

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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

**DIRECT TESTIMONY OF
STEVEN R. HERLING**

**Re: Description of PJM and its Regional Transmission Planning Process;
TrAIL Project within PJM's Planning Process**

April 13, 2007

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Steven R. Herling and my business address is 955 Jefferson Avenue,
3 Valley Forge Corporate Center, Norristown, Pennsylvania 19403-2497.

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5

DUTIES AND RESPONSIBILITIES

6 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

7 A. I am Vice President of Planning for PJM Interconnection, L.L.C. (“PJM”). As
8 PJM’s Vice President of Planning, I am responsible for the Capacity Adequacy
9 Planning Department, which develops the long-term load forecast for the PJM
10 region and, in consultation with load-serving entities, sets and enforces
11 requirements for the sufficiency, adequacy and availability of the generation
12 resources needed to ensure reliable service to loads; the Interconnection Planning
13 Department, which evaluates interconnections to the transmission system by new
14 generation and merchant transmission projects; and the Transmission Planning
15 Department, which evaluates the reliability and market efficiency of the
16 transmission grid and develops the regional transmission expansion plan
17 (“RTEP”).

18

EXPERIENCE AND EDUCATION

19 Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND
20 EDUCATIONAL BACKGROUND.

21 A. I have been employed by PJM since May 1990, when I began work as an Engineer
22 in the Operations Planning Department. I was promoted to Senior Engineer in
23 1993 and to Manager of the System Planning Department in 1994. I then held a

1 number of management positions until I was promoted to Executive Director,
2 System Planning Division in 2003. I was promoted to my current position in May
3 2004.

4 While at PJM, I have contributed to or led initiatives that resulted in a wide range
5 of milestone achievements in its evolution and growth as a regional transmission
6 organization (“RTO”), including the creation of the RTEP process, the
7 development of procedures and standard terms and conditions for generator and
8 merchant transmission interconnections, and the reliability and adequacy aspects
9 of successive integrations of additional control areas that have more than doubled
10 the size of the PJM market area in the last five years.

11 In addition to my work for PJM, I have contributed to a wide range of activities of
12 the North American Electric Reliability Corporation (“NERC”), formerly the
13 North American Electric Reliability Council. Currently, I serve as vice-chair of
14 the NERC Planning Committee. I have also served on various regional and
15 industry working groups and committees addressing reliability and planning
16 matters. I have testified on a number of occasions on system planning and
17 reliability issues in proceedings before the Federal Energy Regulatory
18 Commission (“FERC”), state commissions, and legislative task forces.

19 Prior to joining PJM, I worked for the General Public Utilities Service Corporation
20 for three years in systems operations, where I was responsible for dispatcher
21 training and certification, operations planning activities, and energy management
22 system and operational support tools. Prior to that, I worked for the American
23 Electric Power Service Corporation (“AEP”) for eight years in bulk transmission

1 planning. In that position, I performed a range of power system analyses related to
2 mechanical behavior of turbine-generator shaft systems, the AEP 765 kilovolt
3 (“kV”) transmission system, and generator and circuit breaker dynamic modeling.

4 I am a licensed Professional Engineer in the state of Ohio. I hold a Bachelor of
5 Science in Electrical Power Engineering and a Master of Engineering in Electric
6 Power Engineering, both from Rensselaer Polytechnic Institute.

7
8 PURPOSE OF TESTIMONY

9 Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

10 A. I have been asked by Trans-Allegheny Interstate Line Company (“TrAILCo”) to
11 describe PJM and its regional transmission expansion planning process
12 (“RTEPP”). In particular, I will discuss the PJM RTEPP with respect to the
13 planned Prexy Facilities and the Pennsylvania 502 Junction Facilities of the Trans-
14 Allegheny Interstate Line (“TrAIL”).

15 Q. WILL YOU BE USING THE SAME TERMS IN YOUR DIRECT TESTIMONY
16 AS SET FORTH IN THE TABLE OF NOMENCLATURE ATTACHED TO THE
17 TESTIMONY OF TRAILCO WITNESS DAVID E. FLITMAN AS TRAILCO
18 EXHIBIT DEF-1?

19 A. Yes. In addition, I may define other specific terms in my direct testimony.

20
21 PJM

22 Q. PLEASE DESCRIBE PJM.

23 A. PJM is a regional transmission organization, or RTO, that ensures the reliability
24 of the electric transmission system under its functional control and coordinates

1 the movement of wholesale electricity in all or parts of Delaware, Illinois,
2 Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio,
3 Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

4 The PJM system serves approximately 51 million people. PJM dispatches more
5 than 164,000 megawatts (“MW”) of generation capacity over more than 56,000
6 miles of transmission lines – a system that serves nearly 20 percent of the United
7 States economy. PJM’s wholesale electricity markets had more than \$22 billion
8 in billings in 2005.

9 PJM presently has more than 450 members. These members/customers include
10 power generators, Transmission Owners, electricity distributors, power marketers
11 and large consumers. PJM’s role as a federally regulated RTO means that it acts
12 independently and impartially in operating and planning the regional
13 transmission system and in overseeing the wholesale electricity market.

14 As part of its ongoing responsibilities as an RTO, PJM prepares the RTEP each
15 year in order to analyze the electric supply needs of the customers in the PJM
16 region. The RTEP directs transmission upgrades to address near-term needs
17 within five years and assesses long-lead-time transmission options requiring a
18 planning horizon of 15 years or more. The RTEP provides forward-looking
19 information as to the state of the supply and delivery infrastructure and identifies
20 future system needs, both in terms of reliability and market efficiency. The
21 RTEP will direct PJM’s transmission owning members to address such needs
22 through specific transmission solutions. However, the information publicly
23 disseminated through the RTEP permits other resource providers, including

1 generators, demand response providers and merchant Transmission Owners, the
2 opportunity to address identified system needs in a manner that might delay or
3 even obviate a transmission solution first identified in the RTEP.

4 Q. IS ALLEGHENY POWER A PJM MEMBER?

5 A. Yes. Each of the three Allegheny Power operating companies is a member of
6 PJM and is considered a “Transmission Owner” under the Amended and Restated
7 Operating Agreement of PJM Interconnection, L.L.C. (“Operating Agreement”).

8 Q. IS TRAILCO A PJM MEMBER?

9 A. Yes. TrAILCo became a PJM member effective on March 28, 2007 and is
10 considered a Transmission Owner under the Operating Agreement.

11 Q. IS VIRGINIA ELECTRIC AND POWER COMPANY A PJM MEMBER?

12 A. Yes, Virginia Electric and Power Company (“Dominion Virginia Power”) is a
13 Transmission Owner member of PJM under the Operating Agreement.

14 Q. HOW IS THE TERM “TRANSMISSION OWNER” DEFINED BY THE
15 OPERATING AGREEMENT?

16 A. “Transmission Owner” means a PJM member that owns Transmission Facilities
17 or leases Transmission Facilities with rights equivalent to ownership.
18 “Transmission Facilities” means facilities that (i) are within the PJM region, (ii)
19 meet the definition of transmission facilities pursuant to FERC’s Uniform System
20 of Accounts or have been classified as transmission facilities in a ruling by FERC
21 addressing such facilities, and (iii) have been demonstrated to the satisfaction of
22 PJM to be integrated with the PJM transmission system and integrated into the

1 planning and operation of the PJM transmission system to serve all of the power
2 and transmission customers within the PJM region.

3 PJM TRANSMISSION PLANNING PROCESS

4 Q. DOES PJM HAVE A WRITTEN PROTOCOL FOR ITS TRANSMISSION
5 PLANNING PROCESS?

6 A. Yes. The process is set out in Schedule 6, entitled “Regional Transmission
7 Expansion Planning Protocol,” of the Operating Agreement. The purpose and
8 objective of Schedule 6 is stated as:

9 This Regional Transmission Expansion Planning Protocol shall
10 govern the process by which the Members shall rely upon the
11 Office of the Interconnection to prepare a plan for the enhancement
12 and expansion of the Transmission Facilities in order to meet the
13 demands for firm transmission service, and to support competition,
14 in the PJM Region. The Regional Transmission Expansion Plan to
15 be developed shall enable the transmission needs in the PJM
16 Region to be met on a reliable, economic and environmentally
17 acceptable basis.

18
19 Q. WHAT IS PJM’S PLANNING PROCESS?

20 A. A Transmission Owner’s integration into PJM has the potential to enhance
21 reliability and economic benefits, as a result of inclusion in a larger, stronger and
22 more diversified portfolio of aggregated resources. In order to realize this mutual
23 benefit for its members, PJM plans the integrated system from a regional
24 perspective in collaboration with each individual Transmission Owner. PJM’s
25 authority and obligation to perform this function is established in its Tariff and
26 related agreements whereby certain planning functions that historically had been
27 managed by individual Transmission Owners have been contractually assigned to
28 PJM. This collaborative planning process - the RTEPP - provides an open and

1 inclusive forum for participation by all classes of market participants and
2 stakeholders.

3 PJM's RTEPP identifies transmission system upgrades and enhancements to
4 preserve the reliability of the transmission system. PJM's federally approved,
5 region-wide planning process provides an open, non-discriminatory framework to
6 identify the system enhancements that will ensure reliability and access by load
7 to efficient power supply.

8 The RTEPP integrates transmission, generation and demand-side resources to
9 address transmission system constraints involving reliability and persistent
10 congestion. The result is one process that integrates many system factors,
11 including:

- 12 • Forecasted load growth, demand-side-response efforts and
13 distributed generation additions;
 - 14 • Interconnection requests by developers of new generating
15 resources and merchant transmission facilities;
 - 16 • Solutions to mitigate persistent congestion and forward-looking
17 economic constraints and to ensure adequate allocation and
18 funding of long-term financial transmission rights;
 - 19 • Assessments of the potential risk of aging infrastructure;
 - 20 • Long-term firm transmission service requests;
 - 21 • Generation retirements and other deactivations;
 - 22 • Transmission Owner-initiated improvements; and
 - 23 • Load-serving entity capacity plans.
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1 Q. WHAT IS A “LOAD-SERVING ENTITY”?

2

3 A. Under the Operating Agreement, a load-serving entity means an entity that serves
4 end-users (or ultimate consumers of electricity) within the PJM region and that
5 has been granted authority or has an obligation pursuant to state or local law,
6 regulation or franchise to sell electric energy to end-users located within the PJM
7 region. The term includes load aggregators, power marketers and duly designated
8 agents of load-serving entities.

9 Q. ARE THE TRANSMISSION OWNERS ACTIVELY INVOLVED IN THE PJM
10 RTEPP WITH THE SELECTION OF THE EXPANSION PLANS?

11 A. Yes. The Transmission Owners’ involvement is essential to make the process
12 work. The participation of the Transmission Owners’ planning groups is
13 extremely important in the development of the regional transmission plan. The
14 Transmission Owners have first hand knowledge of their systems and have
15 developed relationships with load serving entities within their areas of PJM.
16 When PJM determines there are reliability violations, the Transmission Owners
17 are consulted to validate the violations and to suggest recommended upgrades to
18 relieve them. Additionally, each Transmission Owner performs its own
19 independent analysis to identify reliability violations from a more local zone
20 perspective. This approach leads to a more comprehensive package of upgrades
21 that incorporates resolutions to both local and regional reliability violations.

1 Q. WHAT IS THE MAGNITUDE OF TRANSMISSION UPGRADES
2 AUTHORIZED BY PJM?

3 A. More than \$4.2 billion of transmission upgrades and additions have been
4 authorized by the PJM Board of Managers (“PJM Board”) from the inception of
5 the RTEPP in 1999 through December 2006. About \$3.5 billion of baseline
6 transmission network upgrades across PJM ensure that established reliability
7 criteria will continue to be met. At the same time, \$673 million of additional
8 transmission upgrades will add more than 24,000 MW of new generating
9 resources and merchant transmission projects.

10 Q. DESCRIBE WHAT YOU MEAN BY “BASELINE TRANSMISSION
11 NETWORK UPGRADES.”

12 A. PJM’s baseline reliability assessments identify areas where the electric power
13 system, as forecasted over a specific time, is not in compliance with reliability
14 standards developed by NERC, PJM reliability standards and standards required
15 by the Nuclear Regulatory Commission applicable to nuclear plant licensees.
16 Baseline assessment analyses lead to recommendations for enhancement plans to
17 ensure compliance with each set of standards.

18 Q. PLEASE EXPLAIN THE ROLE OF FERC AND NERC IN ADDRESSING
19 TRANSMISSION RELIABILITY.

20 A. Historically, compliance with reliability standards developed by NERC was
21 considered voluntary. Because those standards set an industry standard for good
22 utility practice, compliance was generally universal by Transmission Owners and
23 generation owners. However, the Energy Policy Act of 2005 (“EPAct 2005”)

1 created a mandatory compliance and enforcement regime for reliability standards
2 under the oversight of FERC. Pursuant to EPCRA 2005, FERC has designated
3 NERC as the “Electric Reliability Organization” for the United States and NERC
4 has proposed various reliability standards, most of which have been adopted by
5 FERC for enforcement as FERC rules, with mandatory compliance set to begin
6 on June 1, 2007. PJM has been applying the NERC reliability standards, and the
7 PJM deliverability standards used to apply them, on a mandatory basis since the
8 initiation of the RTEP process.

9 Q. ARE ANY OF THESE RELIABILITY STANDARDS ENFORCEABLE
10 THROUGH THE IMPOSITION OF MONETARY PENALTIES FOR NON-
11 COMPLIANCE?

12 A. Yes. When compliance becomes mandatory, penalties for violation of the
13 reliability standards developed by NERC and approved by FERC may be as high
14 as \$1 million per violation per day.

15 Q. WHAT RELIABILITY CRITERIA DOES PJM EVALUATE IN THE
16 DEVELOPMENT OF THE RTEP?

17 A. PJM tests a wide range of reliability criteria in the development of the RTEP. All
18 reliability criteria testing procedures employed in the development of the RTEP
19 include detailed assumptions regarding load levels, transfer levels and generation
20 patterns. The tests are referred to as “bright line” tests because there can be no
21 doubt as to whether the criteria are satisfied or violated. The specific assumptions
22 and requirements associated with each criterion are documented and the analysis
23 procedures are posted on the PJM website.

1 PJM tests for compliance with all reliability criteria imposed through the
2 NERC Planning Standards. NERC Category A criteria require that, for all
3 facilities in service, equipment thermal ratings and system voltage limits are
4 respected and that the system is stable. NERC Category B criteria impose similar
5 requirements with one facility removed from service. This is referred to as the “n
6 minus 1” or “n-1” criteria. These criteria ensure that the system continues to
7 remain reliable upon the instantaneous outage of a transmission element. PJM
8 ensures compliance with NERC Categories A and B through the more rigorous
9 deliverability criteria used in testing the PJM system.

10 PJM tests for both load deliverability and generator deliverability. The load
11 deliverability test evaluates the capability of the transmission system to deliver
12 energy from the remainder of the PJM region to a portion of the PJM region
13 experiencing higher than normal unavailability of generating capacity. The
14 generator deliverability test evaluates the capability of the transmission system to
15 deliver energy from a grouping of generators experiencing higher than normal
16 availability to the remainder of the PJM region experiencing lower than normal
17 generator availability. The deliverability tests establish a link between generation
18 resource adequacy for the region and the transmission adequacy necessary to
19 deliver the generation resources to loads.

20 NERC Category C criteria require the system to be stable and equipment thermal
21 ratings and system voltage limits to be respected for less probable system events.
22 Such events include second contingencies, involving the loss of one system
23 element followed by system readjustments and then the loss of a second system

1 element. This is referred to as the “n minus 2” or “n-2” criteria. Category C also
2 includes events such as the loss of two circuits on a single tower line or for a
3 single faulted system element followed by a circuit breaker failing to operate,
4 what is referred to as a stuck breaker. While generation re-dispatch is allowed
5 after the first element in an n-2 event, PJM does not dispatch generation in
6 anticipation of loss of tower line events or stuck breaker events and the test of
7 compliance with these criteria therefore, does not allow generation patterns to be
8 adjusted.

9 In addition, PJM tests for compliance with all locally established reliability
10 criteria (i.e., Transmission Owner reliability criteria). Such criteria may, for
11 example, require a higher degree of reliability through more stringent standards in
12 urban areas. In all cases, such local criteria are documented and posted on the
13 PJM website.

14 Q. PLEASE EXPLAIN THE SIGNIFICANCE OF PJM’S FIVE-YEAR BASELINE
15 RTEP ANALYSIS.

16 A. PJM performs a five-year baseline analysis to assess compliance with reliability
17 criteria and recommend transmission upgrades to meet near-term demand growth
18 for customers’ electricity needs not only from existing generation, but from new
19 resources that arise from interconnection requests by developers seeking to
20 construct new generating plants and merchant transmission facilities. The five-
21 year baseline component of PJM’s RTEPP includes the following:

- 22 • Solutions to address baseline transmission constraints revealed
23 by reliability criteria violations observed in power-flow and
24 related studies;

- 1 • Cost responsibility allocations for baseline reliability
2 upgrades;
- 3
- 4 • “Direct connection” transmission enhancements associated
5 with generation and merchant transmission interconnection
6 requests; and
- 7
- 8 • Necessary “network” transmission enhancements in response
9 to interconnection requests.
- 10

11 Approved transmission upgrades identified through the five-year planning process
12 have ensured continuing compliance with all applicable reliability criteria and
13 have enabled the interconnection of more than 19,000 MW of new generation to
14 the grid.

15 Q. DOES PJM ENGAGE IN PLANNING BEYOND A FIVE-YEAR HORIZON?

16 A. Yes. The development of the five-year baseline plan is only the first step in a
17 more comprehensive 15-year planning process. PJM’s 15-year planning horizon
18 permits the consideration of many long-lead-time transmission options. This
19 type of planning enables PJM to address both the reliability and economic
20 performance of the transmission grid based on the impacts of long-term load
21 growth and a wide range of market factors.

22 The scope of 15-year planning encompasses reliability-based sensitivity analyses.
23 These sensitivity studies examine the long-term reliability impacts of uncertainty
24 with respect to assumptions about economic growth, the extent of loop flows
25 within PJM, and assumptions about generation resources.

26 PJM also conducts market efficiency studies as part of each RTEP cycle’s 15-
27 year analyses. Market efficiency analyses addresses such factors as the impacts
28 of fuel and emissions-related prices, generation retirements and the delivery needs

1 of the new “clustered” generation projects, such as those emerging in PJM
2 associated with large baseload Midwest and northern Pennsylvania coal projects,
3 nuclear generation in Maryland and northern Virginia, Appalachian Ridge and
4 northern Illinois wind farms and natural gas pipeline access projects. This
5 analysis provides market participants with both historic congestion information
6 and fifteen-year econometric projections of the cost and benefits of proposed
7 transmission projects.

8 As a result of the first such 15-year analysis, in June 2006, PJM formally
9 endorsed further study and evaluation of a number of backbone transmission
10 proposals to meet the long-term reliability and economic needs of the PJM
11 region. These initial proposals, together with several more Transmission Owner-
12 proposed projects and about a dozen more member-proposed projects, are being
13 analyzed to identify the most effective set of projects to resolve identified
14 reliability and market efficiency issues.

15 Q. PLEASE EXPLAIN THE SIGNIFICANCE OF THE DEPARTMENT OF
16 ENERGY (“DOE”) STUDY AND PJM’S REQUEST FOR THE NATIONAL
17 INTEREST ELECTRIC TRANSMISSION CORRIDOR (“NIETC”)
18 DESIGNATION.

19 A. In its August, 2006 National Electric Transmission Congestion Study (“DOE
20 Study”), the DOE identified the Atlantic coastal area from metropolitan New
21 York southward through northern Virginia as one of two “Critical Congestion
22 Areas” in the United States considered by DOE to be critically important to

1 remedy existing or growing congestion problems because the current and/or
2 projected effects of the congestion are severe.

3 In response to the DOE Study, PJM has filed a request for the designation of
4 three National Interest Electric Transmission Corridors (“NIETC Designation”)
5 to facilitate the type of multi-state projects, including the planned Prexy Segment,
6 502 Junction Segments and Loudoun Segment.

7 Q. HOW ARE RELIABILITY PROJECTS BUILT AND PAID FOR?

8 A. PJM’s Consolidated Transmission Owners Agreement (“TOA”) obligates
9 Transmission Owners to build transmission facilities, approved by the PJM
10 Board, that are needed to meet reliability standards and other reliability
11 requirements. This requirement provides all PJM stakeholders much needed
12 certainty in resolving reliability concerns. Regardless of who bears responsibility
13 for the actual construction of new transmission facilities, pursuant to Schedule 6
14 of the Operating Agreement, the cost of new reliability facilities is paid for by
15 load serving entities in the transmission zones that cause the need for the project.
16 Costs are allocated among the transmission zones in proportion to their
17 contribution to the reliability criteria violation resolved by the required
18 transmission facility. Transmission Owners recover their costs through FERC-
19 approved transmission service rates.

20 Projects associated with the interconnection of new generation and merchant
21 transmission projects must meet specified financial and construction-related
22 obligations. These requirements enable PJM to ensure that upgrade construction
23 remains on schedule and required in-service dates are met.

1 Q. DOES PJM COORDINATE TRANSMISSION PLANNING WITH
2 NEIGHBORING SYSTEMS?

3 A. Yes. PJM coordinates its planning processes with neighboring systems to
4 address issues of mutual concern. PJM participates in such interregional
5 planning under arrangements with the Midwest Independent Transmission
6 System Operator, the Independent System Operator of New England, the New
7 York Independent System Operator, the Tennessee Valley Authority and
8 Progress Energy.

9 Q. DOES THE RTEPP INVOLVE OTHERS OUTSIDE OF THE PJM
10 ORGANIZATION?

11 A. Yes. The RTEPP is open, transparent and collaborative from start to finish.
12 Forums and processes provide opportunities for stakeholders to help PJM
13 improve the transmission grid, ensuring reliability and access to robust,
14 competitive markets. The activities of the Transmission Expansion Advisory
15 Committee (“TEAC”) provide the primary forum for the ongoing exchange of
16 ideas, discussion of issues and presentation of planning findings. PJM governing
17 committees such as the Members Committee, Planning Committee and TOA
18 Administrative Committee provide additional opportunities for stakeholders to
19 provide input.

20 Ad hoc PJM stakeholder groups are commissioned periodically to address
21 specific issues. Such groups are addressing issues associated with 15-year
22 planning, market efficiency and cost allocation.

1 In addition, PJM staff liaisons to federal and state regulatory bodies, including
2 the Organization of PJM States, Inc., continue to foster two-way communication
3 and the resolution of planning issues.

4 Q. PLEASE DESCRIBE THE RELATIONSHIP OF THE TEAC TO THE RTEPP.

5 A. The TEAC operates under specific provisions of the Operating Agreement.
6 TEAC activities are at the core of stakeholder input in the RTEPP. The scope of
7 the TEAC's responsibility includes the review of and the provision of comments
8 and input on the following:

- 9 • Scope and assumptions of RTEPP studies, including
10 economic/market efficiency analysis;
11
- 12 • RTEP analysis at defined points during the RTEPP cycle;
13
- 14 • RTEP recommendations to be proposed to the PJM Board for
15 endorsement; and
16
- 17 • Specified RTEPP matters as requested by the PJM Board.
18

19 TEAC participation is open to all transmission customers, any other entity
20 proposing to provide transmission facilities to be integrated into the PJM region,
21 all PJM members, representatives of state commissions, the agencies and offices
22 of state consumer advocates of states in the PJM region and any other interested
23 parties. This broad group of constituents fosters a wide range of opinions,
24 comments and advice on RTEP process plan development and recommendations
25 for PJM Board approval.

26 Following the presentation of analysis assumptions or results to the TEAC,
27 stakeholders are invited to provide written comments. These comments are

1 provided to the PJM Board for their consideration and serve as the basis for on-
2 going dialogue at subsequent TEAC meetings.

3
4 THE PREXY FACILITIES

5 Q. HAS THE PJM BOARD APPROVED AN RTEP THAT INCLUDES THE
6 PREXY FACILITIES?

7 A. Yes. In June 2006, the PJM Board approved an RTEP that includes a new 500 kV
8 transmission line to connect the proposed 502 Junction Substation in Greene
9 County, Pennsylvania, with the proposed Prexy Substation in Washington
10 County, Pennsylvania. The RTEP includes the new Prexy Substation and the
11 Prexy 138 kV lines.

12 Q. WHICH PORTION OF THESE FACILITIES WILL BE BUILT BY
13 ALLEGHENY POWER?

14 A. The RTEP designated Allegheny Power as the Transmission Owner responsible
15 for constructing all of these facilities, which are identified in the RTEP as
16 Upgrade b0321. Allegheny Power has notified PJM that TrAILCo, an affiliate of
17 Allegheny Power, will construct these facilities. TrAILCo includes these
18 facilities in the project it refers to as the “Trans-Allegheny Interstate Line” or
19 “TrAIL” for short. TrAIL includes the Pennsylvania 502 Junction Facilities, the
20 remaining 502 Junction Segments and the Meadow Brook Expansion as part of
21 TrAIL. However, those facilities are not part of the Prexy Facilities.

1 Q. WHY ARE THE PREXY FACILITIES NECESSARY?

2 A. As explained in detail in the direct testimony of TrAILCo witnesses Hozempa and
3 Gass, these facilities are necessary to address four specific electric reliability
4 problems that are expected to occur beginning in 2009 if they are not constructed.

5 Q. WHAT WAS THE BASIS FOR THE PJM BOARD'S JUNE 2006
6 DESIGNATION OF ALLEGHENY POWER TO CONSTRUCT THE PREXY
7 FACILITIES?

8 A. When PJM identifies reliability projects such as those that comprise the Prexy
9 Facilities that need to be constructed, Schedule 6 of the Operating Agreement
10 requires PJM to designate one or more Transmission Owners or other entities to
11 construct, own and/or finance the recommended transmission enhancement or
12 expansion. The projects designated to Allegheny Power that TrAILCo has
13 identified as constituting TrAIL and the respective segments referred to in this
14 proceeding are identified in the June 2006 RTEP as follows:

15

Upgrade	Description
b0321	Prexy 500 kV line, Prexy 500/138 kV Substation, and Prexy138 kV Lines
b0328.2	Meadow Brook Substation to Loudoun Substation 500 kV line (approximately 20 of 50 miles in the Allegheny Power transmission zone)
b0347.1	502 Junction Substation to Mt. Storm Substation 500 kV line
b0347.2	Mt. Storm Substation to Meadow Brook Substation 500 kV line
b0347.3	Construct 502 Junction Substation
b0347.4	Upgrade Meadow Brook Substation

16

1 The projects described in the June 2006 RTEP for construction by Dominion
2 Virginia Power are as follows:

Upgrade #	Description
b0328.1	Meadow Brook Substation to Loudoun Substation 500 kV line (approximately 30 of 50 miles in the Dominion Virginia Power transmission zone)
b0328.3	Upgrade Mt. Storm Substation
b0328.4	Upgrade Loudoun Substation

3
4 Although the Prexy Facilities are considered by TrAILCo to be a part of TrAIL,
5 they are not part of the 502 Junction Segments or Loudoun Segment because they
6 are based on different electric reliability criteria drivers.

7 Q. DOES THE PJM OPERATING AGREEMENT PERMIT ALLEGHENY
8 POWER TO DESIGNATE TRAILCO TO FINANCE, CONSTRUCT, OWN,
9 OPERATE AND MAINTAIN TRAIL?

10 A. Yes. The Operating Agreement permits a Transmission Owner or other entity
11 designated to construct, own and/or finance a recommended transmission
12 enhancement or expansion to agree to undertake its designated responsibilities
13 jointly with other Transmission Owners or other entities.

14 Q. WHO WITHIN PJM HAD THE PRIMARY RESPONSIBILITY FOR
15 PREPARING OR SUPERVISING THE PREPARATION OF THE RTEP
16 STUDIES THAT IDENTIFIED THE ELECTRICAL NEED FOR THE PREXY
17 FACILITIES?

18 A. Scott Gass supervised the creation of the 2011 Regional Transmission Expansion
19 Planning base case while he was employed by PJM as Manager of the
20 Transmission Planning Department. He also supervised all of the analyses

1 conducted with the case, including model adjustments, identifying reliability
2 criteria violations, and formulating solutions to the violations. At that time, Mr.
3 Gass was one of my direct reports.

4
5 PENNSYLVANIA 502 JUNCTION FACILITIES

6 Q. HAS THE PJM BOARD APPROVED AN RTEP THAT INCLUDES THE
7 PENNSYLVANIA 502 JUNCTION FACILITIES?

8 A. Yes. In June 2006, the PJM Board approved an RTEP that includes a new 500 kV
9 transmission line to connect the proposed 502 Junction Substation in Greene
10 County, Pennsylvania, with Dominion Virginia Power's existing Mt. Storm
11 Substation in Grant County, West Virginia. From the Mt. Storm Substation, the
12 line will continue generally eastward and connect with Allegheny Power's
13 existing Meadow Brook Substation in Frederick County, Virginia. From the
14 Meadow Brook Substation, the line will continue generally eastward to Dominion
15 Virginia Power's Loudoun Substation in Loudoun County, Virginia.

16 Q. WHICH PORTION OF THE LINE AND RELATED FACILITIES WILL BE
17 BUILT BY ALLEGHENY POWER?

18 A. The RTEP designated Allegheny Power as the Transmission Owner responsible
19 for constructing the Pennsylvania 502 Junction Facilities, the remaining 502
20 Junction Segments and the Meadow Brook Expansion. Allegheny Power has
21 notified PJM that TrAILCo will construct these facilities.

1 Q. WHICH PORTION OF THE LINE AND RELATED FACILITIES WILL BE
2 BUILT BY DOMINION VIRGINIA POWER?

3 A. The RTEP designated Dominion Virginia Power as the Transmission Owner
4 responsible for constructing the remainder of the line that is referred to in this
5 proceeding as the Loudoun Segment as well as required the Mt. Storm Expansion
6 and the Loudoun Expansion.

7 Q. WHY IS THE LINE COMPRISED OF THE 502 JUNCTION SEGMENTS,
8 INCLUDING THE PENNSYLVANIA 502 JUNCTION FACILITIES, AND
9 LOUDOUN SEGMENT NECESSARY?

10 A. Studies performed by PJM under the direction of Scott Gass, while an employee
11 of PJM, revealed the need for a major new 500-kV transmission line to avoid
12 reliability criteria violations observed to occur by 2011. These violations include
13 potential line overloads and voltage problems. Analysis of various options
14 yielded a recommendation for this new line from the western part of PJM to feed
15 the mid-Atlantic and northern Virginia load centers. These load centers
16 encompass an area of PJM that continues to experience significant economic
17 growth – growth that requires access to additional sources of electricity and the
18 transmission infrastructure to provide it. Mr. Gass’s testimony discusses in detail
19 the studies performed by PJM that determined the need for this line, as well as the
20 load growth that has contributed to the need for these additional facilities.

21 Q. WHAT WAS THE BASIS FOR THE PJM BOARD’S JUNE 2006
22 DESIGNATION OF ALLEGHENY POWER TO CONSTRUCT THE
23 PROJECTS THAT COMPRISE THE 502 JUNCTION FACILITIES AND

1 RELATED FACILITIES AND DOMINION VIRGINIA POWER TO
2 CONSTRUCT THE PROJECTS THAT CONSTITUTE THE LOUDOUN
3 SEGMENT?

4 A. The designation of Allegheny Power and Dominion Virginia Power to construct
5 these facilities was based on the provisions of Schedule 6 of the Operating
6 Agreement discussed earlier in my testimony with regard to the Prexy Facilities.
7 With respect to the 502 Junction Segments designated to Allegheny Power, a
8 portion of these segments were proposed by Allegheny Power as part of a larger
9 project considered by PJM in the RTEP analysis to resolve the related reliability
10 criteria violations. The Loudoun Segment designated to Dominion Virginia
11 Power was proposed by Dominion Virginia Power for consideration as an
12 alternative means to resolve the same reliability criteria violations. The substation
13 upgrades, including new substations, associated with the Prexy Facilities, the 502
14 Junction Segments and the Loudoun Segment were designated to the owners of
15 each substation requiring upgrade.

16 Q. WHO WITHIN PJM HAD THE PRIMARY RESPONSIBILITY FOR
17 PREPARING OR SUPERVISING THE PREPARATION OF THE RTEP
18 STUDIES THAT IDENTIFIED THE ELECTRICAL NEED FOR THE 502
19 JUNCTION SEGMENT AND THE LOUDOUN SEGMENTS?

20 A. As I indicated earlier in my testimony, Scott Gass supervised the creation of the
21 2011 Regional Transmission Expansion Planning base case which included the
22 identification of these facilities as needed for electric reliability purposes.

1 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

2 A. Yes, it does. However, I reserve the right to file such additional testimony as
3 may be necessary or appropriate.