

**OTS Statement No. 1
Witness: Gary L. Yocca**

IN RE: APPLICATION OF TRANS-ALLEGHENY INTERSTATE LINE COMPANY (TrAILCO.) FOR APPROVAL: 1) FOR A CERTIFICATE OF PUBLIC CONVENIENCE TO OFFER, RENDER, FURNISH OR SUPPLY TRANSMISSION SERVICE IN THE COMMONWEALTH OF PENNSYLVANIA; 2) AUTHORIZATION AND TO LOCATE, CONSTRUCT, OPERATE AND MAINTAIN CERTAIN HIGH-VOLTAGE ELECTRIC SUBSTATION FACILITIES; 3) AUTHORITY TO EXERCISE OF POWER OF EMINENT DOMAIN FOR THE CONSTRUCTION AND INSTALLATION OF AERIAL ELECTRIC TRANSMISSION FACILITIES ALONG THE PROPOSED TRANSMISSION LINE ROUTES IN PENNSYLVANIA; 4) APPROVAL OF AN EXEMPTION FROM MUNICIPAL ZONING REGULATION WITH RESPECT TO THE CONSTRUCTION OF BUILDINGS; AND 5) APPROVAL OF CERTAIN RELATED AFFILIATED INTEREST ARRANGEMENTS

Docket Nos. A-110172, A-110172F0002, A-110172F0004 and G-00071229

Direct Testimony

of

Gary L. Yocca

Office of Trial Staff

Concerning:

OFFICE OF TRIAL STAFF ANALYSIS OF APPLICATION, COMPLIANCE WITH COMMISSION REGULATIONS AND OTHER RELEVANT ISSUES

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Gary L. Yocca. My business address is P.O. Box 3265,
3 Harrisburg, PA 17105-3265.

4

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

6 A. I am employed by the Pennsylvania Public Utility Commission
7 (“Commission”) in the Office of Trial Staff (“OTS”) as a Fixed Utility
8 Financial Analyst Supervisor.

9

10 **Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL**
11 **BACKGROUND?**

12 A. My educational and professional background is set forth in Appendix A, which
13 is attached.

14

15 **Q. WHAT ARE YOUR DUTIES AS A TECHNICAL SUPERVISOR IN**
16 **THE OFFICE OF TRIAL STAFF?**

17 A. My current duties include supervision of a group of engineers who are
18 responsible for the engineering, rate structure, revenue, quality of service, rate
19 base and other issues that come before the Office of Trial Staff’s Technical
20 Division. I also provide expert testimony as required.

21

1 **Q. PLEASE DESCRIBE THE ROLE OF OTS.**

2 A. OTS was established by the Pennsylvania Legislature and is responsible for
3 protecting the public interest in proceedings affecting rates and reliability. The
4 OTS analysis in this proceeding is based on its responsibility to represent the
5 public interest.¹

6
7 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

8 A. The purpose of my direct testimony is to provide the OTS's overall analysis of
9 the Application of Trans-Allegheny Interstate Line Company ("TrAILCO") to
10 locate, construct, operate and maintain high voltage transmission lines and
11 substations and specifically to provide the OTS position regarding the
12 Application's compliance or noncompliance with the Commission's
13 regulations set forth at 52 Pa. Code §§ 57.71-57.77, entitled "Subchapter G.
14 Commission Review of Siting and Construction of Electric Transmission
15 Lines".

16
17 **Q. PLEASE DESCRIBE THE CORPORATE ENTITY KNOWN AS**
18 **TRAILCO.**

19

¹ OTS filed a Petition to Intervene in this proceeding on May 24, 2007, with the stated purpose of protecting the public interest. The Commission subsequently granted the motion and OTS has been an active party ever since that date.

1 A. TrAILCo is a Maryland and Virginia corporation with its principal office in
2 Greensburg, Pennsylvania and is a direct subsidiary of Allegheny Energy
3 Transmission, LLC, which is, in itself, a direct subsidiary of Allegheny
4 Energy, Inc. It was incorporated pursuant to the laws of Maryland and
5 Virginia on October 10, 2006 and October 27, 2006 respectively (Application,
6 paragraph 1). Allegheny Power (“Allegheny”) has designated TrAILCo as the
7 entity within the Allegheny holding company system responsible for
8 constructing the new transmission facilities in the event the Application is
9 granted by the Commission (Application, paragraph 7).

10

11 **Q. WHAT IS TRAILCO REQUESTING IN ITS APPLICATION?**

12 A. The Application filed by TrAILCo requests the Commission to permit it to
13 locate, construct, operate and maintain a new 500/138 kV substation in
14 Washington County, Pennsylvania (“Prexy Substation”), a new 500 kV
15 substation in Greene County, Pennsylvania (“502 Junction Substation”), a new
16 500 kV transmission line to connect the Prexy Substation and the 502 Junction
17 Substation (“Prexy Segment”), and three new 138 kV transmission lines with
18 double circuit construction from the Prexy Substation (“Prexy 138 kV Lines”)
19 to connect with existing transmission lines of Allegheny Power. TrAILCo will
20 also construct the new 500 kV transmission line in Pennsylvania from the 502
21 Junction Substation to the Pennsylvania-West Virginia state line
22 (“Pennsylvania 502 Junction Segment”) (Application, paragraphs 5 and 6).

1 In addition, TrAILCo has requested that the Commission issue a
2 Certificate of Public Convenience to allow TrAILCo to be recognized as a
3 public utility, requested exemption from local zoning regulations, requested
4 authorization to exercise the power of eminent domain in connection with the
5 siting, construction and maintenance of the proposed transmission facilities,
6 and requested approval of certain affiliated interest transactions as among the
7 various affiliates involved in this proceeding.

8
9 **Q. WHAT IS THE STATED PURPOSE OF THE TRANSMISSION**
10 **FACILITIES?**

11 A. According to TrAILCo Witness Scott W. Gass, the facilities are needed to
12 prevent anticipated electric reliability problems caused by conditions that may
13 occur solely within the Allegheny Power Zone of PJM² if the facilities are not
14 constructed. Additionally, Mr. Gass claims that the Pennsylvania 502 Junction
15 Segment and the related facilities in West Virginia and Virginia are needed to
16 prevent anticipated electric reliability problems caused by conditions that may
17 occur outside of the Allegheny Power Zone (Application, paragraph 8).

² PJM Interconnection is a “Regional Transmission Organization” (RTO), as that term is defined according to the Federal Energy Regulatory Commission Rules and Regulations (*See*, 18 CFR Part 35). In general, PJM Interconnection is an organization with operational control of transmission related facilities in the Mid-Atlantic region that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

1 **Q. WHAT IS THE ALLEGHENY POWER ZONE?**

2 A. The Allegheny Power Zone is an area within the PJM Region as set forth in
3 Attachment J to the PJM Open Access Tariff. It is identified as the APS Zone
4 on Attachment J (OTS Ex. No. 1, Sch.’s 1 and 2).

5

6 **Q. HAS THE COMMISSION PROMULGATED REGULATIONS**
7 **GOVERNING THE STANDARDS FOR THE SITING AND**
8 **CONSTRUCTION OF ELECTRIC TRANSMISSION LINES?**

9 A. Yes. The Commission’s regulations are set forth at 52 Pa. Code
10 §§ 57.71-57.77, entitled “Subchapter G. Commission Review of Siting and
11 Construction of Electric Transmission Lines” that are provided as OTS Exhibit
12 No. 1, Schedule 3.

13

14 **Q. PER THE REGULATIONS, WHAT FACTORS WILL THE**
15 **COMMISSION CONSIDER IN ITS DETERMINATION OF AN**
16 **APPLICATION TO CONSTRUCT TRANSMISSION LINES AND**
17 **RELATED FACILITIES?**

18 A. Section 57.75 of the Commission’s regulations, 52 Pa. Code § 57.75 entitled
19 “Hearing and notice” and specifically at Subsection (e), provides that at any
20 hearings held under this section, the Commission will accept evidence upon,
21 and in its determination of the application it will consider, *inter alia*, the
22 following matters:

- 1 1. The present and future necessity of the proposed high voltage
- 2 transmission line in furnishing service to the public.
- 3 2. The safety of the proposed high voltage (“HV”) transmission line.
- 4 3. The impact and efforts which have been and will be made to minimize the
- 5 impact, if any, of the proposed high voltage transmission line upon the
- 6 following:
- 7 a. Land use,
- 8 b. Soil and sedimentation,
- 9 c. Plants and wildlife habitats,
- 10 d. Terrain,
- 11 e. Hydrology,
- 12 f. Landscape,
- 13 g. Archeologic areas,
- 14 h. Geologic areas,
- 15 i. Historic areas,
- 16 j. Scenic areas,
- 17 k. Wilderness areas,
- 18 l. Scenic rivers.
- 19 4. The availability of reasonable alternative routes.³
- 20

³ 52 Pa. Code §§ 57.75 (e) (1) through (4).

1 **Q. PER THE REGULATIONS, WHAT DETERMINATIONS MUST THE**
2 **COMMISSION MAKE PRIOR TO GRANTING ANY APPLICATION**
3 **TO CONSTRUCT TRANSMISSION LINES AND RELATED**
4 **FACILITIES?**

5 A. Section 57.76 of the Commission’s regulations, 52 Pa. Code § 57.76 entitled
6 “Determination and order.” provides that the Commission will issue its order,
7 with its opinion, if any, either granting or denying the application, in whole or
8 in part, as filed or upon the terms, conditions or modifications, of the location,
9 construction, operation or maintenance of the line as the Commission may
10 deem appropriate. This section further provides that the Commission will not
11 grant the application, either as proposed or modified, unless it finds and
12 determines as to the proposed transmission line:

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

21

⁴ 52 Pa. Code §§ 57.76 (a).

1 **Q. IN ADDITION TO THE ABOVE, ARE THERE OTHER PARTICULAR**
2 **ISSUES THAT THE COMMISSION SEEKS TO HAVE ADDRESSED**
3 **IN THIS PROCEEDING?**

4 A. Yes. At Public Meeting of April 24, 2007, Commission Chairman Wendell F.
5 Holland issued a Statement directing (through the Secretary of the Commission
6 and the Office of Administrative Law Judge) that certain questions be included
7 and addressed in the application proceeding. The Chairman's questions,
8 reprinted verbatim here, are as follows:

9 A. Is the Commission obligated by Pennsylvania law to find that a
10 proposed transmission line is necessary and proper for the public
11 convenience — if we make only one of the following findings that the
12 proposed line:

- 13 Enhances reliability?
- 14 Benefits retail competition?
- 15 Reduces costs to retail electric generation customers in Pa?
- 16 Strengthens the interstate regional grid to which
- 17 Pennsylvania is connected?
- 18
- 19

20 Of the four questions posed above, is any one more or less
21 crucial than the others? Must all be answered in the affirmative for
22 approval; or can any single issue satisfy the burden of proof?

23
24
25 B. Grandfathering: What would be the effect, if any, of a US
26 Department of Energy designation of a National Infrastructure Electric
27 Transmission Corridor ("NIETC corridor designation") pursuant to
28 Section 1221 of the Energy Policy Act of 2005, if the corridor
29 designation was to be made after this application is filed and included
30 all or a portion of the proposed line?

31
32 Stated differently, if there is a subsequent DOE NIETC
33 designation of a corridor in which this line is located, what effect would
34 that have on this proceeding?

1 **Q. HAS ANY TRAILCO REPRESENTATIVE FORMALLY RESPONDED**
2 **TO THE QUESTIONS POSED BY CHAIRMAN HOLLAND IN HIS**
3 **STATEMENT PRESENTED AT PUBLIC MEETING OF APRIL 24,**
4 **2007?**

5 A. No. To my knowledge, no TrAILCo representative has formally submitted or
6 distributed to the parties any response(s) to Chairman Holland's questions.

7
8 **Q. ARE YOU PRESENTLY PREPARED TO RESPOND TO CHAIRMAN**
9 **HOLLAND'S QUESTIONS?**

10 A. No, and I would comment first that many of the responses appear to be in the
11 nature of a legal opinion better addressed by each party's counsel and ruled
12 upon ultimately by the Administrative Law Judge ("ALJ"). Further, I have
13 been advised by counsel that TrAILCo, as the Applicant, has the burden of
14 proof in this proceeding. As such, OTS considers it incumbent upon TrAILCo
15 to provide the initial responses to Chairman Holland's questions. Following
16 such a submission, OTS and the other parties will then properly respond to the
17 questions as appropriate.

18
19 **Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?**

20 A. The remainder of this prepared direct testimony will address the aforecited
21 factors that the Commission will consider in its determination of whether or
22 not to approve the Application. Following my analysis of such factors, I will

1 then address the cited determinations that the Commission must make prior it
2 any granting of the Application.

3
4 **1. Necessity**

5 **Q. WHAT INFORMATION HAS TRAILCO SUPPLIED REGARDING**
6 **THE CLAIMED PRESENT AND FUTURE NECESSITY OF THE**
7 **PROPOSED HV TRANSMISSION LINES?**

8 A. I note initially that the Application simply states that the need for the proposed
9 new HV Transmission Line facilities is set forth in the testimony and exhibits
10 of TrAILCo witnesses Hozempa, Herling and Gass (Application, paragraph
11 27).

12
13 **Q. HOW DOES TRAILCO WITNESS HOZEMPA EXPLAIN THE**
14 **PERCEIVED NEED FOR THE PROPOSED PREXY FACILITIES?**

15 A. Mr. Hozempa, a Senior Engineer employed by Allegheny Energy Service
16 Corporation's Transmission Planning Department, states that studies
17 performed by PJM and Allegheny Power concluded that there are four electric
18 reliability problems that will occur beginning in 2009 if the Prexy Facilities are
19 not constructed (TrAILCo St. No. 2, p. 5). These problems are detailed in
20 TrAILCo Ex. LAH-3. The apparent rationale for submission of the exhibit is
21 to support the contention that if there are outages at certain locations, certain
22 138 kV lines will exceed their emergency rating and overload, potentially

1 leading to voltage collapses in those areas. In fact, the witness specifically
2 refers to southern Allegheny, Washington and northern Green Counties. Per
3 the contention, customers in these areas will also be at risk for localized
4 “brown-outs” or low-voltage conditions in the event of simultaneous outages
5 of the Union Junction 138 kV line and the Gordon-Manifold 138 kV line
6 (TrAILCo St. No. 2, p. 7).

7
8 **Q. WHAT STUDIES ARE REFERRED TO BY MR. HOZEMPA?**

9 A. The witness states that he reviewed the PJM Regional Transmission Expansion
10 Plan (RTEP) studies that identify the reliability concerns noted above. Mr.
11 Hozempa also states that he worked with PJM’s planning department in order
12 to determine the best solution to address those reliability problems (TrAILCo
13 St. No. 2, p. 5). In his opinion, the Prexy Facilities, provide the most cost
14 effective solution to the four reliability problems that would directly affect
15 retail customers served by Allegheny Power in southwestern Pennsylvania,
16 particularly the southern Allegheny, Washington and northern Greene
17 Counties. (TrAILCo St. No. 2, pp. 6-7).

18 Moreover, Mr. Hozempa testified that with regard to the 502 Junction
19 facilities, he reviewed the PJM Load Deliverability and Generation
20 Deliverability studies that identified reliability violations as set forth in
21 TrAILCo Witness Gass’ testimony and has worked closely with PJM’s
22 planning department in determining the best solution to address the reliability

1 problems identified by those studies. In Mr. Hozempa's opinion, the 502
2 Junction Facilities, the remaining 502 Junction Segments and other named
3 expansion projects, taken together, provide the best solution to reliability
4 violations that are expected to begin occurring in 2011. (TrAILCo St. No. 2,
5 pp. 7-8). Mr. Hozempa believes that if the Pennsylvania 502 Junction
6 Facilities, in addition to the remaining expansion projects, are not constructed,
7 retail customers served by Allegheny Power, as well as customers outside of
8 the Mid-Atlantic region, will be adversely affected. (TrAILCo. St. No. 2, pp.
9 9-10).

10
11 **Q. HAS TRAILCO PROVIDED OTHER CLAIMED SUPPORT FOR THE**
12 **ELECTRICAL NEED FOR THE PREXY FACILITIES?**

13 A. Yes. Scott Gass, Principal Consultant for PowerGEM and formerly the PJM
14 Manager for Transmission Planning, testified that in his former capacity, he
15 directed the North American Electric Reliability Corporation ("NERC"⁵)
16 Category C3 analysis conducted by the PJM transmission owners as part of the
17 2006 RTEP process for transmission facilities below 345 kV and claims to
18 have validated the violations identified by the transmission owners and
19 confirmed that the proposed solutions were sufficient to address the potential
20 violations. He notes that Allegheny Power was a part of this process

⁵ NERC is designated as an Electric Reliability Organization "ERO" as certified by the Federal Energy Regulatory Commission with the designated purpose of establishing and enforcing reliability standards for the bulk-power system.

1 (TrAILCo St. No. 4, p. 5). Mr. Gass asserts that he validated the violations
2 noted by Allegheny Power in the Prexy area and confirmed the proposed
3 solution, which was then incorporated into the 2006 RTEP baseline upgrades
4 (TrAILCo St. No. 4, p. 6). Based upon the studies performed by PJM,
5 Dominion Virginia Power and Allegheny Power, Mr. Gass testified that PJM
6 concluded that there are 11 electric reliability problems that are likely to occur
7 beginning in 2011 and one electric reliability problem that is likely to occur in
8 2014 if the proposed 502 Junction facilities (and related expansion projects) are
9 not constructed (TrAILCo St. No. 4, p. 8). Furthermore, he testified that PJM
10 and Allegheny Power concluded that there are four electric reliability problems
11 that will occur beginning in 2009 if the Prexy Facilities are not constructed
12 (TrAILCo. St. No. 4, p. 4).

13
14 **Q. WHAT IS THE STATED NEED FOR THE 502 JUNCTION**
15 **FACILITIES AS CLAIMED BY TRAILCO?**

16 A. According to TrAILCo, the 502 Junction Facilities and other proposed
17 facilities are needed to address twelve (12) potential electric reliability
18 problems that are expected to occur beginning in the year 2011 if the facilities
19 are not constructed (TrAILCo St. No. 2, p. 7).

20

1 **Q. DID MR. GASS ALSO HAVE A ROLE IN DETERMINING WHETHER**
2 **THERE IS A PERCEIVED NEED FOR THE PENNSYLVANIA 502**
3 **JUNCTION FACILITIES?**

4 A. Yes. Mr. Gass states that in his former role as PJM's Manager Transmission
5 Planning, he supervised the creation of the base case for the need for the 2011
6 RTEP and the power system studies that determined the need for the 502
7 Junction Substation, the 502 Junction Segments, the Mt. Storm Expansion, the
8 Meadow Brook Expansion, the Loudoun Segment and the Loudoun Expansion
9 (TrAILCo St. No. 4, p. 6). He further notes that he specifically supervised the
10 analyses conducted with the 2011 RTEP case, including model adjustments,
11 identifying reliability criteria violations and formulating solutions to the
12 violations. He also supervised the generator deliverability, load deliverability
13 and NERC Category C studies (TrAILCo St. No. 4, p. 7).

14
15 **Q. WHAT WERE THE RESULTS OF THE STUDIES PERFORMED BY**
16 **PJM?**

17 A. As a result of the studies, PJM concluded that there are eleven (11) electric
18 reliability problems that are likely to occur beginning in the year 2011, and one
19 electric reliability problem that is likely to occur beginning in the year 2014 if
20 the 502 Junction Facilities are not constructed (TrAILCo St. No. 4, p. 8).
21 Those reliability problems are detailed in TrAILCo Ex. SWG-1 and further
22 explained in Mr. Gass' testimony beginning on page 8. Moreover, he

1 concluded that there are four identified electric reliability problems that will
2 occur beginning in 2009 if the Prexy Facilities are not constructed. These
3 reliability problems are detailed in TrAILCo's Ex. LAH-3 and further
4 explained in Mr. Hozempa's testimony.

5
6 **Q. HAVE YOU ENCOUNTERED OR RESEARCHED THE DEFINITION**
7 **OF THE TERM "ELECTRIC RELIABILITY" AS IT MAY BE**
8 **APPLIED IN THIS PROCEEDING?**

9 A. Yes. For their part, TrAILCo has defined the term as referring to the delivery
10 of electricity to customers in the amounts desired and within accepted
11 standards for the frequency, duration and magnitude of outages and other
12 adverse conditions or events (TrAILCo St. No. 4, p. 9). Additionally, I note
13 that a study performed for the U.S. Department of Energy ("DOE") by the Oak
14 Ridge National Laboratory states that "power" reliability can be defined as the
15 degree to which the performances of the elements in a bulk system results in
16 electricity being delivered to customers within accepted standards and in the
17 amount desired. The degree of reliability may be measured by the frequency,
18 duration, and magnitude of adverse effects on the electric supply.⁶

⁶ *Measurement Practices for Reliability and Power Quality – A Toolkit of Reliability Measurement Practices*, John D. Kueck and Brendan J. Kirby – Oak Ridge National Laboratory, Philip N. Overholt – U.S. Department of Energy and Lawrence C. Markel – Sentech, Inc., June 2004.

1 **Q. WHAT ARE SOME OF THE INDICES FOR MEASURING**
2 **RELIABILITY?**

3 A. The three most common indices are referred to as SAIFI, SAIDI and CAIDI as
4 defined in IEEE Standard 1366.⁷ Another index that considers momentary
5 interruptions is MAIFI.⁸

6 • **SAIFI**, or system average interruption frequency index, is the average
7 frequency of sustained interruptions per customer over a predefined area.
8 It is the total number of customer interruptions divided by the total
9 number of customers served.

10 • **SAIDI**, or system average interruption duration index, is commonly
11 referred to as customer minutes of interruption or customer hours, and is
12 designed to provide information as to the average time the customers are
13 interrupted. It is the sum of the restoration time for each interruption
14 event times the number of interrupted customers for each interruption
15 event divided by the total number of customers.

16 • **CAIDI**, or customer average interruption duration index, is the average
17 time needed to restore service to the average customer per sustained

⁷ The IEEE name was originally an acronym for the Institute of Electrical and Electronics Engineers, Inc. Today, the organization's scope of interest has expanded into so many related fields, that it is simply referred to by the letters I-E-E-E (pronounced Eye-triple-E).

⁸ Momentary Average Interruption Frequency Index (power generation). See also next page.

1 interruption. It is the sum of customer interruption durations divided by
2 the total number of customer interruptions.

- 3 • **MAIFI**, or momentary average interruption frequency index, is the total
4 number of customer momentary interruptions divided by the total number
5 of customers served. Momentary interruptions are defined in IEEE Std.
6 1366 as those that result from each single operation of an interrupting
7 device such as a recloser.⁹

8
9 **Q. HAS TRAILCO PROVIDED ANY INDICES FOR WEST PENN**
10 **POWER COMPANY?**

11 A. Yes. In response to the Office of Consumer Advocate's interrogatory (Set VII,
12 No. 1), TrAILCo provided total annual SAIFI and CAIDI reliability index data
13 for West Penn Power Company for each year from 2002 through 2006.

14
15 **Q. WHO SETS THE STANDARDS FOR THESE AND OTHER INDICES?**

16 A. The Federal Energy Regulatory Commission ("FERC") has required the North
17 American Reliability Council ("NERC") to submit significant improvements to
18 56 of the 83 reliability standards that are being approved as mandatory, and
19 enforceable. The Final Rule approved in the March 16, 2007 FERC Order
20 applies to all users, owners and operators of the Bulk Power System within the

⁹ Id., p. 3.

1 United States.¹⁰ As of June 18, 2007, U.S. utilities and other bulk power
2 industry participants that violate any requirements of all 83 reliability standards
3 will face enforcement actions by the NERC. Compliance with the new
4 standards is mandatory, and corrective measures can be ordered including
5 sanctions that impose limitations or restrictions on activities; remedial action
6 directives designed to correct conditions, practices or other actions posing a
7 threat to reliability; and fines of \$1,000 to \$1 million a day can be imposed
8 (OTS Ex. No. 1, Sch. 4).

9 However, it should be noted that acceptance of these statements at face
10 value can be somewhat misleading. FERC's approval of the proposed NERC
11 reliability standards was only recently undertaken earlier this year and some
12 reliability standards are still awaiting approval. Moreover, FERC has noted
13 that the focus of the ERO's enforcement resources during an initial period
14 should only apply to the most serious reliability standards violations.

15 Presumably, since Allegheny Power's previous proposals to address Category
16 C3 violations in the Prexy area on the 138 kV systems through controlled load
17 shedding is a permissible solution to the NERC standard (TrAILCo St. No. 2,
18 p. 14), a continuation of this practice will not subject Allegheny Power to any
19 enforcement actions in the immediate future. More importantly, however,
20 Category C violations, of which these projects are assigned to address in the

¹⁰ FERC Order 693 issued March 16, 2007 at Docket No. RM06-16-0000, "Mandatory Reliability Standards for the Bulk Power System."

1 future, measure system performance in the event of the loss of two or more
2 bulk electric system elements. Conceivably, the reliability concerns that
3 TrAILCo has identified would be remedied by the proposed project, but there
4 is no discussion of whether reasonable alternatives exist (such as load shedding
5 or other NERC approved remedies) to address system failures in the event of a
6 Category C loss. Additionally, I would question whether different facilities,
7 such as smaller capacity lines, could adequately address the identified system
8 performance reliability failures.

9
10 **Q. ARE THE SIXTEEN (16) POTENTIAL ELECTRIC RELIABILITY**
11 **PROBLEMS IDENTIFIED ABOVE SUBJECT TO THE MANDATORY**
12 **COMPLIANCE ENFORCEMENT ACTIONS BY NERC?**

13 A. Yes. Although they were identified prior to the FERC action that gave NERC
14 powers to enforce compliance, it is my understanding that failure to correct
15 these problems could lead to sanctions or fines imposed by NERC in the
16 future. (TrAILCo St. No. 3, p. 10). The question still remains as to whether
17 reasonable alternatives to the proposed project exist that would address these
18 reliability concerns.

19
20 **Q. DID PJM EVALUATE RELIABILITY CRITERIA IN THE**
21 **DEVELOPMENT OF THE RTEP?**

1 A. Yes, apparently. TrAILCo Witness Steven R. Herling discusses the reliability
2 criteria beginning on page 10 of TrAILCo Statement No. 3.

3

4 **Q. HOW WERE THESE RELIABILITY STANDARDS INCORPORATED**
5 **INTO THE RTEP ANALYSIS?**

6 A. As stated by TrAILCo, PJM performs a five-year baseline analysis to assess
7 compliance with reliability criteria and recommends transmission upgrades to
8 meet near-term demand growth for customers' electricity needs. This analysis
9 includes 1) solutions to address baseline transmission constraints revealed by
10 reliability criteria violations; 2) cost responsibility allocations for baseline
11 reliability upgrades; 3) direct connection transmission enhancements
12 associated with generation and merchant transmission interconnection requests,
13 and 4) necessary network transmission enhancements in response to
14 interconnection requests (TrAILCo St. No. 3, pp. 12-13). Additionally,
15 TrAILCo states that PJM also performs a 15-year planning analysis which
16 considers many long-lead-time transmission options. Market efficiency
17 analyses are also conducted which address such factors as the impacts of fuel
18 and emissions-related prices, generation retirements and the delivery needs of
19 new generation projects (TrAILCo St. No. 3, pp. 13 – 14).

20

1 **Q. WHAT WAS THE PROCESS THAT WAS NECESSARY FOR**
2 **TRAILCO TO BE GRANTED AUTHORITY TO PROCEED WITH**
3 **THIS PROJECT?**

4 A. The provisions of the PJM Open Access Transmission Tariff (“OATT”)
5 require PJM to formulate a plan for the enhancement and expansion of the PJM
6 transmission system in order to maintain the reliable operation of the system.
7 PJM has to develop an RTEP for consideration by the PJM Board. PJM
8 formulated an RTEP with the help of Allegheny Power, and submitted it to the
9 PJM Board. The PJM Board approved an RTEP on June 22, 2006 which
10 included the TrAIL Project assigned to Allegheny Power. On July 21, 2006,
11 PJM filed a report with the Federal Energy Regulatory Commission (“FERC”)
12 of the recommended allocations of cost responsibility for transmission
13 upgrades reviewed and approved by the PJM Board. FERC issued its “Order
14 on Cost Allocation Report, Establishing Hearing and Settlement Judge
15 Procedures and Consolidating Proceedings.”¹¹ TrAILCo also filed its proposed
16 financing program in an application before FERC at Docket No. ES07-24-000
17 on February 22, 2007 (TrAILCo St. No. 1, p. 12).

18 Furthermore, in March 2006, PJM Interconnection, Allegheny Power
19 and Dominion Power requested early National Interest Electric Transmission
20 (“NIET”) Corridor designation for the Allegheny Power TrAIL project from
21 the Secretary of the U.S. Department of Energy (“DOE”). The proposed

¹¹ TrAILCo filing before FERC at Docket No. ER07-24-000 on February 21, 2007.

1 corridor covers the entire states of Maryland and Delaware and large portions
2 of Pennsylvania, Virginia and West Virginia. On April 26, 2007, DOE
3 announced the issuance of two draft NIET Corridor designations. In a Notice
4 issued on May 7, 2007, the Department of Energy, Office of Electricity
5 Delivery and Energy Reliability formerly designated such corridors as NIETCs
6 under Section 1221 of the Energy Policy Act of 2005.¹² This designation may
7 significantly limit the Commission’s authority to reject or materially alter
8 TrAILCo’s Application. NIET designation may also allow Allegheny Power
9 to take rights-of-way under federal eminent domain.¹³

10 In addition, TrAILCo filed its Application with the Commission
11 requesting a certificate of public convenience as a public utility and the balance
12 of its requests to, among other things, site the TrAIL facilities in Pennsylvania
13 in April 2008.

14
15 **Q. ARE YOU AWARE OF ANY NON-PJM, NON-TRAILCO ENTITIES**
16 **THAT QUESTION THE NEED FOR THE TRAILCO PROJECTS?**

17 A. Yes. The Piedmont Environmental Council (“Piedmont”), a 34-year old non-
18 profit organization dedicated to promoting and protecting the Piedmont’s rural
19 economy, natural resources, history and beauty, has issued a position paper

¹² The Commission submitted comments regarding such designation in response to the DOE’s *Notice*, on July 6, 2007, there, *inter alia*, opposing the DOE’s designation of major portions of Pennsylvania as a National Interest Electric Transmission Corridor.

¹³ <http://www.stopaptrail.org/home.html>

1 titled “How Dominion and Allegheny Power Got It Wrong” in September,
2 2007.¹⁴ This report generally concludes that the proposed 502 Junction-Mt.
3 Storm-Meadow Brook-Loudoun (TrAIL) 500 kV Transmission Line should be
4 rejected by the Virginia State Corporation Commission. The report also
5 provides some options to the proposed transmission line including more power
6 plants in eastern PJM, the use of demand-side resources, the installation of a
7 525-MVAR static VAR compensator (SVC) at Meadowbrook, the installation
8 of a phase-angle regulator (PAR) on the Pruntytown-Mt. Storm line, and the
9 installation of the proposed Amos-Bedington-Kemptown 765-kV line.

10 Additionally, Stop The Towers is a volunteer, grass-roots western
11 Pennsylvania group of concerned residents, businesses and friends of
12 Washington and Greene counties.¹⁵

13 This group opposes the proposed transmission lines for a number of
14 reasons including their belief that the main purpose of this power line is to
15 move cheap electricity from western Pennsylvania and West Virginia to the
16 mid-Atlantic in order to increase Allegheny Power’s profits. They also believe
17 that the transmission line project will not economically benefit citizens or
18 businesses of western Pennsylvania, that it will diminish the quality of life,
19 decrease property values, possibly endanger health, increase electric rates and
20 increase air pollution.

¹⁴ <http://www.pecva.org/anx/index.cfm/1,1,0,0,html/Home>

¹⁵ <http://www.stopthetowers.org/>

1 Another group, the Mid-Atlantic Concerned Citizens Energy Coalition,
2 is a combination of groups and individuals from the entire Mid-Atlantic region
3 that is focused on the energy policies in our region and the impact of the
4 recently designated National Interest Electric Transmission (“NIET”)
5 corridors.¹⁶ They are asking interested individuals and organizations to prepare
6 letters urging local and state officials to file an application for rehearing of the
7 Department of Energy Order that designated two NIET corridors.

8
9 **2. Safety**

10 **Q. WHAT STANDARDS MUST TRAILCO MEET REGARDING THE**
11 **SAFETY ASPECTS OF THE PROPOSED TRANSMISSION**
12 **PROJECTS?**

13 A. As provided by 52 Pa. Code § 57.76(a)(2), TrAILCo must prove that its
14 proposed transmission project will not create an unreasonable risk of danger to
15 the health and safety of the public.

16
17 **Q. WHAT SAFETY CONSIDERATIONS HAS TRAILCO TAKEN INTO**
18 **ACCOUNT FOR THE PENNSYLVANIA-RELATED PROJECTS?**

19

¹⁶ <http://www.maccecc.org/>

1 A. According to TrAILCo (Application, para. 28), the Prexy Segment, The Prexy
2 138 kV Lines and the Pennsylvania 502 Junction Segment will be designed,
3 constructed, operated, and maintained in accordance with standards that equal
4 or exceed those set forth in the National Electrical Safety Code (“NESC”).¹⁷
5

6 **Q. WHAT SAFETY STANDARDS WILL THE TOWER STRUCTURES BE**
7 **DESIGNED TO MEET?**

8 A. According to TrAILCo, all tower structures will meet or exceed all of the
9 design parameters for such facilities, as defined in the latest edition of the
10 NESC (TrAILCo St. No. 7, pp. 13 – 14). According to TrAILCo Witness John
11 R. Bodenschatz, all TrAIL towers will be designed to meet the ice and wind
12 loads for heavy loading districts under the NESC, and to carry the maximum
13 conductor loads anticipated at each structure location for the design conductors
14 and line configuration. The towers will also be designed to provide sufficient
15 clearances between the three conductor phases to allow for the performance of
16 service and maintenance with the conductors energized. The towers will also
17 be designed to provide sufficient height to allow adequate conductor to ground

¹⁷ The IEEE Standards Association states that the National Electrical Safety Code sets the ground rules for practical safeguarding of persons during the installation, operation, or maintenance of electric supply and communication lines and associated equipment. The NESC contains the basic provisions that are considered necessary for the safety of employees and the public under the specified conditions.
<http://standards.ieee.org/nesc/>

1 clearance for the safe and reliable operation of TrAIL (TrAILCo St. No. 7, p.
2 14).

3
4 **Q. DID TRAILCO TESTIFY TO OTHER ELECTRICAL PARAMETERS**
5 **THAT WILL CONFORM TO NESC?**

6 A. Yes. The electrical parameters at which the 500 kV and 138 kV conductors
7 will operate are detailed in TrAILCo Statement No. 7, pages 15 – 17. These
8 conductors purportedly conform to NESC. The minimum line tension and sag
9 parameters for the conductors are also governed by NESC. TrAILCo claims
10 that all of these parameters have been met (TrAILCo St. No. 7, pp. 17 – 18).
11 Parameters for other aspects of the proposed transmission project have also
12 been met and/or exceeded (TrAILCo St. No. 7, pp. 19 – 20). The design
13 criteria are further detailed in TrAILCo Exhibit JRB-1.

14
15 **Q. ARE HEALTH CONSIDERATIONS OUTLINED IN TRAILCO'S**
16 **APPLICATION?**

17 A. Yes. Paragraph 68 of the Application summarizes TrAILCo's testimony.
18 TrAILCo Statement Nos. 8 and 9 detail the Company's positions regarding the
19 effects of electric and magnetic fields, and of audible noise from TrAIL.

20
21 **Q. IS THE PROPOSED TRANSMISSION PROJECT IN COMPLIANCE**
22 **WITH HEALTH AND SAFETY STANDARDS?**

1 A. According to TrAILCo Witness, Dr. William H. Bailey, there are no federal or
2 state standards for either magnetic fields or electric fields from power lines or
3 other sources (TrAILCo St. No. 8, p. 7). There are, however, international
4 guidelines recommended by the International Committee on Electromagnetic
5 Safety (ICES, 2002), and by the European Union based on recommendations
6 of the ICNIRP (EC, 1999). Dr. Bailey claims that the levels of EMF
7 associated with operation of the transmission lines would be lower than the
8 limits recommended in these guidelines (TrAILCo St. No. 8, p. 8).

9 However, there are many competing reports relating the incidence of
10 certain childhood leukemia's and other health related issues to EMF's such as
11 those emitted by high voltage lines similar to those proposed to be constructed
12 by TrAILCo and the same has been an expressed concern of the citizens
13 opposed to the project. A review of the Public Input Hearing Transcripts
14 indicates that a large percentage of those people directly affected by the
15 proposed project expressed concern regarding the suspected adverse health
16 effects and expressed a low confidence in the testimony as submitted by Dr.
17 Bailey.

18

19 **Q. WHO PERFORMED THE TESTS THAT LED TO DR. BAILEY'S**
20 **CONCLUSION?**

21

1 A. Dr. Gary B. Johnson measured magnetic and electric fields to predict the
2 typical and maximum values that could be expected to occur near the
3 transmission lines (TrAILCo St. No. 9, pp. 7 – 9). Dr. Johnson also discusses
4 audible noise caused by corona effects. He claims that the audible noise levels
5 that he calculated is less than 42 dBA in fair weather conditions and less than
6 52 dBA in foul-weather conditions. These levels are below 55 dBA, which is
7 the average level outdoor target value published by the Environmental
8 Protection Agency in 1974 (TrAILCo St. No. 9, pp. 10 – 12). According to
9 TrAILCo, the proposed line is designed to meet the 2007 safety requirements
10 of the NESC (TrAILCo St. No. 9, p. 14).

11

12 **3. Impact on Natural Resources**

13 **Q. HOW HAS THE COMPANY ADDRESSED FACTOR THREE**
14 **CONCERNING THE IMPACT ON THE ENVIRONMENT OF THE**
15 **PROPOSED HIGH VOLTAGE TRANSMISSION LINE (“HVTL”)?**

16 A. The Company references the testimony and exhibits of TrAILCo witness Jack
17 Halpern in paragraphs 29 and 30 of the Application in the section entitled
18 “Environmental Impact Studies.” Mr. Halpern’s testimony and exhibits are
19 attached to the Application as TrAILCo St. No. 5, Ex. JH-1. Exhibit JH-1 is
20 entitled “Route Evaluation Report and Environmental Report TrAIL 500 kV
21 PROJECT, Pennsylvania Portion” (REP).

1 Mr. Halpern testified that he was retained by TrAILCo to perform route
2 selection for the Prexy Segment, the Prexy 138 kV lines and the Pennsylvania
3 502 Junction Segment, the West Virginia Segments and the Virginia state line
4 to Meadow Brook segment of the Trans-Allegheny Interstate Link.¹⁸
5

6 **3a. Land Use**

7 **Q. DOES THE AFOREMENTIONED REP CONTAIN INFORMATION ON**
8 **EXISTING LAND USE IN THE STUDY AREA OF THE PROPOSED**
9 **HVTL?**

10 A. Yes. Existing land use in the area where the HVTL is proposed is summarized
11 in section 4.6 of the REP entitled “Land Use.” According to the REP, and
12 summarized on REP Table 4-3, 63% of the land use in the area of the HVTL is
13 forested and 18% is being used for agriculture with the rest being used for
14 other purposes. The REP concludes that some of land under the state Farmland
15 and Forest Land Assessment (Clean and Green Act) will be crossed as well as
16 land in the Agriculture Conservative Easement Purchase Program (REP p. 72).

¹⁸ With regard to route selection, on October 23, 2007, the Office of Consumer Advocate filed a Motion with the ALJ requesting that TrAILCo be ordered to cure any and all alleged defects in notice to property owners that will be impacted by the proposed project. In its Motion, OCA alleges, *inter alia*, that TrAILCo has failed to identify, with specificity, the proposed route and, additionally, has changed the proposed routing of the line several times during the course of this proceeding. If the OCA’s Motion is to be taken at face value, then the testimony of Mr. Halpern with regard to the REP must be re-evaluated.

1 Section 4.6 of the REP contains information on transportation including roads,
2 railroads, and airports, and residential density of the area.

3
4 **Q. IN YOUR OPINION, HAS TRAILCO SUCCESSFULLY MINIMIZED**
5 **THE EFFECT UPON EXISTING LAND USE?**

6 A. Yes. While it is uncertain whether in other areas such effect has been
7 successfully minimized. For example, construction of the proposed HVTL will
8 require the deforestation of approximately 448 acres of hardwood forest
9 (REP, p. 72). While this is less than one tenth of one percent of the forested
10 areas of Greene and Washington County, it does belong to someone and is
11 used by wildlife and will never be forested as long as the line is in service.
12 Also, the effect on agriculture is somewhat minimized in terms of available
13 land because only the area around the towers will be unavailable for
14 agriculture. However, building a HVTL will limit the use of the land during
15 construction, and in the future if the land use is rezoned to residential or
16 commercial use.

17 In addition, testimony adduced at the Public Input Hearings held in
18 Washington and Greene Counties indicated that the deforestation and
19 subsequent vegetation maintenance could have an adverse effect on domestic
20 animals and on natural water supplies used for watering livestock and crops.
21 Many citizens expressed concern that vegetation maintenance utilizing
22 herbicide/pesticide application could adversely affect their available water

1 supply in those places where the proposed transmission lines overpass shallow
2 fresh water wells. As an additional concern, in those areas where the proposed
3 line is expected to pass closely to residences, those residents were concerned
4 that the application of herbicide/pesticide could adversely and directly affect
5 their health.

6 Obviously, a project of this magnitude cannot escape affecting land use
7 to some degree, but the question is whether there exists an alternative route that
8 would minimize such effects beyond the present project.

9 Additionally, a proposed project of this magnitude minimally requires
10 consultation and cooperation with various state and federal agencies that have
11 either primary jurisdiction with respect to, or particular knowledge regarding,
12 the effects upon the environment surrounding or affected by the proposed
13 project. As of the filing of this testimony, it does not appear that any state
14 agency or federal agency has examined the impact that the proposed project
15 will have and without such a determination, it is unclear how the Commission
16 could make a factual determination that the Application sufficiently describes
17 the environmental impact the project will have and the steps necessary for
18 TrAILCo to minimize those impacts.

19
20 **Q. HAS TRAILCO COMPLETED THE EVALUATION OF THE EFFECT**
21 **ON LAND USE FOR THE HVTL PROJECT?**

1 A. No. For example, the REP claims that the proposed project will have minimal
2 impact on transportation and aviation. The REP states that transmission line
3 structures will not be located in rights of ways owned by other entities,
4 presumably including other public utilities (REP, p. 73). Also, the REP
5 describes Route D alignment which crosses the FAA notification zone.
6 TrAILCo has yet to determine that this is acceptable to the FAA (REP, p. 41).
7 A final report, or study of all FAA approvals, the rights of way and other
8 public utilities that would be affected was not provided in the filing. Also, the
9 REP concludes that the impact on land under the Clean and Green Act, and
10 Agriculture Conservative Easement Purchase Program is unknown (REP, p.
11 72). Without a clear determination of the effect on land use as described above
12 and required by Commission regulation, it is questionable whether TrAILCo
13 has adequately identified the impact and the efforts which will be made to
14 minimize the impact of the proposed project on land use. For example, with
15 reference to the Federal Aviation Administration, there is some concern that
16 the proposed project may impact local airfields. Without FAA review and
17 subsequent approval, it is questionable whether the Commission could make a
18 factual determination that TrAILCo has met its burden with regard to the
19 project's impact on land use and the efforts to minimize that impact.
20

1 **3b. Soil and Sedimentation, 3d. Terrain, and 3h. Geologic Areas**

2 **Q. DOES THE REP CONTAIN INFORMATION ON EXISTING SOIL,**
3 **SEDIMENTATION, TERRAIN AND GEOLOGY IN THE STUDY**
4 **AREA?**

5 A. Yes. The Company grouped the evaluation of these areas in section 4.1 of the
6 REP entitled “Geology, Terrain and Soils”. In describing the geology and
7 terrain, the REP states that the study area is situated in the Appalachian Plateau
8 Physiographic Province, containing rolling hills and shallow valleys (REP, p.
9 51). The geology under the study area is primarily sandstone, shale, limestone
10 and coal. The REP describes the soil in the study area as Alfisols and Udisols
11 with slopes of 15-20 percent (REP, p. 51).

12
13 **Q. IS TRAILCO PROPOSING TO MINIMIZE THE EFFECT ON**
14 **EXISTING SOIL AND CONTROL SEDIMENTATION?**

15 A. Yes. Since soil and sedimentation is most affected during construction, and
16 shortly thereafter. Before construction, the Company is proposing to put into
17 effect a sediment and erosion control plan during construction to minimize the
18 effect of constructing the project. During construction, the Company is
19 proposing to avoid steep slopes, mass wasting areas, construct sediment basins
20 and minimize the effect of access roads (REP, p. 53).

21

1 **Q. HAS TRAILCO COMPLETED THE EVALUATION OF THE EFFECT**
2 **ON SOIL AND SEDIMENTATION FOR THE HVTL PROJECT?**

3 A. Yes. However, to minimize the effect on soil and sedimentation TrAILCo
4 must follow its own plan for soil and sedimentation control described in the
5 REP or any subsequent Soil and Water Sediment Control Plan during
6 construction and shortly thereafter.

7

8 **Q. IS TRAILCO PROPOSING TO MINIMIZE THE EFFECT ON**
9 **EXISTING GEOLOGY AND TERRAIN?**

10 A. Yes, for the most part. For example, construction of the proposed HVTL will
11 probably not require mass excavation and will generally follow the terrain as it
12 exists today. However, since the proposed HVTL will traverse Greene and
13 Washington counties, the location of the HV towers could affect the future of
14 underground mining operations. Also, the HV towers could be affected by
15 future subsidence caused by natural occurrences and manmade occurrences
16 such as underground longwall mining that were not described in the REP.

17

18 **Q. WHAT IS SUBSIDENCE AND WHY SHOULD IT BE CONSIDERED?**

19 A. Subsidence is the motion of a surface as it shifts downward relative to a datum
20 such as sea-level caused by nature or man. As described in the REP, p. 51,
21 Washington and Greene Counties include the most productive underground
22 mines in the state. In the executive summary of a 2005 DEP report entitled

1 “The Affects of Subsidence resulting from Underground Bituminous Coal
2 Mine On Surface Structures and Features and on Water Resources: Second Act
3 54 Five-Year report”, the DEP concludes that over 27,000 acres of longwall
4 mining has occurred in Washington and Greene counties between 1998 and
5 2003. Subsidence should be considered because of the limestone in the
6 proposed study area could be susceptible to subsidence and the abundance of
7 longwall coal mining in the area could cause subsidence. If the subsidence
8 occurs under a HVTL tower, the results could be catastrophic.

9
10 **3c. Plants and Wildlife Habitats**

11 **Q. DOES THE REP CONTAIN INFORMATION ON EXISTING PLANTS
12 AND WILDLIFE HABITATS IN THE STUDY AREA?**

13 A. Yes. The evaluation of plants and wildlife habitats is described in section 4.4
14 of the REP entitled “Vegetation”, and section 4.5 entitled “Wildlife and
15 Sensitive Species”. According to the REP, a “Special Natural Community”
16 containing rare plants, natural communities, terrestrial invertebrates and
17 geological features could be crossed by the power line (REP, p. 62). Also, as
18 summarized on REP Table 4-2, there are many threatened, rare and/or
19 endangered plants in the study area.

20
21 **Q. HAS TRAILCO COMPLETED THE EVALUATION OF THE EFFECT
22 ON PLANT AND WILDLIFE HABITATS?**

1 A. No. When the REP was prepared it was not known if the proposed line crosses
2 a “Special Natural Community” (REP, p. 62). Nor does the REP state whether
3 the proposed line will affect any of the many threatened, rare and/or
4 endangered plants in the study area shown on REP Table 4-2, (REP, p. 63).
5 Without a clear determination of the effect on all plants and wildlife habitats
6 that could be impacted by the proposed project, it is questionable whether the
7 Commission could make a factual finding that TrAILCo’s Application
8 properly assessed the impact of the project on plant and wildlife habitats and
9 whether TrAILCo has properly indicated how it will minimize any identified
10 impacts.

11

12 **3e. Hydrology**

13 **Q. DOES THE REP CONTAIN INFORMATION ON THE EXISTING**
14 **HYDROLOGY OF THE STUDY AREA?**

15 A. Yes. The evaluation of hydrology of the study area is described in section 4.2
16 of the REP entitled “Surface Water and Aquatic Species/Habitat”. According
17 to the REP, the study area is in the lower Monongahela watershed. The REP
18 claims that the preferred route of the project will cross 37 streams of which
19 three (3) are considered major rivers (REP, p. 54). According to the REP, the
20 Fish and Wildlife Service (FWS) indicated that there are no federal aquatic
21 species known to exist within the project area (REP, p 56). However,
22 according to the Pennsylvania Fish and Boat Commission’s review of the

1 Pennsylvania National Diversity Inventory (2006) for resources of special
2 concern under their jurisdiction, there are a number of state listed threatened,
3 endangered, rare and candidate species. These include three fish species and
4 three mussel species (REP, p. 56).

5
6 **Q. HAS TRAILCO MINIMIZED THE EFFECT ON EXISTING**
7 **HYDROLOGY?**

8 A. Yes, in some areas. Similar to the mitigation effects on soil and sedimentation,
9 the Company proposes to develop and follow a soil erosion and sedimentation
10 plan to minimize the effects on hydrology (REP, p. 57). Also, the REP claims
11 that every effort will be taken to minimize the effect on streams as a result of
12 construction and future maintenance of the HVTL including the use of
13 herbicides (REP, p. 58).

14
15 **Q. HAS TRAILCO COMPLETED THE EVALUATION OF THE EFFECT**
16 **ON HYDROLOGY FOR THE HVTL PROJECT?**

17 A. Yes. However, for this to be realized, and to minimize the effect on water
18 quality, TrAILCo must follow its own plan for soil and sedimentation control
19 described in the REP during construction, and apply herbicides in accordance
20 federal state, and local regulations (REP, p. 58).

21

1 **3f. Landscape**

2 **Q. DOES THE REP CONTAIN INFORMATION ON THE EXISTING**
3 **LANDSCAPE OF THE STUDY AREA?**

4 A. Yes. The evaluation of landscape is summarized in section 4.9 of the REP
5 entitled “Aesthetics”. According to the REP, the current landscape consists of
6 attractive green or brown forested hills, rural farms, pasture and livestock. The
7 structures include historic farm houses, new housing, historic churches and
8 schools. The study claims that there will be 100 residences within 500 feet of
9 the proposed centerline. 47 of these residences were judged to have low or low
10 to moderate screening, and people at these residences would be able to see
11 much more of the transmission line than those with moderate to high screening
12 (REP, p. 85). The study concludes that since the project area is extensively
13 forested and shows significant topographic relief, and extensive amount of
14 screening is present which should limit to a varying degree direct visual access
15 to the proposed line, and that “scenic modification” caused by the proposed
16 transmission line should be greatly reduced at longer viewing distances (REP,
17 p. 84).

18

19 **Q. WHAT WOULD BE THE EFFECT ON THE LANDSCAPE IF THE**
20 **HVTL IS BUILT?**

21

1 A. According to the REP, since the project includes towers, it will unavoidably
2 affect the landscape of the surrounding area. The degree of the effect will
3 depend on the multiple factors including the final location of the towers, the
4 existing terrain, light, background and amount of screening (REP, p. 84).

5
6 **Q. HAS TRAILCO MINIMIZED THE EFFECT ON THE EXISTING**
7 **LANDSCAPE?**

8 A. Yes, in some areas. The REP claims that every effort was made or will be
9 made to minimize the visual affects of the proposed project on the landscape
10 (REP, pp. 83-84). However, there was some evidence produced at the Public
11 Input Hearings that TrAILCo could take further efforts to minimize the visual
12 effects of the project by using a modified construction of the towers or by
13 painting the towers a color that would tend to blend in with the scenery as
14 opposed to utilizing a higher contract aluminum.

15
16 **3g. Archeological Areas**

17 **Q. DOES THE REP CONTAIN INFORMATION ON THE EXISTENCE OF**
18 **ARCHEOLOGICAL AREAS?**

19 A. Yes. The evaluation of the archeology of the study area is summarized in
20 section 4.8 of the REP entitled “Description of Cultural Resources”. This
21 section of the REP describes the Prehistoric Period, the Archaic Period, the
22 Late Prehistoric Period and the Historic Period (REP, p. 82). In the Historic

1 Period, the REP mentions the Whiskey rebellion of 1794 and the emergence of
2 the coal and steel industries in the 20th Century (REP, pp. 82-83).

3
4 **Q. HAS TRAILCO MINIMIZED THE EFFECT ON ARCHEOLOGICAL**
5 **AREAS WITH THE STUDY AREA?**

6 A. There is no information in the filing as to whether the Company minimized the
7 affect of these or any other archeological areas other than to say that the
8 Company will seek to avoid the impact on previously recorded cultural
9 resources. It appears that the Company did not do any archeological study and
10 only relied on the work of others to determine any cultural resources in or near
11 the study (REP, pp. 83-84). TrAILCo does state in the REP that it will also
12 seek to continue consultation with the appropriate state and federal agencies on
13 issues relative to cultural resources (REP, p. 83). Since no archeological study
14 was done, the Company would have no way of knowing the precise impact on
15 archeological areas.

16 Of particular note on this requirement, a review of the transcripts for the
17 Public Input Hearings held in Washington and Greene Counties shows that
18 some participants produced evidenced that the proposed project may affect
19 archeological areas. While the evidence adduced at the Public Input Hearings
20 is far from conclusive, it does serve to illustrate that there may be significant
21 archeological areas contained in the project area and that, at a minimum, a
22 detailed study listing the impacts upon any such areas should be undertaken to

1 ensure that the project will minimize any adverse impacts upon such
2 identified areas.

3
4 **3i. Historic Areas**

5 **Q. DOES THE REP CONTAIN INFORMATION ON EXISTING**
6 **HISTORIC AREAS IN THE STUDY AREA OF THE PROPOSED**
7 **HVTL?**

8 A. Yes. While there is no specific section concerning historic areas, the REP does
9 contain references to historic districts in the study area that were considered in
10 selecting the route of the HVTL (REP, pp. 13 and 16). The REP also states
11 that the Company utilized data from the Pennsylvania Bureau of Historic
12 Preservation (REP, p. 32). The 502 Junction Environmental Inventory lists the
13 John Rex/Goowin Strickler Farm as a historic site listed in the National
14 Register of Historic places in 1998 and the Hootman Historic District and/or
15 the South Straban Historic District (REP, p. 41). The study area also includes
16 US Route 40, listed as a National Historic Civil Engineering Landmark in
17 1976, and a national scenic byway in 2002. Also, many sites along US Route
18 40 have been deemed eligible for listing in the National Register of Historic
19 places (REP, p. 73).

20 In addition, a review of the transcripts for the Public Input Hearings
21 held in Washington and Greene Counties shows that there was testimony with
22 regard to the proposed project and its impact upon historic sites not listed in the

1 REP. Again, testimony adduced at a Public Input hearing is far from
2 conclusive, but it does illustrate the need for a detailed examination of the
3 effects of the proposed projects on historic areas. While it is presumed that a
4 copy of TrAILCO's Application was served upon the Chairman of the
5 Historical and Museum Commission in accordance with Commission
6 regulations, there is no indication in the record that the designated agency has
7 evaluated the impact that the proposed project will have upon historic areas
8 and, without such a determination, there is a question whether the Commission
9 could make a factual finding that the proposed project has minimized the
10 impact it will have upon historic areas.

11
12 **Q. HAS TRAILCO TAKEN STEPS TO MINIMIZE THE EFFECT ON**
13 **IDENTIFIED EXISTING HISTORICAL AREAS?**

14 A. Yes. According to the REP, the Company has taken steps to minimize the
15 effect of the project on the existing historical areas that were identified in its
16 Application. However, as indicated above, there is some question whether
17 TrAILCo has taken sufficient steps necessary to identify all historic areas that
18 may be affected by the proposed project and whether any steps have been
19 made to minimize the impact of the project on those historic areas.

20
21 **Q. DO THESE STEPS SATISFY THE COMMISSION'S REQUIREMENT?**

1 A. No. It is not clear from the filing if the steps described in the REP are
2 sufficient. A letter dated October 6, 2007 from the Pennsylvania Museum and
3 Historic Commission (PMHC) attached to the back of the REP indicates that as
4 of that date, the PHMC cannot assess the effects on specific historic or
5 archeological resources. Since the PHMC has not made a determination on the
6 impact to historical resources, it would not be possible for the Commission to
7 determine if the impact of the proposed project has been minimized.

8

9 **3j. Scenic Areas**

10 **Q. DOES THE REP CONTAIN INFORMATION ON EXISTING SCENIC**
11 **AREAS IN THE STUDY AREA OF THE PROPOSED HVTL?**

12 A. Yes. Existing scenic land and recreation use in the area where the HVTL is
13 proposed is summarized in section 4.7 of the REP entitled “Recreation Lands
14 and Designated Natural Scenic Resources”. According to the REP, this study
15 area is enjoyed for its hiking scenic drives, bicycling, hunting, fishing, off-road
16 vehicle use, snowmobiling, bird watching, cross country skiing and other
17 similar outdoor activity. The predominant recreation activities include
18 hunting, fishing, hiking, and visiting historic sites (REP, p. 74).

19

20 **Q. HAS TRAILCO MINIMIZED THE EFFECT ON EXISTING SCENIC**
21 **AREAS FOR THE PROJECT THEY PROPOSE?**

1 A. Yes, partially. As described in section 4.9, the transmission line structures,
2 conductors, wires, and cleared right of way will obstruct the current scenic
3 view of residents, travelers and visitors. The impact on the scenic areas can
4 never be eliminated unless the project is dropped, and/or scaled back to where
5 existing facilities are upgraded. Therefore, based on the current alignment of
6 the HVTL, the Company has taken steps to minimize the impact on scenic
7 areas.

8

9 **Q. COULD THERE BE WAYS TO FURTHER MINIMIZE THE EFFECT**
10 **ON SCENIC AREAS?**

11 A. Yes. I recommend that the Company work to further minimize the impact to
12 the current scenic view.

13

14 **3k. Wilderness Areas**

15 **Q. DOES THE REP CONTAIN INFORMATION ON EXISTING**
16 **WILDERNESS AREAS?**

17 A. No. While there are references in the REP that the land in the study area is
18 primarily forest and farmland, there is no indication if the study area includes
19 any land that would be considered wilderness area. Presumably, none exists in
20 the study area. If none exist, the Company should re-affirm this conclusion.

21

1 **3l. Scenic Rivers**

2 **Q. DOES THE REP CONTAIN INFORMATION ON EXISTING SCENIC**
3 **RIVERS?**

4 A. No. While there are references to rivers and streams the HVTL will cross
5 (REP, p. 54). There is no indication if any of the rivers are considered scenic
6 rivers. If none of the rivers are considered scenic, the Company should re-
7 affirm this conclusion.

8
9 **4. Availability of Reasonable Alternative Routes**

10 **Q. HAS TRAILCO ANALYZED ALTERNATIVE ROUTES FOR THE**
11 **PROPOSED TRANSMISSION LINES?**

12 A. Yes. According to paragraph 31 of the Application, a description of and
13 comparison of alternative routes are discussed in TrAILCo Statement No. 5.

14
15 **Q. PLEASE REFERENCE WHERE A DESCRIPTION AND**
16 **COMPARISON OF ALTERNATIVE ROUTES ARE CONTAINED IN**
17 **THE FILING.**

18 A. A description of alternative routes is contained in TrAILCo Statement No. 5
19 beginning on page 13. The REP performed by the Berger Team, which
20 consists of The Louis Berger Group, Inc. and Commonwealth Associates, Inc,
21 is included in the filing as TrAILCo Exhibit JH-1.

22

1 **Q. HOW MANY ALTERNATIVE ROUTES WERE ANALYZED?**

2 A. The Berger Team analyzed eight alternative routes in Pennsylvania and West
3 Virginia for the 68-mile route between the 502 Junction Substation in
4 Pennsylvania and the Mt. Storm Substation in West Virginia (Section 2.11, p.
5 37 of the REP). According to the REP, the eight routes utilized three different
6 alignments in Pennsylvania established primarily to avoid developments
7 immediately south of Pennsylvania in the Morgantown area. Section 2.11.2 of
8 the REP states that the four alternative routes between the 502 Junction
9 Substation and the Prexy Substation site were subjected to a detailed review
10 using an inventory of the environmental factors defined in Table 2.2 of the
11 study.

12
13 **Q. WHAT ROUTE WAS SELECTED FOR THE PENNSYLVANIA**
14 **PORTION OF THE 502 JUNCTION-MT. STORM 500 KV**
15 **TRANSMISSION LINE?**

16 A. Alternative Route H was recommended by the Berger Team for this portion of
17 the proposed TrAIL project. A major factor in choosing Route H was the fact
18 that it was the shortest of the alternatives for this segment (TrAILCo St. No. 5,
19 p. 15 and Section 3.1.1, p. 42 of the REP).

20

1 **Q. WHAT ROUTE WAS SELECTED FOR THE 502 JUNCTION**
2 **SUBSTATION – PREXY SUBSTATION 500 KV TRANSMISSION**
3 **LINE?**

4 A. The Berger Team recommended Alternative Route C as the preferred route.
5 This Route C was chosen because it crosses the least amount of the
6 Pennsylvania State Game Lands and the least amount of forested lands.
7 Additionally, Route C is comparatively moderate in terms of impacts to steep
8 soils, cultivated cropland and developed land. Finally, Route C would place
9 the line primarily on the rights-of-way previously acquired for a 500 kV
10 transmission line (TrAILCo St. No. 5, p. 16 and Section 3.1.2, p. 42 of the
11 REP).

12
13 **5. Determinations Necessary for Granting the Application**

14 **Q. WHAT IS THE FIRST DETERMINATION THAT THE COMMISSION**
15 **MUST FIND IN ORDER TO GRANT TRAILCO’S APPLICATION?**

16 A. The first determination is that the Commission must find that there is a need
17 for the project.

18
19 **Q. HOW HAS TRAILCO ATTEMPTED TO DEMONSTRATE A NEED**
20 **FOR THE TRANSMISSION PROJECT?**

21

1 A. TrAILCo has provided information relating to the genesis of the project as a
2 result of the RTEP, which is designed to maintain the reliability of the electric
3 transmission grid in the PJM Region (Application, paragraph 4). Each RTEP
4 encompasses a wide range of proposed power system enhancements to
5 accommodate needed power system changes. According to PJM, its RTEP
6 process encompasses independent analysis, recommendations and approval to
7 ensure that facility enhancements and cost responsibilities can be identified in
8 a fair and non-discriminatory manner, free of any market sector's influence.¹⁹
9 TrAILCo has also described how its RTEP was designed to meet and correct
10 the 16 potential electric reliability problems based on the NERC reliability
11 standards (TrAILCo St. No. 3, p. 10).

12
13 **Q. DO YOU AGREE THAT TRAILCO HAS DEMONSTRATED THE**
14 **NEED FOR THE TRAILCO FACILITIES?**

15 A. I agree that TrAILCo has demonstrated that they have a solution for the
16 potential reliability problems that they have identified. However, as I stated
17 earlier, there may be other options to resolving the reliability problems that
18 present permissible solutions to the NERC standards. TrAILCo failed to
19 discuss whether reasonable, less costly and less intrusive alternatives exist to
20 address the reliability problems.

¹⁹ PJM Manual 14B: Generation and Transmission Planning, Section 2: Regional Transmission Expansion Planning Process (RTEPProcess), pages 8–9.

1 **Q. WHAT IS THE SECOND DETERMINATION THAT THE**
2 **COMMISSION MUST MAKE IN TERMS OF GRANTING TRAILCO'S**
3 **APPLICATION?**

4 A. The second determination that the Commission must make is whether the
5 proposed transmission project will create an unreasonable risk of danger to the
6 health and safety of the public.

7
8 **Q. HAS TRAILCO DEMONSTRATED THAT IT MEETS THIS ASPECT**
9 **OF THE COMMISSION'S REQUIREMENTS?**

10 A. TrAILCo claims that all of its tower structures and related equipment meet or
11 exceed all design standards for such facilities (TrAILCo St. No. 7, pp. 13 –
12 14). In addition, the Company has submitted testimony that shows while there
13 are no federal or state standards for electric and magnetic fields, TrAILCo's
14 measurements show that the levels of these fields would be lower than certain
15 European guidelines (TrAILCo St. No. 8, pp. 7 – 8). As stated earlier, there
16 are many competing reports relating the incidence of certain childhood
17 leukemia's and other health related issues to EMF's such as those emitted by
18 high voltage transmission lines. This conflict and the expressed concerns of
19 the public certainly raises questions in this regard.

20

1 **Q. HAS TRAILCO COMPLIED WITH THE THIRD DETERMINATION**
2 **THAT THE COMMISSION MUST MAKE RELATIVE TO THE**
3 **PROPOSED TRANSMISSION PROJECT?**

4 A. In my opinion, not completely. The third determination is that the proposed
5 transmission project must be in compliance with applicable statutes and
6 regulations which provide for the protection of the natural resources of
7 Pennsylvania.

8
9 **Q. PLEASE PROVIDE EXAMPLES WHERE, IN YOUR OPINION, THE**
10 **APPLICATION IS NOT IN COMPLIANCE WITH APPLICABLE**
11 **STATUTES.**

12 A. The effect of the transmission line on farmland administered under the state
13 Farmland and Forest Land Assessment (Clean and Green) Act, the Agricultural
14 Security Law, and the Agricultural Conservation Easement Purchase Program
15 is not clear (Section 4.6.1, p. 72 of the REP). For example, in Greene County,
16 approximately 42 parcels in the Clean and Green program will be crossed by
17 the preferred route. The number of parcels in Washington county in the Clean
18 and Green Program and in both counties in the Agricultural Security Area and
19 the Conservation Easement programs is unknown (Section 4.6.1, pp. 72 -73 of
20 the REP). Therefore, according to TrAILCo, the impacts on these programs
21 cannot be evaluated at this time (Section 4.6.1, p. 73 of the REP).

1 Further, testimony adduced at the Public Input Hearings held in
2 Washington and Greene Counties indicated that the deforestation and
3 subsequent vegetation maintenance could have an adverse effect on domestic
4 animals and on natural water supplies used for watering livestock and crops.
5 Concerns were also expressed regarding the use of herbicides and pesticides on
6 water supplies. As stated earlier, it does not appear that any state agency or
7 federal agency has examined the impact that the proposed project will have.
8 As such it is uncertain how the Commission can make a determination
9 regarding the environmental impact of the project. An example of this is that
10 there is some concern that the project may impact local airfields, and that
11 without FAA approval, it is questionable whether the Commission could make
12 a factual determination that TrAILCo has met its burden with regard to the
13 project's impact on land use.

14 It also does not appear that TrAILCo has properly assessed the impact
15 of the project on plant and wildlife habitats. Without a clear determination of
16 the effect on these habitats, it is questionable whether the Commission could
17 make a factual finding in this area of concern.

18 In terms of the impact of the project on archeological areas, TrAILCo
19 did not perform an archeological study, and, therefore, there is no way of
20 making a determination of the precise impact on these areas.

21 It is also not clear from the filing whether steps described in the REP are
22 sufficient to identify all historic areas that may be affected by the project, and

1 if any steps have been taken to minimize the impact of the project on those
2 areas. At this time, the PHMC has not made any determination on the impact
3 to historical resources.

4
5 **Q. WHAT IS THE FOURTH DETERMINATION THAT THE**
6 **COMMISSION MUST MAKE?**

7 A. The fourth determination is whether the proposed transmission project will
8 have minimum adverse environmental impact, considering the electric power
9 needs of the public, the state of available technology and the available
10 alternatives.

11
12 **Q. IN YOUR PROFESSIONAL OPINION, IS THERE ENOUGH**
13 **INFORMATION IN THE APPLICATION AND OTHER TESTIMONY**
14 **AND EXHIBITS FOR THE COMMISSION TO MAKE SUCH A**
15 **DETERMINATION?**

16 A. In my opinion, this question ties the first and third considerations together.
17 Since it appears that there is a reasonable question regarding the need for the
18 project, or at least a question of whether there are reasonable alternatives to the
19 proposed transmission lines, this question should be answered in the negative.
20 This is especially the case due to the fact that there remain some questions
21 regarding the potential environmental impacts of the project in Washington and
22 Greene Counties. It also does not appear that all applicable statutes and

1 regulations have been fully met by TrAILCo at this time. Approval of the
2 Application at this time, in my opinion, is premature at best.

3

4 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

5 A. Yes.

APPENDIX A

Gary L. Yocca

P.O. Box 3265
Harrisburg, PA 17105-3265
(717)783-8084

Career Summary: *Fixed Utility Financial Analyst Supervisor* with over fifteen years of experience in the supervision of technical experts in the Commission's Office of Trial Staff, and with nearly thirty two years of experience in analyzing economic, engineering, financial, quality of service and rate structure data in major gas, electric, telecommunications, water, sewer and steam heat cases. I have presented expert testimony, which covers a wide range of technical issues in numerous proceedings before the Commission.

Fixed Utility Financial Analyst Supervisor

Current

PENNSYLVANIA PUBLIC UTILITY COMMISSION
OFFICE OF TRIAL STAFF
OTS TECHNICAL STAFF
SUPERVISOR – ENGINEERING SECTION

HARRISBURG, PA

As a result of the creation of the Bureau of Fixed Utility Services and the reorganization of the Office of Trial Staff, effective April 1, 1996 my supervisory responsibilities were changed to include the areas of Engineering, Revenue and Rate Structure for all fixed utility types. During the course of formal and informal investigations personnel under my direction are responsible for reviewing and presenting recommendations regarding tariff rate schedules, tariff rules and regulations, measures of value claims, revenue annualizations, depreciation claims, fuel purchasing practices and economic analyses. They are also responsible for reviewing all pertinent supporting information such as cost of service studies, bill frequency analyses, proofs of revenue, depreciation studies, water quality test results and formal complaints.

Fixed Utility Financial Analyst Supervisor

2 Years

PENNSYLVANIA PUBLIC UTILITY COMMISSION
OFFICE OF TRIAL STAFF
TELECOMMUNICATIONS/WATER DIVISION
RATE STRUCTURE/ENGINEERING SECTION
PA

HARRISBURG,

From March of 1994 to March of 1996 my responsibilities included the supervision and direction of the Rate Structure/Engineering Section, and assisting the Legal Division of the Office of Trial Staff in all aspects of rate structure, rate base and quality of service litigation in water, sewer and telecommunications filings.

Fixed Utility Financial Analyst Supervisor

2 Years

PENNSYLVANIA PUBLIC UTILITY COMMISSION
OFFICE OF TRIAL STAFF
ENGINEERING AND RATE DESIGN DIVISION
ANALYSIS SECTION

HARRISBURG, PA

I was named Section Chief of the Analysis Section of the Engineering and Rate Design Division in February 1992. My responsibilities were essentially the same as those above, except that my section was responsible for the rate structure and engineering aspects of all utility types including gas, electric and steam heat.

APPENDIX A

Fixed Utility Financial Analyst 3

PENNSYLVANIA PUBLIC UTILITY COMMISSION
OFFICE OF TRIAL STAFF
ENGINEERING AND RATE DESIGN DIVISION

5 ½ Years

HARRISBURG, PA

I performed the functions of an expert witness in major water, steam heat, gas and electric cases before the Pennsylvania Public Utility Commission from September 1986 to February 1992. My testimony covered many issues ranging from cost of service and rate design to natural gas transportation issues.

Fixed Utility Financial Analyst 3

PENNSYLVANIA PUBLIC UTILITY COMMISSION
BUREAU OF RATES
ELECTRIC DIVISION

3 ½ Years

HARRISBURG, PA

I was an expert witness during the period from December 1982 until August 1986. I addressed various issues including rate structure, revenues and sales levels. I was also responsible for analyzing and making recommendations on numerous electric tariff filings including economic development rates.

Bureau of Rates Liaison to the Federal Energy Regulatory Commission (FERC)

PENNSYLVANIA PUBLIC UTILITY COMMISSION
BUREAU OF RATES
ELECTRIC DIVISION

6 Months

HARRISBURG, PA

Concurrently with the above duties, for a six-month period in 1982 and 1983, I participated in hearings and settlement conferences before FERC on natural gas transmission matters.

Public Utility Analyst 3

PENNSYLVANIA PUBLIC UTILITY COMMISSION
BUREAU OF RATES
GAS DIVISION

3 ½ Years

HARRISBURG, PA

From February 1979 to November 1982, my main role was to perform the duties of an expert witness on revenue and expense issues in major gas utility rate cases. The issues that I addressed ranged from normalized sales levels to annualizations of claimed expenses.

Fixed Utility Financial Analyst 1 and 2

PENNSYLVANIA PUBLIC UTILITY COMMISSION
BUREAU OF RATES AND RESEARCH
ENERGY DIVISION

3 Years

HARRISBURG, PA

After joining the Pennsylvania Public Utility Commission in February 1976, I performed the duties of a Public Utility Analyst 1 and 2. For the first three years I worked mainly on major gas and electric cases with increasing levels of responsibility in the areas of revenues and expenses.

APPENDIX A

Production Analyst

UNITED STATES ARMY SECURITY AGENCY
USASAFS BERLIN

5 Years

BERLIN, GERMANY

During my final three years in the U.S. Army, I performed the duties of a Production Analyst and a Senior Voice Intercept Operator – German Language Transmissions at the Army Security Agency's Field Station in Berlin, Germany. I prepared operational reports to the National Security Agency and developed procedures to analyze the operational efficiency of the unit. As a Senior Voice Intercept Operator, I had supervisory responsibility over thirteen other Voice Intercept Operators.

Education

Master of Science in Business Administration, Cum Laude
BOSTON UNIVERSITY

1977

BOSTON, MA

Major: Boston University's MBA Program focused on Business Management, and included courses in Economics, Accounting, Management and Statistics.

Bachelor of Science

THE PENNSYLVANIA STATE UNIVERSITY

1969

UNIVERSITY PARK, PA

Major: My major was Ceramic Science in the College of Earth and Mineral Sciences. The program focused on the engineering and chemistry of non-organic, non-metallic materials that are generally formed at and are able to withstand high temperatures.

Numerous Conferences and Seminars Concerning Public Utility Regulation, Economic and Management

**1976 to Present
Various Locations**

I have attended over 100 conferences and seminars since I began employment with the Public Utility Commission. A detailed listing is available.

Testimony

The following list provides an index of the natural gas distribution, electric power, telecommunications, steam heat, sewer and water service utility cases in which I have presented expert testimony before the Pennsylvania Public Utility Commission.

1. Docket No. A-110300F0095, Metropolitan Edison Company
2. Docket No. A-110400F0040, Pennsylvania Electric Company
3. Docket No. A-122250F5000, Equitable Gas Company and The Peoples Natural Gas Company, d/b/a Dominion Peoples
4. Docket Nos. A-211770, A-230242 and G-910255, LP Water and Sewer Company
5. Docket No. I-830374, Pennsylvania Power and Light Company
6. Docket No. I-900009, Equitable Gas Company
7. Docket No. I-00920015, Conestoga Telephone & Telegraph Company
8. Docket No. P-920567, Metropolitan Edison Company and Pennsylvania Electric Company
9. Docket No. P-00951005, Frontier Communications of Breezewood, Inc., Et. Al.
10. Docket No. P-00961024, Commonwealth Telephone Company
11. Docket No. P-00971182, Ironton Telephone Company

12. Docket No. P-0062213, Metropolitan Edison Company
13. Docket No. P-0062214, Pennsylvania Electric Company
14. Docket No. P-00072259, Metropolitan Edison Company
15. R.I.D. 296, F-2, Pennsylvania Gas & Water Company – Gas Division
16. Docket No. R-78120714, Columbia Gas of Pennsylvania, Inc.
17. Docket No. R-79030781, Philadelphia Electric Company – Gas Operations
18. Docket No. R-79090956, National Fuel Gas Distribution Corporation
19. Docket No. R-79100972, Apollo Gas Company
20. Docket No. R-80111375, North Penn Gas Company
21. Docket No. R-811600, National Fuel Gas Distribution Corporation
22. Docket No. R-811719, Philadelphia Electric Company – Gas Operations
23. Docket No. R-821906, The Peoples Natural Gas Company [Not entered in record due to settlement]]
24. Docket No. R-822042, Columbia Gas of Pennsylvania, Inc.
25. Docket No. R-822250, Pennsylvania Electric Company
26. Docket No. R-842583, Duquesne Light Company
27. Docket No. R-842651, Pennsylvania Power & Light Company
28. Docket No. R-842770, Metropolitan Edison Company
29. Docket No. R-842771, Pennsylvania Electric Company
30. Docket No. R-850021, Duquesne Light Company
31. Docket No. R-850267, Pennsylvania Power Company
32. Docket No. R-860378, Duquesne Light Company
33. Docket No. R-860384, Metropolitan Edison Company
34. Docket No. R-860413, Pennsylvania Electric Company
35. Docket No. R-870666, Equitable Gas Company
36. Docket No. R-870687, Lake Latonka Water Company
37. Docket No. R-870825, Western Pennsylvania Water Company
38. Docket No. R-870840, Philadelphia Suburban Water Company
39. Docket No. R-880941, Equitable Gas – Energy Company
40. Docket No. R-880971, Equitable Gas Company
41. Docket No. R-880979, Pennsylvania Electric Company
42. Docket No. R-891238, Equitable Gas Company
43. Docket No. R-891283, Chartiers Natural Gas Company, Inc.
44. Docket No. R-901595, Equitable Gas Company
45. Docket No. R-901607, The Peoples Natural Gas Company [Not entered in record due to settlement]
46. Docket No. R-901870, Equitable Gas – Energy Company
47. Docket No. R-911909, Pennsylvania American Water Company
48. Docket No. R-911925, Equitable Gas Company
49. Docket No. R-912164, Equitable Gas Company
50. Docket No. R-00922180, The Peoples Natural Gas Company
51. Docket No. R-00922206, The Peoples Natural Gas Company
52. Docket No. R-00922319, Glen Alsace Water Company
53. Docket No. R-00922482, Pennsylvania Gas & Water Company – Scranton Water Rate Area
54. Docket No. R-00932673, Lemont Water Company
55. Docket No. R-00943008, Bell Atlantic – Pennsylvania, Inc.
56. Docket No. R-00943156, Borough of Schuylkill Haven
57. Docket No. R-00953416, North Penn Gas Company
58. Docket No. R-00038173, Philadelphia Gas Works
59. Docket No. R-00049157, Philadelphia Gas Works[Not entered in record due to settlement]
60. Docket No. R-00049255, PPL Electric Utilities Corporation
61. Docket No. R-00061297, Emporium Water Company
62. Docket No. R-00061366, Metropolitan Edison Company
63. Docket No. R-00061367, Pennsylvania Electric Company
64. Docket No. R-00061931, Philadelphia Gas Works
65. Docket No. R-00072110, Philadelphia Gas Works
66. Docket No. R-00072334, UGI Penn Natural Gas, Inc.