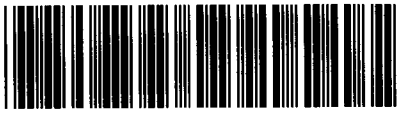

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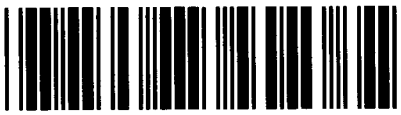

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PUC DOCKET NO. 41606

APPLICATION OF ELECTRIC TRANSMISSION TEXAS, LLC AND SHARYLAND UTILITIES, L.P. TO AMEND THEIR CERTIFICATES OF CONVENIENCE AND NECESSITY FOR THE PROPOSED NORTH EDINBURG TO LOMA ALTA DOUBLE-CIRCUIT 345-KV TRANSMISSION LINE IN HIDALGO AND CAMERON COUNTIES, TEXAS	§	**BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS**

2013 JUL -3 PM 4:47

DIRECT TESTIMONY

OF

BARRETT A. THOMAS

ON BEHALF OF

ELECTRIC TRANSMISSION TEXAS, LLC

AND

SHARYLAND UTILITIES, L.P.

July 3, 2013

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Barrett A. Thomas. My business address is 212 East Sixth Street, Tulsa, Oklahoma 74119.

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

A. I am employed by American Electric Power Service Company (AEPSC), a wholly-owned subsidiary of American Electric Power Company, Inc. (AEP), as a Transmission Line Project Engineer in the Projects Engineering division. As relevant to my testimony, AEPSC provides transmission engineering design, construction and project management services to the nine utility operating companies of AEP and also to Electric Transmission Texas, LLC (ETT).

Q. PLEASE DESCRIBE YOUR JOB RESPONSIBILITIES, PARTICULARLY AS THEY RELATE TO YOUR TESTIMONY IN THIS PROCEEDING.

A. I am responsible for the engineering and design of some of the transmission lines that are assigned to AEPSC's Tulsa office. This includes transmission lines in the Electric Reliability Council of Texas (ERCOT).

Q. ARE YOU AND YOUR STAFF RESPONSIBLE FOR THE ENGINEERING AND DESIGN OF THE PROJECT INVOLVED IN THIS PROCEEDING?

A. Yes, we are responsible for ETT's segment or portion of the transmission line project in this proceeding.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS, BUSINESS EXPERIENCE AND PREVIOUS TESTIMONY BEFORE THIS COMMISSION.

A. I acquired a Bachelor of Science in Electrical Engineering from Oklahoma State University in 1999. I am a registered Professional Engineer in the State of Texas and in the State of Oklahoma. I began my career working for American Electric Power-Public Service Company of Oklahoma as a Distribution Engineer in February 2000. I worked in this capacity for eight years before transferring to my current position with AEPSC in January 2008 as a Transmission Line Engineer. As stated previously, in my current position I am responsible for the engineering and design of some of the transmission lines that are assigned to AEPSC's Tulsa office.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony addresses several aspects of ETT's segment of the North Edinburg to Loma Alta double-circuit capable 345-kV transmission line project (the Project) that ETT is undertaking along with Sharyland Utilities, L.P. (Sharyland) (together referred to as Joint Applicants), including:

- Joint Applicants' decision to use 2-954.0 ACSR conductor;
- Joint Applicants' proposed use of single-pole transmission structures; and
- ETT's cost estimates for its portion of the proposed line routes.

Q. WHAT DO YOU MEAN WHEN YOU REFER TO ETT'S PORTION OF THE PROJECT?

A. I mean that part of the Project for which ETT is responsible. As Mark Caskey and Teresa Trotman explain in their direct testimony, Joint Applicants are undertaking the Project as a joint effort, with each electric utility company being responsible for 50 percent of the length of the Project. ETT will build and operate the western portion of the Project and Sharyland the eastern portion of the Project. The precise dividing line will not be established until the final route is approved.

Q. WHAT PORTIONS OF THE APPLICATION IN THIS DOCKET DO YOU SPONSOR OR CO-SPONSOR?

A. I co-sponsor the answers to Question Nos. 5 (in part) and 13 (in part) and Attachment 5 (in part) of the Application. In addition to sponsoring these portions of the Application, I supplied information to POWER Engineers, Inc. for Figures 1.2 and 1.3 and Sections 1.3 through 1.5 of the Environmental Assessment (EA) that is included with Joint Applicants' Application in this proceeding.

Q. WERE YOUR TESTIMONY AND THE INFORMATION YOU HAVE BEEN IDENTIFIED AS SPONSORING PREPARED BY YOU OR BY KNOWLEDGEABLE PERSONS UNDER YOUR SUPERVISION AND UPON WHOSE EXPERTISE, JUDGMENT AND OPINIONS YOU RELY IN PERFORMING YOUR DUTIES?

A. Yes, they were.

Q. IS THE INFORMATION THAT IS CONTAINED IN YOUR TESTIMONY AND THAT YOU ARE SPONSORING TRUE AND CORRECT TO THE BEST OF YOUR KNOWLEDGE AND BELIEF?

A. Yes, it is.

III. CONDUCTOR SELECTION

Q. WHAT CONDUCTOR ARE THE JOINT APPLICANTS PROPOSING TO INSTALL ON THE PROJECT?

A. The Joint Applicants propose to install 2-954.0 kcmil ACSR "Cardinal" conductor on the Project.

Q. WHY IS THIS CONDUCTOR TYPE PROPOSED?

A. This conductor type was chosen for two main reasons. First this conductor's emergency rating of 1939 MVA exceeds the 1600 MVA emergency rating requested by ERCOT. Second, it is the same conductor type that is being used for the Lobo to North Edinburg 345-kV transmission line that ETT is constructing. Thus, this type of conductor is sufficient to meet the demands for the Project.

Q. WHAT IS THE NORMAL AND EMERGENCY CURRENT RATING FOR THIS CONDUCTOR?

A. The normal current rating is 2224 amps at 95 degrees Celsius, and the emergency current rating is 3245 amps at 150 degrees Celsius.

IV. STRUCTURE SELECTION

Q. PLEASE DESCRIBE THE TRANSMISSION STRUCTURE THE JOINT APPLICANTS PLAN TO USE ON THIS PROJECT.

A. The Joint Applicants plan to use single-pole (also known as monopole) structures rather than lattice structures for the majority of the Project. As the name suggests, a single-pole structure is a single steel pole, while a lattice structure is a framework of multiple steel bars bolted together to form a transmission tower. Sharyland has indicated that it may use a limited number of steel lattice structures where Sharyland determines appropriate for engineering or other considerations. ETT does not anticipate a need to use steel lattice structures for its section of the Project. Diagrams of these structures are included in Figures 1-2 and 1-3 of the EA.

Q. WHAT FACTORS LED TO THE JOINT APPLICANTS' DECISION TO USE A SINGLE-POLE STRUCTURE?

A. Several factors led to this decision. First, feedback from landowners along the alternative routes overwhelmingly supported selection of single-pole rather than lattice structures. As discussed in Mr. Caskey's and Ms. Trotman's direct testimony, Applicants held public meetings in the Cities of McAllen, Mercedes, Harlingen, Brownsville and Edinburg, Texas concerning the Project. At each of those meetings, Applicants solicited public input concerning preferred transmission structures, among other things. Approximately 86 percent of the landowners that expressed an opinion concerning structure type preferred single-pole structures. Many respondents

expressed concern about the larger footprint of lattice towers in agricultural areas and expressed a preference for single-pole structures from an aesthetic perspective.

The construction schedule and completion target date for this critical Project also contributed to the selection of single-pole structures, which are generally simpler to construct than lattice towers.

V. ESTIMATED COST AND ENGINEERING OF THE PROPOSED ROUTES

Q. WHAT IS THE ESTIMATED COST RANGE FOR ETT'S SEGMENT OF THE PROJECT?

A. The estimated cost range for ETT's segment of the proposed transmission line depends on the route approved by the Public Utility Commission of Texas (PUCT). The approved route will determine not only the length and distance of the transmission line as a whole but also the dividing point to separate ETT's and Sharyland's segments of the Project.

A cost estimate for ETT's segment would include the costs of acquiring right-of-way, materials and supplies, labor and transportation, engineering and administration. The shortest alternative route is Route 22 at a total length of 96.3 miles. ETT's estimated line cost for its 50 percent share of that alternative route is $157,462,000. The longest alternative route is Route 12 at a total length of 124.5 miles. ETT's estimated line cost for its 50 percent share of that alternative route is $190,058,000. The estimated line lengths and estimated line costs for each alternative route filed with the PUCT are broken down in more detail in Attachment 5 of the Application. Attachment 5 also includes the estimated cost impact of mutual

coupling on other paralleled transmission facilities, which Mr. Caskey discusses and adds to the total estimated cost for each line route.

Q. PLEASE DESCRIBE THE INPUT USED TO DETERMINE THE COST ESTIMATES FOR THE ETT SEGMENTS FOR THE PROPOSED LINE ROUTES?

A. ETT's transmission line cost estimates for its segment of the Project were developed from manufacturers' recent quotes for similar construction materials and labor and cost data from past comparable projects. An estimated annual inflation rate was applied to the labor and materials costs through the targeted construction date. Besides estimated costs for materials and labor, estimated costs were included for right of way acquisition, right of way clearing, reclamation and damages, overheads, and allowances for funds used during construction or AFUDC.

In this specific area, four primary factors have increased the estimated costs per mile for this project higher than other typical 345-kV projects: (1) real estate values in the Lower Rio Grande Valley (LRGV) (a fast growing rural and urban mix area) have significantly increased the easement cost; (2) coastal wind loading resulting from tropical storms and hurricanes that have historically occurred in this region requires more and/or larger steel poles; (3) the dense residential and commercial development in portions of the LRGV have resulted in a significant number of turns and short spans to avoid obstacles, which has significantly increased the number of more expensive angle structures and tangent structures; and (4) the areas where there is significant irrigated agricultural production, which includes citrus orchards, results in higher cost estimates for crop damages and restoration.

Q. DO THE ESTIMATED COSTS PROVIDED IN THE APPLICATION REFLECT THE ACTUAL TRANSMISSION PROJECT COSTS FOR THE ROUTES TO BE CONSTRUCTED?

A. No. The costs are only estimates. Since the approved line route has not yet been determined by the PUCT, surveying and the detailed engineering design for ETT's segment of the proposed line has not been performed. This will be completed once the final route has been approved by the PUCT.

Once the PUCT approves a route and the final engineering design is completed, construction bids will be received and construction costs will be updated in the PUCT Monthly Construction Report entry for this project. Actual costs will be supplied to the PUCT once the transmission line construction has been completed in this same report. Until that point, the costs reflected in the Application and in my testimony are only estimates.

Q. DO YOU BELIEVE ETT'S ESTIMATED LINE COSTS DISCUSSED ABOVE ARE REASONABLE?

A. Yes. I believe ETT's estimated line costs are reasonable based on my experience with projects that require similar construction activities.

Q. DOES ETT'S PORTION OF THE PROJECT ADEQUATELY CONSIDER ELECTRICAL EFFICIENCY AND RELIABILITY?

A. Yes, ETT'S portion of the Project adequately considers electrical efficiency and reliability. A transmission line constructed on any of the alternative routes will be engineered so that the line itself will be electrically efficient and reliable. Obviously,

various factors, such as line length and number of angle structures, will make lines located on some alternative routes less cost-efficient than others. However, any of the alternative routes can be engineered so that electrical efficiency and reliability will be adequate for that route.

Q. DOES THE TRANSMISSION LINE DESIGN FOR ETT'S PORTION OF THE PROJECT MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL SAFETY CODE (NESC)?

A. Yes. Design for ETT's portion of the Project meets or exceeds the requirements for construction as defined in the NESC. However, the NESC is a safety code and not a design guide, so additional design criteria will be used, including the American National Standards Institute (ANSI) standards, ETT and AEPSC standard practices, and such practices as required by federal, state, and local governments and agencies.

VI. SUMMARY AND CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The Joint Applicants decision to use 2-954.0 kcmil ACSR "Cardinal" for the Project is reasonable for the reasons discussed above. In addition, ETT has provided a reasonable estimate of the range of costs for its portion of this transmission line Project based on current labor and material projections, anticipated easement costs, and associated impacts on transmission construction costs from the general area where the alternative routes occur.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.