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SOAH DOCKET NO. 473-25-02531
PUC DOCKET NO. 57115

JOINT APPLICATION OF THE CITY
OF SAN ANTONIO, ACTING BY
AND THROUGH THE CITY PUBLIC
SERVICE BOARD (CPS ENERGY),
AND SOUTH TEXAS ELECTRIC
COOPERATIVE, INC. (STEC) TO
AMEND THEIR CERTIFICATES OF
CONVENIENCE AND NECESSITY
FOR THE PROPOSED HOWARD
ROAD-TO-SAN MIGUEL 345-KV
TRANSMISSION LINE IN BEXAR
AND ATASCOSA COUNTIES

BEFORE THE STATE OFFICE
OF
ADMINISTRATIVE HEARINGS

Direct Testimony and Exhibits of

Brian C. Andrews

On behalf of

**Frank Allen Ranch, LLC
and
The Terri Luensmann Spousal GST Trust**

November 12, 2024



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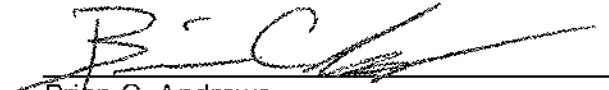
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TRANSMISSION LINE IN BEXAR	)	
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Affidavit of Brian C. Andrews

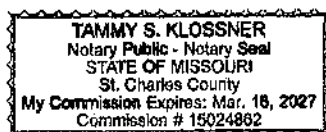
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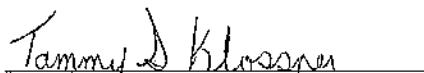
Brian C. Andrews, being first duly sworn, on his oath states:

1. My name is Brian C. Andrews. I am a Principal with Brubaker & Associates, Inc., 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017. We have been retained by Frank Allen Ranch, LLC and The Terri Luensmann Spousal GST Trust to testify in this proceeding on their behalf.
2. Attached hereto and made a part hereof for all purposes are my direct testimony and exhibits which were prepared in written form for introduction into evidence in SOAH Docket No. 473-25-02531, Public Utility Commission of Texas Docket No. 57115.
3. I hereby swear and affirm that the testimony and exhibits are true and correct and that they show the matters and things that they purport to show.


Brian C. Andrews

Subscribed and sworn to before me this 12th day of November, 2024.




Notary Public

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ROAD-TO-SAN MIGUEL 345-KV	)	
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AND ATASCOSA COUNTIES	)	

Direct Testimony of Brian C. Andrews

I. INTRODUCTION AND SUMMARY

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- Q** PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
- A** Brian C. Andrews. My business address is 16690 Swingley Ridge Road, Suite 140,
Chesterfield, MO 63017.
- Q** WHAT IS YOUR OCCUPATION?
- A** I am a consultant in the field of public utility regulation and a Principal with the firm of
Brubaker & Associates, Inc., energy, economic and regulatory consultants.
- Q** PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.
- This information is included in Appendix A to this testimony.

1 **Q** **HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE THE PUBLIC UTILITY**
2 **COMMISSION OF TEXAS (“PUC” OR “COMMISSION”) ON**
3 **TRANSMISSION-RELATED MATTERS IN GENERAL AND IN CERTIFICATE OF**
4 **CONVENIENCE AND NECESSITY (“CCN”) PROCEEDINGS, IN PARTICULAR?**

5 **A** Yes, I filed expert testimony in PUC Docket Nos. 44837, 45866, 46234, 48625, 48629,
6 49523, 50410, 50545, 50812, 50830, 51023, 51568, 53053, 53727, 55114, 55151,
7 55296, 55397, and 55573. I also provided consulting and technical support for my
8 colleague, Mr. James R. Dauphinais, for his transmission line routing testimony and
9 exhibits filed in PUC Docket Nos. 40728, 41606, 42087, 43599, 43878, 44547, and
10 46429. My involvement in those proceedings included reviewing the applicant's
11 application and exhibits, analyzing the routing criteria and Geographical Information
12 System (“GIS”) data of the routes, identifying modifications to improve the routing factor
13 performance of filed routes, reviewing and analyzing cost-estimates of proposed
14 routes, providing insight and recommendations for testimony, and creating exhibits for
15 Mr. Dauphinais. I provided similar support for Mr. Dauphinais' testimony filed in
16 transmission line CCN proceedings in Illinois, Michigan, and Alberta. Lastly, I have
17 been involved in a transmission line CCN proceeding in Virginia, providing support to
18 one of my colleagues at BAI.

19 **Q** **ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

20 **A** I am testifying on behalf of Frank Allen Ranch, LLC and The Terri Luensmann Spousal
21 GST Trust. Their properties would be impacted by Segment 78. The proposed routes
22 that use Segment 78 are K, S, T, V, Y, Z, AA, AC, AD, AE, and AG.

Q WHAT IS THE SUBJECT MATTER OF YOUR TESTIMONY?

A My testimony addresses the route alternatives offered to the Commission by the City of San Antonio, acting by and through City Public Service Board ("CPS Energy"), and South Texas Electric Cooperative, Inc. ("STEC"), (referred to jointly as "Joint Applicants") in their CCN Application ("Application") for the proposed Howard Road to San Miguel 345-kV Transmission Line Project ("Proposed Project"). I am not addressing the issue of need for the Proposed Project.

My silence regarding any issue should not be taken as an endorsement of any position taken by the Joint Applicants in their application or direct testimonies in this proceeding.

Q WHAT MATERIALS DID YOU REVIEW PRIOR TO THE PREPARATION OF YOUR DIRECT TESTIMONY?

A I reviewed the Joint Applicants' Application, exhibits, direct testimony, and responses to Requests for Information ("RFI"). This included a thorough review of the Environmental Assessment and Alternative Route Analysis ("EA") conducted by POWER Engineers ("POWER") on behalf of the Joint Applicants, which is Attachment 1 to the Application. I also conducted a detailed desktop review of the GIS data.

Q CAN YOU PLEASE SUMMARIZE YOUR CONCLUSIONS?

A The Joint Applicants' selection of Route U as the route that best addresses the requirements of the Public Utility Regulatory Act ("PURA") and the PUC Substantive Rules is reasonable. Route U represents a reasonable balance of the most important routing factors. Route U is tied for 7th best with 50 habitable structures within 500 feet of the centerline. Route U is the 12th least expensive route, with an estimated cost of

1 \$293.36 million. Route U is the 3rd best route with respect to paralleling, with 21.41
2 miles not parallel to any type of compatible rights of way including apparent property
3 lines.

4 If the Commission is seeking to approve the least cost route for this Project,
5 Route N is a very reasonable choice as well. Route N is the 17th least impactful route,
6 with 78 habitable structures within 500 feet. Route N is the least expensive route, with
7 an estimated cost of \$274.60 million, representing savings of \$18.76 million relative to
8 Route U. Route N is also an excellent route for paralleling, ranking 4th, with 22.05 miles
9 not parallel to existing compatible right of way or property lines. While Route N does
10 impact 28 more habitable structures than Route U, the savings of \$18.76 million cannot
11 be discounted, as this represents nearly \$670 thousand per habitable structure.

12 Either Route U or Route N are reasonable selections as the route that best
13 addresses the requirements of the PURA and the PUC Substantive Rules.

14 **II. ROUTE SELECTION FACTORS**

15 **Q WHAT FACTORS DOES THE COMMISSION CONSIDER IN THE APPROVAL OF A**
16 **TRANSMISSION LINE ROUTE?**

17 **A**The Commission considers, holistically, all the factors in Section 37.056(c)(4)(A-D) of
18 the Texas Utilities Code, Commission Substantive Rule § 25.101, and the
19 Commission's policy of prudent avoidance related to electric and magnetic fields. Other
20 guidance comes from past Commission decisions. The circumstances involved in
21 individual transmission line cases vary, so the applicability of precedent depends on
22 the similarity of prior cases to the issues at hand and whether there is any new or
23 different information related to the issues that were not available to the Commission at

1 the time the precedent was established. Finally, additional factors are part of the overall
2 environmental assessment typically included with each application.

3 **Q HAS THE COMMISSION DECIDED TO NOT GIVE PREFERENCE TO EXISTING**
4 **PIPELINE RIGHT-OF-WAY ("ROW") PARALLELING?**

5 A Yes. In an Order dated April 22, 2015, in PUC Project No. 42740, the Commission
6 adopted amendments to Substantive Rule § 25.101. The amendment removes any
7 presumption that the Commission has a preference for transmission line routes to
8 parallel natural gas or other pipelines by removing pipelines from the list of compatible
9 ROW. While this amendment to the Substantive Rule does not prohibit approval of a
10 transmission line parallel to an existing pipeline ROW, I understand that closely
11 paralleling a pipeline is no longer preferred because the cathodic protection required
12 to mitigate stray voltage concerns has driven up the costs of previously approved
13 transmission line projects. Because pipeline ROW is no longer on the list of compatible
14 ROW, I did not include it in my evaluation of the paralleling of compatible ROW in my
15 testimony.

16 **Q SHOULD GREATER WEIGHT BE PLACED ON CERTAIN FACTORS VERSUS**
17 **OTHERS?**

18 A Yes. For example, the Commission in its Final Order in Docket No. 30168, *Application*
19 *of TXU Delivery Company to Amend a CCN for a Proposed Transmission Line within*
20 *Jack, Wise and Benton Counties, Texas*, noted it has emphasized two factors in
21 deciding the routing of transmission lines: (1) the cost of the line; and (2) its impact on
22 habitable structures (Final Order at page 2). The Commission also found in Docket
23 No. 30168 that the ALJs placed too much emphasis on recreational and park areas,

1 historical values, and environmental issues (*Ibid.*). This said, in other transmission line
2 routing proceedings (e.g., Docket Nos. 37464, 38230, and 38354), the Commission
3 has not selected the route that had the least number of habitable structures affected
4 when another route had better performance regarding paralleling existing compatible
5 ROW (including property boundaries). In Docket No. 47808, the Commission approved
6 a route that was neither least cost nor least impactful to habitable structures, stating:

7 The Commission selects modified route 39 over modified route 125
8 based on a preference to parallel an existing transmission line and for
9 aesthetic purposes to avoid a scenic roadway that is appreciated as
10 such by the community.¹

11 Another point of emphasis is in Commission Substantive
12 Rule § 25.101(b)(3)(B). This section of the rule emphasizes the paralleling of
13 compatible ROW (including property boundaries) and conforming to the Commission's
14 policy of prudent avoidance of electric and magnetic fields. Regarding property
15 boundaries, the Commission in Docket No. 43599, *Application of LCRA TSC*
16 *Transmission Services Corporation to Amend its CCN for the Proposed Blumenthal*
17 *Substation and 138-kV Transmission Line*, concluded the term "property lines" in
18 Commission Substantive Rule § 25.101(b)(3)(B)(iii) refers to the property boundaries
19 of a landowner's total contiguous area of land; the term does not refer to tax-parcel
20 lines. It also is important to recognize that, all else being equal, paralleling existing
21 transmission lines (particularly of equal or greater size and visibility) reduces the
22 incremental impact on the community and landowners compared to paralleling other
23 compatible ROW that do not include transmission towers or similar infrastructure.

¹*Joint Application of Oncor Electric Delivery Company LLC and Brazos Electric Cooperative, Inc. to Amend Certificates of Convenience and Necessity for the Cogdell to Clairemont 138-KV Transmission Line in Kent and Scurry Counties*, Docket No. 47808, Final Order at page 1 (January 18, 2019).

1 Finally, although some categories of data tabulated in the EA can be routing
2 factors, they deserve less weight than other factors required by statute and rule. For
3 example, being in the “foreground visual zone” of state and U.S. highways is not
4 necessarily a significant detriment unless the affected state and U.S. highways are
5 widely recognized as scenic routes, highways, or byways. A high number in the
6 category of foreground visual zone of highways can be a good factor, as it indicates a
7 route may be more compliant with the routing criteria by following highways, which are
8 generally considered compatible corridors.

9 **Q WHEN WEIGHING THE FACTORS TO BE CONSIDERED, IS IT POSSIBLE THAT**
10 **SUBSTANTIALLY BETTER PERFORMANCE WITH RESPECT TO ONE FACTOR**
11 **CAN ULTIMATELY OUTWEIGH INFERIOR PERFORMANCE WITH RESPECT TO**
12 **ANOTHER FACTOR?**

13 **A Yes.** A hypothetical example of this would be when one route impacts a relatively small
14 number of habitable structures but parallels a small amount of the available existing
15 compatible ROW. In such a circumstance, it may be appropriate to select a route that
16 impacts more habitable structures if that route also outperforms the other route in its
17 paralleling of existing compatible ROW.

18 **Q CAN UNIQUE CIRCUMSTANCES NOT READILY CAPTURED IN ROUTING**
19 **FACTORS MODIFY THE SELECTION OF A TRANSMISSION LINE ROUTE?**

20 **A Yes.** I can offer three examples of such unique circumstances. First, in Docket
21 No. 38290, *Application of Sharyland Utilities, LP to Amend its CCN for the Proposed*
22 *Hereford to White Deer 345-kV CREZ Transmission Line*, the iconic beauty and
23 engineering challenges of Palo Duro Canyon, with higher habitable structure counts on

1 another route that avoided Palo Duro Canyon, led the Commission to select a more
2 expensive route for the transmission line proposed in that proceeding.

3 Second, In Docket No. 38354, *Application of LCRA TSC Transmission Services*
4 *Corporation to Amend its CCN for the Proposed McCamey D to Kendall to Gillespie*
5 *345-kV CREZ Transmission Line*, the Commission found the well-developed Interstate
6 Highway 10 corridor was a more compatible ROW for paralleling purposes than the
7 alternative paralleling opportunities in the Texas Hill Country. This led the Commission
8 to select a route with higher habitable structure counts and cost more than other
9 alternative routes.

10 And finally, in Docket No. 38597, *Application of Oncor Electric Delivery*
11 *Company LLC to Amend its CCN for the Proposed Krum to West Anna 345-kV CREZ*
12 *Transmission Line*, the adverse impact on community values² of crossing the Greenbelt
13 multi-use trail system, along with both the routing factor performance and the large size
14 of the structures required to cross the Greenbelt in the only location allowed by the U.S.
15 Army Corps of Engineers, led the Commission to select a route that was significantly
16 longer and had much more length not paralleling existing compatible ROW (including
17 property boundaries) compared to alternative routes.

18 These three examples show it is important to consider not just the statutory
19 routing factors, but also any significant unique circumstances that may not be explicitly
20 captured within those routing factors.

²The Commission has previously defined "community values" as: [A] shared appreciation of an area or other natural or human resource by a national, regional, or local community. Adverse effects upon community values consist of those aspects of a Proposed Project that would significantly alter the use, enjoyment, or intrinsic value attached to an important area or resource by a community. *Application of AEP Transmission Services Corporation to Amend its Certificate of Convenience and Necessity for a 345-kilovolt Double-circuit Line in Caldwell, Guadalupe, Hays, Travis and Williamson Counties, Texas*, Docket No. 33978, Order at FoF page 118 (October 10, 2008).

1 **Q ARE THERE UNIQUE CIRCUMSTANCES IN THIS PROCEEDING?**

2 A No. I have not identified any unique circumstances in this proceeding.

3 **Q ARE THERE ROUTING FACTORS IN THIS PROCEEDING THAT ARE NOT USEFUL**
4 **FOR DETERMINING THE ROUTE THAT BEST MEETS THE REQUIREMENTS OF**
5 **PURA AND THE PUC SUBSTANTIVE RULES?**

6 A Yes. When there is little or no adverse impact for the route alternatives for a particular
7 routing factor, then that routing factor does not provide useful information for
8 determining the route that best meets the requirements of PURA and the PUC
9 Substantive Rules. In this proceeding, several routing factors have little to no adverse
10 impact on any routes. The statements below are based on the routing factor data in
11 the EA for the 34 filed routes.

12 In the routing factor tables in the EA, there are 5 criteria with a value of 0 for the
13 34 routes considered. These factors are:

- 14 1. Length utilizing existing transmission line ROW;
- 15 2. Length of route across conservation easements and/or mitigation banks
16 (Special Management Area);
- 17 3. Number of FAA registered public/military airports having no runway more
18 than 3,200 feet in length located within 10,000 feet of ROW centerline;
- 19 4. Length of ROW across know critical habitat of federally-listed threatened or
20 endangered species; and
- 21 5. Length of ROW across Edwards Aquifer Contributing Zone.

22 These five criteria are not helpful to determine the route that best meets the
23 requirements of PURA and the PUC Substantive Rules in this proceeding.

III. THE JOINT APPLICANTS' FILED ROUTES

Q PLEASE DESCRIBE THE JOINT APPLICANTS' PROPOSED ROUTES?

A Joint Applicants filed 34 routes for the Proposed Project using a combination of 109 noticed segments. The Proposed Project is located within Bexar and Atascosa Counties in Texas. The northern end of the Proposed Project will be the existing CPS Energy Howard Road Station. The southern end of the Proposed Project will be the STEC San Miguel Station. As a crow flies, the Howard Road Station endpoint is approximately 39.8 miles to the north of the San Miguel Station endpoint. The Joint Applicants' proposed routes range from 45.32 miles to 58.92 miles, with estimated total costs between \$274.60 million to \$390.54 million.

Q DID THE JOINT APPLICANTS IDENTIFY THE ROUTE THEY BELIEVE BEST ADDRESSES THE REQUIREMENTS OF PURA AND THE PUC SUBSTANTIVE RULES?

A Yes. The Joint Applicants identified Route U as the route that best addresses the requirements of PURA and the PUC Substantive Rules. The Joint Applicants provide four bullet points on why Route U was selected. First, Route U has a relatively low number of habitable structures within 500 feet of the proposed centerline at 50 (40 is the lowest and 179 is the highest). Next, it has a relatively high percentage of the route parallel and adjacent to existing transmission line right of way, other existing rights of way (roadways), and apparent property lines or other natural or cultural features at 56% (58% is the highest and 37% is the lowest). Third, Route U has a relatively short overall length at 49.15 miles (45.32 is the shortest 58.92 is the longest). Finally, Route U has a relatively low estimated total project cost at \$293.356 million (\$274.601 million is the lowest and \$390.539 million in the highest.)

1 Q DID POWER IDENTIFY A ROUTE AS THE ROUTE THAT BEST ADDRESSES THE
2 REQUIREMENTS OF PURA AND THE PUC SUBSTANTIVE RULES?

3 A No. POWER did not provide any evaluation or ranking of the 34 alternative routes.

4 **IV. ROUTE COMPARISON**

5 Q WHAT ROUTES DID YOU REVIEW?

6 A I reviewed the 34 proposed routes the Joint Applicants filed in their Application. This
7 consisted of a detailed review of the EA, the routing factors for each route, and a
8 desktop review of the Study Area via the GIS data and aerial photography.

9 Q PLEASE EXPLAIN YOUR DESKTOP REVIEW OF THE GIS DATA AND AERIAL
10 PHOTOGRAPHY.

11 A Joint Applicants provided the GIS data they used to conduct the EA. GIS data consists
12 of files that show the locations of the routes, links, endpoints, land use and other
13 features, and routing constraints identified in the Study Area. I reviewed this data within
14 Google Earth, allowing me to see the potential impacts of the Proposed Project, as this
15 GIS data is overlaid on Google's aerial imagery. I also reviewed some of the Study
16 Area using Google's Street View function, allowing me to see parts of the Study Area
17 via continuous 360-degree photos taken as recently as April 2024.

18 Q PLEASE EXPLAIN HOW YOU PROCEEDED WITH YOUR REVIEW.

19 A As I have done in past proceedings before the Commission, I use the distance not
20 parallel to linear features to evaluate paralleling performance. POWER provides data
21 in Table 4-1 of the EA for length of the line that is parallel to various features. Exhibit
22 BCA-1 presents my calculated factors for the distance not parallel to various types of

1 linear features. Having calculated my referred paralleling factors, I then carefully
2 reviewed the routing factors and cost estimates of the routes, in an attempt to find the
3 route that best addresses the requirements of PURA and the PUC Substantive Rules.

4 **Q PLEASE EXPLAIN WHY YOU USE THE LENGTH OF A ROUTE NOT PARALLEL**
5 **TO LINEAR FEATURES TO MEASURE PERFORMANCE.**

6 **A** Using the length of a route paralleling a ROW, or the percentage of the total length of
7 a route paralleling a ROW, can be misleading because the alternative routes under
8 consideration may have different lengths. For example, if we had a route of 200 miles
9 that paralleled existing transmission lines for 50% of its length and another alternative
10 route of 100 miles that paralleled existing transmission lines for only 25% of its length,
11 it would not be appropriate to say the 200 mile line outperforms the 100 mile line
12 regarding paralleling existing transmission lines because the 200 mile route would have
13 100 miles of length that does not parallel existing transmission lines, while the 100 mile
14 route would have only 75 miles of length that does not parallel existing transmission
15 lines. By measuring existing ROW paralleling performance by miles that do not parallel
16 that ROW, total line length is removed from the measure and, instead, the focus is
17 appropriately placed on minimizing the number of new transmission line route miles
18 that do not parallel the particular ROW in question. The ALJs in Docket No. 38597
19 endorsed the merit of this approach.³

³*Application of Oncor Electric Delivery LLC to Amend a Certificate of Convenience and Necessity for the Krum West to Anna 345-kV CREZ Transmission Line in Collin, Cooke, Denton, and Grayson Counties, Texas*, Docket No. 38597, Proposal for Decision at page 46 (February 9, 2011).

1 **Q BASED ON YOUR REVIEW OF THE IMPORTANT ROUTING FACTORS AND COST**
2 **ESTIMATES, DO YOU AGREE WITH THE JOINT APPLICANTS THAT ROUTE U IS**
3 **THE ROUTE THAT BEST ADDRESSES THE REQUIREMENTS OF PURA AND THE**
4 **PUC SUBSTANTIVE RULES?**

5 **A I believe Route U is a reasonable selection for the Route that best address the**
6 **requirements of PURA and the PUC Substantive Rules. The three most important**
7 **routing factors are impact to habitable structures, cost, and paralleling. Route U is a**
8 **relatively high performing in all three.**

9 With respect to habitable structures, Route U is tied for 7th best with 50 habitable
10 structures within 500 feet of the centerline. The range for all routes is a low of 40 and
11 a high of 179.

12 With respect to estimated total cost, Route U is the 12th least expensive route,
13 with an estimated cost of \$293.36 million. The range for all routes is a low of \$274.601
14 million and a high of \$390.539 million.

15 With respect to paralleling, Route U is the 3rd best route with respect to
16 paralleling, with 21.41 miles not parallel to any type of compatible rights of way
17 including apparent property lines. The range is 20.41 miles to 31.19 miles.

18 In reviewing the other routing factors, I see nothing that would suggest that
19 Route U is an unacceptable choice for this Proposed Project. Route U is a reasonable
20 selection for the route that best addresses the requirements of PURA and the PUC
21 Substantive Rule.

1 **Q CAN THE LEAST EXPENSIVE ROUTE BE VIEWED AS THE ROUTE THAT BEST**
2 **ADDRESSES THE REQUIREMENTS OF PURA AND THE PUC SUBSTANTIVE**
3 **RULES?**

4 **A Yes. Route N is the least expensive route, with an estimated total cost of \$274.601**
5 **million. This represents savings over Route U of \$18.755 million or 6.4%. Route N**
6 **does have 28 more habitable structures within 500 feet of the centerline with 78,**
7 **however it has very similar paralleling benefits as Route U. Route N has 22.05 miles of**
8 **length not parallel to any comparable rights of way, including property lines, which is**
9 **ranked 4th, just behind Route U.**

10 **Q WHAT IS THE COST PER HABITABLE STRUCTURE THAT WOULD BE SAVED BY**
11 **SELECTING ROUTE N OVER ROUTE U?**

12 **A Route N has 28 more habitable structures at a benefit of \$18.755 million. Stated**
13 **differently, the Joint Applicants have chosen to incur \$18.775 million to avoid 28**
14 **habitable structures by selecting Route U instead of Route N. This results in \$670**
15 **thousand per habitable structure.**

16 **Q ASIDE FROM AN INCREASE IN HABITABLE STRUCTURES, CAN YOU IDENTIFY**
17 **ANY OTHER REASONS WHY ROUTE N WOULD NOT BE CONSIDERED THE**
18 **ROUTE THAT BEST ADDRESSES THE REQUIREMENTS OF PURA OR THE PUC**
19 **SUBSTANTIVE RULES**

20 **A No. There is nothing that stands out to me in the routing factors as a reason to not**
21 **select Route N. Like Route U, Route N is also a reasonable selection for the route that**
22 **best addresses the requirements of PURA and the PUC Substantive Rules. If the**

1 Commission is intent on minimizing costs, I would recommend them approving
2 Route N.

3 **Q CAN YOU PROVIDE A MAP EXHIBIT THAT SHOWS BOTH ROUTES N AND U?**

4 **A** Yes. I provide this map in Exhibit BCA-2, which shows all route segments in black,
5 with Route N in blue and Route U in red.

6 **Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

7 **A** Yes, it does.

Qualifications of Brian C. Andrews

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

2 A Brian C. Andrews. My business address is 16690 Swingley Ridge Road, Suite 140,
3 Chesterfield, MO 63017.

4 **Q PLEASE STATE YOUR OCCUPATION.**

5 A I am a consultant in the field of public utility regulation and a Principal with the firm of
6 Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

7 **Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL**
8 **EMPLOYMENT EXPERIENCE.**

9 A I received a Bachelor of Science Degree in Electrical Engineering from the Washington
10 University in St. Louis/University of Missouri - St. Louis Joint Engineering Program. I
11 have also received a Master of Science Degree in Applied Economics from Georgia
12 Southern University.

13 I have attended training seminars on multiple topics including class cost of
14 service, depreciation, power risk analysis, production cost modeling, cost-estimation
15 for transmission projects, transmission line routing, MISO load serving entity
16 fundamentals and more.

17 I am a member and a former President of the Society of Depreciation
18 Professionals. I have been awarded the designation of Certified Depreciation
19 Professional ("CDP") by the Society of Depreciation Professionals. I am also a certified
20 Engineer Intern in the State of Missouri.

21 As an Associate at BAI, and as a Senior Consultant, Consultant, Associate
22 Consultant and Assistant Engineer before that, I have been involved with several

1 regulated and competitive electric service issues. These have included book
2 depreciation, fuel and purchased power cost, transmission planning, transmission line
3 routing, resource planning including renewable portfolio standards compliance, electric
4 price forecasting, class cost of service, power procurement, and rate design. This has
5 involved use of power flow, production cost, cost of service, and various other analyses
6 and models to address these issues, utilizing, but not limited to, various programs such
7 as Strategist, RealTime, PSS/E, MatLab, R Studio, ArcGIS, Excel, and the United
8 States Department of Energy/Bonneville Power Administration's Corona and Field
9 Effects ("CAFÉ") Program. In addition, I have received extensive training on the
10 PLEXOS Integrated Energy Model and the EnCompass Power Planning Software. I
11 have provided testimony on many of these issues before the Public Service
12 Commissions in Arizona, Arkansas, California, Colorado, Florida, Illinois, Indiana,
13 Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Montana, New Mexico,
14 Oklahoma, South Carolina, Texas, and Washington DC.

15 BAI was formed in April 1995. BAI provides consulting services in the
16 economic, technical, accounting, and financial aspects of public utility rates and in the
17 acquisition of utility and energy services through RFPs and negotiations, in both
18 regulated and unregulated markets. Our clients include large industrial and institutional
19 customers, some utilities and, on occasion, state regulatory agencies. We also prepare
20 special studies and reports, forecasts, surveys and siting studies, and present seminars
21 on utility-related issues.

22 In general, we are engaged in energy and regulatory consulting, economic
23 analysis and contract negotiation. In addition to our main office in St. Louis, the firm
24 also has branch offices in Corpus Christi, Texas; Louisville, Kentucky and Phoenix,
25 Arizona.

**CPS Energy Howard Road to San Miguel 345-KV Transmission Line Project
Paralleling Data**

Route (1)	Length (2)	Length of ROW parallel and adjacent to existing transmission line ROW (3)	Length of ROW parallel and adjacent to other existing ROW (roadways) (4)	Length of ROW parallel and adjacent to apparent property lines (or other natural or cultural features, etc.) (5)	Length Not Parallel to Existing Transmission Lines (6) = (2) - (1)	Length Not Parallel to Existing Transmission Lines or other existing ROW (roads, rail, etc.) (7) = (6) - (4)	Length not Parallel all compatible ROW including apparent property lines (8) = (7) - (5)
Route A	47.77	1.67	2.51	17.29	46.10	43.58	26.29
Route B	56.67	0.36	6.22	18.90	56.31	50.09	31.19
Route C	50.71	1.78	2.43	15.68	48.92	46.49	30.81
Route D	55.95	0.48	6.56	19.34	55.47	48.91	29.57
Route E	55.81	5.97	6.56	16.31	49.84	43.28	26.98
Route F	53.42	0.11	4.75	18.12	53.31	48.56	30.43
Route G	52.23	4.63	5.12	16.98	47.60	42.47	25.49
Route H	50.05	1.78	2.76	18.36	48.27	45.51	27.15
Route I	50.81	2.27	4.67	15.67	48.54	43.87	28.20
Route J	58.92	1.36	12.21	17.82	57.56	45.35	27.53
Route K	49.78	11.23	0.60	12.30	38.55	37.95	25.65
Route L	49.02	9.19	2.47	16.54	39.83	37.36	20.82
Route M	46.99	9.19	1.58	15.81	37.80	36.22	20.41
Route N	47.47	9.19	1.58	14.64	38.27	36.69	22.05
Route O	47.60	4.47	4.95	12.07	43.13	38.18	26.12
Route P	50.48	4.47	6.02	12.33	46.01	40.00	27.66
Route Q	48.23	4.47	2.85	14.34	43.76	40.91	26.57
Route R	45.32	4.47	2.23	14.64	40.85	38.62	23.99
Route S	49.05	4.72	2.06	12.44	44.33	42.26	29.82
Route T	47.90	5.98	2.77	10.23	41.92	39.15	28.92
Route U	49.15	10.21	2.67	14.85	38.94	36.26	21.41
Route V	50.47	7.14	6.03	12.98	43.34	37.31	24.33
Route W	49.44	7.14	4.81	14.72	42.31	37.50	22.78
Route X	50.85	7.14	4.52	13.84	43.71	39.19	25.36
Route Y	48.87	7.14	2.73	12.09	41.73	39.00	26.91
Route Z	49.05	10.21	0.60	11.05	38.84	38.24	27.19
Route AA	49.34	7.14	2.73	10.92	42.21	39.48	28.56
Route AB	49.88	4.95	4.24	14.60	44.92	40.68	26.08
Route AC	48.35	5.98	2.55	10.35	42.38	39.82	29.47
Route AD	48.64	2.90	4.69	10.22	45.75	41.06	30.84
Route AE	51.03	0.49	9.32	11.13	50.54	41.23	30.10
Route AF	50.66	6.89	5.47	15.84	43.78	38.31	22.47
Route AG	50.64	0.49	10.43	12.79	50.15	39.72	26.93
Route AH	56.19	5.86	6.31	17.99	50.33	44.02	26.02

Exhibit BCA-2

Howard Road to San Miguel 345-kV Transmission Project

Legend

- Segments
- Route N
- Route U

