

BEFORE THE PUBLIC UTILITIES COMMISSION OF COLORADO

DOCKET NO. 09A-324E

IN THE MATTER OF THE APPLICATION OF TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC., (A) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE SAN LUIS VALLEY-CALUMET-COMANCHE TRANSMISSION PROJECT, (B) FOR SPECIFIC FINDINGS WITH RESPECT TO EMF AND NOISE, AND (C) FOR APPROVAL OF OWNERSHIP INTEREST TRANSFER AS NEEDED WHEN PROJECT IS COMPLETED

DOCKET NO. 09A-325E

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO (A) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE SAN LUIS VALLEY TO CALUMET TO COMANCHE TRANSMISSION PROJECT, (B) FOR SPECIFIC FINDINGS WITH RESPECT TO EMF AND NOISE, AND (C) FOR APPROVAL OF OWNERSHIP INTEREST TRANSFER AS NEEDED WHEN PROJECT IS COMPLETED

SURREBUTTAL TESTIMONY OF TOM DARIN

ON BEHALF OF

WESTERN RESOURCE ADVOCATES

January 18, 2010

1 **Q. Please state your name, occupation, and business address.**

2 A. My name is Tom Darin. I am a Transmission Planning & Siting Specialist within the Office of
3 Electricity Delivery and Energy Reliability for the U.S. Department of Energy (USDOE). My
4 business address is U.S. Dept. of Energy, 1000 Independence Ave., SW, Rm. 8G-024,
5 Washington, D.C. 20585.

6 **Q. Are you the same Tom Darin who submitted Answer Testimony on October 28, 2009?**

7 A. Yes, I am.

8 **Q. Are you continuing to represent WRA in this Surrebuttal?**

9 A. Yes. This Surrebuttal does not represent the views or opinions of the USDOE, and is solely my
10 work, based on my experience at WRA that focused on transmission for renewable energy
11 resources. Due to the timing of starting my new job at the USDOE and the extensions in these
12 dockets' combined schedules, I am contracting with WRA as an independent contractor to
13 present testimony in this case.

14 **Q. Please summarize your Surrebuttal.**

15 A. In this Surrebuttal, I reaffirm the importance of WRA's proposed conditions on each CPCN, and
16 respond to the Applicants' comments and objections with regard to my Answer Testimony and
17 the proposed conditions for each CPCN contained therein. The issues fall into three primary
18 categories: 1) demand-side management (DSM) and distributed generation (DG); 2) the use of
19 the proposed transmission lines to facilitate the development and delivery of renewable energy,
20 as described in the Applications; and 3) the responsible mitigation of visual impacts, and the
21 importance of early consideration and planning that is necessary to be sure that visual impacts
22 are properly incorporated into transmission siting and design.

1 **Q. Please summarize the Applicants' objections with regard to WRA's proposed CPCN**
2 **conditions.**

3 A. The objections to WRA's proposed conditions, as discussed in this Surrebuttal, generally fall
4 into these categories:

- 5 • DSM, DG, and environmental concerns, such as visual impacts, are not relevant in a CPCN
6 proceeding;
- 7 • Reporting on DSM and DG is either redundant or over-burdensome, and the Commission's
8 interest in such information would be beyond its jurisdiction as it relates to Tri-State;
- 9 • Applying a rebuttable presumption to future generation facility CPCN applications before
10 the Commission would frustrate FERC's open access requirements;
- 11 • Requiring a percentage of the proposed transmission lines' capacity to be committed to
12 renewable energy prior to commencing construction of the proposed facilities might pose
13 implementation challenges based on Xcel's experience relative to a similar condition in a
14 CPCN hearing in Minnesota; and
- 15 • WRA's seems to single out visual impact as a key area for mitigation, and its recommended
16 mitigation strategies are overly-prescriptive.

I. Demand-Side Management & Distributed Generation

17 **Q. What is Public Service's response concerning WRA's CPCN conditions that relate to DSM**
18 **and DG?**

19 A. Public Service's concern is that WRA's condition requiring the Company to provide a baseline
20 and future reports on its DSM and DG resources in the San Luis Valley and the areas to be
21 served by the proposed transmission lines is that Public Service already provides extensive
22 reports on its DSM and DG resources and acquisitions, and that such a condition on the CPCN
23 would be duplicative.¹

¹ Public Service Rebuttal Testimony of Karen Hyde at 3, lines 10-11, and at 37, lines 14-17.

1 **Q. Why are you not persuaded by Public Service's concerns with regard to the reporting that**
2 **it does?**

3 A. There are two problems with Public Service's arguments. First, the Company's reporting is not
4 duplicative, because the Company reports on its DSM and DG progress by program not by
5 region.² Second, if the Company is already compiling this information for system-wide
6 reporting, then the additional effort to separate out a subset of that data for a region should not
7 be considerable.

8 It is well-recognized that energy efficiency, peak-shaving programs, and other demand-side
9 resources – as well as distributed generation in the areas that would be served by the proposed
10 lines – would have an impact on how the lines would be used and what capacity they would
11 have to export, import, or wheel power. In other words, there is a direct correlation between the
12 utilization of demand-side resources and ultimately the amount of outside generation needed to
13 import to an area. In addition, a region such as the San Luis Valley, might have a higher
14 agricultural load while regions north of the proposed Calumet substation might have more
15 mixed or urban load. Accordingly, the reports proposed by WRA would assist the Company, its
16 customers, and the Commission in ensuring that Public Service is aggressively pursuing and
17 implementing DSM and DG programs as part of integrated resource planning, and that these
18 programs are reaching different customer classes throughout its service territory.

19 **Q. What is Tri-State's response to WRA's CPCN conditions that relate to DSM and DG?**

20 A. Tri-State's concern, that it applies to all of WRA's proposed conditions, is:

² Public Service Rebuttal Testimony of Karen Hyde at 37, lines 22-23.

1 If the Commission desires to see transmission built for load serving and market
2 development purposes, it is essential that it draw a line and discourage intervenors
3 from participating in CPCN proceedings to promote their particular interests that are
4 unrelated to the public convenience and necessity of a particular project.³

5 **Q. Why does WRA disagree with Tri-State's concerns?**

6 A. WRA's recommended conditions are pertinent and logically follow from the Applicants'
7 proposal; our recommended conditions are intended to help ensure that the objectives stated in
8 the Applications are achieved. DSM and DG are integral to load, load shape, and the local
9 ability to serve load, and so are particularly relevant in a case where one of the stated rationales
10 for the project is to address a voltage drop risk in a region that the Applicants claim does not
11 have adequate transmission. Tri-State, should recognize the connection between demand-side
12 resources and local distributed generation (sometimes referred to as non-transmission
13 alternatives) on one hand, and the need for transmission on the other – namely, that local
14 demand-side and distributed generation resources can lessen the need for new transmission lines
15 to import energy in order to meet load requirements in a particular region.

16 **Q. Has Tri-State demonstrated aggressive pursuit of DSM or DG resources to address its**
17 **reliability concern?**

18 A. Though Tri-State claims that energy efficiency and other demand-side resources cannot
19 “eliminate the reliability issues impacting Tri-State's members in the San Luis Valley,”⁴ it
20 neither presents any compelling evidence about the magnitude of the demand-side energy or
21 capacity resources its programs have achieved, nor does it present evidence as to the distributed
22 generation its programs or its members have achieved. Tri-State does not state whether DG can
23 play a role in alleviating reliability concerns. As stated above, Tri-State is missing the point:
24 while demand-side capacity and energy resources might fall short of eliminating reliability and

³ Tri-State Rebuttal Testimony of James Spiers at 8, lines 16-20.

⁴ Tri-State Rebuttal Testimony of James Spiers at 12, lines 20-22, and at 13 lines 1-11.

1 load-serving needs, the pertinent issue is the extent to which these resources can lessen the
2 reliability, load-serving, and, ultimately, transmission needs. In short, though Mr. Spiers
3 describes a number of the programs it offers its members, it would be helpful to have more
4 information with regard to the achievements of those programs or their potential to develop
5 more demand-side or distributed resources.⁵ That information is relevant to this proceeding and
6 for the Commission's future regulatory responsibilities.

7 **Q. Does Tri-State raise any other concerns with WRA's proposed DSM and DG reporting**
8 **condition?**

9 A. Yes, Tri-State is concerned that the Commission has no jurisdiction over its end-use programs.⁶
10 However, WRA's condition does not address Tri-State's programs, it merely recommends that
11 the Commission require Tri-State to report on the achievements of its programs, which Tri-State
12 describes at some length, and the results of which benefit Tri-State customers. The
13 Commission's interest in the results of these programs is, as mentioned earlier and described
14 more-fully below, directly related to the load, load shape, and generation in the areas to be
15 served by the proposed transmission lines for which Tri-State seeks a CPCN.

16 **Q. Do demand-side management and distributed generation have a role to play in planning**
17 **for and designing the transmission system?**

18 A. Yes, energy efficiency, other demand-side measures, and distributed generation all support
19 reliability, preserve existing transmission capacity, and may lessen the need for new
20 transmission capacity. No substantive arguments were presented to the contrary. Clearly the
21 need for, and the role of, the proposed transmission lines in the San Luis Valley and north from
22 Calumet would be directly related to both the depth and the breadth of DSM and DG resources
23 in the areas to be served by the proposed lines – and that includes both the Denver front-range

⁵ Tri-State Rebuttal Testimony of James Spiers at 10-12.

⁶ Tri-State Rebuttal Testimony of James Spiers at 10, lines 12-13.

1 area intended for a great deal of solar import from the proposed transmission facilities, as well
2 as the San Luis Valley and local loads – as DSM and DG directly impact load and load shape.

3 In a recent case involving postponement of proposed multi-state transmission lines, a Virginia
4 Senior Hearing Examiner found generation, demand response, and energy efficiency to be
5 central to the analysis for the power lines in question. In the case, PATH Allegheny Virginia
6 Transmission Corporation's (PATH) requested permission to withdraw its application for the
7 proposed transmission lines, as its analysis indicated that the lines would not be needed as soon
8 as originally thought due to demand response programs lessening future load requirements that
9 would have been served by the proposed transmission facilities. The hearing examiner found
10 that any future application for the lines should contain an analysis that includes generation,
11 demand-side resources, and energy efficiency. In his findings, the Virginia Senior Hearing
12 Examiner states that:

13 (3) Any future application for the PATH Project should contain the updated load
14 flow analysis ... and an analysis of changes in circumstances, including changes in
15 generation, demand response and energy efficiency resources;⁷

16 In the case of the PATH proposed transmission lines, PATH requested to withdraw its
17 application for approval and certification of the proposed transmission facilities in significant
18 part, because of the impact of demand-side resources.

19 In this case, a detailed analysis of the current or potential impact of distributed generation or of
20 demand-side resources is lacking. Though the specifics of the proposed PATH transmission
21 lines are different, Colorado should similarly consider maximizing the use of local generation,
22 energy efficiency, and load-control programs in order to ensure the need for and make best use

⁷ Skirpan, Jr., Alexander F., Senior Hearing Examiner. Commonwealth of Virginia, State Corporation Commission. Case No. PUE-2009-00043. Report of Alexander F. Skirpan, Jr., Senior Hearing Examiner. January 6, 2010. Page 20.

1 of the transmission lines. Conditioning each CPCN to verify that DSM and DG are, indeed,
2 being deployed at optimal levels is central to ensuring both the need for and optimal use of the
3 proposed transmission lines.

II. Transmission Lines Needed For Renewable Generation

4 **Q. Did you review Public Service's Rebuttal Testimony of Karen Hyde?**

5 A. Yes.

6 **Q. Do you have any concerns regarding the issues discussed in Ms. Hyde's Rebuttal?**

7 A. Yes. Ms. Hyde offered Rebuttal Testimony addressing WRA's recommendation that the
8 proposed transmission lines facilitate renewable energy development – a critical objective for
9 WRA, as well as both Applicants' stated purpose and need for the proposed facilities.

10 **Q. What is Ms. Hyde's primary concern relative to WRA's renewable energy conditions?**

11 A. Ms. Hyde is concerned that WRA's recommended renewable energy conditions might run
12 counter to FERC open access and "first-come-first-serve" queue policies that prohibit
13 discriminatory transmission services by public utilities.⁸

14 **Q. Do you agree with Ms. Hyde's concern?**

15 A. No. For purposes of advancing to a new energy economy in Colorado and reducing carbon
16 emissions, WRA is committed to new transmission investments facilitating the development and
17 delivery of renewable energy and low-carbon resources. On this point, WRA is in agreement
18 with Tri-State and Public Service, that, along with addressing reliability concerns, this is the
19 exact purpose and need provided to the Commission for the proposed transmission facilities.
20 WRA's condition in this regard is:

⁸ Public Service Rebuttal Testimony of Karen Hyde at 34, lines 5-9. See also Tri-State Rebuttal Testimony of James Spiers at 9, lines 3-5.

1 Given that the primary rationale for the transmission facilities is to deliver renewable
2 energy resources, the Commission presumes that any future CPCN application for a
3 generation facility that would use capacity on the proposed lines would be for a
4 renewable resource. Thus, the Commission expects to apply a rebuttable
5 presumption against a finding of need in a future CPCN case for a non-renewable
6 resource that would interconnect with the proposed transmission facilities.

7 WRA's condition is to help ensure that the Applicants' stated purpose and need is achieved.

8 **Q. What is your response to Ms. Hyde's concern relative to WRA's proposed renewable**
9 **energy conditions?**

10 A. Ms. Hyde raises the point that FERC open access policies – where any type of generation
11 resource may obtain transmission access on the proposed lines – could frustrate both WRA's
12 renewable energy goals and the Applicants' stated purpose and need for the facilities of
13 facilitating “environmentally friendly, low-carbon resources.” Important here is that WRA's
14 renewable energy goals, that often involve supporting transmission, must be balanced with
15 economic and other environmental objectives. In the instant case, the proposed facilities could
16 cost Colorado ratepayers \$200 million, in addition to having impacts on Colorado's scenery,
17 open spaces, and wildlife.

18 WRA's renewable energy conditions – that the Applicants demonstrate that the new
19 transmission lines will be at least committed to carrying “at a minimum, the amount of
20 renewable resources located in the Valley, that were approved by the Commission as part of its
21 Phase II Decision”⁹ in Public Service's 2007 Resource Plan, and a rebuttable presumption
22 against a non-renewable resource that would interconnect with the proposed facilities in a future
23 CPCN proceeding – are designed to solve the dilemma posed by Ms. Hyde. Namely, that the
24 aforementioned economic costs and environmental impacts associated with the proposed
25 transmission facilities might not serve their important public policy goal of facilitating

⁹ WRA Answer Testimony of Tom Darin at 6, lines 10-16, and at 35, lines 6-12.

1 renewable energy resources if these types of conditions are not in place. Stated differently,
2 without these conditions, carbon-heavy resources could readily fill the capacity on the proposed
3 transmission lines – just as any resource, renewable or otherwise. WRA’s proposed conditions,
4 therefore, attempt to strike a balance between FERC open access policies and ensuring that a
5 certain amount of renewable energy will be actually utilizing the addition transmission capacity
6 of the proposed facilities (the stated purpose and need for the new lines). If there is no effort to
7 try and ensure this intended outcome, which is the main purpose of these transmission facilities,
8 one might then view the economic and environmental costs of the proposed transmission
9 facilities in a different light.

10 **Q. More specifically, does WRA’s rebuttable presumption condition interfere with FERC**
11 **open access policies?**

12 A. I do not believe so. Rather, I believe that it is exactly because of open access and non-
13 discriminatory policies for FERC-jurisdictional lines that there is a need for an appropriate
14 condition in the instant case to ensure WRA’s renewable energy policy goals and both
15 Applicants’ stated purpose and need of the proposed facilities will be met.

16 The struggle between open access and ensuring renewable energy resources on FERC-
17 jurisdiction transmission lines was squarely before the Minnesota PUC, as discussed in my
18 Answer Testimony. Similar to that case, WRA is seeking creative and forward-thinking
19 solutions regarding the need to balance the FERC open access policies with the important policy
20 goals of new transmission facilitating renewable energy and low-carbon resources.

21 Accordingly, WRA’s condition would apply only a rebuttable presumption in a CPCN case
22 before the Commission, which does not interfere with FERC jurisdiction as that presumption
23 could be overcome. One example might be the potential for natural gas-fired generation to be

1 combined with renewable energy to increase the utilization of transmission facilities, assist with
2 load balancing, and help provide voltage support.

3 WRA appreciates the concerns articulated by Ms. Hyde regarding the implementation of the
4 Minnesota PUC precedent – a ruling that WRA understands has not been found to violate FERC
5 open access requirements. WRA is also strongly committed to having the Applicants’ proposed
6 transmission facilities help bring Colorado rapidly towards a new, low-carbon energy economy.
7 WRA agrees with Ms. Hyde that there might be other avenues besides the Minnesota
8 Commission’s condition or those recommended by WRA to achieve this important policy goal,
9 as well as meet the stated purpose and need of the project, and we are open to working with the
10 Commission and the Applicants to explore such avenues.

11 **Q. Do you have any additional clarifications to make with regard to Ms. Hyde’s Rebuttal?**

12 A. Yes, there are a number of phrases that don’t accurately represent what WRA is proposing, and
13 might cause confusion. Ms. Hyde’s testimony suggests that WRA’s conditions would limit the
14 use of the transmission lines to ONLY renewable resources,¹⁰ and that all the renewable
15 resources in the Company’s resource plan must be committed to prior to construction
16 commencing.¹¹ WRA’s recommended conditions are clearly stated to not limiting the lines to
17 renewable energy, and do not require all the renewable resources in Public Service’s resource
18 plan be committed to (the amount is proportional to a fraction of what the Commission
19 approved in Phase II of Public Service’s resource plan, and can be met by one, the other, or both
20 Applicants in tandem).

¹⁰ Public Service Rebuttal Testimony of Karen Hyde at 3, lines 11-12.

¹¹ Public Service Rebuttal Testimony of Karen Hyde at 35, lines 7-10.

III. Visual Impact Mitigation And Associated Costs Need Early Consideration

1 **Q. Did you review the Rebuttal Testimony submitted by Nicole Korbe on behalf of Tri-State?**

2 A. Yes.

3 **Q. Do you have any concerns regarding the issues discussed by Ms. Korbe?**

4 A. Yes. Ms. Korbe offered Rebuttal Testimony addressing issues raised by WRA's expert
5 witness, Mr. Apostol, and his analysis and conditions for mitigating visual impacts – in addition
6 to Mr. Darin's testimony related to these issues. WRA disagrees with Ms. Korbe's testimony as
7 it relates to the relevancy of environmental concerns, WRA's focus on visual impacts, and the
8 choice of Highway 160 as a focal point.

i. Environmental Concerns In Determining Public Convenience, Necessity, And Need

9 **Q. Are environmental issues, and visual impacts in particular, relevant to a CPCN**
10 **proceeding?**

11 A. Yes, the first major area where WRA disagrees with Ms. Korbe is that she suggests that
12 Mr. Apostol's analyses and recommendations are not relevant in the instant proceeding, and that
13 they are more properly considered in subsequent power line siting proceedings.¹² Mr. Apostol's
14 testimony provides a high-level analysis regarding the potential to mitigate adverse visual
15 impacts associated with the proposed facilities, in addition to providing recommendations
16 regarding potential mitigation strategies. Making this determination requires a careful
17 consideration and balancing of many factors, and overall benefits and costs. As a preliminary
18 observation, an essential part of Tri-State's CPCN Application is the evidence it provided
19 showing potential corridors for the proposed facilities. Tri-State's Application, therefore, has

¹² Tri-State Rebuttal Testimony of Nicole Korbe at 9, lines 12-17. See also Korbe at 8, lines 18-20.

1 substantial information on environmental factors, and Mr. Apostle's analysis and
2 recommendations add to the consideration of these factors in this Docket.

3 One of those factors is the nature of environmental impacts associated with the proposed
4 development, including opportunities to mitigate those impacts to acceptable levels. It is,
5 therefore, highly relevant to a CPCN determination that the overall extent, nature, and
6 likelihood of successful mitigation of environmental impacts be considered. Weighing costs
7 relative to benefits is a critical analysis performed in a CPCN application. Part of the cost
8 analysis is properly focused on potential mitigation measures for minimizing environmental
9 impacts. Considering these factors in a CPCN proceeding will allow reasonable and cost-
10 effective mitigation techniques to be built into the approved cost of, and cost recovery for,
11 proposed facilities. Leaving consideration of these factors to downstream processes jeopardizes
12 both the early-on consideration of protecting and balancing environmental concerns, as well as
13 the potential to have cost-effective mitigation strategies properly funded.

ii. WRA's Focus On Visual Impacts

14 **Q. Please describe Ms. Korbe's concerns about WRA's focus on visual impacts.**

15 A. Ms. Korbe is concerned that WRA and Mr. Apostol are "narrowly focused on visual impacts"
16 and do not consider other environmental and natural resource values including land use,
17 wildlife, wetlands, vegetation, and other issues.¹³

18 **Q. Does WRA agree that its environmental concerns are limited to visual impacts?**

19 A. No. In my Answer Testimony, I discussed the well-recognized environmental benefits
20 associated with co-locating facilities in already-disturbed corridors. In this case, along the
21 important stretch between Alamosa and La Veta Pass, the potential corridors for the proposed

¹³ Tri-State Rebuttal Testimony of Nicole Korbe at 9, lines 18-21, and at 10, lines 9-10.

1 facilities would mostly follow Highway 160 which has existing environmental impacts.

2 Accordingly, placing the proposed power-line facilities in such an area would lessen impacts to
3 wildlife, vegetation, and other natural resources – a very important consideration. However,
4 given that, in some locations, adding power lines would add a new vertical component to this
5 already impacted area, WRA chose to focus its resources in the instant docket on strategies to
6 reduce visual impacts.

7 As such, WRA strongly agrees with Tri-State that all natural resources need to be considered
8 and analyzed for varying alternatives to accomplish the purpose and need of a project.¹⁴ As Tri-
9 State illustrates, the Rural Utility Service (RUS) has initiated an Environmental Impact
10 Statement relative to the proposed facilities. WRA's scoping comments to RUS raised the full
11 spectrum of visual and other key natural resource values. With proposed corridors mostly co-
12 located with already-disturbed areas, in the instant proceeding, I relied on my professional
13 experience and judgment to retain an outside consultant to evaluate the potential visual impacts
14 of the proposed facilities, and to develop mitigation strategies to minimize these impacts.
15 Focusing on visual impacts, however, is not meant to imply that other important wildlife and
16 natural resource values should not also receive consideration and protection.

iii. Siting The Transmission Lines South Of Highway 160

17 **Q. Does Ms. Korbe disagree with Mr. Apostol's recommendations with regard to the general**
18 **location of the transmission lines?**

19 A. Yes, Ms. Korbe states that Tri-State has analyzed potential impacts with detailed visual impacts
20 analyses, and disagrees with Mr. Apostol's suggestion that, in the area of his analysis, a power

¹⁴ WRA Answer Testimony of Tom Darin at 3-4, lines 17-9; at 20, lines 14-16; at 21, lines 5-8; and Section IV is devoted to scenery, lands, and wildlife, in particular, see page 28, lines 24-26. Also see WRA Answer Testimony of Dean Apostol at 16, lines 22-24, that addresses the cultural value of the ghost town of Uptop.

1 line route south of Highway 160 would be a better option than one north of the Highway for
2 visual impact mitigation.¹⁵

3 **Q. Does WRA's witness, Mr. Apostol, recommend a specific route for the transmission lines?**

4 A. No, Mr. Apostol's testimony provides tools and strategies for minimizing the visual impacts of
5 the proposed lines, and provides the general recommendation of siting the lines to the south of
6 Highway 160 from Alamosa to a few miles east of La Veta Pass (the length of the proposed
7 transmission corridor that Mr. Apostol examined). His testimony breaks this section of the
8 proposed transmission corridor into 5 subsections, describes each subsection, and the different
9 characteristics of each. It should be noted that his analysis was done using the maps from the
10 initial Applications, and not subsequent updates. From his macro-level analysis, he concluded
11 that a route generally following the southern edge of the initially-proposed corridor would
12 lead to the least visual impacts for the many travelers (local, regional, and otherwise) on
13 Highway 160, when compared to locating the line to the north of Highway 160.¹⁶

14 **Q. Do either Mr. Apostol or Mr. Darin state that, for the area in question, any siting of the**
15 **transmission lines to the north of Highway 160 would result in unacceptable visual**
16 **impacts?**

17 A. No.

18 **Q. How does Ms. Korbe portray the routing differences between Mr. Apostol's**
19 **recommendation and Tri-State's current routing considerations?**

20 A. Tri-State's current detailed visual impacts analysis indicates that optimum corridors to site
21 the proposed facilities in the future might potentially be on the north and south side of

¹⁵ Tri-State Rebuttal Testimony of Nicole Korbe at 11, lines 13-15.

¹⁶ WRA Answer Testimony of Dean Apostol at 2, line 19; at 13, lines 3-5; and at 13-19.

1 Highway 160.¹⁷ Ms. Korbe also contends that Mr. Apostol does not consider visual impacts to
2 residential subdivisions and communities.¹⁸

3 **Q. Are there reasons that Mr. Apostol's analysis would differ from Tri-State's, and does**
4 **Mr. Apostol consider the visual impact to local residents?**

5 A. There are a number of reasons the two analyses would differ. First, Tri-State is working with
6 data that it is continually collecting and updating, while Mr. Apostol worked with a static set of
7 data from the original Application. Second, as Mr. Apostol presents in his testimony, there are a
8 number of different systems for evaluating the scenic integrity or value of a landscape,¹⁹ as well
9 as general principles that are used in the placement and design of transmission lines to avoid or
10 reduce scenic impacts, in particular the question of "for whom and from which viewpoint(s)".²⁰

11 Depending upon how one answers those questions, the resulting choices with regard to siting
12 and visual impact mitigation might be very different. Following the general rule that "public
13 viewpoints with large numbers of people, or where the viewers have a reasonable expectation
14 of an unaltered view are the places that get the highest consideration," Mr. Apostol chose
15 Highway 160 as the most important view corridor.²¹ The Applicants, local communities, siting
16 jurisdictions, or other involved parties might well choose different priorities, which could
17 reasonably lead to different opinions as to the best transmission route.

¹⁷ Tri-State Rebuttal Testimony of Nicole Korbe at 11-12.

¹⁸ Tri-State Rebuttal Testimony of Nicole Korbe at 10, lines 4-6.

¹⁹ WRA Answer Testimony of Dean Apostol at 6-7. To clarify some of the terminology used by Mr. Apostol, he explains the following: "The Forest Service Landscape Aesthetics, a Handbook for Scenery Management, page 30-31, describes scenic attractiveness as 'combinations of attributes in natural or natural appearing landscapes.' Landscape Architects have developed criteria to inventory and map scenic attractiveness into three classes: A-Distinctive, B-Typical or Common, and C-Indistinctive. Earlier literature also used the terms 'outstanding' and 'ordinary,' analogous to 'distinctive' and 'indistinctive' respectively ... I used outstanding and distinctive interchangeably, and did the same for ordinary and indistinctive. So to sum up, in my testimony, outstanding = distinctive, and ordinary = indistinctive."

²⁰ WRA Answer Testimony of Dean Apostol at 7-8.

²¹ WRA Answer Testimony of Dean Apostol at 8, lines 1-3, and at 13, lines 10-11.

1 We note that both Mr. Apostol and WRA considered the visual impact to local residents and
2 discuss the balance and trade-offs that are involved in transmission siting, including the impact
3 on local residents.²²

4 **Q. Do you find an overarching theme in the concerns expressed by Ms. Korbe with regard to**
5 **the recommendations of Mr. Apostol?**

6 A. When reading Mr. Apostol's Answer Testimony, it is important not to miss the proverbial forest
7 for the trees. Mr. Apostol provides tools and strategies for visual impact mitigation that can, and
8 should, be applied, not only along the portion of the transmission route that he examined, but
9 along the entire route. His analysis was based upon the data and proposed potential transmission
10 corridor information that was available with the Applicant's filings and early data responses.
11 His macro-location recommendations are based upon general mitigation principles that might
12 not apply to the specifics of different areas along the general proposed transmission corridor that
13 he examined.

14 Mr. Apostol's recommendations, and WRA's support of them, do not dictate the siting of the
15 proposed transmission lines; rather, they provide tactics and approaches for how best to mitigate
16 the visual impacts of the proposed transmission lines, wherever they are finally sited, and a
17 broad perspective on visual impacts, based upon Highway 160 as the site from which the
18 proposed lines stand to have the greatest visibility to the greatest number of viewers.

19 Mr. Apostol is clear that the measurement of scenic impacts is more qualitative than
20 quantitative.²³ The strategies and recommendations he provides are extremely valuable, and

²² WRA Answer Testimony of Dean Apostol at 1, lines 24-25; at 8, line 6; and at 18, lines 19-23. WRA Answer Testimony of Tom Darin at 29, lines 16-18; at 30, lines 21-22; and at 32, lines 16-19.

²³ WRA Answer Testimony of Dean Apostol at 5, line 7.

1 should be employed to the extent practicable, but they should not be applied as rigid rules,
2 which they were neither intended nor presented to be.²⁴

3 **Q. Do you have any further clarifications?**

4 A. Yes. Mr. Thompson provided rebuttal testimony relative to a perceived “northern route”
5 proposed by WRA.²⁵ To be clear, I never “proposed,” or even suggested, a northern route for
6 the proposed facilities. Rather, I simply testified in my Answer Testimony that, for a limited
7 stretch north of the San Luis Valley substation, there might be an opportunity to find appropriate
8 siting for transmission facilities (without commenting on potential reliability concerns), as
9 evidenced by the existing 110 kV and 230 kV lines in this area. In generally discussing a
10 potential north and then eastern route, my main concern is the potentially significant
11 environmental concerns and future siting challenges when the route would turn east near Poncha
12 Pass in the vicinity of the Arkansas River as it proceeds to the Colorado front range. This route,
13 as Mr. Thompson suggests, is longer than the proposed corridors, and in very simple terms,
14 might be trading one set of scenic and environmental concerns in San Luis Valley, for a wholly
15 different set of concerns to the north and northeast.

16 **Q. Do you have any concluding remarks?**

17 A. Yes, my Surrebuttal addresses a number of issues from the visual impacts of transmission lines,
18 to FERC jurisdiction, to assisting companies in utilizing proposed transmission lines optimally
19 and to transmit energy from the resources they were intended to. The combination of these
20 issues, the increasingly interconnected and geographically distributed nature of the transmission
21 system, and changing energy policy in Colorado and the nation as a whole all demand a change

²⁴ WRA Answer Testimony of Dean Apostol at 20, lines 18-20: “Above all, the line should be located, wherever possible, in the lowest impact area. It is important that this project be considered a multiple objective design project, not simply an engineering project.”

²⁵ Public Service Rebuttal Testimony of Rick Thompson at 11, lines 7-8.

1 in the way we use and plan for transmission expansion. Interwest, in its Cross-Answer
2 Testimony of Gregory Blue, proposes that Public Service and Tri-State develop a long-term,
3 unified transmission master plan.²⁶ I agree given that this type of comprehensive and long-term
4 transmission planning in Colorado has the potential to yield the most efficient, effective, and
5 reliable transmission system for integrating and coordinating clean energy resources, while also
6 providing the best planning opportunity to avoid and minimize environmental impacts.

7 **Q. Does this conclude your testimony?**

8 A. Yes.

²⁶ Interwest Cross-Answer Testimony of Gregory Blue at 4-5.

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

DOCKET NO. 09A-324E

IN THE MATTER OF THE APPLICATION OF TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC., (A) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE SAN LUIS VALLEY-CALUMET-COMANCHE TRANSMISSION PROJECT, (B) FOR SPECIFIC FINDINGS WITH RESPECT TO EMF AND NOISE, AND (C) FOR APPROVAL OF OWNERSHIP INTEREST TRANSFER AS NEEDED WHEN PROJECT IS COMPLETED

DOCKET NO. 09A-325E

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO (A) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE SAN LUIS VALLEY TO CALUMET TO COMANCHE TRANSMISSION PROJECT, (B) FOR SPECIFIC FINDINGS WITH RESPECT TO EMF AND NOISE, AND (C) FOR APPROVAL OF OWNERSHIP INTEREST TRANSFER AS NEEDED WHEN PROJECT IS COMPLETED

AFFIDAVIT OF TOM DARIN

COMES NOW Tom Darin, of proper age and duly sworn, and states that the attached Testimony in the above-captioned matter was prepared by him or under his supervision and control and that it is true and correct to the best of his knowledge and belief, and would be the same if given orally under oath.

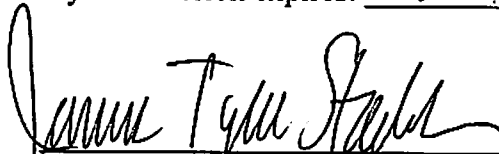


Tom Darin

STATE OF Maryland)
CITY)
COUNTY OF Baltimore) ss.

SUBSCRIBED AND SWORN to before me this 15th day of January 2010. Witness my hand and official seal.

My commission expires: MARCH 10th 2013


Notary Public

JAMES TYLER STADDON
NOTARY PUBLIC
BALTIMORE CITY, MARYLAND