

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

<b>IN RE: APPLICATION OF TRANS-ALLEGHENY</b>	:	
<b>INTERSTATE LINE COMPANY FOR</b>	:	
<b>(I) A CERTIFICATE OF PUBLIC CONVENIENCE</b>	:	
<b>TO OFFER, RENDER, FURNISH AND/OR</b>	:	
<b>SUPPLY TRANSMISSION SERVICE IN THE</b>	:	
<b>COMMONWEALTH OF PENNSYLVANIA;</b>	:	
<b>(II) AUTHORIZATION AND CERTIFICATION</b>	:	
<b>TO LOCATE, CONSTRUCT, OPERATE AND</b>	:	<b>Docket Nos. A-110172</b>
<b>MAINTAIN CERTAIN HIGH VOLTAGE ELECTRIC</b>	:	<b>A-110172F0002</b>
<b>TRANSMISSION LINES AND RELATED ELECTRIC</b>	:	<b>A-110172F0003</b>
<b>SUBSTATION FACILITIES; (III) AUTHORITY</b>	:	<b>A-110172F0004</b>
<b>TO EXERCISE THE POWER OF EMINENT</b>	:	<b>G-00071229</b>
<b>DOMAIN FOR THE CONSTRUCTION AND</b>	:	
<b>INSTALLATION OF AERIAL ELECTRIC</b>	:	
<b>TRANSMISSION FACILITIES ALONG THE</b>	:	
<b>PROPOSED TRANSMISSION LINE ROUTES</b>	:	
<b>IN PENNSYLVANIA; (IV) APPROVAL OF AN</b>	:	
<b>EXEMPTION FROM MUNICIPAL ZONING</b>	:	
<b>REGULATION WITH RESPECT TO THE</b>	:	
<b>CONSTRUCTION OF BUILDINGS; AND</b>	:	
<b>(V) APPROVAL OF CERTAIN RELATED</b>	:	
<b>AFFILIATED INTEREST ARRANGEMENTS</b>	:	

**REBUTTAL TESTIMONY OF LAWRENCE A. HOZEMPA**

**Re: Reliability Standards, Reliability Need for Prexy Facilities and the Pennsylvania  
502 Junction Facilities, and the Planning Process for TrAIL**

**December 10, 2007**

REBUTTAL TESTIMONY OF LAWRENCE A. HOZEMPA

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Lawrence A. Hozempa and my business address is 800 Cabin Hill  
3 Drive, Greensburg, Pennsylvania.

4

5 Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

6 A. Yes. I have filed written Direct Testimony on behalf of Trans-Allegheny  
7 Interstate Line Company ("TrAILCo"), which has been designated as TrAILCo  
8 Statement No. 2.

9

10 Q. PLEASE DESCRIBE THE PURPOSE OF YOUR REBUTTAL TESTIMONY.

11 A. This Rebuttal Testimony addresses various assertions contained in testimony from  
12 opponents, concerning the reliability need for the Prexy Facilities and the 502  
13 Junction Facilities, and TrAILCo's planning process. Specifically, my rebuttal  
14 addresses testimony filed by Office of Trial Staff ("OTS") witness Gary Yocca in  
15 OTS Statement No. 1, Office of Consumer Advocate ("OCA") witness Peter  
16 Lanzalotta in OCA Statement No.1, Energy Conservation Council ("ECC")  
17 witness George Loehr in ECC Statement No. 1, and testimony by members of the  
18 public during public input hearings.

1 Q. WILL THE USE OF VARIOUS TERMS IN YOUR REBUTTAL TESTIMONY  
2 BE CONSISTENT WITH THE DEFINITIONS ASSIGNED TO THOSE TERMS  
3 IN THE TABLE OF NOMENCLATURE ATTACHED TO TRAILCO  
4 WITNESS FLITMAN'S DIRECT TESTIMONY AS TRAILCO EXHIBIT DEF-  
5 1?

6 A. Yes. In addition, I may define other specific terms in my rebuttal.

7

8 OVERVIEW AND PERSPECTIVE

9 Q. BY WAY OF REBUTTAL, DO YOU HAVE ANY GENERAL  
10 OBSERVATIONS CONCERNING THE TESTIMONY OPPOSING TRAIL?

11 A. Yes, I do. The tone of the opposing testimony is that this project is being driven  
12 by an evil profit motivated entity simply looking to make a profit from  
13 transmission facilities. What is totally lost in such opposition's rhetoric is the  
14 fundamental basis upon which this project rests, which is the public service  
15 obligation of the public utility subsidiaries of Allegheny Energy, Inc. ("Allegheny  
16 Energy") to provide sufficient resources to supply adequate and reliable power to  
17 their customers. The planned transmission investment will receive a return – a  
18 regulated return, by the way – which must be provided if needed capital is to be  
19 obtained. TrAILCo witness Mader addresses the rate aspects of this project in  
20 more detail.

21

22 There is a troubling and fallacious underlying assumption implicit in the  
23 opposition's arguments that Allegheny Energy, Allegheny Power and TrAILCo

1           somehow control the universe. To the contrary, they cannot dictate where or what  
2           types of generation will be built from the Mississippi to the Atlantic; they cannot  
3           require customers to buy efficient appliances; they cannot force customers to use  
4           less power at peak times. However, what they must do is to react to the world in  
5           which they find themselves. They cannot as a matter of law hide behind good  
6           intentions, including promises of future facilities. They cannot ignore directives  
7           from PJM to step up and make the investments required to maintain a reliable  
8           transmission system. A shortfall in meeting reliability requirements places  
9           Allegheny Power customers in jeopardy of an inadequate amount of quality  
10          power, and places Allegheny Power in the cross-hairs of penalties and fines from  
11          regulators.

12  
13          We do not want to put western Pennsylvania at risk of inadequate service in just a  
14          couple of years because a project opponent objects to coal fired generation a state  
15          or two away, or the likelihood of a carbon tax that might make gas fired  
16          generation a bit more favorable in a contest with coal fired generation or the hope  
17          that generation might be built in eastern PJM. Hope is nice but Allegheny Energy  
18          along with Allegheny Power and TrAILCo and their regulators are faced with the  
19          world as it is.

20  
21          Furthermore, this proceeding should not be an indirect way to manipulate or pre-  
22          judge what generation resources might or might not be certificated for approval in  
23          the years to come.

1 Q. OTS WITNESS YOCCA AND ECC WITNESS LOEHR EACH QUESTION  
2 WHETHER VARIOUS ALTERNATIVES TO TRAIL WERE ADEQUATELY  
3 EXPLORED. DO YOU HAVE REBUTTAL TO THESE POINTS?

4 A. Yes. These witnesses question whether options to TrAIL might include demand  
5 side management ("DSM") resources, more power in eastern PJM, static VAR  
6 compensator equipment, phase angle regulators ("PAR"s), and/or the installation  
7 of a DC line. In my further rebuttal below I address these alternatives. But an  
8 overall point I want to make in rebuttal is that all of these various "work-arounds"  
9 are not, either alone or in combination, a lasting solution to the fundamental need  
10 to add the transmission capability that will be provided by TrAIL. Furthermore, a  
11 DC line is not the best solution for this type or scope of project. DC lines are  
12 more viable options for point-to-point power transfers or asynchronous  
13 interconnections, and the primary driver for TrAIL is the reliability of the  
14 interconnected, AC, EHV bulk power supply facilities.

15

16 Q. ARE YOU AWARE OF THE PIEDMONT ENVIRONMENTAL COUNCIL'S  
17 REPORT TITLED "HOW DOMINION AND ALLEGHENY POWER GOT IT  
18 WRONG"?

19 A. Yes.

20

21 Q. HAVE YOU READ THIS REPORT?

22 A. Yes I have.

1 Q. DO YOU AGREE WITH THE REPORT'S CONCLUSIONS?

2 A. No.

3

4 Q. PLEASE EXPLAIN WHY YOU DISAGREE.

5 A. Primarily I disagree with the recommendation that the Virginia State Corporation  
6 Commission should reject TrAILCo's application to construct the 500 kV  
7 facilities in Virginia. I also find it very interesting that the report claims PJM,  
8 Dominion, and Allegheny Power exaggerated the situation and the problem  
9 doesn't really exist. Then it goes on to propose options to a purported non-  
10 existent problem.

11

12 Furthermore, I disagree with the report's 'alternative solutions'. First, it proposes  
13 more power plants in eastern PJM. Neither PJM, Dominion, Allegheny Power  
14 nor TrAILCo can force a generator to build in a specific location. Secondly, it  
15 proposes aggressive demand side management. The amount of load and the wide  
16 geographic area crossing jurisdictional and state boundaries that need to be  
17 managed, in addition to the short time frame to operate within, makes this option  
18 impossible. The report also proposes installation of a PAR on the Mt. Storm-  
19 Doubs 500 kV line and construction of the Amos-Bedington-Kempton EHV  
20 line. The PAR will control the power flowing on the Mt. Storm-Doubs 500 kV  
21 line, but a PAR forces the power to flow elsewhere on the system. The power  
22 does not just go away. In short, the report obviously agrees that a line needs to be  
23 built. The Piedmont Council just does not want the line in Virginia.

1 Q. IS THERE ANYTHING YOU AGREE WITH IN THE REPORT?

2 A. Yes. I agree with the report's recommendation that an SVC at Meadow Brook  
3 Substation will work to alleviate the voltage violations in the Meadow Brook  
4 Substation area in the case of conditions modeled in PJM's 2006 RTEP loadflow,  
5 but future cases may determine that an SVC will not be enough for a long term  
6 solution. Possibly both an SVC and the TrAIL project will be needed to resolve  
7 future constraints. An SVC was part of the original TrAIL proposal and  
8 Allegheny Power's initial response to PJM regarding the voltage violations  
9 discovered through the 2006 RTEP process. An SVC is more expensive than  
10 tapping the 500 kV line into the substation, but it would work for the conditions  
11 modeled in PJM's 2006 RTEP case.

12

13 DEMAND SIDE MANAGEMENT RESOURCES

14 Q. WITH RESPECT TO DSM RESOURCES, DID YOU PROVIDE ANY  
15 UNDERLYING ANALYSIS FOR PURPOSES OF TRAILCO REBUTTAL  
16 TESTIMONY BEING OFFERED BY DR. ZARNIKAU?

17 A. Yes, I did. I completed a review of the Prexy area for loading conditions in 2009  
18 and 2011. My results are summarized below.

19 2009:

20 The load in Washington and Greene Counties in the case which is directly related  
21 to the facilities in question is 576.9 MW and 191.4 MVar.

1 The worst conductor loading occurs on the Union Junction 138 kV line for loss of  
2 the Buffalo Junction 138 kV line followed by the loss of the Wylie Ridge-Smith  
3 138 kV line. In order to reduce the loading on this line to 100%, the load in  
4 Washington and Greene Counties needs to be reduced 4% (23.1 MW and 7.6  
5 MVar).

6  
7 The worst voltage violations in the Prexy area occur with the loss of the Union  
8 Junction 138 kV line followed by the loss of the Wylie Ridge-Smith 138 kV line.  
9 I tried to reduce load in Washington and Greene Counties to bring the voltages to  
10 acceptable levels but was unsuccessful. I reduced the load 20% (115.4 MW and  
11 38.3 MVar) and still had 11 substations with unacceptable voltage. Based on the  
12 2011 analysis, discussed below, I think the load in Washington and Greene  
13 Counties needs to be less than 400 MW, which is about a 31% reduction.

14  
15 2011:

16 The load in Washington and Greene Counties in the case which is directly related  
17 to the facilities in question is 597.2 MW and 161.8 MVar.

18 The worst conductor loading occurs on the Union Junction 138 kV line for loss of  
19 the Buffalo Junction 138 kV line followed by the loss of the Wylie Ridge-Smith  
20 138 kV line. In order to reduce the loading on this line to 100%, the load in

1 Washington and Greene Counties needs to be reduced 13% (77.6 MW and 21  
2 MVA<sub>r</sub>).

3

4 The worst voltage violations in the Prexy area occur with the loss of the Union  
5 Junction 138 kV line followed by the loss of the Wylie Ridge-Smith 138 kV line.  
6 I tried to reduce load in Washington and Greene Counties to bring the voltages to  
7 acceptable levels but was unsuccessful. I reduced the load 25% (149.3 MW and  
8 40.4 MVA<sub>r</sub>) and still had 11 substations with unacceptable voltage. I reduced the  
9 load to 400 MW and 108.4 MVA<sub>r</sub> (33%) and only had one substation with  
10 unacceptable voltage.

11

12 It is interesting to note that at 400 MW almost all of the system voltages are  
13 acceptable, except for one substation, under the various North American Electric  
14 Reliability Corporation ("NERC") Category C3 contingencies. The load in  
15 Washington and Greene Counties is over 400 MW for more than 6000 hours each  
16 year. That means the area is at risk over two-thirds of the year, not just a couple  
17 of hours on a hot summer day.

18

19 I performed a similar analysis on the load reduction that will be necessary to  
20 relieve the overload on the Mt. Storm-Doubs 500 kV line and the results are  
21 below.

1       2011:

2       The load in the Allegheny Power Zone in the case which is directly related to the  
3       loading on the Mt. Storm-Doubs 500 kV line is 2303.9 MW and 461.9 MVAR.

4  
5       The worst conductor loading on the Mt. Storm-Doubs 500 kV line occurs for loss  
6       of the Mt. Storm-Greenland Gap 500 kV line. In order to reduce the loading on  
7       this line to 100%, the load in the Allegheny Power Zone needs to be reduced 36%  
8       (829.4 MW and 166.3 MVAR). This is approximately one-third of the Potomac  
9       Edison load, plus some load from Pennsylvania.

10

11       RELIABILITY STANDARDS

12       Q.     HAVE YOU REVIEWED OTS WITNESS YOCCA'S DIRECT TESTIMONY  
13             CONCERNING ELECTRIC DISTRIBUTION RELIABILITY STANDARDS  
14             IMPOSED BY THIS COMMISSION ("PAPUC"), AND NERC STANDARDS?

15       A.     Yes.

16

17       Q.     WHAT IS THE RELATIONSHIP BETWEEN THE PAPUC'S RELIABILITY  
18             STANDARDS AND THE NERC STANDARDS?

19       A.     The PAPUC has reliability standards that are directly related to the reliability of  
20             the electric distribution service customers receive. The vast majority of the  
21             customers served by Allegheny Power in Pennsylvania are connected directly to  
22             the distribution system. There are also some customers served by Allegheny  
23             Power in Pennsylvania that are served directly from the subtransmission and the

1 transmission system. As noted by Mr. Yocca, these reliability standards which  
2 apply to the distribution system include the System Average Interruption  
3 Frequency Index (SAIFI), Customer Average Interruption Duration Index  
4 (CAIDI), and System Average Interruption Duration Index (SAIDI). All of these  
5 indices are calculated values. One factor used in these calculations is the number  
6 of electric distribution customers affected by the interruption in service.

7  
8 NERC reliability standards only apply to bulk electric transmission facilities;  
9 namely, facilities operated at voltages over 100 kV. NERC standards focus on  
10 how the contingency of a bulk electric transmission facility affects the rest of the  
11 system, especially other bulk electric transmission facilities.

12  
13 The relationship between these two standards is that violating the NERC  
14 standards may impact the PAPUC reliability indices. For example, loss of a  
15 transmission facility may interrupt distribution customers and will have a direct  
16 impact on the PAPUC reliability indices. However, the converse is not true. In  
17 other words, poor distribution system reliability does not cause poor transmission  
18 system reliability; but, poor transmission system reliability can contribute to poor  
19 reliability on the distribution system.

1 Q. HAVE YOU REVIEWED ECC WITNESS LOEHR'S DIRECT TESTIMONY,  
2 ASSERTING THAT TRAILCO HAS MISAPPLIED NERC'S STANDARDS?

3 A. Yes, I did review that testimony.  
4

5 Q. DID TRAILCO MISAPPLY THE NERC STANDARDS IN DETERMINING  
6 THE NEED FOR THE PREXY FACILITIES, AS ASSERTED BY ECC  
7 WITNESS LOEHR?

8 A. No. Mr. Loehr is wrong. Our analysis was not based on simultaneous  
9 contingencies as he asserts.  
10

11 There is very little room for interpretation in the language of the NERC standards.  
12 For example, in NERC Standard TPL-002-0 Requirement R1.3.2 it states the  
13 assessment should "cover critical system conditions and study years as deemed  
14 appropriate by the responsible entity." What system conditions are critical is  
15 determined by the responsible entity. Also, the critical system condition modeled  
16 must be based on reasonable assumptions.  
17

18 In the analysis conducted which identified the reliability problems in Washington,  
19 Greene and southern Allegheny Counties, the applicable NERC Standard, TPL-  
20 003-0, was applied correctly. For example, Electrical Occurrence 1 in TrAILCo  
21 Exhibit LAH-3 is the contingency of the Buffalo Junction 138 kV line followed  
22 by the loss of the Wylie Ridge-Smith 138 kV line. The analysis of this event  
23 shows an overload on the Union Junction 138 kV line. Any manual system

1 adjustments available to alleviate the overload are considered prior to proposing  
2 any solution. In this case, there are no manual system adjustments available to  
3 alleviate the overload other than interrupting customers.

4

5 Q. WHAT ALTERNATIVES ARE PERMITTED FOR NERC CATEGORY C  
6 CONTINGENCIES?

7 A. As shown in footnote (c) of Table I in TrAIL Exhibit LAH-4,  
8 “Depending on system design and expected system impacts, the controlled  
9 interruption of electric supply to customers (load shedding), the planned removal  
10 from service of certain generators, and/or the curtailment of contracted Firm  
11 (nonrecallable reserved) electric power transfers may be necessary to maintain the  
12 overall reliability of the interconnected transmission systems.”

13

14 These options are not listed in a preferential order. The priority is to “maintain  
15 the overall reliability of the interconnected transmission systems.” These options  
16 may or may not be available in every, or in any circumstance. For example in the  
17 Prexy area, there is no generation in the area of concern that will alleviate the  
18 reliability violations so re-dispatching generation resources is not an option.  
19 Also, this part of the transmission system is not significantly impacted by  
20 transfers so curtailing transfers will not resolve the reliability violations,  
21 especially since the contingencies that cause the violations are those that isolate  
22 this area from the system.

1 Q: IS OTS WITNESS YOCCA'S OBSERVATION CORRECT, THAT  
2 ALLEGHENY POWER CONSIDERED MANUAL LOAD SHEDDING AS AN  
3 OPTION TO THE NERC CATEGORY C3 VIOLATIONS IN GREENE AND  
4 WASHINGTON COUNTIES IN PREVIOUS ANALYSES?

5 A: Yes.

6

7 Q: WHY DOES ALLEGHENY POWER NO LONGER CONSIDER MANUAL  
8 LOAD SHEDDING AS AN OPTION TO THE NERC CATEGORY C3  
9 VIOLATIONS IN GREENE, WASHINGTON AND SOUTHERN  
10 ALLEGHENY COUNTIES?

11 A. Under certain contingencies 15 substations will have unacceptable voltage, i.e.  
12 voltages below 90% of nominal or 0.90 per unit after the second contingency  
13 occurs. In order to maintain acceptable voltage in the area after the second  
14 contingency nearly one-third of the load will have to be shed since there is no  
15 generation redispatch or curtailment of transfers that will mitigate the problems in  
16 the Prexy area. That will impact approximately one-third of the customers in the  
17 area; residential, commercial and industrial. The NERC standard allows for  
18 controlled loss of load in order to mitigate the effects of a NERC Category C3  
19 contingency, however, uncontrolled loss of load is a violation of the standard.  
20 Since the second contingency may cause uncontrolled loss of load, controlled  
21 interruption of customer load may have to commence after the first contingency in  
22 anticipation of the second contingency. This is why Allegheny Power no longer

1 considers manual load shedding as an acceptable solution to the NERC Category  
2 C3 violations in Greene, Washington and southern Allegheny Counties.

3

4 RELIABILITY NEED FOR PREXY FACILITIES

5 Q. DO WASHINGTON AND GREENE COUNTIES NEED THE POWER THE  
6 PREXY FACILITIES WILL PROVIDE?

7 A. Yes. The Prexy Facilities will provide power under normal conditions to  
8 Washington, Greene, and southern Allegheny Counties. However, the need for  
9 the Prexy Facilities is really driven by reasonable planning for loss-of-power  
10 contingencies that would result in the loss of transmission facilities in the area and  
11 render the existing transmission infrastructure incapable of supporting the  
12 electrical demand in this area. Outages in the area will occur. That is when  
13 Washington and Greene Counties will really need the power the Prexy Facilities  
14 will provide.

15

16 This type of contingency loss analysis is not done in a vacuum. Portions of  
17 Washington County, in particular, are experiencing significant growth and  
18 development, which is projected to continue into the foreseeable future.  
19 Allegheny Power's load forecasts for this area reflect above-average growth over  
20 the next several years. Significant expansion in the Washington County area was  
21 readily observable while traveling through the area for the public input hearings in  
22 this proceeding. Some examples of this expansion are the commercial  
23 development along the I-70 corridor such as Strabane Square, Trinity Point and

1           The Foundry as well as the residential development in Peters and South Strabane  
2           Townships.

3  
4           Certain public input witnesses cited generic population statistics for areas  
5           encompassing Washington and Greene Counties to question why area power  
6           reliability should be of concern. Such general statistics are not a reliable resource  
7           for purposes of maintaining system reliability because they do not capture  
8           demand characteristics for the use of electricity in the area. Utility load and  
9           capacity forecasts are based on foreseeable increases in customer demand, which  
10          include increases in commercial development as well as increases in the general  
11          population and new residential developments. A few projects that are causing  
12          increases in demand are the expansions at Southpointe and The Meadows; growth  
13          at the California Technology Park; and the new Tanger Outlets.

14

15       Q.    HOW CAN THE ELECTRICAL DEMAND IN THIS AREA BE INCREASING  
16           FASTER THAN THE POPULATION?

17       A.    Even though there is a relationship between population and electrical demand,  
18           they are not directly linked. The commercial development in the area adds  
19           electrical demand without necessarily increasing the population. Some of the  
20           people who work at these commercial establishments commute from outside the  
21           area. Also, people who live in the area may build an addition on their home,  
22           install central air conditioning, or purchase a second or third television, DVD

1 player, or computer. This also increases the electrical demand without an increase  
2 in population.

3

4 Q. HAVE YOU ANY RESPONSE TO THE ASSERTION BY SOME  
5 OPPONENTS THAT YOU DID NOT CONDUCT A PROBABILITY  
6 ANALYSIS TO DETERMINE THE LIKELIHOOD OF THE EVENTS  
7 IDENTIFIED IN TRAILCO EXHIBIT LAH-3?

8 A. Yes. The events identified in TrAILCo Exhibit LAH-3 are NERC Category C3  
9 contingencies. NERC Category C3 is a set of deterministic criteria and, as such,  
10 requires the evaluation of all combinations of one NERC Category B contingency  
11 followed by (after manual system adjustment) a second NERC Category B  
12 contingency. The calculation of a probability associated with any specific event,  
13 such as those identified in TrAILCo Exhibit LAH-3, is not applicable.

14

15 Q. ARE YOU AWARE OF ANY INFORMATION THAT SUPPORTS YOUR  
16 ANALYSIS INDICATING THERE ARE IMMINENT RELIABILITY  
17 PROBLEMS?

18 Low voltages on the transmission system have occurred in Greene, Washington,  
19 and southern Allegheny Counties during the high load periods of the past three  
20 summers even with all of the transmission facilities in-service. The transmission  
21 system voltages will be much worse if a transmission line contingency were to  
22 occur during these periods.

1 Q. IS THE 500 KV LINE TRAILCO IS PROPOSING TO CONSTRUCT AS PART  
2 OF THE PREXY FACILITIES LARGER THAN NECESSARY TO MEET  
3 RELIABILITY CONCERNS?

4 A. No. First, to address a point of clarification, the 500 kV line TrAILCo is  
5 proposing to construct is TrAILCo's standard 500 kV design. Our engineering  
6 witness, John Bodenschatz, has described the design details as part of his  
7 testimony, and has filed rebuttal testimony to respond to certain additional  
8 concerns raised by other witnesses.

9  
10 In terms of why facilities are installed that are larger than the immediate need may  
11 require, it simply would not be practical for TrAILCo to construct a line that will  
12 need to be upgraded, rebuilt, or require additional transmission facilities just a few  
13 years into the future. Twenty years ago, the capacity of the existing transmission  
14 system in this area was adequate to serve the load under normal and contingency  
15 conditions with some additional capacity to allow for future load growth. As the  
16 load grew, the extra or additional capacity in the existing system got used up.  
17 Today under heavy load conditions with all facilities in-service, the voltage on the  
18 transmission buses in this area are reaching critical levels, and from our analysis  
19 we know that the voltage in this area will collapse under certain contingencies.  
20 We expect the proposed line to be adequate to serve this area for many years  
21 under normal and contingency conditions. The Prexy Facilities will help maintain  
22 acceptable voltage levels and reduce loading on other transmission lines in the  
23 area.

1 Q. WOULD SMALLER CAPACITY LINES BE A PRUDENT ALTERNATIVE  
2 TO THE CURRENT TRAILCO PROPOSAL, TO ADDRESS THE CATEGORY  
3 C VIOLATIONS CITED IN TRAILCO EXHIBIT LAH-3 FILED WITH YOUR  
4 DIRECT TESTIMONY?

5 A. No. A key consideration buried in such a question is how many smaller capacity  
6 lines would be required to address the Category C violations for the same time  
7 frame as the proposed solution. Although it may be possible to build enough 138  
8 kV lines to address the reliability concerns, I do not believe that is a practical or  
9 prudent approach. Power engineers often use a water system analogy to explain  
10 how a power system operates. Let me try to use this analogy to describe the  
11 situation we are dealing with in this area.

12  
13 We have two pumps feeding into the system right now; one at Wylie Ridge  
14 Substation near Weirton, WV and one at Yukon Substation near Smithton, PA.  
15 From these pumps there are pipes that serve into the area. When one of these  
16 pipes fails followed by another pipe failure, the pressure in this area drops below  
17 acceptable limits. Customers can no longer use water. This occurs at 15  
18 substations spread over a wide area. TrAILCo's proposal is to bring in a main  
19 line and put a new pump (Prexy Substation) centered in the transmission system  
20 of the Prexy area. It would take quite a few 138 kV lines to do the same thing. It  
21 may not require as many 138 kV lines in 2009 or 2010, but eventually there will  
22 be a significant number of 138 kV lines in the area.

1 Q. EVEN IF ADDITIONAL SMALLER LINES WERE NEEDED, WOULDN'T  
2 THIS BE A LESS COSTLY AND LESS INTRUSIVE ALTERNATIVE TO THE  
3 PROPOSED PREXY FACILITIES?

4 A. No. For each smaller capacity 138 kV line that is constructed, substations will  
5 have to be expanded to accommodate these new lines. Also, the 'pumps', i.e. the  
6 transformers, at Wylie Ridge and Yukon will need to have additional capacity.  
7 Furthermore, it certainly will not be less intrusive. Building numerous 138 kV  
8 lines will impact far more customers than building the proposed Prexy Facilities.

9  
10 Q. COULD THE ELIMINATION OF "T" JUNCTIONS REDUCE RELIABILITY  
11 PROBLEMS JUST BY CONSTRUCTING SMALL SUBSTATIONS AT THE  
12 JUNCTIONS?

13 A. No. The junctions referred to are Buffalo Junction which is located in Brooke  
14 County, West Virginia, just east of Windsor Substation and Union Junction which  
15 is located in Washington County, Pennsylvania just south of Mitchell Substation.  
16 These junctions are too far outside the area with the reliability violations. By  
17 building a substation at the junctions you will not resolve the reliability problems  
18 resolved by the Prexy Facilities.

19  
20 Q. COULD TRAILCO USE CAPACITORS TO CORRECT THE VOLTAGE  
21 PROBLEMS IDENTIFIED IN TRAILCO EXHIBIT LAH-3 INSTEAD OF  
22 BUILDING THE PREXY FACILITIES?

1 A. No. The problems listed in TrAILCo Exhibit LAH-3 are only the potential  
2 problems that TrAILCo anticipates in 2009. As I stated earlier, the system  
3 assessment completed in November 2006 shows the number of transmission  
4 system reliability problems that are anticipated in 2011 if the Prexy Facilities are  
5 not constructed. Capacitors and other types of reactive devices can support  
6 voltage to a limited degree, but they can only marginally reduce the loading on  
7 facilities such as transmission lines and transformers. In reviewing the  
8 Washington, Greene, and southern Allegheny County areas, the number of  
9 contingencies that cause reliability violations and the number of substations and  
10 lines impacted indicates a major reinforcement is required. The Prexy Facilities  
11 are the effective, long-term reinforcement that is required to address all of the  
12 reliability violations identified.

13

14 Q. WILL THE CLOSING OF CONSOL'S 84 MINE ELIMINATE THE NEED FOR  
15 THE PREXY FACILITIES?

16 A. No. First, all of the load at CONSOL's 84 Mine will not be eliminated. There  
17 will still be some demand for ventilation and mine-water treatment facilities at the  
18 mine. Furthermore, the mine owners may decide just as quickly to re-open the  
19 mine and the load will come right back on the system. Even so, the loss of the  
20 demand at CONSOL's 84 Mine will not significantly decrease the load in  
21 Washington and Greene Counties; it will only serve to decrease the growth rate  
22 since there are so many other customers adding load and moving into the area that  
23 will quickly replace their demand reduction.

1 RELIABILITY NEED FOR PENNSYLVANIA 502 JUNCTION FACILITIES

2 Q. DO YOU AGREE WITH OCA WITNESS LANZALOTTA'S ASSESSMENT  
3 THAT PJM'S DELIVERABILITY TESTS ARE MORE RIGOROUS THAN  
4 NERC STANDARDS REQUIRE, AND ARE TOO CONSERVATIVE?

5 A. No. PJM's deliverability tests are in place to ensure that the NERC Standards are  
6 met. As stated in TPL-002-0, the assessment should:

7 "cover critical system conditions and study years as deemed appropriate by the  
8 entity performing the study."

9  
10 The deliverability tests are designed to model critical system conditions such as  
11 capacity emergencies as defined in their planning standards. Obviously PJM  
12 conducts planning analyses for many transmission zones in numerous states and  
13 the criteria have been applied consistently throughout their entire footprint.

14  
15 Q. DO PJM'S DELIVERABILITY TESTS PROMOTE THE DEVELOPMENT OF  
16 TRANSMISSION BEYOND WHAT IS NEEDED?

17 A. No. PJM's deliverability tests insure the necessary transmission infrastructure is  
18 in place to meet reliability standards. The system model incorporates the  
19 generation resources, transmission infrastructure, and electrical demand forecast  
20 to be available for the year under study. PJM as the Regional Transmission  
21 Organization ("RTO") has the exclusive authority for maintaining the reliability  
22 of the transmission system. If the transmission system has a reliability violation  
23 due to the location of generation resources or electrical demand, the reliability of

1 the system must be maintained even if that requires construction of transmission  
2 facilities. PJM cannot require a generator to locate in a specific area any more  
3 than it can require an end use customer to locate in a specific area.

4

5 PLANNING PROCESS FOR TRAIL

6 Q. CERTAIN TRAILCO OPPONENTS HAVE ASSERTED THAT THE PROJECT  
7 IS DRIVEN BY ECONOMICS, NOT RELIABILITY. HAVE YOU ANY  
8 RESPONSE?

9 A. Yes, I do. The TrAIL project was prompted by reliability considerations. It was  
10 not planned in response to economic drivers.

11

12 First, consider the Prexy Facilities. There are studies going back several years  
13 that validate the reliability concerns that will be addressed by those facilities. The  
14 current version of the Prexy Facilities proposal was issued in December 2001 with  
15 an in-service date of July 2011. This reliability reinforcement project has been  
16 planned for over five years. In fact, the load in the area to be served by the Prexy  
17 Facilities has increased faster than anticipated, so the project has been advanced  
18 to insure reliable service in the area.

19

20 Secondly, the Pennsylvania 502 Junction Facilities portion of the TrAIL project is  
21 a solution to a reliability violation that was identified by PJM. PJM is an  
22 independent, not-for-profit, revenue neutral organization responsible for the  
23 reliability of the transmission system within the PJM RTO footprint. PJM will

1 not 'profit' or financially benefit from the construction of this line. PJM is  
2 mandated by FERC to maintain the reliability of the transmission system. PJM is  
3 only concerned that the line gets built so the transmission system continues to be  
4 reliable.

5

6 As I note below, other independent organizations have also determined there are  
7 reliability concerns in this area, and have included the TrAIL project as a solution.

8

9 Allegheny Power has been designated by PJM under the PJM Operating  
10 Agreement and the PJM Consolidated Transmission Owners Agreement as the  
11 appropriate entity responsible to assure the construction of TrAIL, as specified in  
12 the RTEP. Allegheny Energy designated TrAILCo as the entity to carry out  
13 Allegheny Power's responsibility.

14

15 To state that the TrAIL project is being built just for profit, and not for any  
16 reliability purpose, is incorrect.

17

18 Q. HAVE YOU ANY COMMENT WITH RESPECT TO ECC WITNESS  
19 HANHAM'S ASSERTIONS OF "UNEVEN ECONOMIC DEVELOPMENT"  
20 WITH RESPECT TO THE PENNSYLVANIA PORTIONS OF THE TRAIL  
21 PROJECT?

22 A. Except for the 1.2 mile piece of the TrAIL project from 502 Junction to the West  
23 Virginia state line, TrAIL in Pennsylvania is intended to solely address local

1 reliability needs. Thus, any assertions about "uneven economic development"  
2 between Greene/Washington Counties in Pennsylvania and Loudoun County in  
3 Virginia are not germane to this proceeding. There is no relationship between  
4 Loudoun County and the primary facilities proposed by TrAIL in Pennsylvania.

5

6 Q. WILL THE CONSTRUCTION OF TRAIL ENCOURAGE MORE COAL  
7 FIRED GENERATION, AND THEREFORE INCREASED CO2 EMISSIONS?

8 A. I cannot determine what types of additional generation resources, if any, will be  
9 constructed due to the construction of TrAIL. Nor can I determine if existing coal  
10 fired generation resources will be utilized more, or less. The PJM generation  
11 interconnection queue has numerous generation projects identified in addition to  
12 coal. In the Pennsylvania and West Virginia area there are also wind, natural gas,  
13 and methane generation projects proposed.

14

15 Q. WHY DOESN'T PJM OR TRAILCO ENCOURAGE MORE GENERATION IN  
16 EASTERN PJM?

17 A. Neither PJM nor TrAILCo has the authority to direct construction of generation  
18 resources.

19

20 Q. IS ECC WITNESS LOEHR'S ASSERTION CORRECT, THAT MORE  
21 TRANSMISSION LINES DO NOT MEAN THE TRANSMISSION SYSTEM  
22 HAS MORE RELIABILITY?

1 A. No. Think of transmission lines as spokes in a wheel or threads in a spider's web.  
2 The more spokes or threads, the stronger or more stable the wheel or the web  
3 becomes. If we cut a thread of a web with a lesser amount of threads, the web  
4 becomes weaker and distorted, especially near where the thread was cut. If we  
5 cut a thread of a web with a greater amount of threads, the web is only slightly  
6 weaker and the distortion is less. This is also true of a more highly connected  
7 transmission system. Loss of a transmission line has less of an impact on  
8 reliability in a highly connected transmission system.

9  
10 Q. IS ECC WITNESS LOEHR'S ASSERTION CORRECT, THAT TRAIL HAS  
11 NOT BEEN REVIEWED IN COORDINATION WITH OTHER PROPOSED  
12 TRANSMISSION LINES?

13 A. No. First, let me state again that TrAIL is the best solution to address the specific  
14 reliability violations cited in TrAILCo Exhibit SWG-1. PJM has been reviewing  
15 and continues to review proposals to address reliability, market efficiency, and  
16 operating concerns. They have recently announced the Amos-Bedington-  
17 Kemptown Potomac Appalachian Transmission Highline (PATH) project. PATH  
18 is also a project to address a specific reliability violation, and the loadflow model  
19 used to determine its need had TrAIL modeled in it. It would be imprudent for  
20 anyone to conduct a study on a major proposed transmission line project without  
21 considering the effects of other major transmission line projects.

1 Q. HAS THE TRAIL PROJECT BEEN STUDIED BY INTER-REGIONAL  
2 GROUPS?

3 A. Yes. TrAIL was modeled in the Reliability*First* Corporation ("RFC")  
4 Transmission System Performance ("TSP") study completed in November 2006.  
5 This assessment studied 148 different transfer scenarios involving nine study  
6 clusters within RFC based on geographic area and eight study clusters outside of  
7 RFC.

8  
9 RFC recently completed another TSP study in October/November 2007 for the  
10 years 2008 and 2013. The 2013 study also included TrAIL.

11  
12 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

13 A. Yes. However, I reserve the right to file such additional testimony as may be  
14 necessary or appropriate, and to supplement my rebuttal after reviewing responses  
15 to discovery.