

**PUBLIC SERVICE COMMISSION
OF WEST VIRGINIA
CHARLESTON**

Case No. 07-0508-E-CN

TRANS-ALLEGHENY INTERSTATE LINE COMPANY

**Application of Trans-Allegheny Interstate Line
Company for a certificate of public convenience
and necessity under W. Va. Code § 24-2-11a
authorizing the construction and operation of the
West Virginia segments of a 500 kV electric
transmission line and related facilities in Monongalia,
Preston, Tucker, Grant, Hardy, and Hampshire
Counties, and for related relief**

**REBUTTAL TESTIMONY OF
JACK HALPERN**

January 4, 2008

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Jack Halpern, and my business address is 4511 South Ocean
3 Boulevard, Suite 507, Highland Beach, Florida 33487.

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

5 A. Yes. I have filed written direct (March 30, 2007) and supplemental (August 10,
6 2007) testimony on behalf of Trans-Allegheny Interstate Line Company
7 (“TrAILCo”).

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

9 A. This rebuttal testimony addresses a number of issues, including:

- 10 • LRE evaluation standards and data
- 11 • The effect of TrAIL on animals and plants
- 12 • The effect of TrAIL on water and wetlands
- 13 • The visual impacts of TrAIL
- 14 • Historical resources
- 15 • The effects of TrAIL on gas wells and lines
- 16 • Use of highway rights-of-way (“ROW”) for TrAIL
- 17 • Route recommendations by Staff and other parties
- 18 • Response to criticisms of process

19 Q. WILL YOU BE USING THE SAME TERMS IN YOUR REBUTTAL
20 TESTIMONY AS SET FORTH IN THE TABLE OF NOMENCLATURE
21 ATTACHED TO THE APPLICATION?

1 A. Yes, as well as some of the terms used in my direct and supplemental testimony.
2 In addition, I may define other specific terms in this rebuttal testimony.

3

4 LRE EVALUATION STANDARDS AND DATA

5 Q. PLEASE RESPOND TO DR. KOTCON'S ASSERTIONS (PAGE 7) THAT
6 TRAILCO PURPOSEFULLY PROPOSED A ROUTE THAT DID NOT
7 INVOLVE FEDERAL LANDS, SO AS TO AVOID THE PREPARATION OF
8 AN ENVIRONMENTAL IMPACT STATEMENT ("EIS") UNDER THE
9 NATIONAL ENVIRONMENTAL POLICY ACT ("NEPA").

10 A. The avoidance and/or minimization of impacts on public lands such as State
11 Forests and Parks, National Forests and Parks, or other public lands with
12 designated uses (recreation, historic preservation, natural resource management) is
13 standard protocol in siting studies. It is absolutely appropriate that impacts on
14 these lands are minimized when possible and practical.

15 Dr. Kotcon does acknowledge that this proceeding involves no "federal action,"
16 which would trigger an EIS. Nor is there any compelling reason to subject TrAIL
17 to an EIS. TrAILCo's Application is to be reviewed under West Virginia statutes
18 and this Commission's rules. Any attempt to layer onto those requirements
19 federal laws and regulations merely confounds and delays the Commission's
20 approval process, and should be rejected.

1 Q. IT HAS BEEN SUGGESTED THAT USE OF THE GEOGRAPHIC
2 INFORMATION SYSTEM (“GIS”) FOR SITING TRAIL WAS INADEQUATE.
3 DO YOU AGREE?

4 A. No. GIS has been routinely used in electric transmission line route selection for
5 more than 30 years. I have been personally involved in over a dozen projects
6 using GIS for siting electric utility facilities and I believe that our use of it in
7 selecting a route for TrAIL was appropriate. GIS was used to identify major
8 routing constraints, land uses, and landscape features – the uses for which it is
9 most suited. Other data sources such as aerial photography and interpretations
10 from these photos, as well as information developed through field reconnaissance
11 efforts were also major sources of information used during the TrAIL routing
12 effort. Moreover, many of the site specific impact concerns can only be clearly
13 identified through field visits (with appropriate access rights), and then handled
14 through design and engineering solutions. On the ground field investigations are
15 currently being conducted, where possible, to gather more detailed information for
16 these purposes.

17 GIS was one of many tools used in the site evaluation and selection process, and
18 we were cognizant of the limitations of GIS before and during our work. These
19 known limitations in no way minimize the value of the GIS to the process used to
20 ultimately select the Preferred Route for TrAIL.

1 Q. DR. KOTCON MAINTAINS THAT THE ROUTE EVALUATION CRITERIA
2 USED IN THE LRE ARE INSUFFICIENT. PLEASE RESPOND.

3 A. Dr. Kotcon notes (page 8) that, “The Route Selection Criteria do NOT include:
4 avoidance of habitat for listed threatened or endangered species; avoidance of
5 areas with karst topography or other areas with sensitive groundwater aquifers;
6 avoidance of high quality waters, e.g., trout streams; avoidance of scenic impacts
7 to designated overlooks or other areas prized for their visual quality; etc.”

8 As stated in the LRE on page 11, the route selection criteria are intended to be
9 “basic” route selection guidance covering “features observed in the project area,”
10 “concerns expressed by various West Virginia and local governmental agencies,”
11 “concerns expressed by the public,” and criteria based on “previous experiences of
12 routing team members with other extra high voltage transmission line projects.”
13 This list was not intended to be an exhaustive list of all factors considered, but
14 merely the major guiding criteria for the routing process.

15 Additional environmental considerations for the routing process are in Table 2-2
16 (pg. 29-35) and presented in Table 2-3 (pgs. 36-39), Table 2-4 (pgs. 46-49), and
17 Table 4-1 (72-74) of the LRE. These factors include, among others: recorded
18 sensitive species observation locations, designated sensitive habitat zones for
19 threatened and endangered species (Maryland), and scenic byway crossings which
20 relate to Dr. Kotcon’s concern regarding designated scenic resources. Designated

1 scenic vista sites were reviewed from the National Scenic Byways Program, and
2 considered by attempts to minimize impacts on public parks, designated natural
3 areas, and historic districts.

4 Dr. Kotcon's suggestion that "karst topography or other areas with sensitive
5 groundwater aquifers" and "high quality waters, e.g., trout streams" should have
6 been routing criteria reflects a misunderstanding of both the distribution of these
7 features in the study area and the potential impacts that transmission line
8 construction and operation would likely have on these features. Potential karst
9 features in the study area generally follow a northeast to southwest orientation,
10 cutting through the entire study area. As a result of this configuration and the
11 opposing generally east-west orientation of the route, there is little potential to
12 avoid crossing these features.

13 Nevertheless, a detailed review of geological concerns along the route is currently
14 underway to identify specific areas of concern. Once specific areas are identified,
15 appropriate measures will be taken to limit any potential impacts on karst areas
16 and associated ground water resources. The approximate distance of 1200 feet
17 between towers will allow changes should they be necessary. These measures will
18 be reviewed and approved by State representatives through the permitting process
19 prior to any construction operations.

1 Dr. Kotcon's concerns regarding high quality streams and trout streams follow a
2 similar argument. Many of the perennial streams in the study area are cold water
3 streams that support trout populations, and many are considered high quality
4 streams by the West Virginia Division of Natural Resources ("WVDNR"). Thus,
5 because of its prevalence, this factor is not particularly useful as a differentiating
6 criterion for route selection. Instead, we avoided placing angles in the route near
7 any stream course (every angle point in the route equates to the location of a future
8 tower structure) and avoided routing the line parallel to streams to avoid long
9 stretches of disturbed riparian area. Thus, there are estimated to be 31 out of the
10 476 towers in West Virginia that are less than 200 feet from streams and, of that
11 number, only 3 are within 200 feet a high quality stream. During the design
12 process, TrAILCo can attempt to move these 31 even farther away from streams,
13 to the extent practicable.

14 Q. MR ELLARS "BELIEVE[S] SOME METHOD OF WEIGHTING CRITERIA
15 SHOULD HAVE BEEN UTILIZED." WHY DIDN'T TRAILCO USE
16 WEIGHTING CRITERIA?

17 A. There are other ways to select routes for linear features, other than relying on
18 weighting of quantifiable environmental factors and lumping the scores for each
19 factor together to compute a single numerical score for each route. The more
20 consistency between the different factors among the alternatives being considered

1 makes a weighting approach less valuable in the decision process. This was the
2 case for this proposed route. Hence, the approach used for this study was to use a
3 multidisciplinary routing team to incorporate the non-quantifiable factors instead
4 of relying just on numerical scores in a weighting scheme.

5 When weighting factors and the routes determined by weighting are presented for
6 review to the public, the weights are relentlessly criticized as completely
7 subjective, and the weighting process itself becomes another arena of controversy.

8 Those closer to the line favor one set of weights, while others who are farther from
9 the line tend to weigh things differently, thus frustrating any effort to derive a
10 calculus for the overall public good. Those involved in the routing process must
11 often adjust routes selected by weighting and environmental scoring to take into
12 account issues that are not quantifiable. Sometimes these adjusted routes are
13 considerably different from the route identified by weighting and numerical
14 scoring. Many planners involved in selecting routes have moved away from
15 weighting for these very reasons.

16 Weights are numerical values that are normally applied to measured
17 environmental factors (such as feet of forest crossed or numbers of residences near
18 the route centerline). They therefore cannot take into account qualitative features
19 such as aesthetics, permitting difficulties, public attitudes, and special requests
20 from landowners and natural resource agencies. In addition, quantifiable data

1 often are not readily available during the study period, or are available for only
2 part of the route, such as in one county but not in the next county, or because of
3 access restrictions.

4 Q. WHY DIDN'T TRAILCO INCLUDE COST AS A COMPONENT OF ITS
5 EVALUATION CRITERIA FOR SELECTION OF THE ROUTE, AS NOTED
6 BY MR. ELLARS?

7 A. The calculation of cost for each of the alternatives would require much more
8 detailed information than exists at this stage of the process. Costs include not only
9 the length and number of towers, but also the types of towers and foundations.
10 TrAILCo did not have access to the properties where the detailed surveying and
11 engineering necessary for meaningful cost estimation could be accomplished.

12
13 ANIMALS AND PLANTS

14 Q. DO YOU AGREE WITH MR. HANSEN (PAGE 13) THAT TRAILCO HAS
15 FAILED TO PROPERLY RECOGNIZE AND EVALUATE THE EFFECT OF
16 TRAIL ON WILDLIFE AND WILDLIFE HABITATS?

17 A. No. Sections 4.4 and 4.5 of the LRE address the evaluation of TrAIL's impact on
18 vegetation and wildlife, respectively. The level of analysis is appropriate at this
19 stage of project development. Additional field studies concerning the detailed
20 impacts on wildlife and sensitive plant species are ongoing, where possible, and

1 continue as part of the normal agency consultation, coordination, and permitting
2 process.

3 Mr. Hansen suggests that the LRE does not indicate whether threatened, rare,
4 and/or endangered (“RTE”) species are present along and adjacent to the Preferred
5 Route. TrAILCo requested rare species and natural community information from
6 the U.S. Fish & Wildlife Service (“USFWS”) and the WVDNR. This
7 correspondence (included in Appendix A of the LRE¹) is the best information that
8 the Routing Team was able to obtain from the relevant agencies. As part of the
9 ongoing permitting process, however, field surveys are currently underway, where
10 access is permitted, to identify more specific location information of any rare
11 species or natural communities and any potential impacts and mitigation needs, as
12 noted by Mr. Fleissner in his rebuttal testimony. In light of these prior and
13 ongoing efforts, Mr. Hansen’s criticisms are completely unjustified.

14 Q. MR. HANSEN HAS SUGGESTED (PAGE 13) THAT TRAILCO HAS FAILED
15 TO PROPERLY ASCERTAIN WHETHER THE INDIANA BAT, NORTHERN
16 FLYING SQUIRREL, BALD EAGLES, OR RUNNING BUFFALO CLOVER
17 ARE AFFECTED BY TRAIL, AND THAT THE PROJECT DOES NOT

¹ These efforts were underway months before TrAILCo filed its Application. The USFWS provided information on federally listed species in a letter dated November 15, 2006. The WVDNR provided location information for rare species and sensitive natural communities by letter dated October 10, 2006.

1 COMPLY WITH THE ENDANGERED SPECIES ACT (“ESA”). DO YOU
2 AGREE?

3 A. No. Like those of Dr. Kotcon, Mr. Hansen’s criticism reflects a lack of
4 understanding of the route selection process and the current stage of the project,
5 and the level of analysis necessary and practical at this stage. As noted above,
6 during the route evaluation, we consulted with both the USFWS (regarding
7 federally listed species) and the WVDNR (regarding RTE species). This
8 information was used to develop and evaluate the series of alternative routes
9 considered, a standard practice through this phase of siting and development.

10 Subsequent to the submission of the LRE, TrAILCo has continued consultation
11 efforts with the USFWS and the WVDNR, and has begun conducting surveys
12 along the Preferred Route for the Indiana bat, Virginia big-eared bat, Cheat
13 Mountain salamander, West Virginia northern flying squirrel, bald eagles, and the
14 running buffalo clover. (The bald eagle has been delisted from the federal list of
15 endangered species under the ESA.) Surveys have been completed for the running
16 buffalo clover, and while none was found, TrAILCo has agreed to conduct another
17 survey immediately prior to project construction. The other surveys are ongoing.
18 TrAILCo will submit the results of these surveys to the USFWS and will continue
19 consultation to determine if TrAIL will affect any federally listed species and if

1 The LRE presents information sufficient for the Commission to make findings
2 regarding hydrology and the relative lack of impact from TrAIL.

3 Q. MR. VESELKA ASSERTS THAT TRAILCO FAILED TO ADEQUATELY
4 INVENTORY THE WETLANDS THAT WILL BE AFFECTED BY THE
5 PREFERRED ROUTE. MR. ELLARS (PAGE 29) SUGGESTS THAT
6 TRAILCO'S FILING DOES NOT CONTAIN SUFFICIENT INFORMATION
7 ON WETLANDS. DID TRAILCO PRESENT SUFFICIENT INFORMATION
8 ON WETLANDS FOR THE COMMISSION TO RULE IN THIS MATTER?

9 A. Yes. Mr. Gaul explains in his rebuttal testimony the types of information used for
10 the assessment of wetlands for developing reasonable comparisons between the
11 Alternative Routes.

12 Q. DO YOU AGREE WITH MR. HANSEN'S CONCLUSION REGARDING THE
13 EFFECT THAT TRAIL WILL HAVE ON THE LAUREL RUN WATERSHED
14 DURING AND AFTER CONSTRUCTION?

15 A. No. Mr. Hansen cites sedimentation into the streams and wetlands as the main
16 concern from project construction. TrAIL will be subject to the sedimentation and
17 erosion standards in a National Pollutant Discharge Elimination System
18 ("NPDES") permit and the West Virginia Department of Environmental
19 Protection's Stormwater Construction General Permit that TrAILCo will apply for
20 prior to project construction. These permits will specifically set sedimentation

1 standards and monitoring protocols to protect streams from harmful levels of
2 sedimentation.

3 I also dispute Mr. Hansen's conclusion that TrAIL would greatly impact the
4 Laurel Run watershed following construction through removal of riparian canopy
5 and forest fragmentation, which he says will heat trout streams and result in the
6 loss of interior forest habitat. As seen in the Hansen/Veselka report (aerial
7 photograph on page 7), it appears that only one potential trout stream, the
8 mainstem of Laurel Run from Arden Peters Road tributary to the Hornbeck Road
9 tributary, has densely forested banks in the area crossed by the Preferred Route.
10 (The beaver complex tributary that is also crossed has forested banks, but is not
11 indicated as a potential trout stream.) According to the Hansen/Veselka report, the
12 only trout found in Laurel Run is the brown trout, which has been stocked in the
13 stream since 1984. Optimal brown trout temperature requirements are 53.6 to
14 66.2°F, with a temperature tolerance range of 32 to 80.6°F.² Although the
15 temperature data presented in the Hansen/Veselka report show the West Virginia
16 water quality criteria for temperature in trout waters to be exceeded in Laurel Run
17 in a portion of the time data have been collected, the temperatures recorded are
18 still within the tolerance range of the brown trout.

² Raleigh, R.F., L.D. Zuckerman, and P.C. Nelson. 1986. Habitat suitability index models and instream flow suitability curves: Brown trout, revised. U.S. Fish & Wildlife Service. Biol. Rep. 82(10.124). 65 pp. [First printed as: FWS/OBS-82/10.71], September 1984.

1 Moreover, as described in the LRE and noted in Mr. Hansen's testimony,
2 TrAILCo will use Class III clearing within 100 feet of stream banks. Under this
3 level of clearing, woody vegetation will remain in the riparian area, up to 5 feet in
4 height for the 80 feet under the conductor path, while slow growing woody species
5 will be allowed to grow up to 25 feet in height in the remaining 70 feet of cleared
6 ROW. Although Mr. Hansen does not provide the width of Laurel Run where
7 crossed by the Preferred Route, based on aerial photography views, it is likely that
8 a 25-foot high tree canopy adjacent to Laurel Run will adequately shade this
9 stream. In the 80 feet under the conductor path, the 5-foot high woody vegetation
10 will continue to provide some shade to the stream, possibly complete shade
11 depending on the width and topography of the stream at the crossing location. As
12 a result, within the Laurel Run watershed, TrAIL will only alter the riparian
13 condition adjacent to one densely forested stream (Laurel Run) for approximately
14 80 feet of its length.

15 It is impossible to predict the actual temperature change as the result of this
16 clearing without knowing several physical and biological characteristics of Laurel
17 Run in the proposed crossing location. However, one Forest Service study (1978)
18 on the effect of power line corridor clearance on stream habitat found (1) that the
19 mean temperature changes due to ROW exposure on nine studied streams ranged
20 from -0.5 to 5.4°F and (2) that, after reentering the forest after exposure,

1 temperatures stabilized 200 to 300 feet downstream.³ Other studies have indicated
2 that leaving a riparian buffer, even a buffer of understory species for small
3 streams, protects streams from thermal increases.⁴ In the worst case scenario, the
4 partial lessening of shade as a result of ROW clearing for 80 feet is not likely to
5 increase the temperature of Laurel Run above brown trout tolerance levels.

6 Mr. Hansen also states that a failure to maintain access roads could cause
7 sedimentation to enter the streams. TrAILCo is committed to installing and
8 maintaining appropriate drainage structures along access roads to prevent
9 sedimentation after project construction. It should also be noted that the aerial
10 photograph on page 7 of the Hansen/Veselka report shows that very little of the
11 portion of the Laurel Run watershed crossed by the Preferred Route is forested;
12 the majority of the land use is residential and agricultural. As such, it is unlikely
13 that interior forest habitat is substantially impacted by the Preferred Route in the
14 Laurel Run watershed.

15 Q. MR. VESELKA (PAGE 6) ASSERTS THAT THE DISTURBANCES IN
16 WETLANDS OF THE LAUREL RUN WATERSHED MAY LEAD TO

³ Forest Service, 1978. Effects of Power Line Corridor Clearance and Maintenance on Stream Habitat. In, *Strategies for Protection and Management of Floodplain Wetlands and Other Riparian Ecosystems*. USDA Forest Service GTR-WO-12. December, 1978.

⁴ See, e.g., Forest Service, 1971. Water temperature in the Steamboat Drainage. Pacific Northwest Forest and Range Experiment Station, Portland, Oregon. USDA Forest Service Research Paper PNW-119. August, 1971.

1 CHANGES IN THE SPECIES ASSEMBLAGES, WHICH CAN BE
2 INDICATIVE OF IMPAIRED WETLAND HEALTH AND FUNCTION. DO
3 YOU AGREE?

4 A. No. Construction of TrAIL is likely to convert forested wetlands contained within
5 the ROW to emergent or scrub-shrub wetlands. However, according to the
6 Hansen/Veselka report (page 25), only one wetland in the studied corridor within
7 the Laurel Run watershed near the Preferred Route is a forested wetland: the
8 beaver complex. Because the beaver complex occurs adjacent to a stream, it is
9 likely that TrAILCo will use Class III clearing (as described above), which will
10 limit the alteration of this wetland, allowing portions of it to remain a forested
11 wetland. In viewing the aerial photograph on page 7 of the Hansen/Veselka
12 report, it is apparent that the area of Laurel Run watershed crossed by the
13 Preferred Route contains a mosaic of residential and agricultural land use; this area
14 already contains extensive edge and open habitat. The remaining wetlands are all
15 types (emergent, scrub-shrub, unconsolidated bottom) that will not be altered.

16 Q. PLEASE RESPOND TO MR. HANSEN'S ASSERTIONS (PAGE 11) THAT
17 THE PLANS TO RESTORE DISTURBED AREAS ARE INSUFFICIENT.

18 A. TrAILCo intends to adhere to the sedimentation and erosion standards and
19 requirements set forth in its NPDES permit and the West Virginia Department of
20 Environmental Protection's Stormwater Construction General Permit that

1 TrAILCo will apply for prior to project construction. These permits will set
2 sedimentation standards to protect streams from harmful levels of sedimentation.
3 Mr. Hansen asserts that TrAILCo's statement that it will follow the requirements
4 set forth in these permits is insufficient to evaluate its sediment and erosion
5 control plans because the locations of towers, access roads, and the precise ROW
6 are unknown. We disagree. Although the exact locations were unknown at the
7 time of the LRE submittal, and remain unknown, they will be known when
8 TrAILCo applies for the NPDES and Stormwater Construction General permits,
9 which will reflect the exact sediment, erosion, and siltation controls needed to
10 protect streams. Mr. Hansen seems to be arguing that this Commission should
11 ignore the fact that other agencies will still have to appropriately review and
12 regulate TrAIL after it is certified in this proceeding.

13 Q. DID TRAILCO STUDY THE EFFECTS OF THE PREFERRED ROUTE ON
14 THE WATKIN'S RUN STREAM, AS DISCUSSED BY THE WILLIAMSES?

15 A. No. The Williamses state that any stream crossing can cause "day lighting." We
16 take this to mean the reduction in shade provided by riparian trees. We disagree
17 with this statement. Although the cutting of riparian trees could cause a loss of
18 stream shading, TrAILCo proposes measures to minimize, or eliminate, this
19 potential effect. Within 100 feet of streams, TrAILCo will use Class III clearing,
20 as discussed above. Depending upon the width and nature of the stream, this

1 remaining riparian vegetation will provide enough canopy to either completely or
2 partially shade the stream. As part of the ongoing permitting process, TrAILCo is
3 committed to adhering to protection measures identified by the appropriate
4 agencies.

5
6 VISUAL IMPACTS

7 Q. SOME PUBLIC SPEAKERS AND OPPOSING WITNESSES HAVE RAISED
8 CONCERNS ABOUT THE IMPACT OF TRAIL ON THE VIEW FROM THEIR
9 PROPERTIES. WERE VISUAL IMPACTS ASSESSED IN THE LRE?

10 A. Yes. Aesthetic impacts were discussed and evaluated in the LRE by reviewing the
11 visual accessibility of TrAIL from specific viewpoints near the route (primarily
12 residences in close proximity). This assessment included estimating the amount of
13 existing screening from vegetation, topography, and nearby buildings; the distance
14 between the viewpoint and the transmission line; the width of the probable field of
15 view; the length of the proposed transmission line in view; and existing visual
16 perturbations in the viewshed. Photo-simulations showing the general character
17 of the transmission line structures and lines in the landscape were also presented in
18 the LRE. Mr. Gaul in his rebuttal testimony will sponsor additional work that has
19 been performed in locations along the Preferred Route that have been raised as
20 areas of special concern.

1
2 HISTORICAL RESOURCES

3 Q. SEVERAL PUBLIC SPEAKERS AND MR. ELLARS HAVE INDICATED
4 THAT CULTURAL RESOURCE SITES WERE OVERLOOKED, AND THAT
5 THE METHODOLOGY FOR LOCATING HISTORIC/CULTURAL
6 RESOURCES WAS DEFICIENT. DO YOU AGREE?

7 A. No. Information was gathered from the West Virginia Division of Culture and
8 History/State Historic Preservation Office (“SHPO”) that identified the location of
9 potentially eligible and eligible architectural resources, listed National Register
10 properties, and archaeological sites for the entire West Virginia study area. This
11 information was mapped and used during the route planning effort and as part of
12 the inventoried information for comparison among the alternatives. The tally of
13 architectural resource sites within ¼ mile of each of the alternatives was
14 performed for comparison purposes only, and should not be considered the full
15 extent of our data gathering effort.⁵ A detailed cultural resource survey is not
16 required during this stage of project planning.

⁵ The locations of known archaeological sites in the study area exist as GIS shape files, but were not included for public disclosure due to their sensitivity and to protect the site locations from looting or other deleterious impacts. While Section 106 of the National Historic Preservation Act does not apply to this project, nondisclosure of the location of cultural resources is consistent with 36 CFR 800.11(c)(1).

1 While Section 106 of the National Historic Preservation Act does not apply to this
2 project, TrAILCo is essentially following its implementing regulations:

3 36 CFR § 800.4 (b) (2) Phased identification and evaluation. Where
4 alternatives under consideration consist of corridors or large land
5 areas, or where access to properties is restricted, the agency official
6 may use a phased process to conduct identification and evaluation
7 efforts ... and ... as specific aspects or locations of an alternative are
8 refined or access is gained, the agency official shall proceed with the
9 identification and evaluation of historic properties in accordance
10 with paragraphs (b)(1) and (c) of this section.

11
12 TrAILCo has used a similar “phased” approach to seek approval for the Preferred
13 Route. Once this proceeding has been completed, consultation with the SHPO
14 will be conducted to establish an area of potential effects (“APE”) for the
15 Preferred Route, identify cultural resources within the APE, evaluate their
16 eligibility for inclusion in the National Register, determine the project’s effects on
17 historic properties, and avoid, minimize, or mitigate effects on historic properties,
18 if necessary. This process will also afford interested parties an opportunity to
19 comment.

20 Q. DID TRAILCO OVERLOOK THE CULTURAL AND HISTORICAL
21 RESOURCES ADDRESSED BY MR. MCNEELY, THE DALLAS FAMILY,
22 DR. SEXSTONE, MS. BUTCHER (PAGES 5-7), AND MR. HANSEN (PAGES
23 9-10)?

24 A. The Bhavana Society site was noted in our field maps, and was identified during
25 the routing study. The Heritage Baptist Church, while more than 1.5 miles away

1 from the Preferred Route, was also identified in our field reconnaissance. While
2 not all of the asserted historic and cultural resources mentioned by these witnesses
3 were identified by the Routing Team, as I have already noted, a complete cultural
4 resources survey will be conducted, and additional consultation will occur with
5 West Virginia SHPO to determine a plan for evaluations and assessing effects to
6 historic properties.

7
8 GAS WELLS AND LINES

9 Q. THE DALLAS FAMILY HAS RAISED CONCERNS ABOUT THE
10 PROXIMITY OF TRAIL TO NATURAL GAS FACILITIES. ARE THEIR
11 CONCERNS JUSTIFIED?

12 A. We certainly understand and appreciate any concerns raised about potential health
13 and safety issues relating to gas and electric lines in close proximity. This
14 particular issue and any specific approaches to mitigation are addressed in the
15 rebuttal testimony of Mr. Bodenschatz. However, I can address how the location
16 of gas lines was considered in our siting effort. As stated in the LRE, the goal of
17 the route selection study was to select the most suitable route for the West Virginia
18 Segments of TrAIL. The most suitable route was defined as the route minimizing
19 the effect of the transmission line factors on the natural and cultural environment,
20 while avoiding an unreasonably circuitous route, extreme costs, and non-standard

1 design requirements. Because electric lines and gas lines routinely co-exist in the
2 same ROW, the latter were not expressly avoided during the route selection
3 process. In fact, gas line corridors are sometimes considered in electric line siting
4 processes for their potential benefit of shared ROW.

5
6 HIGHWAY ROW

7 Q. DO YOU AGREE WITH THE PUBLIC SPEAKERS WHO SUGGESTED THAT
8 FOLLOWING INTERSTATE HIGHWAYS SHOULD HAVE BEEN
9 CONSIDERED AS AN ALTERNATIVE TO THE PREFERRED ROUTE?

10 A. No. Any line built along an interstate and just outside the highway ROW would
11 cause extensive impacts that would exceed those of the Preferred Route.
12 Additional impacts would result from the increased length of the route, which
13 would be required in order to follow the edge of the highway ROW. Typical
14 highway ROW expands and contracts, allowing room for road cuts and fills,
15 interchanges, etc. Routing a transmission line alongside this ROW would
16 necessarily require the line to constantly curve to follow the highway alignment,
17 while at the same time deal with topographic variations. This constant turning
18 requires significantly more structures, resulting in greater impact to the area's
19 natural resources, and greater impacts on the visual landscapes and views in the
20 area. In addition, access to these structures normally can not be from a limited

1 access highway which results in even more environmental impact caused by the
2 additional access road construction. Lastly, development, both existing and future,
3 is often concentrated at interstate highway exits. One of our routing criteria is to
4 avoid residential developments and minimize the need for removal of existing
5 residences, so routing along the highway and passing through development at each
6 exit is problematic. The end result of attempting to follow highway ROW while
7 avoiding residential and commercial development is a route that continuously
8 deviates and/or crosses the interstate before and after each intersection and returns
9 to the interstate after each interchange. Again, this results in a longer, more
10 circuitous route, more structures, and more impact.

11
12 ROUTE RECOMMENDATION

13 Q. MR. ELLARS (PAGES 8-9) STATES THAT TRAILCO HAS FAILED TO
14 DEMONSTRATE THAT THE PREFERRED ROUTE “IS THE BEST OPTION
15 AS COMPARED TO THE OTHER ALTERNATIVES THAT WERE
16 CONSIDERED.” PLEASE RESPOND.

17 A. I will respond later in my rebuttal testimony to Mr. Ellars’ numerical comparisons
18 of Routes A and H between 502 Junction and Mt. Storm, and the undue emphasis
19 that he places upon relatively insignificant differences in those quantifiable
20 criteria. (Mr. Ellars does not question the selection of the preferred route from Mt.

1 Storm to Meadow Brook Substation through West Virginia in any way.)

2 However, I first want to reiterate the approach of the Routing Team.

3 The Preferred Route in West Virginia was selected for the reasons summarized on
4 page 54 of the LRE. The route location and the thinking of the Routing Team is
5 described from west to east along Route H from 502 Junction to Mt. Storm in
6 great detail on Pages 55 through 71 of the LRE.⁶ The Preferred Route, like any
7 transmission line route between 502 Junction and the substation at Mt. Storm, is
8 not impact free. But the Preferred Route minimizes impacts to the natural and
9 cultural environment when all quantitative *and qualitative* factors are taken into
10 account.

11 Given the data readily available at the time of the routing study, Table 2-3
12 compares as accurately as possible the eight Alternative Routes for the West
13 Virginia Segments between 502 Junction and Mt. Storm. Table 2-4 accurately
14 compares the four Alternative Routes between Mt. Storm and the West
15 Virginia/Virginia State Line. The types of data listed in these tables are
16 commonly used for planning routes for all types of linear features, with the exact
17 final alignment to be determined at a later date after the basic route location is
18 defined with planning data. The final determination is always dependent on

⁶ Mr. Ellars restates our reasons why we selected Route H over other alternative routes on pages 10-11 of his testimony. He does not dispute a single one of these ten points in his testimony.

1 intensive, onsite environmental field studies, permit application review actions,
2 engineering evaluations, ROW negotiations, and staking by a surveyor.

3 The planning data in Tables 2-3 and 2-4 were collected by the Routing Team from
4 the standard and universally recognized data sources listed in Table 2-2. In
5 addition, color aerial photography was carefully studied at great length to assess
6 the relative aspects of the Alternative Routes. Extensive inspection of the routes
7 was conducted repeatedly in the field from points of public access. Throughout
8 the entire process, the goal was to select the best route in terms of the general
9 routing criteria and in terms of minimizing impacts to the natural and cultural
10 environment. The Routing Team always understood that when the Preferred
11 Route was selected, permission to enter on private property would be obtained
12 later in the project, the centerline of the route would be staked or marked
13 electronically and teams of biologists, cultural resource specialists, and other
14 investigators would commence an intensive study of the ROW. This information
15 would replace the planning level data with exact onsite information so that impacts
16 could be more accurately assessed and the appropriate project decisions made,
17 none of which should affect the overall selection of the Preferred Route. All eight
18 of Alternative Routes A through H between 502 Junction and Mt. Storm were
19 routed to address the general study area routing issues described in Section 1.2 on
20 Pages 7 through 9 of the LRE, to conform to the definition in Section 2.1 on Page

1 10 of the LRE of the most suitable route “as the route minimizing the effect of the
2 transmission line on all factors of the natural and cultural environment,” and to
3 meet the general routing criteria listed in Section 2.3 on Page 11 of the LRE.

4 **Q. PLEASE RESPOND TO MR. ELLARS’ CONCLUSION (PAGE 11) THAT,**
5 **BASED ON THE DATA IN THE LRE, ROUTE A APPEARS TO BE THE**
6 **BETTER CHOICE IN “ALMOST EVERY EVALUATION CATEGORY**
7 **EXCEPT FOR CULTURAL RESOURCE PROXIMITY.”**

8 **A. Mr. Ellars’ Table JWE-2 consists of data taken from LRE Table 2-3 for**
9 **Alternative Routes A and H. This project would be very easy for the Routing**
10 **Team and for the Public Service Commission if the route selection could be based**
11 **on a small table with a few numbers in it. The reality is that “the numbers,” as**
12 **utilized by Mr. Ellars, greatly oversimplify the complex and daunting task of**
13 **arriving at a route for a large transmission line. But even if one wishes to limit**
14 **consideration to the data collected by Mr. Ellars in his Table JWE-2, there is**
15 **actually little important difference between Routes A and H, particularly when**
16 **those data are updated.**

17 **Q. BEFORE YOU PROCEED TO ADDRESS THE FACTORS ADDRESSED BY**
18 **MR. ELLARS IN HIS TABLE, WHAT ARE THE UPDATED DATA TO**
19 **WHICH YOU JUST REFERRED?**

1 A. After the Preferred Route was selected, additional aerial photography was
2 developed of Route H and other portions of the Preferred Route to enable further
3 analysis of ROW location, permitting, etc., that must occur prior to construction.
4 Upon review of Mr. Ellars' testimony, it was apparent that he felt that specific
5 numeric data were particularly important in his review of the Routing Team's
6 work. Accordingly, members of the Routing Team have since obtained and
7 preliminarily reviewed 1:200 aerial photographs of both Routes A and H, in order
8 to bring these data forward. I must reiterate that such a formulaic approach is not
9 the way to determine the location of TrAIL.

10 Q. PLEASE REVIEW THE CRITERIA SET FORTH IN MR. ELLARS' TABLE
11 JWE-2, AND STATE THE EXTENT TO WHICH YOU FEEL THE DATA ARE
12 IMPORTANT IN COMPARING ROUTES A AND H.

13 A. There are 25 lines of data in Mr. Ellars' table.

14 ***Line 1. Route Length.*** The length of Route A is 332,300 feet (63 miles) and
15 Route H at 358,900 feet (68 miles). Route H is a little longer than Route A by
16 26,600 feet, or about 8%. However, both routes are longer than the straight line
17 distance between 502 Junction and Mt. Storm of 291,450 feet; Route A is 12
18 percent longer and Route H is 18.7 percent longer.

19 ***Line 2. Stream/River Crossings.*** Route A crosses 65 streams and rivers, versus 75
20 streams and rivers crossed by Route H. Both routes cross more streams than most

1 of the other alternative routes, such as Route C (47 streams), Route F (51 streams),
2 and Route G (53 streams).⁷ However, it is more important to understand that a
3 large 500 kV transmission line with an average span of 1,200 feet in the
4 mountainous terrain found in this area of West Virginia will be able to span
5 without difficulty all streams and rivers, including the largest in the project area.
6 And because of the pronounced topographic relief, there are an estimated 12
7 structures within 200 feet of a stream channel for Route H. TrAILCo will keep all
8 structures out of stream channels and as far from stream channels as possible to
9 prevent not only floods from washing out the line, but also to facilitate satisfaction
10 of the water quality, fishery, and soil sedimentation regulations of the State of
11 West Virginia and other regulatory bodies. Utilities are proficient in managing
12 thousands of existing crossings of streams and major rivers, and I am certain that
13 TrAILCo will be capable of meeting all appropriate conditions concerning stream
14 crossings. Neither Route A nor Route H will have much effect on stream flow or
15 water quality.

16 ***Table Line 3. Crossing of Steep Soils.*** Route A crosses 43,450 feet of soils
17 sloping over 20 percent, Route H crosses 82,950 feet. All of the Alternative
18 Routes were located to avoid various developed land constraints. Great efforts

⁷ These are streams from the smallest drainages in the data source (see Table 2-2) to large sized rivers, excluding major rivers. Not stated in Table JWE-2 is the category for major rivers, where the two routes cross the same number (4 rivers).

1 were made by the Routing Team to adjust the routes over and over again to avoid,
2 not only urban areas, such as Morgantown, but to keep the route away from small
3 towns, crossroad villages, cultivated land, pasture land, and hayland. Developed
4 areas and agricultural lands tend to be located on soils that are level or gently
5 sloping and not on steeply sloping soils in the project area. Because the routes
6 were placed in areas where urban and agricultural development was minimal, they
7 tend to be on steeper forested soils. We believe that there is no alternative to
8 crossing steep soils, given the terrain in this project area and the lack of any other
9 level land to cross. West Virginia utilities have managed transmission line ROW
10 for decades in West Virginia and elsewhere on steeply sloping soils.

11 ***JWE-2 Table Line 4. Natural Land Crossings.*** Route A crosses no designated
12 natural land, while Route H crosses 9,800 feet. (These lengths are from the
13 adjusted information in errata data of May 16, 2007, which adjusts the numbers
14 for “Designated Natural Lands” for all Alternative Routes in Table 2-3 of the
15 LRE.) As stated previously for steep soils, the routes were located to avoid
16 developed land, including urban areas, small towns, crossroad communities,
17 clusters of residences and stores, scattered individual residences and stores, and
18 agricultural land throughout the entire area. Avoiding developed land and
19 residences was one of the main messages from the public workshops, and we took
20 this into account in the routing process. Therefore the routes judged to be better

1 by the Routing Team *do* cross relatively more undeveloped natural land and steep
2 soils. Concluding that Route A is better than Route H because it crosses less
3 natural land is like trying to accomplish the impossible mission of avoiding all
4 adverse impacts. We cannot avoid all impacts from TrAIL, particularly when
5 some of the routing criteria and the environmental factors in Table 2-3 are in
6 tension with each other, in some cases mutually exclusive.

7 ***Line 5. Sensitive Species.*** Route A has no known sensitive species (federal sites
8 within one mile and no state listed species within 1,000 feet of the route
9 centerline). Route H has 4 known sites (1 federal and 3 state listed species) within
10 these ranges. However, Mr. Ellars' Table JWE-2 omits the 8,450 feet of Maryland
11 sensitive species habitat crossed by Route A, compared to none for Route H as
12 shown in LRE Table 2-3. As stated in the footnote to Table 2-3 and in the body
13 of Table 2-2, Maryland (which Route A enters) does not report sensitive species
14 sites, but provides sensitive species habitat zones. Review of the Maryland data
15 on thematic maps by the Routing Team indicates that numerous species of flora
16 and fauna have been recorded in Maryland's Garrett County. As shown by the
17 habitat lengths crossed in feet on page 37 of Table 2-3, all of the alternative routes
18 that pass through Garrett County would impact designated sensitive species zones
19 in close proximity to the route centerline.

1 **Line 6. Cultivated Cropland.** Route A crosses 8,700 feet of cultivated cropland
2 and Route H crosses 9,050 feet of cropland. The additional 350 feet of cropland
3 crossed by Route H is insignificant. Cultivated cropland is a minor land use
4 throughout the project area and has been largely avoided by both of these routes.

5 **Line 7. Developed Space.** Mr. Ellars sums the category “Developed, Low and
6 Medium Intensity” and the “Developed, Open Space” categories in Table 2-3 of
7 the LRE. Using these sums, Route A crosses 15,050 feet of Developed Space and
8 Route H crosses 17,200 feet. The additional 2,150 feet crossed by Route H is 14
9 percent more than Route A, but this is only 0.6 percent of the length of Route A,
10 and is not significant. Developed lands crossed by Route H are widely scattered
11 and consist primarily of small groups of buildings along roads. Developed lands
12 have been largely avoided by both Route A and Route H and impacts have been
13 minimized as much as possible.

14 **Line 8. Forest.** Route A crosses 276,050 feet of forested land (83% of its length)
15 while Route H crosses 308,950 feet of forest (86% of its length). Forested land is
16 by far the largest land cover type in the project area accounting for 74 to 87
17 percent of the land in the study area as shown in Table 4-3 in the LRE. Clearing
18 of the ROW will be the major impact of the transmission line on either route. But
19 once again, as with steep soils and natural lands, the routes have been laid out to
20 avoid urban areas, residential developments, and agricultural areas, and will *have*

1 to cross more forested lands; there is no other place to go. In this regard, it should
2 be noted that all of the exiting 500 kV and 138 kV transmission lines in the area
3 also cross extensive amounts of steep, forested lands.

4 ***Line 9. Wetlands (From Land Cover Data).*** Route A crosses 3,550 feet of
5 wetlands (1.7% of its length) and Route H crosses 2,300 feet of wetlands (0.6% of
6 its length). The length of wetlands crossed is small and represents both a minor
7 cover type in the project area and an effort by the Routing Team to avoid
8 wetlands. I understand that on-the-ground wetland delineations studies have been
9 initiated on Route H to determine the actual wetlands present on the proposed
10 ROW. I expect that the delineation should not add any significant increases in the
11 amount of wetlands crossed. Review of the data source in LRE Table 2-2 shows,
12 once again, that these wetlands are widely scattered and generally small in size.
13 With a 1,200-foot average span and variable topography, TrAIL should be able to
14 easily span over almost all of these wetlands.

15 ***Line 10. Transmission Line Paralleled.*** Route A parallels 83,450 feet of
16 transmission line, Route H parallels none. To the extent that there is a slight
17 reduction in the impacts of a new line on an entirely new ROW by putting this in
18 the “impact shadow” of an existing similar transmission line, then there are
19 advantages to Route A here. This advantage is particularly persuasive to the
20 planners and regulators; however, in my experience this arguable advantage is less

1 accepted by landowners. It is also interesting to note that four of the other
2 Alternative Routes (Table 2-3) parallel more existing lines than Route A, and
3 therefore could be considered preferable to Route A in this regard.

4 ***Line 11. Residences within 250 Feet.*** LRE Table 2-3 reports that Route A passes
5 within 250 feet of 3 residences while Route H passes within 250 feet of 5
6 residences. These numbers are remarkably small for routes 63 and 68 miles long.
7 The newer, 2007 1:200 photography shows that new residences have been
8 constructed, and that Route A now passes within 250 feet of a total of 6
9 residences, and that Route H likewise passes within 250 feet of a total of 6
10 residences. These revised numbers show the growth in the number of rural
11 residences throughout the area, especially in southern Pennsylvania where most of
12 the new residences on Route A are located in the expanding urban area north of
13 Morgantown. But the numbers are still extremely small, accounting for an
14 average of one residence for every 11 miles of Route A and one residence for
15 every 9 miles of Route H.

16 More importantly, review of the new aerial photography indicates that ***all***
17 residences can be avoided by making minor adjustments to the alignment of Route
18 H. The same is likely true for Route A, although additional review would be
19 needed in the area of the crossing of Stewardstown Road. But the point is that the

1 numbers seized upon by Mr. Ellars demonstrate no meaningful distinction
2 between Routes A and H.

3 ***Line 12. Residences within 500 Feet.*** LRE Table 2-3 reports that Route A passes
4 27 residences within 500 feet of the route centerline of Route A, while the Route
5 H centerline passes within 500 feet of 78 residences. Using the new 2007 aerial
6 photography, the updated numbers are Route A, 42 residences, and Route H, 79
7 residences. These revised numbers show the growth in the number rural residences
8 throughout the area, especially along Route A in southern Pennsylvania.
9 However, the numbers are still small, accounting for an average of 0.7 residences
10 per mile on Route A and 1.2 residences per mile on Route H.

11 ***Line 13. Other Buildings Within 250 Feet.*** LRE Table 2-3 reports that Route A
12 passes 8 other buildings within 250 feet of the route centerline, while Route H
13 passes within 250 feet of 5 other buildings. Using the new 2007 aerial
14 photography, the updated numbers are Route A, 19 other buildings, and Route H,
15 6 other buildings. For routes 63 to 68 miles long, these are both very small
16 numbers and of little relative importance in choosing a route.

17 ***Line 14. Other Buildings Within 500 Feet.*** LRE Table 2-3 reports that Route A
18 passes 37 other buildings within 500 feet of the centerline, while Route H passes
19 within 500 feet of 55 other buildings. Using the new 2007 aerial photography the
20 updated numbers are Route A, 63 other buildings, and Route H, 56 other

1 buildings. The updated information confirms relatively rapid development along
2 Route A, but these are otherwise minor differences between the routes, both of
3 which pass through largely undeveloped areas.

4 ***Line 15. Commercial Buildings Within 500 Feet.*** LRE Table 2-3 reports that
5 Route A passes within 500 feet of no commercial buildings while Route H passes
6 within 500 feet of 1 commercial building. Using the new 2007 aerial photography
7 the updated numbers are Route A, 1 commercial building, and Route H, 1
8 commercial building. Once again, for routes 63 and 68 miles long, these numbers
9 are infinitesimal, and illustrate that both routes successfully avoid commercial
10 areas.

11 ***JWE-2 Table Line 16. All Buildings Within 1,000 Feet*** Route A passes within
12 1,000 feet of 317 buildings of all types while Route H passes within 1,000 feet of
13 396 buildings of all types. Adding the information from the 2007 aerial
14 photographs, the new numbers are Route A, 373 buildings, and Route H, 398
15 buildings. Both of these numbers are low compared to the other Alternative
16 Routes. For example, even on the basis of the 2003 1:500 photography, Route C
17 passes within 1,000 feet of 731 buildings. These numbers reflect the success of
18 the Routing Team in avoiding developed areas.

19 ***Line 17. Churches Within 500 Feet.*** Both routes are “equal,” in that neither
20 Route A nor Route H has a church within 500 feet of the route centerline.

1 ***Line 18. Schools Within 500 Feet.*** Both routes are “equal,” in that neither Route
2 A nor Route H has a school within 500 feet of the route centerline.

3 ***Line 19. Cemeteries Within 500 Feet.*** Both routes are “equal,” in that neither
4 Route A nor Route H has a cemetery within 500 feet of the route centerline.

5 ***JWE-2 Table Line 20. Cultural (Resource) Sites Within 0.25 Mile.*** Route A has
6 11 recorded cultural resource sites within a quarter of a mile of the route
7 centerline, while Route H has only 1 recorded cultural resource site within a
8 quarter mile. While Route H appears superior in this regard, I should note that the
9 difference is probably due to increased survey efforts on the part of Maryland that
10 identified more cultural resource sites in the area traversed by Route A.

11 ***Line 21. Cultural (Resource) Sites Within 500 Feet.*** Route A has 6 recorded
12 cultural resource sites within 500 feet of the route centerline while Route H has
13 only 1. Once again, while Route H appears to be superior in this regard, the
14 difference is minor, and probably due to increased survey efforts on the part of
15 Maryland that identified more cultural resource sites in the area traversed by Route
16 A.

17 ***Line 22. Recreational Trail Crossings.*** Route A has 12 recreational trail
18 crossings, while Route H crosses 8 trails. Once again, this is a minor difference
19 for these long routes.

1 ***Line 23. Number of Angle Structures.*** Route A has 32 angle structures, while
2 Route H has 53. This is a general estimate intended for conceptual design
3 information. This information does ***not*** reflect environmental suitability or
4 unsuitability. There will be numerous additional light angles once the design is
5 finished, so this information is also incomplete. The Routing Team could have
6 inventoried other structure design features, but this, too, would have little effect on
7 “best choice” for the route.

8 ***Line 24. Transmission Lines Crossed.*** Route A crosses 8 existing transmission
9 lines, while Route H crosses 11. This is a relatively minor difference. Nor is this
10 information related to environmental suitability; rather, once again, it is a general
11 estimate intended for conceptual design comparisons. A route with fewer
12 transmission line crossings is not necessarily the better choice.

13 ***Line 25. Interstate Highway Crossings.*** Route A crosses Interstate Highway 68
14 once northeast of Morgantown and Route H crosses Interstate Highway 79 twice
15 while avoiding the urban area of Morgantown. This is a minor difference,
16 especially as Route A also crosses the Mon/Fayette Expressway in Pennsylvania,
17 which is in reality a major interstate highway.

18 Q. IF NUMERIC COMPARISONS LIKE THOSE DISPLAYED IN MR. ELLARS’
19 TABLE ARE NOT VERY GOOD BASES TO CHOOSE BETWEEN ROUTES A

1 AND H, THEN HOW DID THE ROUTING TEAM SELECT ROUTE H OVER
2 ROUTE A?

3 A. On behalf of the Routing Team, I respectfully commend to the Commission's
4 attention the LRE submitted with the Application as reflective of our analysis. In
5 the context of Mr. Ellars' approach, I would emphasize that there are other
6 difficult issues with Route A that are not addressed in Table JWE-2, because they
7 can not be quantified.

8 ***1. Permitting Difficulties.*** In addition to 9.1 miles of route in Maryland, Route A
9 also extends east of the 502 Junction Substation site for 13.4 miles in Pennsylvania
10 before entering West Virginia. Route H has only 1.5 miles in Pennsylvania,
11 without serious permitting concerns. Hence, Route A would require substantial
12 permitting in three states, while Route H would require substantial permitting
13 activity in only one. That one state happens to be West Virginia, which is why I
14 am testifying before this Commission. But any carefully routed 500 kV
15 transmission line between 502 Junction and Mt. Storm will cause broadly similar
16 impacts to landowners and local resources, no matter what state(s) is/are traversed.
17 There is only one aspect of this factor that is common to both routes: West
18 Virginia must be involved in the permitting process for a large part of either Route
19 A or Route H. It is simply a fact that Route H has the very definite advantage of
20 having to meet the substantial permitting requirements of only one state, not three.

1 **2. *Special Design Requirements In Greene County.*** As stated on page 54 of the
2 LRE, one of the reasons for selecting Route H is that this route would not require
3 special engineering work. Route A would require special design and construction
4 work for a particularly difficult segment east of Stewardstown Road in Greene
5 County, Pennsylvania. Route A in this location must avoid numerous residences
6 and commercial buildings on a flat at the crest of the rocky cliffs above the Cheat
7 River. To the south, the route must avoid an area containing numerous residences,
8 the Lake Lynn Dam, Lake Lynn power plant, Cheat Lake, and numerous 138 kV
9 transmission lines that extend out from the power plant. To the north the route
10 must avoid the medium sized city of Point Marion, Pennsylvania. The Routing
11 Team repeatedly examined the area to find a path for Route A through this
12 congested area, and could only come up with one that would literally pass over the
13 rocky cliffs above the Cheat River just north of the residences on Stewardstown
14 Road, and would hug the cliffs below their crest where a series of special
15 structures would need to be constructed in rubble below the cliffs and on very
16 steep soils. The line would continue to the east and then cross the Cheat River at a
17 point about 1,800 feet below the Lake Lynn Dam. This segment of Route A is not
18 a good route for a large 500 kV transmission line, and would be far more difficult
19 to access and construct than *any* other portion of either Route A or Route H. The
20 possibility of obtaining the required permits from the Pennsylvania Public Service

1 Commission and the Army Corps of Engineers is problematic, and this was
2 considered a major constraint in the suitability of Route A by the routing team.

3 **3. Wind Generation Development.** The Routing Team identified known
4 proposed and permitted wind generation facilities in the study area. These
5 included (1) Exelon Corp.'s, existing Mountaineer Wind Energy Center, located in
6 Tucker and Preston Counties, West Virginia, which includes 44 turbines with a
7 capacity of 66 megawatts; (2) the proposed Roth Rock Wind Power Project
8 proposed by Synergics Wind Energy, LLC, which includes up to 24 turbines and a
9 capacity of up to 40 megawatts (MW) located in southern Garrett County,
10 Maryland; (3) the Mt. Storm wind farm proposed by US Wind Force, LLC, and
11 site-certified by this Commission, which includes up to 89 wind turbines and a
12 capacity of 150 megawatts, located in northwestern Grant County, West Virginia,
13 and (4) a wind farm under construction by Shell WindEnergy Inc. (formerly
14 NedPower Mount Storm, LLC) which includes approximately 200 turbines and a
15 capacity of up to 300 megawatts, located in northern Grant County, West Virginia.
16 Mr. Ellars is appropriately concerned about TrAIL's crossing through the Shell
17 WindEnergy, Inc. wind farm east of Mt. Storm. This crossing point has received
18 significant engineering review and is addressed by Mr. Fleissner in his rebuttal
19 testimony. Wind farm crossings were a noted concern during the routing process,
20 and were considered as an evaluation factor between the routes, although not

1 tallied in the environmental tables. Wind farm developments were a concern for
2 all of the routes passing east of Morgantown, since any non-circuitous route along
3 this general path would likely pass through both the Roth Rock and Wind Force
4 wind farms. Route A passes through both the proposed Roth Rock wind farm
5 along backbone ridge in Garrett County, Maryland, and the Mt. Storm wind farm
6 proposed by Wind Force LLC just west of the Mt. Storm substation in Grant
7 County, West Virginia. Preliminary structure locations for the Roth Rock wind
8 turbines suggests that crossing this site while paralleling the existing line could
9 result in the route centerline passing within 150-200 feet of the nearest proposed
10 turbine. Similar concerns would occur for the approved Wind Force LLC, Mt.
11 Storm project, where two of the proposed turbine locations would be within 100-
12 200 feet of the centerline of Route A as it parallels along the north side of the
13 existing Pruntytown to Mt. Storm 500 kV line. Although Route H is not without
14 concerns with respect to wind turbines, its crossing of the Mountaineer Wind
15 Energy Center occurs at a location where there is a roughly 2,800 foot break
16 between the turbine locations, greatly minimizing potential routing conflicts.

17 **4. Gas Well Drilling.** One feature not inventoried in LRE Table 2-3 or JWE-2 is
18 the issue of avoiding gas wells. The 2007 aerial photography reveals many new
19 gas wells along Route A in southern Pennsylvania's Greene and Fayette Counties.
20 Relative to multi-jurisdictional permitting and the special design challenges of

1 Route A discussed immediately above, this is a minor point. Nevertheless, the
2 current alignment of Route A crosses several of the new wells, and would need to
3 be adjusted.

4 Q. DO YOU BELIEVE THAT ROUTE A IS PREFERABLE TO ROUTE H?

5 A. No. Most of the differences between Routes A and H are not significant in a
6 quantitative sense, and do not warrant a decision “by the numbers,” as suggested
7 by Mr. Ellars. More importantly, such an approach can not take into account the
8 non-quantifiable factors that I have discussed. Both A and H are better than any of
9 the other six Alternative Routes between 502 Junction and Mt. Storm, but I remain
10 convinced that Route H was appropriately selected as the Preferred Route, for the
11 reasons that I have provided in the LRE and in my testimony.

12 Q. DID TRAILCO PURPOSEFULLY AVOID MARYLAND IN SELECTING THE
13 PREFERRED ROUTE?

14 A. No. Six of the eight Alternative Routes considered passed through Maryland (and
15 Pennsylvania), and each was given legitimate consideration by the Routing Team.
16 Route H was developed taking into consideration a range of planning factors
17 which have been presented in the LRE, and discussed in my testimony and that of
18 other TrAILCo witnesses.

19 As discussed above, one of the benefits of Route H is that it eliminates any
20 permitting or certification in Maryland, and all but eliminates such regulatory

1 review in Pennsylvania. This is a reality in any siting project, and should not be
2 ignored. Indeed, this is noted as one of the many nonquantifiable factors in the
3 LRE on page 54. But this benefit of Route H came into play only to the extent
4 that it was given appropriate consideration when the Routing Team compared all
5 of the Alternative Routes.

6
7 OTHER PARTIES' SUGGESTED ROUTES

8 Q. PLEASE RESPOND TO THE CRITICISMS OF MR. HARRIS (PAGES 19-20)
9 AND DR. KOTCON (PAGES 16-17) RELATING TO THE COMPARISON OF
10 THE PREFERRED ROUTE AND THE GRAFTON ALTERNATIVE ROUTE.

11 A. The best Grafton Alternative Route parallels 16 miles of existing transmission
12 lines, and uses 8 miles of existing ROW. However, because this ROW is of
13 insufficient width, an additional 706 acres of new ROW would be required, which
14 is 73 acres more ROW than the Preferred Route. Mr. Harris is therefore incorrect
15 in stating that “the Grafton Alternative does not impose a new right-of-way on a
16 previously undisturbed area.”

17 Concerning the issues of reducing impacts by paralleling an existing transmission
18 line, in my experience, placing a new transmission line along an existing line of
19 similar design does tend to mute somewhat the impacts of the new line by placing
20 it in the “impact shadow” that is already present from the existing line. However,

1 in the case of the Grafton Alternative, the circuitous path of the route, the
2 additional length required (it is 24% longer), the need for many clumsy diversions
3 away from a parallel alignment, the effect of “fencing in” of many residences
4 between the existing 500 kV line and the new 500 kV line on these diversions, and
5 the greater human development along the existing line in the Grafton area results
6 in conspicuously greater impacts compared to the corresponding segment of the
7 Preferred Route. As shown in my supplemental testimony and the study that we
8 undertook, the Grafton Alternative results in noticeably greater impact to the
9 overall natural and human environment than the comparable segment of the
10 Preferred Route.

11 The fact, as asserted by Mr. Harris, that 59 of the impacted residences along the
12 Grafton Alternative currently live within 500 feet of an existing 69 kV, 138 kV, or
13 500 kV transmission line does not mean that these residents will not be strongly
14 opposed to having a second, 500 kV line placed near them. The perceived
15 advantages of paralleling existing lines are primarily persuasive to planners, and
16 not necessarily to the resident property owners.

17 Concerning the new ROW acreages summarized in Table 2-2 of the Grafton Area
18 Route Evaluation report, the estimated acreage of new ROW required for this
19 route takes into account maximizing the use of nearby existing ROW for two 138
20 kV circuits and a 69 kV circuit, which happen to be adjacent or nearby. Use of

1 this existing ROW assumes that the new 500 kV circuit would be double-circuited
2 with the existing 138 and 69 kV circuits on new double-circuit steel structures.
3 The calculations assumed that the existing 138 kV lines are on 100-foot wide
4 ROW and that the existing 69 kV line is on a 50-foot wide ROW. The use of the
5 existing ROW minimizes the new ROW required and hence meets the routing
6 criterion.

7 Q. MR. MCNEELY IN HIS REPORT (PAGES 9-13) PROPOSES SEVERAL
8 ALTERNATIVE LOCATIONS FOR PORTIONS OF TRAIL NEAR THE
9 PROPERTY OF HIS CLIENT, THE BHAVANA SOCIETY. DOES ANY OF
10 THEM OFFER A BETTER SOLUTION THAN THE PREFERRED ROUTE?

11 A. No. His “Alternative A” is based on the complete reconfiguration of existing
12 facilities, which to my knowledge are not even before the Commission. The
13 location of other residential development along Back Water Road would limit
14 moving the route to the south or north. Mr. McNeely’s suggestion (page 10) to
15 double-circuit the existing and new 500 kV line or to cross over the existing 500
16 kV line would violate the routing criteria.⁸ In any event, it is my understanding
17 TrAILCo has successfully negotiated with the property owner to the west of the

⁸ As stated at page 11 of the LRE, major route selection criteria included not only the minimization of crossing existing 500 kV circuits, but also that the centerline of the new 500 kV circuit could not be closer than 200 feet from the existing 500 kV circuit centerline. I also note that, at page 7 of his testimony, Mr. McNeely says that “[a]ny engineering issues are outside his knowledge and experience.”

1 always changes as time passes, especially in an area as large as that encompassed
2 by the 114-mile long proposed ROW in West Virginia. In our lengthy
3 examination of the area and study of aerial photography during the routing study
4 we were greatly surprised by the large numbers of new houses and other types of
5 new construction that is going on in this area of West Virginia. I suspect that Mr.
6 Ellars, who has examined both Routes A and H, will agree that there are large
7 numbers of recently built houses and other types of new structures throughout the
8 entire area. The new structures reported by TrAILCo are *not* “inaccuracies” in
9 the data, but instead evidence of this new construction. The review by TrAILCo
10 that uncovered the new structures is the beginning of an effort to identify and
11 resolve ROW issues that, like other issues, will have to be carefully resolved
12 during the detailed planning and ROW acquisition process for the new
13 transmission line.

14 Q. PLEASE ADDRESS THE NEW STRUCTURES AND OTHER ISSUES THAT
15 HAVE COME TO LIGHT SINCE FILING OF THE APPLICATION.

16 A. There are six new houses and other new structures recently discovered, a new
17 wind powered generator in the ROW of the Preferred Route, and the house on
18 Halleck Road mentioned by Mr. Ellars. Several of these are addressed by Mr.
19 Fleissner in his rebuttal testimony, and I will focus on Mr. Ellars’ suggestion that

1 their omission in the LRE reflects some shortcoming in the collection of data by
2 the Routing Team.

3 Q. MR. ELLARS SAYS (PAGE 21) THAT TRAILCO HAS STATED IN
4 RESPONSE TO STAFF-6-4 THAT 3 NEW RESIDENCES AND 3 NEW
5 ADDITIONAL STRUCTURES ALONG ROUTE H MAY REQUIRE
6 REMOVAL. IS THIS CORRECT?

7 A. No. Mr. Ellars has mistakenly read the response, and should not have inserted
8 “[Route H]” in quoting it. The response covered the *entire* Preferred Route; only
9 two of the structures are on Route H.

10 ***Crossing of Barry Lane.*** This new house, which is just east of the first crossing
11 of Interstate Highway 79 west of Morgantown, was constructed after the 2003
12 aerial photographs used initially for the routing study were produced. The house
13 is clearly shown on the 2007 aerial photography. It is on the south side of the
14 proposed 200-foot wide ROW and, at the closest point, about 50 feet south of the
15 route centerline. This house can be avoided by simply shifting the alignment of
16 the Preferred Route a minimum of 50 feet to the north or 150 feet to the south.
17 Although additional angles would be needed in the route, in part to avoid another
18 residence immediately west of the Interstate Highway, this is the likely solution to
19 this issue. Alternatively, if the owner prefers, the house could be moved at

1 TrAILCo's expense to the south a minimum of about 50 feet or to the north about
2 150 feet.

3 ***Crossing of River Road.*** This barn was not discernable on the 2003 aerial
4 photography, but it is shown on the 2007 photography. The barn is about 50 feet
5 south of the centerline of the Preferred Route behind a house on the north side of
6 River Road. The Routing Team believes that this barn can be avoided by one of
7 three options: local alignment of the Preferred Route could be shifted readily about
8 50 feet to the north; if the owner has no need for the barn, it could be purchased
9 and removed; or, if the owner agrees, the barn could be moved at TrAILCo's
10 expense about 50 feet to the south or 150 feet to the north to a new location off the
11 proposed ROW.

12 I have no doubt that, if Route A had been selected, the Routing Team would
13 likewise be contending with recent developments in those areas, too. The fact that
14 we know more about Route H today than we did when TrAILCo filed its
15 Application does not demonstrate any inadequacy in the LRE or mistake in the
16 selection of the Preferred Route.

17 Q. PLEASE RESPOND TO MR. ELLARS' ASSERTION CONCERNING THE
18 HOUSES ALONG HALLECK ROAD THAT HE BELIEVES MAY REQUIRE
19 REMOVAL.

1 A. There are two existing houses on the west side on one of the crossings of Halleck
2 Road. (The other two crossings of Halleck Road do not involve nearby
3 residences.) On the south side of the Preferred Route an existing house is about
4 180 feet south of the route centerline on an elevated knoll. This house is
5 apparently the house of concern to Mr. Ellars and will *not* require removal for
6 construction in the Preferred Route. There is also a house north of the route about
7 150 feet from the route centerline. This house, too, will *not* require removal.
8 Both of these houses were counted in the housing inventory and were observed
9 from Halleck Road on several occasions. They are also clearly shown on both the
10 2003 and 2007 aerial photography.

11 Q. PLEASE ADDRESS THE OTHER NEWLY DISCOVERED STRUCTURES,
12 EAST OF MT. STORM.

13 A. *Windmill and Crossing Grassy Ridge Road.* A new wind power generator, one of
14 a row of new windmills, has been constructed by Shell just west of Grassy Ridge
15 Road. In this area the Preferred Route is paralleling the north side of the existing
16 500 kV line. Neither the windmill nor the associated construction activities were
17 shown on the 2003 aerial photography and no sign of the work was observed in
18 the field until after the Preferred Route was established and the 2007 aerial
19 photographs were examined.

1 ***Crossing of Wisteria Lane.*** This is a new house on the west side of Wisteria Lane
2 adjacent to the north side of the existing line, built since 2003. It is clearly shown
3 on the new 2007 aerial photography.

4 ***Crossing Old Fields Road.*** Immediately east of the crossing of Wisteria Lane, a
5 new house on Old Fields Road, not shown on the 2003 aerial photos, was observed
6 north of the existing line. A mobile home and bus were observed on Old Fields
7 Road between this new house and the existing transmission line. Farther north,
8 the previously mentioned Bethel cemetery, the site of the former Bethel School
9 and Bethel Church, and other residences restricted routing options in this area as
10 discussed for the house on Wisteria Road. Although the route could have been
11 moved north of the new house and the cemetery and the church and school site (as
12 described for the house on Wisteria Lane), the Preferred Route was placed on a
13 slight diversion away from the existing line to pass between the new house on Old
14 Fields Road and the mobile home and barn. The Routing Team expected that
15 subsequent discussions with the owner of the land with the mobile home could
16 lead to adjustments so that the diversion and the unnecessary encumbrance of the
17 properties involved on Wisteria Lane and Old Fields Road could be eliminated by
18 placing the route adjacent to the existing transmission line. I understand that
19 subsequent discussions by TrAILCo with the landownerlandowners have produced
20 an agreement to move the mobile home and bus to a different place on their

1 existing property. An additional landowner immediately west has also expressed a
2 desire to relocate and allow the new line to be placed adjacent to the existing line.
3 With these two adjustments, the Preferred Route will be shifted about 100 feet to
4 the south, to abut the ROW to that of the existing line. The centerline of the
5 adjusted route will be about 180 feet south of the new house on Old Fields Road.

6 ***Mt. Olive Road.*** This small building is a shed on Mt. Olive Road and in the
7 centerline of the Preferred Route. This shed has been recently built and is not
8 shown on the 2003 photography originally used for the routing study, but it is
9 clearly shown on the 2007 aerial photography. There are three options to avoid
10 this building: realignment about 100 feet to the north, although this will cause the
11 line to “fence in” the building between the proposed line and the existing 500 kV
12 line, and may encumber several parcels of property in a less favorable manner to
13 the property owners; if the owner agrees, the building could be purchased and
14 removed; or TrAILCo could move the building at its expense about 100 feet north.

15 ***Crossing Road South of Mt. Olive Road.*** This small 16 x 32 hunting cabin is on a
16 local road south of Mt. Olive Road, about 90 feet north of the proposed centerline
17 of the Preferred Route, or about 10 feet into the proposed ROW. In this area the
18 Preferred Route is paralleling the north side of the existing 500 kV line. This was
19 not shown on the 2003 aerial photography, but it is shown on the 2007
20 photography.

1 Q. DO YOU WISH TO RESPOND FURTHER TO ANY OF THE CRITICISMS
2 MADE BY DR. KOTCON (PAGES 9, 13-15) CONCERNING THE INTEGRITY
3 OF YOUR WORK?

4 A. It is hard to respond to someone who does not understand the basic tenets of site or
5 route selection, yet feels comfortable demeaning me and my work as “deliberately
6 misleading” and “deceptive” (page 14). It is apparent that Dr. Kotcon failed to
7 check his emotions at the door from the time he became involved in this matter.
8 For example, he states that, “The open house meetings were primarily one-way
9 sessions in which the public was given information, but little opportunity to
10 challenge the underlying purpose of the line, nor was information from the Line
11 Route Evaluation available to illustrate the relative impacts of alternative routes.”
12 I attended virtually all of the open houses, where I and my staff were available and
13 strongly encouraged dialogue with the attendees. We specifically requested
14 information that we may have not been aware in our own research. This
15 information was taken back and added to our data and used to adjust line routes
16 and provide information that was subsequently reported in our LRE.

17 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

18 A. Yes, it does.