do we? If a retool were done to reflect the amount of DR that cleared the RPM auction, we don't know how it would change it, do we?
>
> A. Well, No, actually, I can tell you right now that it wouldn't change anything. It would potentially delay some of the load deliverability violations. It would have no impact on -- I believe there were five category C violations in 2012 and 13, it would have no affect on those. So, I can tell you with absolute certainty that it wouldn't change the in-service date.

Tr. 1297.

Moreover, to implement OCA's approach would require a fundamental change to PJM's existing FERC-approved RTEP process and in the rules for demand response. The following exchange between OCA's counsel and Mr. Herling reveals the lack of sound reasoning underlying the parties' arguments as to demand response resources:

Q. Hypothetically, if demand resource programs were modeled for this purpose, for non-emergency purposes, and all of the factors were held constant, would new transmission be more likely or less likely to be needed?

A. That's a difficult question to answer, because, in order for that hypothetical to be possible, we would have to fundamentally change the business rules under which those programs are governed. Today, we have only ten, up to ten, opportunities to exercise those programs. So, they are a very limited resource. There are very specific notification times and limits on the number of hours that customers can be interrupted. So, in order to use them for non-emergency conditions, we would have to significantly change the conditions under which we can call the programs. And you have to assume that if we, for example, expanded the number of calls we have on those resources, that some of those customers would no longer sign up for the programs, because they would not want their load interrupted more frequently. So, it's really difficult to say.

Tr. 1274-75.

Q. Yeah, but given all that though, in my hypothetical, those rules could change to make them available. Let's say, hypothetically, the customers wouldn't bale out of the program just because of that change, would transmission then be more likely or less likely to be needed?

A. If you had, essentially, unlimited ability to curtail customers, to have them removed from service, then, yes, it's likely that transmission would be less required. But essentially, you would have customers coming off every time a line approached its capability.

Tr. 1275.

PJM properly considers and incorporates demand response and energy efficiency resources into the RTEP process by relying on these resources for transmission planning once have committed to provide service in an RPM auction. PPL Electric St. 7, p. 43. PJM's approach to these resources is eminently reasonable because this coordination between the RPM auction and the RTEP process provides PJM with the assurance that the demand response and energy efficiency resources will actually be available when needed to offset the peak demands under emergency peak load conditions used in the transmission line planning process for NERC A and B standards. Moreover, unlike generation resources, due to the voluntary nature of the

demand response and energy efficient measures, these resources are not under the control or direction of system operators. PPL Electric St. 7-R, p. 12.

Further, energy efficiency programs are largely new in concept, and there is no track record for the sustainability of the demand reductions that may result. Indeed, as explained in detail in PPL Electric's Initial Brief, the newly proposed demand response and energy efficiency programs raise a number of concerns regarding their implementation into the RTEP including, whether targets that have been set by the states for demand response resources and energy efficiency may not be attainable, the levels that are attainable may be slower in coming than anticipated, and they may or may not be sustainable over time. PPL Electric Initial Brief, pp. 56-66. Moreover, as explained above, an increase in demand response resources will have no effect on the need for the S-R Transmission Line in 2012.

The parties also criticize PJM and PPL Electric for not adequately reflecting future projected demand reductions based on demand response resources and energy efficiency measures stemming from Pennsylvania's Act 129 and the New Jersey EMP as capacity resources for transmission planning purposes. OTS Main Brief, pp.13-15; OCA Main Brief, pp.40-52; 60; ECC Main Brief, pp.22-24. OCA suggests an interim retool analysis is necessary to incorporate the effects that Pennsylvania's Act 129 and the New Jersey EMP to reflect the potential effects of these new programs on peak demand prior to the Commission making a determination as to the need for the S-R Transmission Line. OCA Main Brief, pp. 46-47. OCA witness Fagan estimates that PECO will achieve its Act 129 reductions (355 MW) and that the New Jersey EMP will eventually achieve 50 percent of its stated energy efficiency and demand reduction goals (ramp up from 275 MW in 2012 to 2,100 MW in 2020) and suggests that such estimates should be reflected in OCA's proposed Retool. OCA St. 2, p. 25.

As explained in PPL Electric's Initial Brief, Mr. Fagan significantly overstates the potential impact of these new state initiatives.[9] Specifically, the targets that have been set by the states for peak demand reductions and energy conservation may or may not be attainable, the levels that are attainable may be slower in coming than anticipated, they may or may not contribute to reducing PJM peak demand used for transmission line planning purposes, they may or may not produce incremental demand reductions, and they may or may not be sustainable over time. Before demand response and energy efficiency resources can be relied upon for transmission planning purposes, PJM must have a reasonable level of certainty as to the sustained availability of these resources. PJM's procedures are appropriate for transmission planning. Demand response will be reflected when it is bid into RPM and clears as a committed resource. Energy efficiency effects on peak demand will be reflected in future peak demand forecasts as such effects are experienced in the data used as the baseline for forecasts. To do otherwise would jeopardize reliable service.

ii. PJM Will Update RTEP And A Further Retool Should Not Be Required

The RTEP integrates a wide range of factors beyond those identified by Mr. Fagan. PPL Electric St. 7-R, p. 6. Moreover, the RTEP is an on-going process with analyses performed each year, updating **all** data and assumptions together to provide the most up-to-date assessment of the reliability of the grid and the state of compliance with NERC Reliability Standards. It is subject to ongoing evaluation and updating. *Id.* at 6-7. OCA's and ECC's request to prepare yet another retool before approving the S-R Transmission Line is simply an attempt to postpone approval of

[9] OCA asserts that demand reduction related to Pennsylvania's Act 129 **will be** achieved due to the mandatory nature of the requirements placed on Pennsylvania's EDCs. OCA Main Brief, p. 49. However, what the OCA fails to acknowledge is that all of the programs contained in the Pennsylvania EDCs plans are voluntary for EDC customers.

the line in the hope that "something" will happen to avoid its necessity. This is not good planning and it ignores the fact that violations that must be resolved are imminent.

A new RTEP, the 2009 RTEP, will be released in 2010. There is no indication that the results of the 2009 RTEP will materially affect the need date of the S-R Transmission Line. The S-R Transmission Line has been evaluated through three years of RTEP analyses, commencing with identification of violations in 2006, the original approval of the project in the 2007 RTEP and confirmation of the need in the 2008 RTEP and March 2009 Retool. PPL Electric St. 7-R, p. 6. Even with a wide range of changing system conditions since 2006, the project is still required to be in service by June 1, 2012. This on-going review of past decisions regarding the need for new infrastructure is at the core of the RTEP process, addressing the year-to-year changes in planning assumptions.

In any event, to the extent that future analyses warrant a short-term delay in the need for the S-R Transmission Line, it will simply provide some "breathing room" to account for possible delays in the expected in-service date and provides no basis for denying PPL Electric's application. Moreover, as highlighted by OCA witness Lanzalotta's testimony during the evidentiary hearings, the siting and construction of required facilities like the S-R Transmission Line is not likely to become any easier.[10] Tr. 1827-28.

g. Requests To Forego The S-R Transmission Line In Favor Of A Collaborative Should Be Rejected

OTS recommends that the Commission might consider directing the formation of a collaborative involving all affected parties to review alternative solutions to the construction of

[10] Mr. Lanzalotta testified that the siting of 500 kV transmission lines **could** become easier if technology associated with underground construction were to improve. Tr. 1827-28. However, as explained in Section IV.C.8 of PPL Electric's Initial Brief, there are numerous operational and cost restrictions to placing bulk transmission lines underground.

the proposed S-R Transmission Line. OTS Main Brief, pp. 26-27. This argument should be rejected.

The **reliability** violations supporting the need for the S-R Transmission Line were first identified in PJM 2006 RTEP and **all** subsequent RTEP analyses have reaffirmed this need. PJM's RTEP analysis that resulted in the identified need for the S-R Transmission Line was not determined by PJM in isolation. Instead, all of the RTEP processes related to S-R Transmission Line were completed via an open and transparent stakeholder process approved by the FERC. As detailed in PPL Electric's Initial Brief and again in this Reply Brief, the need for the S-R Transmission Line is clear, and no more "band-aid" solutions exist as over 130 such solutions have already been implemented. PPL Electric St. 7-R, p. 7. Moreover, all updates have affirmed the need for the S-R Transmission Line, and no new solutions have been identified. Under these circumstances, a collaborative would serve no useful purpose

In addition, recognizing that the record is closed and that there is no time for a retool, OCA, in the alternative, suggests that PPL Electric agree to waive the 12-month decision time frame established under the Energy Policy Act of 2005 to allow PPL Electric in order to permit an updated retool. OCA Main Brief, pp. 70. PPL Electric opposes a further retool and OCA's suggestion to extend the 12-month deadline because either alternative will prevent a timely Commission decision and unnecessarily delay construction of the S-R Transmission Line to address the identified reliability violations in 2012. As shown through PPL Electric's testimony, its Initial Brief and now in this Reply Brief, the evidentiary record clearly supports Commission approval of the S-R Transmission Line **now**. No additional retool analyses are required, and a waiver of the 12-month decision timeframe is inappropriate. The S-R Transmission Line is required to address numerous and persistent NERC reliability violations that will begin to occur

as early as 2012. PPL Electric and PSE&G will already be very hard pressed to meet this in-service date. Further delay will defeat any reasonable chance of completing the line on time.

2. Need For The Lackawanna 500-230 kV Substation

ECC contends that PPL Electric cannot justify the need for the S-R Transmission Line solely to resolve the identified voltage issues at the Lackawanna Substation. ECC Main Brief, pp. 25-26. ECC's argument is based upon its incorrect contentions related to the siting of the S-R Transmission Line which PPL Electric has addressed in Section C.9 of this Reply Brief. Indeed, as shown by the substantial record evidence in this proceeding, the S-R Transmission Line is required to address numerous and persistent reliability violations identified in three consecutive RTEP analyses. The construction of the Lackawanna 500-230 kV Substations is an integral part of the overall system reinforcement plan to resolve the 23 violations of NERC Reliability Standards in eastern Pennsylvania and northern New Jersey. In addition, the Lackawanna 500-230 kV Substation will provide additional benefits to customers served by PJM and PPL Electric, including reinforcing PPL Electric's 230 kV system, reducing congestion costs, improving voltage levels and eliminating stability limits on certain generation output. Therefore, coordinating the required S-R Transmission Line with voltage transformation at Lackawanna Substation will result in additional benefits to PPL Electric and its customers by resolving these issues and providing a more robust transmission system. *See*, PPL Electric St. 4, p. 13.

C. SITING

1. The OCA's Objections To The Route Proposed By PPL Electric Are Without Merit And Should Be Rejected.

OCA's objections to the siting of the S-R Transmission Line pertain to only approximately three miles of its 101 mile length in Pennsylvania. OCA's objections to the routing of the S-R Transmission Line through Saw Creek provide a classic example of improper siting analysis. OCA's objections to the proposed route consist solely of observations that there are some problems and difficulties in routing the S-R Transmission Line through Saw Creek. OCA Main Brief, pp. 72-80. OCA is correct, but its analysis fails to recognize that all transmission lines have some adverse impacts no matter where they are sited. If all that is required to defeat the routing of the transmission line is to demonstrate some adverse effects, then no transmission line will ever be constructed. PPL Electric St. 1-R, p. 2.

OCA has not examined any alternative route around Saw Creek to compare their various advantages and disadvantages. In response to discovery, OCA indicated that it did not propose any specific route around Saw Creek and did not produce any analyses comparing alternative routes. PPL Electric Cross-Examination Ex. 8, p. 2. Similarly, OCA undertook no analysis of the relative advantages and disadvantages of Route A or Route C. PPL Electric Cross-Examination Ex. 8, p. 1.

In contrast, PPL Electric conducted significant analyses of alternative routes around Saw Creek. PPL Electric St. 3-R, pp. 1-6; PPL Electric St. 3-RJ, pp. 1-6. These analyses are summarized at pp. 140-46 of PPL Electric Initial Brief. OCA's contention, that the S-R Transmission Line should be routed around Saw Creek, should be rejected because, as explained above, it undertook no evaluation of any alternative routes and because, as explained below, OCA significantly overstates the adverse impacts of the S-R Transmission Line on Saw Creek.

OCA contends that both the construction of the S-R Transmission Line through Saw Creek and its continued presence thereafter will present safety issues for the public in the vicinity of the S-R Transmission Line. OCA Main Brief, pp. 73-78. Such contentions are significantly overstated.

OCA first observes that some residences in Saw Creek will be within the so-called "fall zone" of the structures that will support the S-R Transmission Line. According to Saw Creek, of the approximately 2,700 homes in Saw Creek, 31 residences, or about one percent, will be within the fall zones of structures. Saw Creek Initial Brief, p. 14-15. OCA's concerns about the stability of the tubular steel structures in the vicinity of these 31 homes are overstated.

PPL Electric explained in detail that the tubular steel structures that it proposes for most of the S-R Transmission Line, including the Saw Creek area, are extremely stable. Such structures have been utilized in the electric industry for approximately 40 years, and they have an excellent record for reliability; there have been very few failures. PPL Electric St. 19-R, p. 1-10. In fact, the proposed structures will be more stable and secure that the lattice steel structures in Saw Creek presently both because the existing structures are about 80 years old and because they consist of numerous members that are jointed by bolts that can loosen over time, because there are much greater surface areas that can become covered with ice and because they are not as sturdy as tubular steel structures and are susceptible to damage from recreational vehicles, etc. In addition, design standards for transmission lines have become more stringent over the years, so the existing structures that were constructed in the 1920s were not built to today's standards. PPL Electric St. 19-R, pp. 7-9. The existing transmission structures in Saw Creek present a greater safety risk than will be presented by the proposed tubular steel structures.

Even the few failures of tubular steel structures that have occurred did not happen under circumstances that will be present in Saw Creek. PPL Electric has experienced failures of towers on only two occasions, but those failures occurred when foundations have been washed out during floods. PPL Electric will make certain that this does not happen in Saw Creek because no structure will be located in areas that are subject to being washed out. PPL Electric St. 5-R, p. 2. Further, even in areas that are subject to being washed out, PPL Electric now protects the foundations of tubular steel structures with riprap, a protective barrier of gravel, stones or similar materials that protects the foundations from erosion. PPL Electric St. 5-R, pp. 1-2. PPL Electric's tubular steel transmission structures have even withstood tornadoes. PPL Electric St. 5-R, p. 2.

National experience with tubular steel structures is also very favorable. There have been very few failures of steel structures, and those were related to tornados. Under such circumstances, the weather conditions that threaten the tubular steel transmission structures pose a greater threat to nearby residences than any possible failure of the tubular steel structure. PPL Electric St. 19-R, p. 10.

PPL Electric explained also that, in the unlikely event of a structure failure, the structure is constrained by the attached conductors and tends to fall within the transmission line right-of-way. PPL Electric St. 19-R, p. 10. There are no residences in the right-of-way in Saw Creek. PPL Electric St. 10-R, pp. 6-7.

OCA did note in responses to interrogatories of PPL Electric that certain structures in Florida failed during Hurricane Wilma in 2005. Such failures, however, were due to inadequate manual tightening of cross brace bolts. OCA Cross-Examination Ex. 10. The structures proposed by PPL Electric for the S-R Transmission Line, however, do not have cross braces, and

therefore, are not subject to this type of failure. Tr. 1057-58. OCA noted also that there were failures during an ice storm in Canada in 1998. Those structures, however, were steel lattice structures that are far less stable and reliable that the tubular steel structures that PPL Electric will build in Saw Creek. Tr. 1056. In fact, they were the same type of structures that exist in Saw Creek today.

Significantly, OCA was unable to identify any rule, anywhere, prohibiting construction of a transmission line structure if a residence is within its fall zone. PPL Electric Cross-Examination Ex. 8, p. 4. Consistent with the absence of any such restriction on locations of transmission structures, PPL Electric's standard transmission rights-of-way are significantly less than twice the height of transmission structures. Structures for 69 and 138 kV line average 85 to 90 feet in height, but the standard rights-of-way for such lines range between 70 and 100 feet in width. Average 230 kV structures are 140 feet in height, and the standard right-of-way width is 150 feet. Further, individual structures, depending on the terrain, can be much taller than the averages. Individual 138 kV structures can reach 150 feet in height, and 230 kV structures can exceed 200 feet in height, but no additional right-of-way width is required. Thus, it is standard and normal practice for the fall zones of transmission line structures to extend well beyond the edge of the right-of-way. PPL Electric St. 5-R, p. 6. It is not unusual for residences to be located near rights-of-way, especially more congested, urban areas. PPL Electric St. 5-R, p. 6. Clearly, OCA's concerns about tubular steel transmission structures are overstated.

OCA next contends that construction of the S-R Transmission Line would be safer if it were rerouted away from Saw Creek to less densely populated areas. OCA Main Brief, pp. 76-77. Although OCA's point might be correct if no steps were taken to address those concerns, that will not be the case in Saw Creek. The public is not allowed near work sites, and given the

population of Saw Creek, PPL Electric will take additional care in isolating the worksites, to keep the public a distance from the worksites. Tr. 797-98. Thus, PPL Electric will undertake additional safety security measures to assure the safety of the public in Saw Creek.

OCA next expressed concern about use of helicopters by PPL Electric for construction and subsequently to perform routine aerial surveys of transmission lines for maintenance purposes. OCA Main Brief, pp. 77-78. In raising its concern during cross-examination, OCA asked about certain testimony that was submitted by PPL Electric in the *Application of PPL Electric Utilities Corporation for Approval of the Siting and Reconstruction of the Proposed Coopersburg # 1 and # 2 138/69 kV Tap in Upper Saucon Township, Lehigh County and Springfield and Richland Townships, Bucks County, Pennsylvania,* Docket No. A-2008-2022941 (*Coopersburg Siting Proceeding*).

OCA's concerns are unfounded. There is much more room for helicopters to operate in the 150 foot-wide cleared portion of the right-of-way in Saw Creek than was available along Route 309, a busy four-lane state highway. PPL Electric also notes that, because OCA did not raise its concern about helicopters until cross-examination at the hearings, PPL Electric had no reasonable opportunity to respond to OCA's concerns.

OCA next argues, by analogy, that, because PPL Electric rerouted the S-R Transmission Line to the edge of the Silverbrook surface anthracite coal mine for many reasons, one of which was safety, PPL Electric should similarly reroute the S-R Transmission Line away from Saw Creek. PPL Electric has explained previously why OCA's analogy to the reroute at the Silverbrook surface anthracite coal mine is flawed. PPL Electric Initial Brief, pp. 98-99; PPL Electric St. 3 (Supp.), pp. 2-4; PPL Electric St. 5-R, pp. 13-14.

Despite OCA's concerns, the route through Saw Creek remains the most appropriate route for that portion of the S-R Transmission Line, given balanced consideration to the many factors that are properly considered in siting a high voltage transmission line.

2. OCA's Contentions Regarding The Delaware Water Gap National Recreation Area Are Meritless.

The OCA devoted a substantial portion of its Main Brief to the Delaware Water Gap National Recreation Area ("DEWA"). OCA Main Brief, pp. 80-96. As explained below, OCA's contentions are without merit. Some contentions are without merit because they are incorrect; other contentions are completely off point.

Initially, it must be noted that the DEWA has taken no position in this proceeding. It is remaining neutral before this Commission. Tr. 376. It will conduct its own permitting process, and its concerns will be addressed there. Tr. 376-79.

Before reaching the substance of its arguments, OCA suggests that there is uncertainty with regard to the length of PPL Electric's proposed right-of-way through the DEWA. OCA correctly notes that, in the Application, the length of the S-R Transmission Line in the DEWA is described as 1.5 miles. PPL Electric Ex. 1.C., p. 74. During cross-examination, it was described as being 4 miles in length. Tr. 817. The reason for this difference, however, was explained in the transcript. After the Siting Application was filed, PPL Electric and PSE&G entered into an agreement under which PPL Electric took responsibility for permitting and constructing the S-R Transmission Line through the DEWA, including both the portion of the DEWA in Pennsylvania and the portion in New Jersey. PSE&G will reimburse PPL Electric for those costs. Tr. 1019. The four-mile distance includes the portion of the DEWA which the S-R Transmission Line will traverse in New Jersey; the 1.5 mile length includes only the Pennsylvania portion of the DEWA.

OCA then provides an extensive litany of issues that PPL Electric may have to address in order to obtain all the appropriate permits for the S-R Transmission Line in the DEWA from the National Park Service. Surely, there will be issues that PPL Electric must address before constructing the S-R Transmission Line through the DEWA, but as PPL Electric has explained, it will undertake many measures to avoid and mitigate such problems. PPL Electric Initial Brief, pp. 92-94, 132-134, 155-161. It is clear that the concerns of the National Park Service must be addressed and resolved because PPL Electric cannot undertake construction of the S-R Transmission Line through the DEWA until it has satisfied the concerns of the National Park Service and obtained all of the required permits. Resolving those concerns and obtaining the permits will present challenges and will take time.

OCA, however, takes an additional step; it contends that PPL Electric should not be authorized to commence construction of any portion of the S-R Transmission Line until it has obtained all permits required for construction of the line through the DEWA. In making these arguments, OCA apparently is attempting to thwart PPL Electric's request that it be permitted to commence the portion of the S-R Transmission Line between Wallenpaupack and Bushkill as soon as it receives all required permits for construction of that portion of the line, before it obtains permits for construction of all segments of the S-R Transmission Line. *See, e.g.,* PPL Electric St. 1-R, pp. 25-27. PPL Electric has explained why it is necessary to commence construction on the Wallenpaupack-Bushkill portion of the S-R Transmission Line at the earliest possible date. There are two principal reasons. First, this portion of the S-R Transmission Line is part of PPL Electric's Vintage Transmission Line Replacement Program. The transmission line that presently runs between Wallenpaupack and Bushkill was built in the 1920s; it is 80 years old. Regardless of the S-R Transmission Line, the portion between Wallenpaupack and

Bushkill needs to be replaced so that PPL Electric can continue to provide safe, adequate and reliable service. The vintage 230 kV transmission line between Wallenpaupack and Bushkill is in a deteriorated condition. Many of its foundations have needed to be recapped; many steel members of the structures have required replacement; the splices along the line have all needed to be replaced; and the conductor, itself, has deteriorated to the point that it no longer can carry the loads for which it was designed. PPL Electric St. 5-R, pp. 10-11.

Second, PPL Electric is required by PJM to have the S-R Transmission Line in service by June 1, 2012. In order to achieve that in-service date, it is necessary for PPL Electric to commence construction of the line in the first quarter of 2010. If PPL Electric is permitted to commence construction of the portion of the S-R Transmission Line between Wallenpaupack and Bushkill in the first quarter of 2010, it can still meet PJM's required in-service date. The cost of construction of the Wallenpaupack-Bushkill portion of the S-R Transmission Line will not be wasted because the replacement is necessary even if the S-R Transmission Line is not constructed for any reason.

It is important to note also that OCA's contentions, regarding the DEWA, are completely irrelevant to PPL Electric's request to start the Wallenpaupack-Bushkill portion of the S-R Transmission Line at the earliest possible date, even if there is a delay in obtaining all the permits required to construct the S-R Transmission Line across the DEWA. The Wallenpaupack-Bushkill portion of the S-R Transmission Line is north of the location where the S-R Transmission Line turns east by southeast to enter and traverse the DEWA. PPL Electric Ex. PS-2. A transmission line that ends in Bushkill will not enter any portion of the DEWA and no DEWA permits are necessary for construction of this portion of the S-R Transmission Line. OCA's contention, that the Commission should not authorize PPL Electric to construct any

portion of the S-R Transmission Line until all permits for the entire line have been obtained, simply disregards the explanations that PPL Electric has presented.

OCA's contention should be rejected because it will jeopardize the quality of service that PPL Electric is presently providing through the 80-year old 230 kV transmission line between Wallenpaupack and Bushkill which line must be replaced regardless of the S-R Transmission Line. The need for this portion of this S-R Transmission Line does not depend upon the need for the S-R Transmission Line as a whole. Instead, it stands on its own merits, at least with regard to the replacement of the existing, deteriorated 230 kV transmission line.

3. No Cost-Benefit Analysis Is Required For The S-R Transmission Line.

OCA next contends that PPL Electric should not be permitted to construct the S-R Transmission Line because it has not presented a specific cost-benefit analysis for the line. OCA Main Brief, pp. 96-99. OCA's contentions are misplaced for several reasons. First, there is no such requirement. OCA's contention is nothing more that an attempt to bootstrap expressions by the Chairman of concern about the manner in which FERC and the PJM allocate revenue requirement associated with larger transmission projects among the beneficiaries of the projects into an absolute requirement in state siting proceedings; it is nothing of the sort. The Chairman's comments related to allocations of revenue required transmission lines at 500 kV or greater among the various transmission zones it will serve. FERC determines such allocations, not the Pennsylvania Commission. The Chairman stated specifically that the matter was for consideration by the FERC and PJM. He made no indication that such concerns relate to Pennsylvania siting proceedings. Statement of Chairman Cawley, *Application of Trans-Allegheny Interstate Line Co.*, Docket No. A-110172 (Nov. 13, 2008).

Further, a cost-benefit analysis is an economic concept. It applies only to a transmission project based on economics. It does not apply to a transmission project designed to resolve reliability issues. The benefit of the S-R Transmission Line will be that the lights will stay on.

4. Saw Creek's Contentions Should Be Rejected Because They Are Based On Misstatements Of The Evidence And Disregard Substantial Portions of the Evidentiary Record.

Saw Creek's criticisms of the S-R Transmission Line, especially in the vicinity of Saw Creek, are based upon application of incorrect legal standards, misstatements of fact, disregard of substantial portions of the evidentiary record and erroneous analyses.

Saw Creek erroneously describes the evidentiary record regarding the stability of the tubular steel structures by stating that PPL Electric's exhibits and testimony "barely mention" this possibility of structure failure. Saw Creek Initial Brief, p. 3. Saw Creek's statement is not correct. The issue was the sole subject of PPL Electric's St. 19-R and was addressed extensively also at PPL Electric St. 5-R, pp. 1-5. These statements explain that such a failure is extremely unlikely and that, even if such a failure were to occur, the conductors would tend to contain the structure in the right-of-way, away from residences. It is simply incorrect for Saw Creek to state that PPL Electric's evidence "barely mentions" this possibility.

Saw Creek similarly states that PPL Electric admitted that it had not evaluated the impacts of construction on Saw Creek at all. In support of this erroneous statement, Saw Creek cites Tr. 918. Again, Saw Creek's statement is incorrect. There, PPL Electric's witness agreed that the subject was not addressed in his initial, direct statement. It was addressed at length, however, at PPL Electric St. 1-R, pp. 13-19.

Another example of misstatements in Saw Creek's brief appears at page 15. There it is stated that one home in Saw Creek is 4¾ inches from the edge of the right-of-way or 104¾ inches from the centerline of the right-of-way. Saw Creek cites Tr. 482-83 in support of this

statement. There, it is stated there that one particular house is 4¾ inches from the edge of the right-of-way, but it makes no comment about the distance from the centerline of the right-of-way. In fact, the existing right-of-way is 200 **feet** wide (PPL Electric St. 1-R, pp. 12-13), not 200 **inches** wide. Therefore, the house in question is 100 feet, 4¾ inches from the centerline of the right-of-way, not 104¾ inches.

Similarly, at page 16 of its Initial Brief, Saw Creek argues that transmission towers are not stable and reliable because 130 towers failed in an ice storm in Canada 1998 and another 30 failed in another storm event. In making these contentions, Saw Creek simply ignored PPL Electric's testimony that the structures that failed are dissimilar from the structures that are proposed for Saw Creek. Specifically, the towers that failed in the Canadian ice storm were lattice towers similar to those in Saw Creek presently. Tr. 1056. The 30 towers that failed in the other storm event failed during Hurricane Wilma in 2005. The reason for those failures was that bolts attaching cross braces had not been properly tightened. OCA Cross-Examination Ex. 10. The structures proposed for Saw Creek contain no such cross braces and therefore are not susceptible to that type of failure. Tr. 1056-58.

Another area where Saw Creek's description of the evidentiary record is flawed relates to the siting or "link selection" process. Saw Creek Initial Brief, pp. 30-31. There, Saw Creek contends that PPL Electric's siting process was deficient because PPL Electric did not traverse or physically field inspect every tract of land crossed by a possible link. Saw Creek's position is erroneous in at least two major respects. First, despite Saw Creek's comments, PPL Electric does not have the legal right to enter upon the private property of others. Therefore, had it "traversed" tracts of land where neither it specifically nor the public generally has the right to be, it would be trespassing on such land. Surely, PPL Electric is not required to trespass on

numerous tracts of land in order to support its site selection process. Second, the fact that not all tracts of land were "traversed," or physically field inspected, does not mean that PPL Electric did not have substantial information regarding such tracts of land. For example, PPL Electric presented the aerial exhibits in Volume 3 of Exhibit 1. Further, the collection of data used by PPL Electric in the site selection process was summarized at pages 8-10 of PPL Electric Exhibit 1.B. PPL Electric had available to it and utilized substantial and detailed information about the areas under consideration, even where field inspection was not available.

Saw Creek next contends that PPL Electric did not study the Tamiment property or other areas around Saw Creek until after it received Saw Creek's surrebuttal testimony, Saw Creek St. R-5, on August 24, 2009. Saw Creek Initial Brief, p. 33. Saw Creek's contention is erroneous on its face. PPL Electric explained its analysis of routes around Saw Creek in its rebuttal testimony, PPL Electric St. 3-R, pp. 1-6, which was served on the parties on August 7, 2009. PPL Electric provided further explanations of its review of routes around Saw Creek in responses to Saw Creek's interrogatories, which also were served on the parties prior to Saw Creek's Statement R-5. PPL Electric St. 3-RJ, pp. 3-4.

Saw Creek then attempts to resuscitate the moribund reroute alternatives proposed by its witness by misstating portions of PPL Electric critique of its alternatives and ignoring other portions of the critique. Saw Creek Initial Brief, pp. 33-38. The two alternatives proposed by Saw Creek are deficient for many reasons that are explained at PPL Electric St. 3-RJ, pp. 1-6. The alternatives would require clearing of swaths of forest 200 feet wide and more than three miles in length and would interfere with the scenery at a major regional attraction, Bushkill Falls. Further, neither alternative avoids Saw Creek completely. Instead, both would have to reenter Saw Creek near the swimming pool on Stafford Drive through very difficult, rugged, steep

terrain. Saw Creek's Route A would also pass close to numerous houses on the east side of Saw Creek. Alternative Route B passes very close to residences and appears to cross land that may be non-condemnable due to curtilage restrictions. Both routes would increase the costs of the S-R Transmission Line and, because both routes would require changes in directions to leave the existing route, which is straight in this area, and rejoin it, an increased number of three pole angle structures would be needed. These larger, more complex structures have greater visual impact than single pole structures and require more excavation and foundations, thereby increasing risk of erosion and sedimentation. Saw Creek's alternative routes can be justified only by concentrating on the effects of the S-R Transmission Line in Saw Creek and disregarding the impacts it would have if it were rerouted away from Saw Creek.

5. Saw Creek's Contentions Regarding Real Estate Values Are Meritless.

Saw Creek next contends that the S-R Transmission Line will adversely affect real estate values in the development. Saw Creek St. 3 and R-3. Although Saw Creek contends that the effects on real estate values in Saw Creek will be substantial, by an unquantified amount, its conclusion is contrary to the credible evidence in this proceeding. All of the market studies and professional literature cited by the parties reach a single conclusion – that transmission lines have no impact or only a slight negative impact on the value of residential properties. This conclusion is confirmed by the only real estate journal article cited by Saw Creek, which contains only two pages of text and contains no market study or analysis of market data. It states that: "Many studies indicate that the HVTL have **no significant effect** on residential property values. More recently, however, an increasing number of studies do show a **small diminution in value** attributable to the close proximity of these lines." PPL Electric Ex. MFB-2, p. 323 (footnote omitted; emphasis added). There is simply no support in any of these materials for Saw Creek's

position that the S-R Transmission Line would substantially decrease the value of residences there.

Although Saw Creek attempts to nitpick at the details of some of the numerous market studies that were presented in the literature and by PPL Electric's witnesses (Saw Creek Initial Brief, pp. 45-51), one common conclusion from all studies and all the real estate literature stands out – all of the studies and literature conclude that a transmission line has little or no effect on the market values of nearby real estate. Saw Creek's conclusion can be right only if every single market study cited or piece of literature from peer-reviewed journals presented in this proceeding is incorrect.

Saw Creek also contends that its situation is different because it involves the replacement of a long-standing familiar infrastructure with larger infrastructure. Saw Creek Initial Brief, pp. 43-44. Saw Creek attempts to preserve this distinction by ignoring its own witness' testimony. On cross examination, the witness stated:

> Q. And look with me, assuming the company is successful and successfully builds the line, about 2015, everything that is there now is removed and the new line is in place, what continuing effect will the old transmission line have upon real estate values in that area?
>
> A. Well, the old transmission line?
>
> Q. That's the question, yes.
>
> A. At that point, I'm not sure that the old transmission line, since it wouldn't exist, could have any effect.

Tr. 1934-35. Thus, the fact that there will be an upgrade of existing infrastructure in Saw Creek is completely irrelevant. Once the S-R Transmission Line is built, and the present line is removed, a purchaser of a residence in Saw Creek will see the new transmission line, and the fact that there formerly was a different transmission line there previously will have no bearing on the

market value of the real estate. Therefore, all of the market studies presented are directly on point; they all address the issue of the effect of a large transmission line on the value of nearby residences.

Saw Creek also attempts to distinguish the numerous market studies presented and cited on the basis that none address a community like Saw Creek which is gated, is partially a second home community, is hilly, is wooded and has certain common amenities. Saw Creek Initial Brief, pp. 47-50. Saw Creek's attempt to distinguish itself from other communities with transmission lines is meritless. All communities are unique in some respects; all have unique characteristics. The topography of every community is unique; the viewshed is unique; *etc.* The fact remains, however, that the conclusion from all of the market surveys is universal – transmission lines have little or no effect on the values of nearby residences.

Saw Creek also attempted to criticize the market surveys presented by PPL Electric by criticizing certain "adjustments" performed by PPL Electric's witness, Mr. Dominy. Saw Creek Initial Brief, p. 51. Saw Creek's description of the market study process and its criticisms of PPL Electric's studies are unfounded. In addition to the full studies he sponsored, Mr. Dominy performed a few comparisons of individual sales to test the conclusions in the full studies. The adjustments that Saw Creek questions were related to these few comparisons. Tr. 1902. For those individualized comparisons, adjustments were made to identify and remove effects of specific characteristics of the properties such as a recent remodeling of a kitchen, which were present at one property and not the other and which would affect value. The full studies, however, looked at all the transactions in gross, as a whole, and did not reflect the adjustments that were only made for the few comparisons of individual sales. Tr. 1901-02. Thus, the

adjustments criticized by Saw Creek were simply not part of the full studies presented and provide no basis for criticizing them.

In the final analysis, the only source of information that even purports to support Saw Creek's conclusion were the interviews conducted by its witness. Saw Creek would have the ALJ and the Commission reject each and every one of the market studies presented or cited in the literature and instead rely upon Saw Creek's survey. The survey, however, is flawed in many respects. First and foremost, the results of the survey do not support Saw Creek's conclusions. Most of the participants in this survey opined that the S-R Transmission Line would not make any difference in the real estate values. PPL Electric Cross-Examination Ex. 9-10, Tr. 1929-33. Nor was Saw Creek's study conducted in a scientific or objective manner. Several people were contacted based on advance knowledge that they had, in their opinion, negative experiences as a result of the announcement of the S-R Transmission Line. Tr. 1928-29, 1932. Saw Creek's survey was not conducted in a reliable manner and, in any event, it does not support Saw Creek's conclusions.

Further confirmation that the S-R Transmission Line will not significantly affect real estate values comes from local brokers. They do not believe that any disclosure of the S-R Transmission Line is required. Saw Creek St. 3, p. 11. Apparently, they do not consider it to be a matter that is material to the sale of a nearby residence.

6. Saw Creek's Arguments About Electric And/Or Magnetic Fields Are Without Merit.

Saw Creek also contended that the S-R Transmission Line should be disapproved because electric and/or magnetic fields ("EMF") from the line will endanger persons living in its vicinity. Saw Creek Initial Brief, pp. 17-29. Of all the active parties in this proceeding, only Saw Creek has raised claims about alleged health effects from EMFs. These claims are without scientific

merit and do not provide a reasonable basis for denying PPL Electric's Application for the S-R Transmission Line.

a. Saw Creek Has Presented No Credible Scientific Evidence That EMF Cause Any Adverse Health Effects

Saw Creek alleges that EMF levels from the S-R Transmission Line "exceed levels shown to cause human diseases, including cancer, leukemia, Alzheimer's Disease and amyotrophic lateral sclerosis ("ALS")." Saw Creek Initial Brief, p. 3. No credible scientific evidence, however, was presented by Saw Creek or any other party to show that EMFs cause or contribute to any of these conditions.

Four expert witnesses testified about scientific research on EMF. Three of them, Dr. Israel, Dr. Lee and Saw Creek witness Dr. Fugate, were in agreement: the scientific research does **not** show that EMF cause or contribute to adverse health effects. PPL Electric St. 15-R, pp. 12-13; PPL Electric St. 16-R, pp. 14-15; Tr. 1154-1155; PPL Electric Cross-Examination Ex. 7, pp. 4-5. The reliability of their evaluations of the EMF research and the credibility of their conclusions about the lack of EMF health effects were not contradicted or even challenged by any party on cross-examination, including Saw Creek.

The uncontested evidence also showed that the health conclusions of these experts are corroborated by the findings of the leading public health agencies that have reviewed the research on EMF, such as the National Research Council (NRC), the National Institute for Environmental Health Sciences (NIEHS), the International Agency for Research on Cancer (IARC) and the World Health Organization (WHO). PPL Electric St. 16-R, pp. 10-11; PPL Electric St. 15-RJ, pp. 4-5; Tr. 1154-55; PPL Electric Cross-Examination Ex. 7, p. 5. As noted by Dr. Fugate, the scientific community has reached a "general consensus" that there is "insufficient evidence" to find that EMF cause adverse health effects. Tr. 1154.

The lone outlier on this issue was Saw Creek's other EMFs witness, Dr. Carpenter. As previously discussed in detail in PPL Electric's Initial Brief, Dr. Carpenter's review of the EMFs research lacked balance, thoroughness, and objectivity. PPL Electric Initial Brief pp. 112-14, 119-22, 126-28. He relied on the results of laboratory studies that could not be replicated by independent researchers, he disregarded the results of an entire category of studies (the whole animal studies) which found no EMFs effects, and he pointed to selective results from epidemiology studies while ignoring contrary results from the same and other studies. *Id.* On cross-examination, it became apparent that Dr. Carpenter, who was presented as an expert in epidemiology and public health, had not even read some of the major epidemiology studies on EMF and childhood leukemia, and did not know the public exposure limits established for EMFs. *Id.,* p. 127.

Even Dr. Carpenter could not say whether EMFs is actually a cause of any adverse health effect. Instead, he equivocated that "cause is a difficult word" for him. Tr. 1089. When asked if EMFs were an established cause of childhood leukemia, he quibbled over definitions: "I would have to answer that no, because of the word established ... it depends on how you define established." Tr. 1117. Moreover, Dr. Carpenter could not identify an exposure threshold for a supposed EMF health risk or even a level of exposure that he would consider safe.

> Q. So how far down do we have to go before you're comfortable there's no increased risk from magnetic fields?
>
> A. Well, I can't answer that. ...

Tr. 1120; *see also* Tr. 1118-19.

Although Dr. Carpenter would not identify a threshold for his alleged EMFs health risks, he eventually conceded that he advocates reducing public EMFs exposures to 1 mG or less. Tr. 1121. This radical proposal is contrary to the recommendations of the leading public health

agencies, which do not encourage a 1 mG exposure standard. Tr. 1120, 1122. Dr. Carpenter's extreme 1 mG exposure limit is less than one nine thousandth of the public exposure guideline recommended by WHO. Tr. 1122. His extreme limit is also less than one one hundred thirtieth of the existing field levels on the Saw Creek right-of-way, one fifteenth of the existing levels along the edge of the Saw Creek right-of-way, and one fifth to one sixth of the **average** level of exposures found throughout everyday public locations in Scranton and Stroudsburg. PPL Electric St. 14-R, pp. 12-13; Ex. JMS-1; Ex. JMS-2.

In its Initial Brief, Saw Creek repeats portions of Dr. Carpenter's prefiled testimony, but does not address any of the serious shortcomings in his opinions that were identified by the other experts and through cross-examination. The record evidence shows that Dr. Carpenter's opinions were flawed and were not based on a reliable and objective review of the scientific research. By contrast, the detailed evaluations of the research and the well-supported conclusions reached by Dr. Israel and Dr. Lee were not challenged on cross-examination. Their conclusions were also consistent with the findings of reputable public health agencies and were supported by Dr. Fugate's testimony on behalf of Saw Creek. In light of this overwhelming evidence, there is no good basis to give any weight to Dr. Carpenter's extreme views.

b. Saw Creek's Argument About Potentially Higher EMF Levels From The S-R Transmission Line Is Both Unrealistic and Immaterial

Saw Creek argues that the EMF levels calculated by PPL Electric (by Mr. Silva and Mr. Keeler) are too low and therefore "downplay" potential exposures on and along the Saw Creek right-of-way. Saw Creek instead relies on the higher values calculated by Dr. Fugate, but completely ignores the uncontroverted testimony that his calculations were based on unrealistic assumptions about the operation of the S-R Transmission Line. PPL Electric St. 8-R, pp. 7-8; PPL Electric St. 14-R, pp. 17-18. As a matter of practical reality, the line loading assumptions

used in Dr. Fugate's calculations are "highly unlikely" to occur, if not impossible. PPL Electric St. 14-R, p. 18; PPL Electric St. 8-R, p. 8. On cross-examination, Dr. Fugate confirmed that he had no "realistic basis" for the line loading assumptions on which his EMF calculations are based. Tr. 1149.

If the EMF levels calculated by Dr. Fugate had been based on accurate and realistic assumptions (which they were not), there still is no evidence that these higher field levels would cause any detrimental consequence. Saw Creek states that the highest EMF levels calculated by Dr. Fugate were 204 mG on the right-of-way and 27 – 74.5 mG on the edges of the right-of-way. Saw Creek Initial Brief, p. 18. These compare to the maximums calculated by Mr. Silva under high line loading of 85.58 mG on the right-of-way and 11.15 – 32.13 mG on the right-of-way edges. PPL Electric St. 14-R, p. 16. All of these levels, whether calculated by Dr. Fugate or Mr. Silva, are significantly below the EMF exposure guidelines for the public developed by international authorities and recommended by the WHO. Thus, ICNIRP and IEEE recommend public exposure levels of 833 mG and 9,040 mG, respectively. Tr. 1162. While there are no federal or state exposure limits for EMFs in Pennsylvania, in 1991 the State of New York adopted a 200 mG edge of right-of-way limit for EMF from high voltage transmission lines[11] and Florida has adopted similar edge of right-of-way limits.[12] PPL Electric St. 14-R, p. 18. The maximum edge of right-of-way levels calculated by either Dr. Fugate or Mr. Silva also easily meet these New York and Florida edge of right-of-way limits for transmission line EMF.

[11] New York Public Service Commission, "Statement of Interim Policy on Magnetic Fields of Major Electric Transmission Facilities." September 11, 1990.

[12] Florida Department of Environmental Protection, "Electric and Magnetic Fields." Florida Administrative Code, Chapter 62-814 (effective 1/7/93) (200 mG EROW standard for new single circuit 500 kV lines, 250 mG for double circuit 500 kV lines.

Additionally, there is no evidence to show that the higher levels of EMF calculated by Dr. Fugate are in any way material to any alleged adverse effect. The only witness who advocated avoiding EMF exposures below the range of 833 – 9,040 mG recommended by the international public exposure guidelines was Dr. Carpenter. His implausible 1 mG exposure level would be significantly exceeded by **all** the EMF levels presented in the proceeding, including the existing levels of EMFs on and along the Saw Creek right-of-way. As discussed above, however, there is no reliable scientific basis for Dr. Carpenter's radical exposure limits.

c. Saw Creek's "Fear of EMF" Argument Is Without Merit

Saw Creek argues that approval of the S-R Transmission Line should be denied based on an alleged "fear" of EMFs among Saw Creek residents. Saw Creek Initial Brief, pp. 27-29. As discussed above, the record evidence does not provide a reliable scientific basis to conclude that EMFs from the S-R Transmission Line will cause or contribute to any adverse health effect. In effect then, Saw Creek is seeking a decision in this proceeding based on misconceptions and mischaracterizations of the actual state of the science. Unfounded fears cannot serve as the basis for rejecting an application for approval of the siting and construction of a transmission line. If all that is required to have an application rejected is public testimony about alleged fears of EMFs, then no approval will be obtained in the future, and reliable electric service will not be available.

Saw Creek's "fear of EMF" argument is particularly inappropriate given that an existing 230 kV transmission line has run through Saw Creek for many decades and the EMF from this pre-existing line are higher than the levels for the S-R Transmission Line on the right-of-way and along one side of the right-of-way. PPL Electric St. 14-R, Tables JMS-3 and JMS-4. As Saw Creek's witness Dr. Carpenter conceded, these existing EMF levels already are far higher than those which he considers detrimental to health. Tr. 1138-39. Given these existing EMF levels,

Saw Creek has failed to show that EMF from the S-R Transmission Line (which will be lower than existing levels on the right-of-way and at one edge) will have any material effect on its residents' perception of risk.

PPL Electric's Magnetic Field Management Program was adopted in the early 1990's to address in a responsible fashion the concerns that some members of the public voice about EMFs. *See* PPL Electric Initial Brief, pp. 103-04. Under this program, the field reduction measures implemented for the S-R Transmission Line will significantly reduce EMFs from the line. *Id.* These same field reduction measures will result in EMF from the S-R Transmission Line that are lower than the existing EMF on the right-of-way and on one edge of the right-of-way.[13] Implementing these field reduction measures will result in an approximate 4 – 5% increase in project costs, which is consistent with the no-cost/low-cost approach to field reduction under PPL Electric's Magnetic Field Management Program. This no-cost/low-cost approach is also consistent with the policy of prudent avoidance, which is recommended by the WHO and Saw Creek's own witness Dr. Carpenter. Tr. 1123.

Far from avoiding the issue of EMFs in this proceeding, PPL Electric has followed a reasonable and a responsible approach to addressing this issue. Thus, PPL Electric (1) identified EMF levels from the S-R Transmission Line; (2) conducted a detailed study and analysis of how different design and operational options could be used to reduce these levels at no or low cost; (3) implemented these design and operation options to reduce the EMF levels from the line; (4) provided Saw Creek information about EMFs and updated that information during the planning process; and (5) provided evaluations of EMF health and technical issues by world-class medical

[13] Saw Creek's claim that PPL Electric has been not been candid about the EMF levels from the S-R transmission line is no more than a red herring. The initial information about EMF that PPL Electric provided Saw Creek was accurate at the time it was sent. Tr. 1077. PPL Electric then provided Saw Creek with updated information about EMF levels when it became available.

and engineering experts in response to Saw Creek's concerns. This is a measured and well-reasoned approach which PPL Electric has followed for many years with the Commission's approval and encouragement.

7. Saw Creek's Reliance On Cases Regarding Safety Hazards Is Misplaced.

Saw Creek cites *West Penn v. Pa. P.U.C.*, 199 Pa. Super. 25 (1962), for the proposition that a route selected for a line can be so contrary to the fundamental purposes of the Public Utility Law[14] that the Commission may withhold approval even if it concludes that there is a need for the service to be furnished. Saw Creek Initial Brief, p. 11. The Superior Court does contain such language, but the Court's decision was made in a case which presented a fact situation that was very different from the present one. In that proceeding, Commission and the Court dealt with a situation where two routes were available for a transmission line. One route crossed a farm that was not being actively cultivated. A second route crossed a farm that was being actively cultivated for fruit and vegetables. The fruit and vegetable farm used an irrigation system that had the capability of shooting solid streams of water 100 feet in the air and projecting lengths of piping for the irrigation system up to 40 feet into the air. Such events were not rate. The transmission line was designed to have a ground clearance of 35 feet. There was testimony that, if a continuous stream of water touched a 138 kV transmission line, any one in contact with the water stream of the irrigation pipes would receive an electric shock that could be fatal. There was no indication that routing the transmission line across the idle farm would cause

[14] Saw Creek's reference to the Public Utility Law is incorrect. The case actually referenced the Act of May 21, 1921, P.L. 1057, 15 P.S. § 1192, which since has been repealed and replaced by Section 1511 of the Business Corporation Law of 1988, 15 Pa.C.S. § 1511. The case involved an appeal from the Commission's denial of an application for approval of the exercise of the power of eminent domain for an aerial transmission line.

any inference with any plans of the owner. West Penn offered no reason for selecting the farm that was being cultivated over the idle farm other than a minor increase in cost.

Under these circumstances, the Commission found that the transmission line would create a hazard for persons working on the farm that was being actively cultivated. The Superior Court declined to reverse the exercise by the Commission of its discretion in disapproving the condemnation.

The S-R Transmission Line presents and entirely different set of facts. PPL Electric has explained at length that it has reviewed alternative routes around Saw Creek and that there are good reasons why those alternative routes were rejected. PPL Electric St. 3-R, pp. 1-6 and 3-RJ, pp. 1-6. Further, PPL Electric has explained that the concerns of Saw Creek, the safety of the structures and construction, EMFs and real estate values, are not factually based. PPL Electric St. 3-R, pp. 13-20, St 5-R, pp. 1-6, St. 19-R, PPL Electric St. 20, PPL Electric St. 21, PPL Electric St. 15-R, PPL Electric St. 16-R, PPL Electric St. 15-RJ, PPL Electric 16-RJ, and PPL Electric Ex. GJS-1 and GJS-2.

Saw Creek also cites *Dunk v. Pa. P.U.C.*, 210 Pa. Super. 183, 232 A.2d 231 (1967) ("*Dunk*") for the proposition that an applicant must present sufficiently detailed evidence to enable the commission to determine whether the rights of property owners have been unreasonably disregarded and whether a hazard exists. Saw Creek Initial Brief, pp. 11, 16, 28. Saw Creek contends that PPL Electric has failed to meet this standard with regard to the stability and reliability of tubular steel transmission structures and with regard to EMFs. In fact, Saw Creek contends that PPL Electric "barely mentions" these issues in its testimony and exhibits. Saw Creek Initial Brief, pp. 16, 28.

Saw Creek applies the *Dunk* decision incorrectly. In *Dunk*, the Court held that Philadelphia Electric Company had met its burden of proof for approval to site a transmission line across an orchard by presenting expert testimony that the line would present no hazard to orchard workers irrigating the trees because the sprayers break up streams of water into droplets that do not conduct electricity. *Dunk*, 210 Pa. Super., *supra*, 187-88, 232 A.2d at 233. Similarly, here, PPL Electric has presented abundant testimony that the proposed transmission structures are safe and reliable, and that EMFs from transmission lines to not present a health hazard. Further, PPL Electric will mitigate any possible hazards related to the transmission structures by constructing them away from areas subject to wash outs and by using modern engineering techniques for foundations. PPL Electric St. 5-R and 19-R. With regard to EMFs, PPL Electric proposes to increase ground clearances by using taller structures and by using reverse phasing techniques, both of which reduce EMFs. *See, e.g.*, PPL Electric St. 5, 15-R, 16-R, 15-RJ and 16-RJ. PPL Electric has certainly met the standards set forth by the Superior Court in *Dunk*.

8. Saw Creek's Concern About The Effects Of The S-R Transmission Line On The Viewscapes Is Exaggerated.

Saw Creek also contends that the S-R Transmission Line should be rejected because it will have an adverse effect on the viewscape in the area. Saw Creek Initial Brief, pp. 53-54. Saw Creeks' contentions should be rejected for two principal reasons. First, the design selected by PPL Electric for the structures in Saw Creek appropriately balance the many competing interests that bear on structure design. During the public outreach conducted by PPL Electric for the S-R Transmission Line, residents of Saw Creek expressed concern about the appearance of the line, EMFs and clearing of woods. PPL Electric took all of these concerns into account when designing the S-R Transmission Line in the Saw Creek area. To reduce the effect of the line on the viewshed, PPL Electric chose to use, wherever practical, monopole structures and taller

structures, which would enable it to use fewer structures. Taller structures, with greater ground clearances, are also proposed to reduce the levels of EMFs in and near the right-of-way. Taller structures also enable PPL Electric to build the line within the portion of the right-of-way that is cleared to 150 feet, thereby reducing the need for additional tree removal. PPL Electric St. 1-R, pp. 22-23.

Second, federal courts, in applying the Telecommunications Act of 1996, 47 U.S.C. § 332c07(B)(iii), have concluded, in the context of considering applications for approvals of the siting and construction of cell towers, that generalized testimony about the aesthetics does not constitute substantial evidence which can justify the disapproval of a cell tower. In considering such a matter, the United States Court of Appeals for the Third Circuit observed:

> One could forcefully argue that the erection of any telecommunications equipment would have an adverse impact on the aesthetics of any residential community. However, under the circumstances, such an unforgiving and absolutist approach to local land use regulation would eviscerate the national policy of promoting the telecommunications industry that is endemic in the TCA.

Ogden Fire Co. v. Upper Chichester Township, 504 F.3d 370, 390, fn. 12 (3d Cir. 2007). Similar considerations apply to electric transmission line proceedings.

Saw Creek provides no basis for rejecting the Siting Application of PPL Electric, and its contentions should be rejected.

9. ECC's Contentions Concerning the Siting of the S-R Transmission Line are Without Merit And Should Be Disregarded.

Although ECC presented no evidence or testimony analyzing any siting issue, it nevertheless addresses siting in its Main Brief. Its contentions are meritless and should be rejected.

First, ECC identifies several considerations that, if taken in isolation, would support the selection of a route other than Route B. ECC's "analysis" is flawed not only because it ignores all of the other consideration that militate for the selection of Route B, but also because it relies on superficial, unanalyzed raw data. As explained below, when the data are considered in a thorough and rational manner, they provide no basis for ECC's contentions.

First, ECC states that Route B is the longest route. ECC Main Brief, p. 27, citing PPL Electric Ex. 1.C., p. 10. It is correct that Route B is the longest route, but it is only slightly longer than the alternative routes. Route B is 101.1 miles in length in Pennsylvania; Route A is 97.6 miles, and Route C is 90.6 miles in length. Therefore, although Route B is longer, the difference among the three routes is not substantial. When it is recognized, however, that the reason for preferring shorter routes is to reduce cost and to reduce environmental impact, it is clear that length alone is not an appropriate consideration. The first 29.7 miles of Route A and Route B utilize an existing transmission line that was constructed for 500 kV operation but has been operated at 230 kV because 500 kV capacity has not been needed previously. Therefore, there will be no construction along the first 29.7 miles of Route B. PPL Electric Ex. 1.C., p. 3. Thus, from a construction perspective, Route B is significantly shorter than Route C.

Despite the fact that Route A is slightly shorter than Route B, Route A was not selected because, among other things, it would require more than 400 acres of additional tree clearing and because it would require 130,550 feet of new right-of-way to be acquired and cleared if that route were chosen. ECC's comments show a disregard for the environment along Route A.

Second, ECC observes correctly that Route B crosses more streams and fresh water ponds than Route A or Route C. ECC Main Brief, p. 27, citing PPL Electric Ex. 1.C., p. 10. Again, however, the difference is not substantial. Route B crosses 78 streams, but Route A

crosses 76 streams and Route C crosses 67 streams. PPL Electric Ex. 1.C., p. 10. More importantly, however, ECC ignores the explanations provided by PPL Electric. The fact is that Route B would impact surface water quality and aquatic species least because less clearing and new right-of-way is needed for this route. As explained previously, the first 29.7 miles of Route B will create no additional crossings of wetlands or surface water sources in this segment. Approximately 61 percent of the remainder of Route B would require double circuiting of an existing 230 kV line, with both circuits on single structures or paralleling that existing line. Although the right-of-way would be widened in these areas, impact to surface water resources would be minimal due to the existing facilities for which rights-of-way have already been cleared. Route B would have the least impact on Exceptional Value and High Quality waters. Route B in fact crosses no Exceptional Value water bodies, but both Route A and Route C do. Further, PPL Electric will mitigate any adverse impacts by using best management practices to control erosion and sedimentation and manage vegetation. PPL Electric Ex. 1.C., p. 26.

Third, ECC observes correctly that Route B crosses more wetlands than the other routes. Route B crosses 11,550 feet of wetlands, Route A crosses 8,100 feet of wetlands and Route C crosses 5,750 feet of wetlands. ECC Main Brief, p. 27, citing PPL Electric Ex. 1.C., p. 10. Again, despite ECC's observations based upon superficial review of raw numbers, Route B will have the least impact on wetlands. Route B will affect the least amount of wetland acreage because it utilizes existing facilities and rights-of-way for more than 90 percent of its length. PPL Electric would need to clear only about six acres of forested/shrub wetland for Route B compared with 13 acres for Route A and 9 acres for Route C. Route B will have the least impact because it utilizes the most area that is already cleared which will not need further vegetation management. PPL Electric Ex. 1.C., pp. 28-29.

Fourth, ECC observes, again correctly, that Route B crosses more designated natural lands than the other two routes. ECC Main Brief, p. 27, citing PPL Electric Ex. 1.C., p. 10. Again, ECC's observations are based upon a non-analytical review of selected raw data and not meaningful analysis. Although Route B would cross more forested land than the other two routes, it would require about half as much forest clearing as the other routes. The effect of reduced forest clearing will minimize visual impacts to visitors as well as potential forest and habitat fragmentation. PPL Electric Ex. 1.C., p. 11.

Fifth, ECC contends that Route A should be selected because there are only 250 houses within 250 feet of the centerline of Route A, whereas there are 216 house within 250 feet of the centerline of Route B. ECC Main Brief, p. 27, citing PPL Electric Ex. 1.C., p. 10. ECC neglects to state that there are 259 houses within 250 feet of the centerline of Route C. Again, ECC's contention is based upon selective observations of raw data. In fact, a more full analysis of the presence of residences is provided at PPL Electric Ex. 1.C., p. 11, where it shows the number of residences and other structures within 75 feet of the centerline of the three routes, residences and other structures within 100 feet of the centerline of the three routes, and residences and other structures within 250 feet of the centerline of each route and other structures within 250 feet of the centerline. Although Route B does come closer to more residences and other structures than Route A (but many fewer structures than Route C), the relatively low number of structures along Route A comes at a high price. Route A avoids structures and residences by traversing pristine forests of Pike County. Route A would require clearing of a 200 foot wide swath of these pristine forests for miles.

On this subject, the Pike County Planning Commission has recognized the advantages of PPL Electric's preferred Route B over the others. The Pike County Planning Commission

concurs that Route B is the least obtrusive route because it makes best use of existing cleared right-of-way. PPL Electric St. 1-R, pp. 21-22.

Sixth, ECC accuses PPL Electric of disregarding effects of the S-R Transmission Line on water supplies. ECC Main Brief, p. 28, citing PPL Electric Ex. 1.C., p. 11. ECC's contentions, again, simply disregard the substantial explanations that PPL Electric has provided substantial information regarding the possible effects of the S-R Transmission Line project on surface water resources and wetlands. *See*, PPL Electric Ex. 1.C., pp. 18-29.

ECC's contentions that Route B should not have been chosen, which are based on selected use of unanalyzed raw data from PPL Electric Ex. 1.C., pp. 10-11, are without merit and disregard the substantial explanations that PPL Electric has provided elsewhere. Contrary to ECC's contentions, careful siting of transmission lines requires more that a comparison of raw data in "box score" format; it requires careful and thorough analysis to glean the real meaning from the data and reach an appropriate conclusion.

ECC's final contention on siting is that PPL Electric's siting analysis contains no discussion of potential impacts from the construction and operation of substations. ECC Main Brief, p. 28. ECC's contentions are erroneous. First, the S-R Transmission Line project in Pennsylvania involves one new substation, which will be located in the Borough of Blakely, Lackawanna County. Despite the failure of ECC to raise this issue in evidence, PPL Electric provided significant information regarding the site of the Lackawanna substation.

The substation will be located on a tract of land that PPL Electric already owns. The fenced area for the substation will occupy approximately 8.26 acres of land. The location of the substation is advantageous both because the source 500 kV S-R Transmission Line and all four the 230 kV transmission lines to which it will be connected cross the tract of land that PPL

Electric already owns. Consequently no additional transmission lines are required to connect the proposed substation to the grid and no further acquisitions of land or land rights are required for the substation. By siting the substation along the route selected for the S-R Transmission Line, PPL Electric minimizes the need to construct additional transmission lines to connect the S-R Transmission Line into the 230 kV bulk electric system, thereby minimizing costs and environmental impacts. PPL Electric Ex. 2, ¶¶ 10-11.

On Attachment A to Exhibit 2, PPL Electric shows that the proposed site of the Blakely substation is adjacent to an existing, smaller substation that steps down electric power from 230 kV to lower voltage levels. Thus, the tract of land on which the new substation will be situated is already subject to both an existing substation and existing transmission lines. Further, PPL Electric will take substantial measures to minimize any potential effects on the environment. Throughout the project, PPL Electric will use best management practices specified in federal and state permit conditions, erosion and sedimentation control plans approved by county conservation districts and PPL Electric's vegetation management practices. PPL Electric Ex. 1.C., p. 26.

In building and designing the Blakely substation, PPL Electric will continue to follow its long-time standing policy of cooperating with local governments. PPL Electric will adopt all reasonable suggestions from the Borough that can be implemented at a reasonable cost and that will not interfere with the construction or operation of the proposed facilities. PPL Electric Ex. 2, ¶ 22. In this regard, it is significant that the Borough of Blakely has not intervened in this proceeding and has not opposed PPL Electric's petition for a finding that it will exempt the Blakely substation from the Borough of Blakely's zoning ordinance.

Despite the fact that no party to the proceeding adduced any evidence to suggest to question the environmental effects of the Blakely substation, PPL Electric did produce significant explanations that the substation will not produce any unreasonable adverse effects.

10. Route B Was Not "Preselected" By PPL Electric, And In Any Event, It Is The Most Appropriate Route.

ECC contends that PPL Electric "preselected" Route B prior to the beginning of the siting process that is explained in detail in, *inter alia,* PPL Electric St. 3 and PPL Electric Ex. 1.B and C. ECC can make this contention only by ignoring the explanations provided by PPL Electric in the testimony. ECC produced a presentation made to PPL Electric's management on December 17, 2007, before The Louis Berger Group was retained to identify the most appropriate route for the S-R Transmission Line. The presentation contained a map showing a possible route for the S-R Transmission Line that is roughly similar to Route B. Tr. 880-81. PPL Electric explained, however, that the presentation indicates that the map was a "for-budget" route only and was not intended to dictate in any way which route ultimately would be selected. The original source of the map contained a statement saying that the line route was shown for illustrative purposes only. Tr. 881. In addition, the presentation, at page 3, indicated that PPL Electric was in the process of selecting a vendor to evaluate alternative routes. The fact that alternative routes were going to be evaluated certainly suggests that more than one line route was under consideration. Tr. 882.

Further, PPL Electric witness Mr. Sparhawk testified that The Louis Berger Group was retained by PPL Electric to conduct an independent siting analysis for the S-R Transmission Line and that it did conduct such an analysis. Further, the presence or absence of the Lackawanna Substation had no effect of any kind on the analysis. Tr. 992.

Based on conclusions reached in disregard of the evidence, ECC then contends that PPL Electric never properly considered Route C. ECC's contention is mystifying. For the numerous

reasons explained throughout PPL Electric Ex. 1.B. and C., and PPL Electric St. 3, PPL Electric set forth the exhaustive process it went through to select Route B as superior to the two alternatives, both of which were studied in great detail, alternative A and C.

ECC's contentions regarding the siting of the S-R Transmission Line are incorrect and are based on either no evidence or disregard of existing evidence.

IV. CONCLUSION

WHEREFORE, for all the foregoing reasons, PPL Electric Utilities Corporation respectfully requests that the contentions of the other parties be rejected. In addition, PPL Electric Utilities Corporation respectfully requests that the Administrative Law Judge and 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 the Pennsylvania Portion of The Proposed Susquehanna-Roseland 500 kV Transmission Line in Portions of Lackawanna, Luzerne, Monroe, Pike and Wayne Counties, Pennsylvania at Docket No. A-2009-2082652, as amended.

PPL Electric Utilities Corporation requests specifically that the Administrative Law Judge and the Pennsylvania Public Utility Commission approve future operation of the S-R Transmission Line 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 the Administrative Law Judge and the Pennsylvania Public Utility Commission approve the "Petition of PPL Electric Utilities Corporation For A Finding That A Building To Shelter Equipment At The 500-230kV Substation To Be Constructed In the Borough of Blakely, Lackawanna County, Pennsylvania is Reasonably Necessary For The Convenience Or Welfare Of the Public" at Docket No. A-2009-2082832.

PPL Electric Utilities Corporation respectfully requests that the Administrative Law Judge and the Pennsylvania Public Utility Commission approve the "Applications 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 A Right-Of-Way And Easement Over And Across The Lands Of The Property Owners Listed Below For The Proposed Susquehanna-Roseland 500 kV Transmission Line In Portions Of Lackawanna, Luzerne, Monroe, Pike and Wayne Counties, Pennsylvania Is Necessary or Proper For The Service, Accommodation, Convenience Or Safety Of The Public:

- HaRa Corporation – Docket No. A-2009-2088337
- Richard Coccodrilli, Jr., Jeffrey J. Coccodrilli, Ryan T. Coccodrilli, and Joseph Williams – Docket No. A-2009-2088327
- D&L Realty Company – Docket No. A-2009-2088340
- Rudolph Saporito and Maria Saporito – Docket No. A-2009-2088312
- David Murphy – Docket No. A-2009-2088360

In addition, PPL Electric Utilities Corporation respectfully requests that the Administrative Law Judge and the Pennsylvania Public Utility Commission approve the commencement of construction of the portion of the Susquehanna-Roseland Transmission Line that will replace the Wallenpaupack-Bushkill 230 kV transmission line as soon as all approvals for construction of that segment of the Susquehanna-Roseland Transmission Line have been obtained, regardless of the status of permitting for other segments of the Susquehanna-Roseland Transmission Line.

PPL Electric Utilities Corporation respectfully requests that the Administrative Law Judge and the Pennsylvania Public Utility Commission grant such other approvals as are necessary or appropriate under all of the circumstances.

Respectfully submitted,

David B. MacGregor

David B. MacGregor (ID # 28804)
Post & Schell, P.C.
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103-2808
Phone: 215-587-1197
Fax: 215-320-4879
E-mail: dmacgregor@postschell.com

Michael W. Gang (ID # 25670)
John H. Isom (ID # 16569)
Andrew S. Tubbs (ID #80310)
Christopher T. Wright (ID # 203412)
Post & Schell, P.C.
17 North Second Street
12th Floor
Harrisburg, PA 17101-1601
Phone: 717-731-1970
Fax: 717-731-1985
E-mail: mgang@postschell.com
E-mail: jisom@postschell.com
E-mail: atubbs@postschell.com
E-mail: cwright@postschell.com

Paul E. Russell (ID # 21643)
Jesse A. Dillon (ID # 47580)
PPL Services Corporation
Office of General Counsel
Two North Ninth Street
Allentown, PA 18106
Phone: 610-774-4254
Fax: 610-774-6726
E-mail: perussell@pplweb.com
E-mail: jadillon@pplweb.com

Curtis S. Renner
Watson & Renner
1400 16th Street, NW
Suite 350
Washington, DC 20036
Phone: 202-737-6302
E-mail: crenner@w-r.com

Of Counsel:

Post & Schell, P.C.

Date: October 14, 2009

Attorneys for PPL Electric Utilities Corporation