

**BEFORE THE PUBLIC UTILITIES COMMISSION**

**STATE OF COLORADO**

DOCKET NO. 09A-324E

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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.

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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.

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**SURREBUTTAL TESTIMONY OF R. MARK CLEMENTS**

**ON BEHALF OF**

**BLANCA RANCH HOLDINGS, LLC AND**

**TRINCHERA RANCH HOLDINGS, LLC,**

January 18, 2010

**BEFORE THE PUBLIC UTILITIES COMMISSION**

**STATE OF COLORADO**

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**SURREBUTTAL TESTIMONY OF R. MARK CLEMENTS**

1                                   **I. INTRODUCTION AND QUALIFICATIONS**

2   **Q.     Please state your name and business address.**

3   A.     My name is R. Mark Clements, and my business address is 2791 E. Caley Ave.,  
4           Centennial, CO 80121.

5   **Q.     By whom and in what capacity are you employed?**

6   A.     I am president and owner of Web Support Services, LLC ("WSS").

7   **Q.     On whose behalf are you testifying in this proceeding?**

8   A.     I am testifying on behalf of Trinchera Ranch Holdings, LLC and Blanca Ranch  
9           Holding, LLC, intervenors in this proceeding (collectively, "Trinchera Ranch").

1    **Q.     What is the subject of your surrebuttal testimony?**

2    A.     I respond to the rebuttal testimony of Public Service Company of Colorado's  
3           ("PSCo") witnesses Gerry Stellern and Joseph Taylor, which, among other things,  
4           asserted that contract path issues exist for the various alternative transmission  
5           systems proposed by James R. Dauphinais in his Answer Testimony and the  
6           Brubaker & Associates, Inc. Transmission Study Report JRD-1 attached as  
7           Exhibit JRD-1 to Mr. Dauphinais' Answer Testimony (the "***Brubaker Report***").

8    **Q.     Have you prepared a statement of your experience and qualifications?**

9    A.     Yes. My resume is provided in Exhibit No. RMC-1 attached to this testimony.

10   **Q.     Are you sponsoring any other exhibits?**

11   A.     I am sponsoring the following exhibits:

- 12                 1)     Exhibit No. RMC-1, which is a copy of my resume;
- 13                 2)     Exhibit No. RMC-2, which is a study entitled Technical Report on  
14                         Contract Path Issues, dated January 18, 2010 (the "Contract Path  
15                         Report"); and
- 16                 3)     Exhibit No. RMC-3, which is a study entitled Cost Estimate For  
17                         Conductor Replacement and Transmission Services, dated January  
18                         18, 2010 (the "Cost Estimate").

19                 Exhibit Nos. RMC-1, RMC-2 and RMC-3 were prepared or obtained by me or  
20                 under my supervision.

21   **Q.     Please summarize your experience as it relates to these proceedings.**

22   A.     My experience is described in detail on my resume in Exhibit No. RMC-1. I own  
23           WSS, an energy consulting firm and publishing company. I have a Master of

1 Science degree in Electrical Engineering, and Bachelor of Science degrees in both  
2 Biology and Mechanical Engineering.

3 I worked for PSCo from 1970 until 1978 in Electric System Planning as a  
4 Planning Engineer, in charge of the five year fuel budget and work on load  
5 management and production cost modeling. I also compared the bus bar costs of  
6 alternative new power resources including transmission, water, fuel, rail  
7 extensions and the thermal efficiency of the power plants. From 1978 until  
8 1982, I worked as a consultant at Stone & Webster Management Consultants,  
9 Inc., where I performed studies for generation expansion planning alternatives,  
10 fuel budgets and supply, comparative costs of generation alternatives, and  
11 mergers and acquisitions, and load management. From 1982 until 1984, I again  
12 worked at PSCo in Economics and Forecasting and from 1984 through 1997 as a  
13 staff assistant to the Manager of System Operations.

14 After 1988, I worked for a few months in Generation Engineering and  
15 then transferred to PSCo's Electric System Planning department as a Senior  
16 Transmission Planning Engineer. I became Manager of Electric System Planning  
17 and then Team Lead, Transmission Reliability Assessment. As a Senior Engineer  
18 in Electric System Planning, I primarily worked on the acquisition of the bankrupt  
19 Colorado-Ute Electric Association, using contract path methodology to divide the  
20 transmission assets of that utility with Tri-State G&T. As Manager of System  
21 Planning I managed three supervisors and 25 total employees performing  
22 generation and transmission planning studies, and the peak winter and summer  
23 load forecasts.

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12 Q.

When PSCo merged with Southwestern Public Service in 1997 and formed New Century Energies ("NCE"), I worked for NCE as a Team Lead, Transmission Reliability Assessment, and my primary responsibilities were to supervise transmission planners, although I was traveling every two weeks to the Midwest ISO to represent the interests of Southwestern Public Service Company in the Stakeholder Committee and the Transmission Owners Committee. During my 25 years working for PSCo and then NCE, I performed several contract path analyses similar to the analysis made in my report attached as Exhibit RMC-2.

Since 1999, I have worked as a consultant to the energy industry as outlined in my resume.

**What is the purpose of your testimony in this matter?**

13 A.

The purpose of my testimony in this matter is to present the results of my contract path analysis and to address the following areas:

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1) The contract path capacity that could move power generated in the San Luis Valley from Poncha Substation to PSCo loads along the Front Range; and

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2) The estimated cost of additional contract path capacity.

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## **II. INFORMATION REVIEWED**

20 Q.

**Please describe the information you reviewed.**

21 A.

I reviewed PSCo's and Tri-State's CPCN applications in this docket, as well as testimony and rebuttal testimony. I reviewed Mr. Dauphinais' surrebuttal testimony. I also reviewed materials describing 3M's Aluminum Conductor

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1 Composite Reinforced conductor, spoke with 3M representatives and investigated  
2 aluminum salvage values. I also reviewed powerflow data in Notepad form to get  
3 line topology, ratings and bus load data, and I read technical reports of the  
4 powerflow studies written by PSCo, Tri-State and BAI, discovery requests and  
5 responses, and PSCo's 2008 FERC Form 1.

6 **Q. Is it typical for persons in the transmission industry conducting contract**  
7 **path analyses and cost estimates to rely on information obtained from**  
8 **vendors such as 3M?**

9 A. Yes, system planners rely on such information for these types of scoping-level  
10 estimates in the regular course of our business..

11 **Q. Please summarize your findings, conclusions, and recommendations.**

12 A. Based on my analyses in the Contract Path Report and the Cost Estimate, I have  
13 concluded that:

- 14 1) PSCo's potential contract path needs for getting power out of the  
15 San Luis Valley range from zero MW to 380 MW;
- 16 2) Contract path capacity is not a significant obstacle to the  
17 transmission alternatives presented in the Brubaker Report;
- 18 3) Feasible and economical ways exist to obtain up to 1,489 MW of  
19 contract path capacity from Poncha Substation or West Canon  
20 Substation to loads along the Front Range; and
- 21 4) PSCo can obtain 755 MW of contract path capacity at no annual  
22 transmission cost at all by building the Trinchera alternative to  
23 Malta.

1     **Q.     On Page 13 of Mr. Taylor's Rebuttal Testimony, Mr. Taylor concludes that**  
2           **Trinchera Ranch Alternatives TR1A and TR2A are not viable without**  
3           **additional transmission from Poncha to the Front Range. Do you agree with**  
4           **Mr. Taylor's conclusions?**

5     A.    No, I don't agree with Mr. Taylor's assumption that additional transmission isn't  
6           available now, and I disagree with Mr. Taylor's possible implication that new  
7           construction is required to make TR1A and TR2A viable. Mr. Taylor concluded  
8           that contract path capacity of only 269 MW existed beyond Poncha (170 MW on  
9           PSCo's Poncha-Malta 115 kV line + 99 MW available on Black Hills' Poncha to  
10          Midway 115 kV line). However, Mr. Taylor's contract path analysis is flawed for  
11          two reasons. First, Mr. Taylor failed to take into consideration the uprate of  
12          Western's 230 kV line from Poncha to Midway (the "Western Line"), as assumed  
13          by the Companies in Exhibit TWG-1 at Page 9. By failing to consider this uprate,  
14          Mr. Taylor's contract path analysis neglected 192 MW of contract path capacity  
15          that PSCo could purchase from Western. After adding 192 MW to the 269 MW  
16          of contract path capacity Mr. Taylor calculated in his Rebuttal Testimony (and  
17          without considering the additional contract path availability described below),  
18          there is at least 461 MW of potential contract path from Poncha to the Front  
19          Range loads. As explained in my Contract Path Report, this is 81 MW more than  
20          is necessary to move the potential generation that may be developed in the San  
21          Luis Valley as part of PSCo's approved 2007 Resource Plan to PSCo's Front  
22          Range loads, thus making Mr. Dauphinais' Alternatives TR1A and TR2A viable  
23          for transmitting the potential generation to loads along the Front Range.

1    **Q.     What is the second flaw in Mr. Taylor's contract path analysis?**

2    A.     Mr. Taylor failed to consider additional economical and viable ways to increase  
3           contract path capacity. For instance, existing new technologies, such as 3M's  
4           Aluminum Conductor Composite-Reinforced ("ACCR"), greatly expand thermal  
5           and contract path capacities. By reconductoring the Western Line, the rating of  
6           that line would increase to up to 885 MVA, which would provide 443 MW of  
7           additional contract path capacity beyond that described above (for a total of 904  
8           MW that PSCo could obtain for transmitting power east and north out of the San  
9           Luis Valley). Furthermore, Mr. Taylor failed to consider potential extension of  
10          transmission alternatives going north out of the San Luis Valley. Mr. Dauphinais  
11          has determined that his Alternative TR1A, which proposed a new 230 kV line  
12          from the San Luis Valley substation to the Poncha substation, can be extended by  
13          building that line to the Malta substation. If this extended alternative were built,  
14          then I calculate that PSCo would have 585 MW of additional contract path  
15          capacity beyond that described above, for a total available contract path capacity  
16          of 1,489 MW. My contract path calculations are set forth in Exhibit RMC-2.

17   **Q.     Is such contract path capacity economically feasible?**

18   A.     Yes. As I explain in my Cost Estimate attached at Exhibit RMC-3, PSCo's costs  
19          in both building a line from San Luis Valley to Poncha (as proposed by Mr.  
20          Dauphinais' TR1A, and using Mr. Dauphinais' estimate for the cost of such line)  
21          and acquiring sufficient contract path capacity to move generation from Poncha to  
22          the Front Range loads are still significantly less than the cost of PSCo's proposed  
23          alternative.



1   **Q.     If PSCo built the TR1AE extension to Malta, described in Mr. Dauphinais’**  
2         **surrebuttal testimony, would PSCo need to purchase any additional**  
3         **transmission service in order to get its planned generation in the San Luis**  
4         **Valley to its Front Range loads?**

5   A.    No. Under Trinchera Ranch's TR1AE extension to Malta, the maximum 380 MW  
6         contract path required under PSCo’s current proposed solar generation in the  
7         valley could be accommodated without any need to purchase additional  
8         transmission capacity. The 170 MW of contract path capacity on PSCo’s existing  
9         line to Malta, plus the additional 585 MW of contract path capacity that would be  
10        provided by the TR1AE extension, would allow for 755 MW of generation in the  
11        San Luis Valley to be delivered to PSCo’s loads on the Front Range, so PSCo  
12        would not need to purchase additional transmission service for its currently  
13        planned generation.

14   **Q.     Does this conclude your testimony in this matter?**

15   A.    Yes.