Control Number: 51023

Item Number: 374

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SOAH DOCKET NO. 473-21-0247
PUC DOCKET NO. 51023

APPLICATION OF THE CITY OF SAN ANTONIO TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE SCENIC LOOP 138-KV TRANSMISSION LINE IN BEXAR COUNTY	§	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

DIRECT TESTIMONY AND EXHIBITS

OF

SCOTT D. LYSSY, P.E. #103637

ON BEHALF OF

APPLICANT
CPS ENERGY

November 6, 2020

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DIRECT TESTIMONY AND EXHIBITS OF SCOTT D. LYSSY, P.E.

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EXHIBITS

Exhibit SDJ-1: Resume of Scott D. Lyssy

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Scott D. Lyssy, P.E. My business address is 500 McCullough, San Antonio, Texas 78215.

Q. WHAT IS YOUR CURRENT OCCUPATION?

A. I am employed by the City of San Antonio (City), acting by and through the City Public Service Board (CPS Energy) as the Manager of Civil Engineering.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. My educational and professional qualifications are outlined in Exhibit SDJ-1 attached to this testimony.

Q. PLEASE STATE YOUR CURRENT JOB RESPONSIBILITIES.

A. I lead an engineering team that is responsible for designing and building new CPS Energy electrical substations and maintaining nearly 100 existing substations within the system. I am also responsible for designing the transmission structure foundations and the right-of-way (ROW) improvements necessary to safely construct, access, and maintain CPS Energy's transmission lines.

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE COMMISSION?

A. No, I have not.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of CPS Energy to address certain aspects of the proposed Scenic Loop 138 kilovolt (kV) Transmission Line Project in Bexar County (Project). My

testimony will provide or support technical elements of the Application on behalf of CPS Energy.

Q. WHAT QUALIFIES YOU TO REPRESENT CPS ENERGY IN THIS PROCEEDING?

A. My qualifications are described in my resume, included hereto as Exhibit SDJ-1.

II. SCOPE AND PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe the engineering, design, and cost aspects of the Project, including:

(1) the design of the proposed Project;

(2) the proposed transmission line structures and ROW widths;

(3) engineering and technical considerations associated with the alternative Scenic Loop substation locations;

(4) engineering considerations and permits for the proposed Project; and

(5) estimated costs for the proposed Project.

Q. WHAT PORTIONS OF CPS ENERGY'S APPLICATION TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY (CCN) FOR THE PROJECT DO YOU SPONSOR?

A. I sponsor the responses to Questions 5 and 13 in the Application. I also co-sponsor the response to Questions 4 and 7 with Mr. Adam Marin and Mr. George Tamez, the response to Question 6 with Mr. Marin and Ms. Lisa Meaux, the response to Question 8 with Mr. Tamez, the response to Question 17 with Mr. Marin, Ms. Meaux, and Mr. Tamez, and the response to Questions 20 and 23 with Ms. Meaux. I co-sponsor Section 1 of the *Scenic Loop 138 kV Transmission Line and Substation Project Environmental Assessment and Alternative Route Analysis Bexar County, Texas* (EA) prepared by POWER Engineers, Inc. (POWER), which is included with the Application as Attachment 1, with Mr. Marin, Ms. Meaux, and Mr. Tamez. I also sponsor Attachment 3 to the Application. Please refer to Exhibit ARM-5 in Mr. Marin's direct testimony for an overview of CPS Energy sponsorship of the Application in this case.

Q. WERE YOUR TESTIMONY AND THE PORTIONS OF THE APPLICATION YOU SPONSOR PREPARED BY YOU OR BY KNOWLEDGEABLE PERSONS UPON WHOSE EXPERTISE, JUDGMENT, AND OPINIONS YOU RELY IN PERFORMING YOUR DUTIES?

A. Yes, they were.

Q. IS THE INFORMATION CONTAINED IN YOUR TESTIMONY AND THE PORTIONS OF THE APPLICATION YOU SPONSOR TRUE AND CORRECT TO THE BEST OF YOUR KNOWLEDGE AND BELIEF?

A. Yes, it is.

III. DESCRIPTION OF THE PROJECT

Q. PLEASE DESCRIBE THE PROJECT.

A. CPS Energy proposes to construct, own, and operate a new double circuit 138 kV electric transmission line in Bexar County, Texas. The Project will connect a new Scenic Loop Substation at or near the intersection of Scenic Loop Road and Toutant Beauregard Road to the existing transmission system at the existing Ranchtown to Menger Creek 138 kV transmission line approximately five miles to the west. Figure 1-1 of the EA shows the location and extent of the Project. Alternative locations for the proposed Scenic Loop Substation are identified on Figures 2-3 and 4-1 of the EA. The entire project will be approximately 4.6 to 6.9 miles in length, depending on the route approved by the Commission.

CPS Energy proposes to install two new 138 kV circuits on new structures. The new 138 kV circuits are currently proposed to be constructed with 2 - 795 kcmil ACSS/TW "Drake" conductors per phase (or similar appropriate conductor) and two ground wires (or OPGW) per structure.

IV. STRUCTURE TYPE AND ROW WIDTH

Q. WHAT TYPICAL STRUCTURE TYPE DOES CPS ENERGY PROPOSE TO USE FOR THIS PROJECT?

A. CPS Energy proposes to construct the Project primarily with 138 kV double circuit steel

monopole structures. Pole structures have a smaller foot print than H-frames and lattice towers. The use of steel poles, which can be delivered in sections to be assembled during construction, are proposed for the Project over concrete because of the rugged terrain and limited access locations in certain areas of the Project.

General structure types and configurations anticipated for the Project are included in Figures 1-2 through 1-5 of the EA. In some areas, such as rugged terrain, shorter than typical, taller than typical, or alternative structure types may be utilized.

Q. WHAT TYPICAL ROW WIDTH DOES CPS ENERGY PROPOSE TO USE FOR THIS PROJECT?

A. The new double circuit 138 kV transmission facilities will typically be constructed on new ROW within 100 foot easements and using spans that will typically range from approximately 600 to 1,000 feet. This ROW width for a new 138 kV transmission line is representative of CPS Energy's rights-of-way in this type of suburban project area. CPS Energy uses this ROW width for safe access to the transmission line structures and to provide the necessary clearances between the conductor and structures and vegetation outside of the controlled ROW.

In certain situations, constraints such as terrain, other physical constraints, or other considerations may require ROW widths and span lengths less or more than the typical ranges above (e.g., canyon crossings and road crossings). If such situations are encountered, the safe and reliable operation and maintenance of the transmission line must be considered along with any constraint.

Actual easement widths will be determined during the detailed design phase of the Project. Access easements and/or temporary construction easements may be needed in some areas as well.

Q. DOES CPS ENERGY OWN OR CONTROL ANY EXISTING EASEMENT, ROW, OR PROPERTY ALONG ANY OF THE PROPOSED ROUTE SEGMENTS?

A. Not at this time. However, the owner of the property on which Segment 42 is located has agreed to donate approximately 2,059 feet of ROW for CPS Energy's use if a route is approved that uses Segment 42 as part of the route. Thus, the percent of the ROW currently

"available" to CPS Energy for the Project varies from 0 percent to approximately 8.51 percent. Routes B, D, G, I, J, M, T, Z and AA all include Segment 42 and would include the donated ROW as part of any of those routes.

Q. DURING THIS STAGE OF THE APPLICATION PROCESS, DO YOU KNOW THE LOCATION OR DESIGN OF EACH STRUCTURE THAT WOULD POTENTIALLY BE REQUIRED FOR THE PROJECT?

A. No. The precise footprint, height, and location of each new structure will be determined after the issuance of a final order in this docket during the detailed design phase when light detection and ranging (LIDAR) survey data and supplemental ground survey data are available in order to fully evaluate all constraints.

Q. DOES CPS ENERGY PLAN TO OVERBUILD EXISTING DISTRIBUTION LINES?

A. Not at this time. CPS Energy's typical practice is to construct transmission lines on their own structures in their own easements adjacent to existing distribution lines. No co-location of transmission and distribution facilities is currently anticipated for the Project.

V. ENGINEERING CONSIDERATIONS

Q. WHAT ENGINEERING CONSIDERATIONS WILL BE USED IN THE DESIGN OF THE PROJECT?

A. CPS Energy will design the Project to meet or exceed industry-accepted standards and specifications for operating the proposed transmission facilities in a safe and reliable manner, including the National Electrical Safety Code (NESC) as published by the Institute of Electrical and Electronics Engineers (IEEE) and including other applicable IEEE standards. The Project will be constructed in a manner that complies with all state and federal statutes and regulations applicable to transmission line construction and operation.

Q. HOW WILL CPS ENERGY DETERMINE THE FINAL ALIGNMENT OF THE ROUTE APPROVED BY THE COMMISSION?

A. Upon Commission approval, engineers for CPS Energy will begin detailed design of the Project and develop an alignment based on the approved route. This will involve gathering

detailed survey information, including locations of above-ground, at-grade, and sub-surface constraints and precise property line locations, as well as any locations of environmental and cultural resources.

Q. HOW DOES CPS ENERGY PROPOSE TO CONSTRUCT THE PROJECT?

A. CPS Energy will construct the Project in accordance with any specific requirements set forth in a final order from the Commission approving the Project and generally as described in Section 1 of the EA.

Q. ARE YOU AWARE OF ANY CONSTRAINTS THAT WOULD PROHIBIT CONSTRUCTION OF THE PROJECT ALONG ANY OF THE PRIMARY ALTERNATIVE ROUTE SEGMENTS INCLUDED IN THE APPLICATION?

A. No. I am not aware of any engineering constraints along any of the primary alternative route segments that would prohibit CPS Energy from safely and reliably constructing, operating, and maintaining the proposed transmission line facilities. CPS Energy has significant experience with designing, permitting, constructing, and operating transmission lines in this type of environment, including consideration of hunting, ranching, and agricultural operations; steep and rocky terrain; floodplains, creeks, rivers, lakes, and stock ponds; horseback riding and other recreational activities; sensitive and endangered species; archeological and historical sites and resources; commercial, residential, and school areas; highway and roadway crossings; and communication towers.

Q. WILL ANY ADDITIONAL PERMITS OR APPROVALS BE REQUIRED FOR THE PROJECT AND, IF SO, WHEN WILL THEY BE OBTAINED?

A. Yes. Following Commission approval of the Project, permits or other agency actions will be required and will be obtained prior to construction during the design phase of the Project, when specific structure locations and heights have been determined. Permits or regulatory approval may be required from the following agencies:

- Texas Department of Transportation
- General Land Office
- Texas Commission on Environmental Quality
- United States Army Corps of Engineers

- United States Fish & Wildlife Service
- Texas Historical Commission
- Federal Aviation Administration

The potential permits or regulatory approvals are described in more detail in response to Question 20 of the Application and Section 1.6 of the EA.

Q. PLEASE DESCRIBE THE PLANNED DESIGN OF THE SCENIC LOOP SUBSTATION.

A. The proposed Scenic Loop Substation will be designed as a three-unit site with one 138/35 kV, 100-MVA transformer and one 4-feeder switchgear. The substation will be looped into the existing Ranchtown to Menger Creek 138 kV transmission line, requiring two 138 kV line terminals. The substation will include one 138 kV circuit switcher and a 2000-A main bus design. It will also be configured for future installation of a 138 kV capacitor bank. Figure 1-6 in the EA shows an example of a substation layout similar to what will be constructed at the Scenic Loop site

Q. PLEASE DESCRIBE THE FACILITIES THAT WILL BE REQUIRED TO CONNECT THE PROJECT TO THE EXISTING RANCHTOWN TO MENGER CREEK 138 kV TRANSMISSION LINE.

A. The project will connect to the existing Ranchtown to Menger Creek 138 kV transmission line. Two new poles will be installed along the existing Ranchtown to Menger Creek line. From the new poles, the circuits will be routed to the new Scenic Loop Substation at or near the intersection of Scenic Loop Road and Toutant Beauregard Road.

VI. COST ESTIMATES

Q. WHAT ARE CPS ENERGY'S ESTIMATED COSTS FOR THE PROJECT?

A. CPS Energy's estimated costs for the transmission line portion of the Project range from approximately $24.8 million to $41.3 million (see Application Attachment 3, Table 3), with route lengths ranging from approximately 4.6 to 6.9 miles. CPS Energy's estimated costs for the substation portion of the Project range from approximately $9.8 million to $11.0 million (see Application Attachment 3, Table 4). All of the estimated costs for the Project

are presented in Attachment 3 to the Application, ranging from approximately $38.4 million to $56.2 million depending on the route. The combination of estimated transmission line costs (Table 3 plus a 10 percent project contingency for each category except "other") and corresponding substation costs (Table 4) provides the total estimated cost for each route of the Project.

Q. WHAT INFORMATION DID YOU USE AS A BASIS FOR DEVELOPING THE COST ESTIMATES?

A. I used information from a variety of sources, including segment data from the EA and geographic information system (GIS) analysis, preliminary designs, estimated per-acre land acquisition costs, and estimated unit costs for labor, material, and construction based on recent CPS Energy project experience.

Q. WHAT COST ESTIMATES DID YOU USE FOR THE REAL ESTATE COMPONENT OF THE PROJECT?

A. The real estate cost estimates for the Project were based on recent land sales in and near the project study area and provided to me by CPS Energy real estate professionals with guidance from a real estate appraiser that CPS Energy often uses on this type of transmission line project. The real estate estimates for each tract are a per square foot cost based on the size, location, and type of property.

Q. ARE THE REAL ESTATE COST ESTIMATES INCLUDED IN THE APPLICATION INTENDED TO REFLECT WHAT CPS ENERGY WILL ACTUALLY PAY EACH INDIVIDUAL LANDOWNER?

A. No. While the cost estimates I used in the Application reflect a reasonable estimate for property values within the study area generally, the ROW costs that I used for cost estimating purposes for the Application should not be viewed or considered as appraised, calculated costs for any specific individual parcel.

Upon selection of a final route by the Commission, CPS Energy will determine the precise placement of the alignment on each parcel and, based on property values established by an independent appraisal of each parcel, will make individual offers to each

affected landowner. CPS Energy will negotiate in good faith with each affected landowner to acquire the necessary ROW.

Q. DO THE TRANSMISSION LINE COST ESTIMATES INCLUDE COSTS ASSOCIATED WITH POTENTIAL ENDANGERED SPECIES MITIGATION?

A. Yes. The potential construction-related effects to the federally listed (endangered) Golden-cheeked Warbler can be authorized and mitigated through consultation with the U.S. Fish and Wildlife Service. The cost estimates included in the Application include estimated mitigation costs associated with the federally listed endangered Golden-cheeked Warbler, where applicable.

Q. DO YOU FIND THE TRANSMISSION LINE COST ESTIMATES TO BE REASONABLE?

A. Yes, I do. The estimates were prepared using input from CPS Energy staff and outside experts with expertise in different disciplines, including real estate, environmental, and construction. I reviewed the components of the transmission line cost estimates and found the cost estimates for the various routes to be reasonable and consistent with engineering practices and market conditions in effect on the filing date. The estimates may be relied on by the Commission as a basis to compare the costs of routes.

Q. ARE THERE FACTORS THAT COULD AFFECT THE ESTIMATED TRANSMISSION LINE COSTS PRESENTED IN THE APPLICATION?

A. Yes. Changes in market conditions, including construction labor and/or the cost of metals or other natural resources, as well as changes in land use and any modifications necessary to comply with the Commission's final order, could increase or decrease costs above or below the estimates contained in the Application.

VII. SUMMARY AND CONCLUSION

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. CPS Energy proposes to construct, own, and operate a new 138 kV electric transmission line in Bexar County, Texas. The Project will connect the new Scenic Loop Substation to the existing Ranchtown to Menger Creek 138 kV transmission line located approximately

five miles to the west via a looped double circuit 138 kV transmission line. The entire project will be approximately 4.6 to 6.9 miles in length, depending on the final route approved.

CPS Energy will install two new 138 kV circuits on new, single pole structures. The new 138 kV circuits are currently proposed with 2-795 kcmil ACSS/TW "Drake" conductor per phase and two shield wires per structure. Brown colored steel poles on 100-foot wide easements are generally proposed. In some areas, depending on terrain and other engineering constraints, alternative structure types may be utilized and easement widths may be more or less than typical. Actual structure types and easement widths will be determined during the detailed design phase of the Project.

The Project cost estimates are reasonable and consistent with engineering practices and market conditions in effect on the filing date.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Educational and Professional Experience for Scott D. Lyssy, P.E.

Professional Experience @ CPS Energy

Manager of Civil Engineering
CPS Energy, San Antonio, Texas *June 2018 - Present*

- Serve as engineering manager for substation and transmission projects
- Financial leadership role by overseeing the budget for substation and transmission projects
- Develop contracts for engineering and construction services
- Coordinate and manage engineering consultants
- Provide technical guidance to colleagues

Procurement Analysist – Supply Chain
CPS Energy, San Antonio, Texas *2017 - 2018*

- Created Contracts and Purchase Orders for services and materials, created RFP's, developed statements of work
- Created solicitations, evaluated contractors and produced complete purchasing documents
- Negotiated costs and services with consultants, contractors, and vendors to get the best value

Electrical Transmission Line Engineer
CPS Energy, San Antonio, Texas *2014 - 2017*

- Promoted and established a safe work environment
- Created RFP's, developed scopes of work, developed contracts, and created service entries for consultants and contractors for all types of services and materials
- Created cost estimates for transmission line construction and materials
- Signed and sealed design work
- Designed and oversaw the construction and maintenance of transmission lines
- Analyzed and determined loading on steel and concrete structures
- Interpreted geotechnical data and design foundations for the transmission structures
- Reviewed shop drawings for transmission structures and related components
- Assisted with ROW acquisitions and routing new transmission lines
- Managed, reviewed, mitigated, and approved plats, site plans, utility conflicts, and encroachments
- Worked with all permitting entities prior to and during construction projects
- Ensured that all SWPPP requirements met and followed

Civil Engineer
CPS Energy, San Antonio, Texas *July 2012 – 2014*

- Prepared and managed budget and schedule for substation projects
- Created cost estimates for electrical substation construction projects
- Designed foundations for large transmission monopole structures and lattice towers
- Reviewed material submittals and shop drawings for transmission structures
- Provided QA for engineering consultant's design plans for new electrical substation sites
- Designed and drafted civil site plans for several new substations projects
- Evaluated and contracted with civil construction contractors for civil site work construction
- Developed substation footprints
- Worked with all permitting entities prior to and during site construction
- Familiar with SW3P requirements
- Familiar with Edwards Aquifer Authority requirements
- Familiar with SPCC requirements for substation projects
- Provided QA and inspections of contractor's work

Professional Experience Prior to Employment at CPS Energy

Bridge Engineer
Texas Department of Transportation, San Antonio, Texas *2010 - 2012*

- Designed bridges and bridge components such as bridge abutment caps, interior bent caps, bridge slabs, bridge beams and traffic rails
- Designed drilled shaft pier foundations and spread footing foundations for support of bridges and retaining walls
- Experienced in the maintenance of existing bridges, culverts and concrete structures
- Experienced in the construction of new bridges and culverts
- Experienced in reinforced concrete design and steel design in accordance to LRFD
- Experienced in geotechnical design and can interpret geotechnical field data for designing pier foundations and retaining walls
- Developed complete bridge plan sets, cost estimates and construction schedules
- Conducted cost benefit analysis for existing bridges and feasibility studies for new projects

Project Manager
Texas Department of Transportation, San Antonio, Texas *2009*

- Project manager for large Interstate Highway improvement project
- Responsible for budget and hitting project costs
- Ensured that all traffic safety and environmental issues where addressed
- Managed the project to ensure that construction adhered to all state and federal regulations and specifications
- Developed change orders and reviewed contractor bid price submittals for additional work required for the project
- Oversaw the monthly payments to the contractor
- Conducted weekly project status meetings
- Addressed comments and concerns of the traveling public
- Met with the local citizens routinely to inform them of the status of the project and addressed their concerns
- Provided final acceptance of the work
- Performed Employee evaluations
- Conducted supervisory duties over several state employees

Project Field Inspector
Texas Department of Transportation, San Antonio, Texas *2008*

- Conducted field oversight of TxDOT construction projects throughout the San Antonio area
- Analyzed plans and contracts to ensure construction was in compliance with state and federal regulations
- Conducted concrete testing and obtained certification to test concrete strength, slump and air entrainment
- Experienced with roadway construction using asphalt hotmix, one and two course surface treatments, reinforced concrete pavement and flexible base materials
- Obtained certification and training to test soil densities using a nucular density gauge
- Experienced in strutural concrete construction

Project/Roadway Designer
Texas Department of Transportation, San Antonio, Texas *2007*

- Designed highway construction plans, specifications, and created cost estimates for new construction projects and maintenance projects
- Developed plan sheets, profiles, cross-sections and cost estimates for the projects
- Design projects included bridge replacements, culvert replacements, roadway widening, traffic control plans, overlay jobs, seal coat jobs, full depth road rehabilitation

Driveway/Access and Utility Permits Coordinator
Texas Department of Transportation, San Antonio, Texas *2006*

- Reviewed and approved driveway/access, drainage, sidewalk and landscape permits
- Reviewed and approved utility (subsurface and overhead) crossing permits
- Reviewed proposed commercial and residential development plans to ensure that they would have no negative impact to the traveling public, environment, TxDOT roadway, or drainage systems.
- Worked closely with designers and consultants throughout the city to mitigate drainage, access and various other issues to ensured that all TxDOT design criteria was followed

Engineering Associate
Vickrey & Associates Civil Engineering Consultants, San Antonio *2005 - 2006*

- Responsible for annual project budget
- Design of public utilities (SAWS and Bexar Met), consisting of new installs, water and sewer rehabilitation projects, water and sewer relocation projects, sewer lift stations and force main projects
- Residential subdivision design
- TxDOT roadway design
- Designed private utilities (water and sewer)
- Commercial development design
- Platting of subdivisions
- Surveying
- Detention pond design
- Subsurface drainage design
- Surface drainage design
- Developed site plans and grading plans

Education

Texas A&M University-Kingsville (2001-2004)
B.S. in Civil Engineering
GPA: 3.25 – Cum Laude

Coastal Bend College – Beeville, Texas (1999 to 2001)

Poth High School (1999)
Advanced diploma, graduated with honors

Professional Credentials

Registered Professional Engineer in the State of Texas - #103637

EIT certification, 2004