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APPLICATION OF AEP TEXAS, INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE ANGSTROM TO NAISMITH DOUBLE-CIRCUIT 345-KV TRANMISSION LINE IN SAN PATRICIO COUNTY	§ § § § § § §	**BEFORE THE STATE OFFICE** **OF** **ADMINISTRATIVE HEARNGS**

ERRATA TO THE DIRECT TESTIMONY OF JOHN POOLE

The Staff (Staff) of the Public Utility Commission of Texas (Commission) files the following Errata to the Direct Testimony of John Poole, originally filed on December 22, 2021. The errata corrects Mr. Poole's testimony to include attachments JP-1 through JP-4 which were inadvertently omitted from his testimony when originally filed on December 22, 2021 A clean version of Mr. Poole's testimony, including all attachments, is attached hereto.

Dated: January 6, 2022

Respectfully submitted,

PUBLIC UTILITY COMMISSION OF TEXAS
LEGAL DIVISION

Rachelle Nicolette Robles
Division Director

/s/ Kevin R. Bartz
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SOAH DOCKET NO. 473-22-0493
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CERTIFICATE OF SERVICE

I certify that, unless otherwise ordered by the presiding officer, notice of the filing of this document was provided to all parties of record via electronic mail on January 6, 2022, in accordance with the Order Suspending Rules, issued in Project No. 50664.

/s/ Kevin R. Bartz
Kevin R. Bartz

PUC STAFF EXHIBIT NO. 1
SOAH DOCKET NO. 473-22-0493
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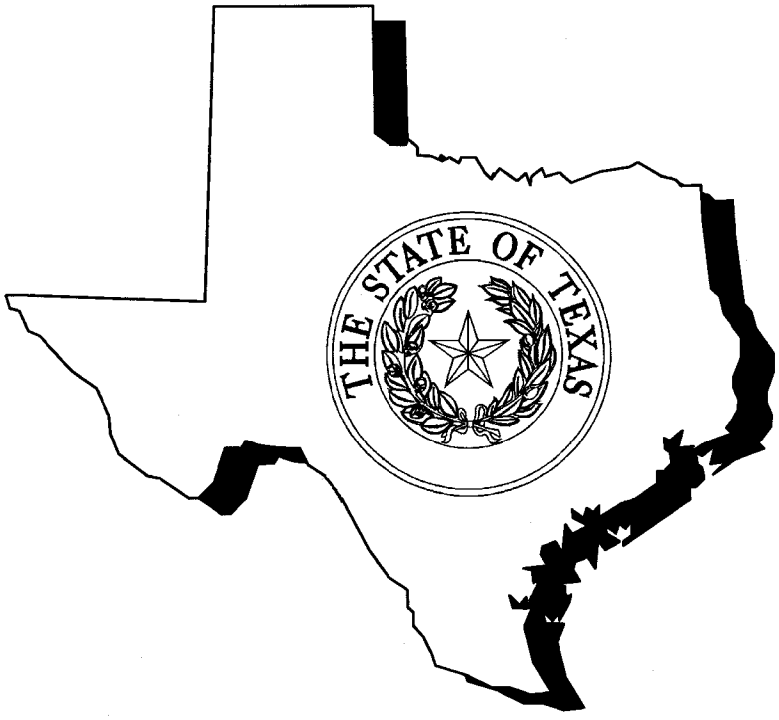
APPLICATION OF AEP TEXAS, INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE ANGSTROM TO NAISMITH DOUBLE-CIRCUIT 345-KV TRANSMISSION LINE IN SAN PATRICIO COUNTY	§	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**



DIRECT TESTIMONY OF

JOHN POOLE, P.E., ENGINEER

INFRASTRUCTURE DIVISION

PUBLIC UTILITY COMMISSION OF TEXAS

DECEMBER 22, 2021

000001

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ATTACHMENTS

I. STATEMENT OF QUALIFICATIONS

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

A. My name is John Poole. I am employed by the Public Utility Commission of Texas (Commission) as an Engineer within the Infrastructure Division. My business address is 1701 North Congress Avenue, Austin, Texas 78701.

Q. Please briefly outline your educational and professional background.

A. I have a Bachelor of Science degree in Electrical Engineering. I completed my degree in December of 2014 and have been employed at the Commission since February of 2015. A more detailed resume is provided in Attachment JP-1.

Q. Are you a registered professional engineer?

A. Yes, I am a registered Professional Engineer in Texas. My member number is 133982.

Q. Have you previously testified as an expert before the Commission?

A. Yes. A list of previous testimony is provided in Attachment JP-2.

II. SCOPE OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present Commission Staff's recommendations

concerning the application of AEP Texas Inc. (AEP Texas) to amend its Certificate of Convenience and Necessity (CCN) to construct a new 345 kilovolt (kV) transmission line to be built doubt circuit capable structures in San Patricio County, Texas (proposed project). This transmission line will start at the existing AEP Texas Angstrom Substation, located approximately 0.5 mile north of State Highway 188 and approximately 4.0 miles east of the City of Sinton, Texas. The transmission line will then extend in a southeasterly direction for between 15.56 to 22.83 miles to the proposed AEP Texas Naismith Substation to be located approximately 2.5 miles north-northeast of Gregory, Texas and approximately 0.3 miles north of State Highway 35 in Patricio County, Texas.[1]

Q. What is the scope of your testimony?

A. The scope of my testimony is to provide Commission Staff's recommendation regarding the need for the project and regarding selection of routes from among the alternative routes presented by AEP Texas.

Q. What are the statutory requirements that a utility must meet to amend its CCN to construct a new transmission line?

A. Section 37.056(a) of the Public Utility Regulatory Act (PURA)[2] states that the Commission may approve an application for a CCN only if the Commission finds

[1] *Application of AEP Texas Inc. to Amend its Certificate of Convenience and Necessity for the Angstrom to Naismith Double-Circuit 345-kV Transmission Line in San Patricio County* at 4 (Application).

[2] Public Utility Regulatory Act, Tex. Util. Code Ann. §§ 11.001-66.016 (PURA).

that the CCN is necessary for the service, accommodation, convenience, or safety of the public. Further, PURA provides that the Commission shall approve, deny, or modify a request for a CCN after considering the factors specified in PURA § 37.056(c), which are as follows:

(1) The adequacy of existing service;

(2) The need for additional service;

(3) The effect of granting the certificate on the recipient of the certificate and any electric utility serving the proximate area; and

(4) Other factors, such as:

(A) Community values;

(B) Recreational and park areas;

(C) Historical and aesthetic values;

(D) Environmental integrity;

(E) The probable improvement of service or lowering of cost to consumers in the area if the certificate is granted; and

(F) To the extent applicable, the effect of granting the certificate on the ability of this state to meet the goal established by PURA § 39.904(a).

Q. Do the Commission's rules provide any instruction regarding routing criteria?

A. Yes. 16 Texas Administrative Code (TAC) § 25.101(b)(3)(B) requires that an application for a new transmission line address the criteria in PURA § 37.056(c),

and that upon considering those criteria, engineering constraints and costs, the line shall be routed to the extent reasonable to moderate the impact on the affected community and landowners, unless grid reliability and security dictate otherwise. The following factors shall be considered in the selection of AEP Texas' alternative routes:

(i) Whether the routes parallel or utilize existing compatible rights-of-way for electric facilities, including the use of vacant positions on existing multiple-circuit transmission lines;

(ii) Whether the routes parallel or utilize existing compatible rights-of-way, including roads, highways, railroads, or telephone utility rights-of-way;

(iii) Whether the routes parallel property lines or other natural or cultural features; and

(iv) Whether the routes conform with the policy of prudent avoidance.

Q. What issues identified by the Commission must be addressed in this docket?

A. In the Order of Referral and Preliminary Order filed on October 19, 2021, the Commission identified the following issues that must be addressed:

1. Is the applicant' s application to amend its CCN adequate? Does the application contain an adequate number of reasonably differentiated alternative routes to conduct a proper evaluation? In answering this question, consideration must be given to the number of proposed alternatives, the locations of the proposed transmission line, and any

associated proposed transmission facilities that influence the location of the line. Consideration may also be given to the facts and circumstances specific to the geographic area under consideration and to any analysis and reasoned justification presented for a limited number of alternative routes. A limited number of alternative routes is not in itself a sufficient basis for finding an application inadequate when the facts and circumstances or a reasoned justification demonstrates a reasonable basis for presenting a limited number of alternatives. If an adequate number of routes is not presented in the application, the ALJ must allow the applicant to amend the application and to provide proper notice to affected landowners; however, if the applicant chooses not to amend the application, then the ALJ may dismiss the case without prejudice.

2. Did the applicant provide notice of the application in accordance with 16 TAC § 22.52(a)(1), (2), and (3)?

3. Did the applicant provide notice of the public meeting in accordance with 16 TAC § 22.52(a)(4)?

4. What were the principal concerns expressed in the questionnaire responses received at or after any public meetings held by the applicant regarding the proposed transmission facilities?

5. Taking into account the factors set out in the Public Utility Regulatory Act (PURA) § 37.056(c), are the proposed transmission facilities necessary for the service, accommodation, convenience, or safety of the public within the

meaning of PURA § 37.056(a)? In addition, please address the following issues:

a. How do the proposed transmission facilities support the reliability and adequacy of the interconnected transmission system?

b. Do the proposed transmission facilities facilitate robust wholesale competition?

c. What recommendation, if any, has an independent organization, as defined in PURA § 39.151, made regarding the proposed transmission facilities?

d. Are the proposed transmission facilities needed to interconnect a new transmission service customer?

6. Are the proposed transmission facilities the better option to meet this need when compared to using distribution facilities? If the applicant is not subject to the unbundling requirements of PURA § 39.051, are the proposed transmission facilities the better option to meet the need when compared to a combination of distributed generation and energy efficiency? In answering this issue, if the proposed transmission facilities include a radial transmission line to serve load, please address the following:

a. The data used to calculate the applicant's load-growth projections that support the need for a transmission-line solution;

b. The date, origin, and relevance of the data used to calculate the applicant's load-growth projections;

c. The assumptions made and relied on to generate the load-growth projections, including but not limited to the assumed rates of load growth, the factors (if any) applied to calculate forecasted loads for new developments in the need study area, and adjustments (if any) made to forecasted loads to account for customer load served by any other electric utilities also providing electric service within the applicant's need study area;

d. The location, described in writing and depicted on a map, of the boundaries and all existing transmission facilities (including proposed substations or switching stations) within the need study area used for the load-growth projections;

e. If included in the applicant' s load-growth projections, the nature, scope, and location depicted on a map of the following loads:

i. the applicant' s current consumers,

ii. the applicant' s pending load request, and

iii. future development projects included in the applicant's load-growth projections;

f. The location depicted on a map of the existing load center, the load center including existing load and currently requested loads, and the load center including existing load, currently requested loads, and the applicant's projected load growth;

g. The location and identity of any existing transmission lines, whether inside or outside the need study area, that are as close as, or

closer to, any load-serving substation proposed in this application compared to the existing transmission line or substation used for the proposed interconnection or tap;

h. The location and identity of any existing substations with remaining transformer capacity, whether inside or outside the need study area, that are as close as, or closer to, any load-serving substation proposed in this application compared to the existing transmission line or substation used for the proposed interconnection or tap;

i. If other utilities are providing distribution service within the applicant's need study area, are the other utilities' distribution facilities described in writing and depicted on a map that identifies the location and nature of the facilities;

j. An analysis of the feasibility, design, and cost effectiveness of a distribution-voltagelevel alternative that uses the same point(s) of interconnection or tap and endpoint(s) and that is routed along the same alternative routes as the transmission-level radial line that is requested to be approved;

k. The applicant's planning study or other reports reflecting the nature and scope of new-build distribution facilities or existing distribution-facility upgrades necessary for projected load growth anticipated before the projected load growth that is the basis for this application; and

l. A comparative cost analysis between all new-build distribution facilities or existing distribution-facility upgrades and the proposed radial transmission facilities that segregates the distribution-alternative costs to support the pending load requests and specific future development loads from general load growth in the need study area.

7. Weighing the factors set forth in PURA § 37.056(c) and 16 TAC § 25.101(b)(3)(B), which proposed transmission-line route is the best alternative?

8. Are there alternative routes or configurations of facilities that would have a less negative effect on landowners? What would be the incremental cost of those routes or configurations of facilities?

9. If alternative routes or configurations of facilities are considered because of individual landowners' preferences, please address the following issues:

a. Have the affected landowners made adequate contributions to offset any additional costs associated with the accommodations?

b. Have the accommodations to landowners diminished the electric efficiency of the line or reliability?

10. Did the Texas Parks and Wildlife Department provide any recommendations or informational comments regarding this application in accordance with section 12.0011(b) of the Texas Parks and Wildlife Code? If so, please address the following issues:

a. What modifications, if any, should be made to the proposed transmission facilities as a result of any recommendations or comments?

b. What conditions or limitations, if any, should be included in the final order in this docket as a result of any recommendations or comments?

c. What other disposition, if any, should be made of any recommendations or comments?

d. If any recommendation or comment should not be incorporated in the proposed transmission facilities or the final order, should not be acted on, or is otherwise inappropriate or incorrect in light of the specific facts and circumstances presented by this application or the law applicable to contested cases, please explain why that is the case.

11. What permits, licenses, plans, or permission will be required for construction and operation of the proposed transmission facilities? If any alternative route requires permission or an easement from a state or federal agency, please address in detail the following:

a. What agency is involved, and what prior communication has the applicant had with the agency regarding the proposed transmission facilities?

b. Has the agency granted the required permission or easement? If not, when is a decision by the agency expected?

c. What contingencies are in place if the agency does not grant the required permission or easement or if the process to obtain the required permission or easement would materially affect the estimated cost, proposed design plans, or anticipated timeline to construct the proposed transmission facilities?

12. Is any part of the proposed transmission facilities located within the coastal management program boundary as defined in 31 TAC § 503.1(a)? If so, please address the following issues:

a. Do the facilities comply with the goals and applicable policies of the Coastal Management Program in accordance with 16 TAC § 25.102(a)?

b. Will the facilities have any direct and significant effects on any of the applicable coastal natural resource areas specified in 31 TAC § 501.3(b)?

13. Are the circumstances for this line such that the seven-year limit discussed in section III of this Order should be changed?

14. Will anything occur during construction that will preclude or limit a generator from generating or delivering power or that will adversely affect the reliability of the ERCOT system?

15. If complete or partial agreement of the parties is reached on a route that relies on modifications to the route segments as noticed in the application, please address the following issues:

a. Did the applicant comply with the additional notice requirements of 16 TAC § 22.52(a)(2) and (a)(3)(C)?

b. Was written consent obtained from landowners directly affected by the proposed modifications to the route segments?

Q. Which issues in this proceeding have you addressed in your testimony?

A. I have addressed the issues from the Order of Referral and Preliminary Order and the requirements of PURA § 37.056, 16 TAC § 25.101, 16 TAC § 25.102.

Q. What have you relied upon or considered to reach your conclusions and make your recommendation?

A. I have relied upon my review and analysis of the data contained in AEP Texas' application and the application's accompanying attachments, including the *Environmental Assessment* (EA)[3] prepared by Power Engineers (Power). I have also relied upon my review of the direct testimonies and statements of position filed in this proceeding by or on behalf of AEP Texas and the intervenors, responses to requests for information, and the letters from the Texas Parks and Wildlife Department (TPWD) to Ms. Rachelle Robles, dated December 7, 2021.[4]

III. CONCLUSIONS AND RECOMMENDATIONS

[3] *Amended Application of AEP Texas Inc. to Amend its Certificate of Convenience and Necessity for the Angstro to Naismith Double-Circuit 345-kV Transmission Line in San Patricio County* at Attachment 1 (Amended Application).

[4] Attachment JP-3.

Q. Based on your evaluation of AEP Texas' application and other relevant material, what conclusions have you reached regarding the application and the proposed project?

1. I conclude that the application is adequate and that AEP Texas' proposed alternative routes are adequate in number and geographic diversity.
2. I conclude that the application complies with the notice requirements in 16 TAC § 22.52(a).
3. I conclude that, taking into account the factors set out in PURA § 37.056(c), the proposed project is necessary for the service, accommodation, convenience and safety of the public.
4. I conclude that the proposed project is the best option to meet the need when compared with other alternatives.
5. I conclude that Route 16 is the best route when weighing, as a whole, the factors set forth in PURA § 37.056(c)(4) and in 16 TAC § 25.101(b)(3)(B).
6. I conclude that this project appears to be compliance with 16 TAC § 25.102 and consistent with the goals and policies of the Texas Coastal Management Program, pending the results of a field survey.
6. I conclude that TPWD provided mitigation measures regarding the application, and that the mitigation measures provided on pages 17 through 20 of my testimony, as well as mitigation measures mentioned in the environmental concerns on pages 34 through 37 of my testimony, are sufficient to address TPWD's mitigation recommendations. I also conclude

that AEP Texas has the resources and procedures in place in order to accommodate the mitigation recommendations.

Q. What recommendation do you have regarding AEP Texas' application?

A. I recommend that the Commission approve AEP Texas' application to amend its CCN in order to construct a new 345-kV transmission line to be built on double circuit capable structures in San Patricio County, Texas. I also recommend that the Commission order AEP Texas to construct the proposed project on Route 16 (Segments A, C, D, I, J, BH, W, Z, AI, AJ, AL, BA, BD, BE1, and BE2). I further recommend that the Commission include in its order approving AEP Texas' application the following paragraphs in order to mitigate the impact of the proposed project:

1. AEP Texas shall conduct surveys, if not already completed, to identify pipelines that could be affected by the transmission lines and coordinate with pipeline owners in modeling and analyzing potential hazards because of alternating-current interference affecting pipelines being paralleled.
2. If AEP Texas encounters any archeological artifacts or other cultural resources during project construction, work must cease immediately in the vicinity of the artifact or resource, and the discovery must be reported to the Texas Historical Commission. In that situation, AEP Texas must take action as directed by the Texas Historical Commission.
3. AEP Texas must follow the procedures to protect raptors and migratory birds as outlined in the following publications: *Reducing Avian Collisions*

with Power Lines: The State of the Art in 2012, Edison Electric Institute and Avian Power Line Interaction Committee, Washington, D.C. 2012; *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*, Edison Electric Institute, Avian Power Line Interaction Committee, and the California Energy Commission, Washington, D.C. and Sacramento, CA 2006; and *Avian Protection Plan Guidelines*, Avian Power Line Interaction Committee and United States Fish and Wildlife Service, April 2005. AEP Texas must take precautions to avoid disturbing occupied nests and take steps to minimize the burden of construction on migratory birds during the nesting season of the migratory bird species identified in the area of construction.

4. AEP Texas must exercise extreme care to avoid affecting non-targeted vegetation or animal life when using chemical herbicides to control vegetation within rights-of-way. AEP Texas must ensure that the use of chemical herbicides to control vegetation within the rights-of-way complies with rules and guidelines established in the Federal Insecticide Fungicide and Rodenticide Act and with Texas Department of Agriculture regulations.

5. AEP Texas must minimize the amount of flora and fauna disturbed during construction of the transmission line, except to the extent necessary to establish appropriate right-of-way clearance for the transmission line. In addition, AEP Texas must revegetate, using native species and must consider landowner preferences and wildlife needs in doing so.

Furthermore, to the maximum extent practical, AEP Texas must avoid adverse environmental influence on sensitive plant and animal species and their habitats, as identified by the Texas Parks and Wildlife Department and the United States Fish and Wildlife Service.

6. AEP Texas must implement erosion control measures as appropriate. Erosion control measures may include inspection of the right-of-way before and during construction to identify erosion areas and implement special precautions as determined necessary. AEP Texas must return each affected landowner's property to its original contours and grades unless otherwise agreed to by the landowner or the landowner's representative. AEP Texas is not required to restore the original contours and grades where a different contour or grade is necessary to ensure the safety or stability of the project's structures or the safe operation and maintenance of the lines.

7. AEP Texas must use best management practices to minimize the potential impacts to migratory birds and threatened or endangered species.

8. AEP Texas must cooperate with directly affected landowners to implement minor deviations from the approved route to minimize the burden of the transmission line. Any minor deviations from the approved route must only directly affect landowners who were sent notice of the transmission line in accordance with 16 TAC § 22.52(a)(3) and landowners that have agreed to the minor deviation.

9. AEP Texas must report the transmission line approved by the Commission

on its monthly construction progress reports before the start of construction to reflect the final estimated cost and schedule in accordance with 16 TAC § 25.83(b). In addition, AEP Texas must provide final construction costs and include any necessary explanation for cost variance upon completion of construction once all costs have been identified.

10. AEP Texas must, to the greatest extent practicable, span any coastal wetlands or submerged aquatic vegetation as defined by 31 TAC § 501.3(b) and Texas Water Code (TWC) § 11.502.

11. AEP Texas must avoid or minimize any potential impacts to any coastal wetlands or submerged aquatic vegetation through utilization of Best Management Practices (BMPs) and its Stormwater Pollution Prevention Plan (SWPP).

12. AEP Texas must coordinate with the United States Army Corps of Engineers (USACE) prior to clearing and construction to ensure compliance with applicable requirements in order to avoid, minimize, and mitigate impacts to waters of the United States and Coastal Natural Resource Areas (CNRAs), including associated coastal wetlands and special hazard areas.

Q. Does your recommended route differ from the routes that AEP Texas and Power believe best addresse the requirements of PURA and the Commission's rules?

A. It differs from AEP Texas but it is the same as Power's recommendation. AEP

Texas identified Route 17, and Power identified Route 16, as the routes that best addresses the requirements of PURA and the Commission's rules.[5]

IV. PROJECT JUSTIFICATION

A. DESCRIPTION OF THE PROJECT

Q. Please describe the proposed project.

A. The proposed project will consist of a new 345-kV transmission line to be built on double circuit capable BOLD Lattice structures.[6] This transmission line will start at the existing AEP Texas Angstrom Substation located approximately 0.5 mile north of State Highway 188 and approximately 4.0 miles east of the City of Sinton, Texas. The transmission line will then extend in a southeasterly direction for between 15.56 to 22.83 miles to the proposed AEP Texas Naismith Substation to be located approximately 2.5 miles north-northeast of Gregory, Texas and approximately 0.3 miles north of State Highway 35 in Patricio County, Texas.

Q. Does AEP Texas' application contain a number of proposed alternative routes sufficient to conduct a proper evaluation?

A. Yes.

Q. Is the proposed project located within the incorporated boundaries of any

[5] Application at 11-12.

[6] Application at 5.

municipality?

A. No. None of the proposed alternative routes would be constructed with the boundaries of any municipality.[7]

B. TEXAS COASTAL MANAGEMENT PROGRAM

Q. Does any part of this project lie within the Texas Coastal Management Program (TCMP) boundary?

A. Yes. All of the proposed alternative routes for this project are located within the TCMP boundary as defined by 31 TAC § 503.1. Additionally, all of the proposed alternative routes for this project are located seaward of the Coastal Facilities Designation Line as defined in 31 TAC § 19.2(a)(22). The following CNRAs are located along proposed alternative routes: coastal wetlands, special hazard areas, and mud flats.[8]

Q. Are any CNRAs located along Route 16?

A. Yes. EA, Power stated that potential CRNAs within the TCMP boundary along Route 16 include special hazard areas within the Federal Emergency Management Agency mapped 100-year floodplains and coastal wetlands.[9] Route 16 crosses 0.32 miles of FEMA mapped 100-year floodplains within the TCMP boundary on Links A and J. Route 16 crosses 0.02 miles of National Wetlands Inventory (NWI)

[7] Amended Application at 7.

[8] Application, Attachment 1 at 118.

[9] *Id.* at 119.

mapped wetlands within the TCMP boundary on Link A and AL.[10]

Q. How does AEP Texas propose to minimize impacts to CNRAs?

A. AEP Texas proposes to wetlands and to use timber matting during construction in areas that contain CNRAs. AEP Texas does not anticipate that the proposed project will have a significant impact on CNRAs with these mitigation measures.[11]

Q. If constructed along Route 16, is the project compliant with 16 TAC § 25.102 and consistent with the goals and policies of the TCMP?

A. A field survey of the segments will be necessary to confirm where coastal wetlands are precisely located on either route as well as confirm the practicality of spanning them. However, selecting a route that minimizes the length it spans wetlands and the 100-year floodplain within the TCMP can assist AEP Texas to achieve compliance with 16 TAC § 25.102, and provide consistency with the goals and policies of the TCMP. Route 16 contains 0.01 miles (52.80 feet) across NWI mapped wetlands, and 0.32 miles across 100-year floodplains which is tied for the shortest distance in both categories and tied for the shortest distance potentially crossing CNRAs.[12]

Without a field survey, we cannot know precisely if this project built along any route is in compliance with 16 TAC § 25.102, or if it is consistent with the goals

[10] *Id.*,, Attachment 1 at Table 4-1.

[11] *Id.*, Attachment 1 at 119.

[12] *Id.*, Attachment 1 at 119.

and policies of the TCMP. However, I can concludebased on the information currently provided that the project—if built along Route 16 or another route that minimizes the length spanning CNRAs—appears to be in compliance with 16 TAC § 25.102 and consistent with the goals and policies of the TCMP.

Q. Are there any proposed alternative routes or segments that give you concern with regards to compliance with 16 TAC § 25.102 and consistentency with the goals and policies of the TCMP?

A. Yes. Although AEP Texas and POWER have indicated their intent to span CNRAs and mitigate their impacts,[13] I have some concern about the ability to span the 0.39 miles of wetlands within the TCMP identified on Link AB, which is used in Route 1, depending on how contingouos those wetlands are.[14] Further, because each of the proposed routes utilize Link A—which crosses a tributary of the Aransas River, Chiltipin Creek—AEP Texas may require a United States Army Corps of Engineers Section 10 permit.[15]

C. NEED FOR THE PROJECT

Q. Could you briefly summarize the need for the project?

A. Yes. As stated in the application, the propose project is needed as part of a larger project. The Corpus Christi North Shore Project is needed to serve large industrial

[13] Application Attachment 1 at 119.

[14] Application, Attachment 1 at Table 4-1.

[15] Application at 14.

customers with the addition of a projected 370 megawatts (MW) of load by 2022, a projected 400 MW in the Sinton area needing service in the fourth quarter of 2023, and another 528 MW of load in the Gregory/Portland area in 2024.[16]

Q. Has an independent organization, as defined in PURA § 39.151, determined that there is a need for the proposed project?

A. Yes. This project was one of several transmission alternatives to address the load growth submitted to the Electric Reliability Council of Texas (ERCOT) Regional Planning Group (RPG) for review as part of the Corpus North Shore Project.[17] After a review of AEP Texas' proposal and description of the need for the project, ERCOT designated the Corpus North Shore Project as a critical project for reliability.[18] The ERCOT RPG reviewed five different options to address the load growth issues presented by AEP Texas.[19]

Q. Are the proposed facilities necessary for the service, accommodation, convenience, or safety of the public within the meaning of PURA § 37.056(a)?

A. Yes. In my opinion, and based on the data and load projections provided by AEP Texas and the ERCOT RPG in Attachments 4a and 4b of the application, it is evident that this project is necessary and is the best way to address the reliability issues resulting from the load growth in the area.

[16] Application at 8.

[17] *Id.*

[18] Application, Attachment 4 at 24.

[19] Application at 8-9.

D. PROJECT ALTERNATIVES

Q. Did AEP Texas consider distribution alternatives to the proposed project?

A. Distribution alternatives were not considered viable alternatives to provide service to the industrial loads that are driving the load growth to be addressed by this project.[20]

Q. What transmission alternatives did the ERCOT RPG review in its selection of the proposed project?

A. AEP Texas presented three proposed projects to address the need in its study to the ERCOT RPG in September 2019.[21] The ERCOT RPG considered each of these, updated them, and added two more options. These options were as follows:

1. A new Angstrom 345-kV substation tapped into the 345-kV line from Whitepoint to STP; a new second 345/138-kV transformer at the Whitepoint substation; and a reconductor 69-kV line from Blessing to Palacios (2.9 miles).
2. A new 345-kV Angstrom substation tapped into the Whitepoint to STP 345-kV line; a new 345/138-kV Naismith substation; two new 345/138-kV transformers at Naismith; two new 138-kV circuits on a double-circuit tower from Naismith to Resnik (approximately 3 miles); one new 345-kV line from Angstrom to Naismith (approximately 17 miles); one new 345-

[20] Application at 9.

[21] Application Attachment 4a at 16-17.

kV line from Naismith to Whitepoint (approximately 8 miles); and a new second 345/138-kV transforrner at the Whitepoint substation.

3. A new 345-kV Angstrom substation tapped into the Whitepoint to STP 345-kV line; a new 345/138-kV Naismith substation; two new 345/138-kV transformers at Naismith; two new 138-kV circuits on a double-circuit tower from Naismith to Resnik (approximatey 3 miles); two new 345-kV circuits on a double-circuit tower from Grissom to Angstrom (approximately 17 miles); one new 345-kV line on a double-circuit tower from Angstrom to Naismith (approximately 19 miles); one new 345-kV line on a double-circuit tower from Naismith to Whitepoint (approximately 8 miles); one new 345-kV line installed on the double-circuit tower between Angstrom and Naismith continuing on the double-circuit tower between Naismith and Whitepoint, but only electrically connecting Angstrom to Whitepoint (approximately 26 miles); and a new second 345/138-kV transformer at the Whitepoint substation.

4. A new 345-kV Angstrom substation tapped into the Whitepoint to STP 345-kV line. A new 345/138-kV Naismith substation; two new 345/138-kV transformers at Naismith. Two new 138-kV circuits on a double-circuit tower from Naismith to Resnik (approximately 3 miles); one new 345-kV line on a double-circuit tower from Grissom to Angstrom (approximately 17 miles); one new 345-kV line on a double-circuit tower from Angstrom to Naismith (approximately 19 miles); and a new second 345/138-kV transformer at the Whitepoint substation.

5. A new 345-kV Angstrom substation tapped into the Whitepoint to STP 345-kV line. One new 345-kV line on a double-circuit tower from Grissom to Angstrom (approximately 17 miles). A new second 345/138-kV transformer at the Whitepoint substation. Reconductor 69 kV line from Blessing to Palacios (approximately 2.9 miles).

Each of these options were reviewed under a typically anticipated maintenance scenario, and ERCOT found that Options 1, 2, and 5 were projected to have thermal violations under these conditions and that Option 5 would have additional voltage violations.[22] ERCOT did further investigations on Option 3 and Option 4 performance plus capital costs, and ERCOT eventually selected Option 4 as the most cost effective and least expensive option to resolve the reliability issues created by the load growth.[23] On June 9, 2020 the ERCOT Board of Directors endorsed the Corpus Christi North Shore Project as defined by Option 4, of which the proposed project is a part.[24]

Q. Do you agree that the proposed project is the best option when compared to other alternatives?

A. Yes.

V. ROUTING

[22] Application Attachment 4b at 13.

[23] Application Attachment 4b at 17.

[24] Application Attachment 4b at 1.

A. STAFF RECOMMENDATION

Q. What routes do you recommend upon considering all factors, including the factors in PURA § 37.056(c) and 16 TAC § 25.101(b)(3)(B)?

A. Based on my analysis of all the factors that the Commission must consider under PURA § 37.056 and 16 TAC § 25.101, I recommend that Route 16 be approved for the proposed project. The basis for my recommendation is discussed in more detail in the remainder of my testimony.

Q. Which route did AEP Texas and Power select as the route that best addresses the requirements of PURA and the Commission's rules?

A. AEP Texas selected Route 17 and Power selected Route 16 as the routes that they believe best address the requirements of PURA and the Commission's rules.[25]

B. COMMUNITY VALUES

Q. Has AEP Texas sought input from the local community regarding community values?

A. Yes. AEP Texas held two public meetings as required by 16 TAC § 22.52(a)(4). The meetings were held virtually due to safety considerations resulting from the ongoing COVID-19 pandemic. The meetings were both held over WebEx on February 18, 2021 from 12:00pm to 1:30pm and 6:00pm to 7:30pm and a recording of the meeting was left on the project website.[26] AEP Texas sent notice

[25] Application Attachment 1 at 89.

[26] Application at 16.

of the meeting to 316 landowners owning property within 500 feet of each of the preliminary alternative route segment centerlines.[27] A total of 15 individuals attended the meeting live virtually and AEP Texas received 23 questionnaire responses.[28]

Q. Did members of the community who attended the public meeting or intervene in this case express concerns about the proposed project?

A. Section 3.3.2 of Attachment 1 of the application, the EA, contains a discussion and summary of the questionnaire responses. 16 of the respondents said the regulatory process of the PUC was adequately explained in the open meeting, while two said that it was not. 17 of the respondents said that the purpose of the project was adequately explained while one said it was not. 15 of the respondents said that the process AEP Texas used to develop proposed routing links was adequately explained while three said it was not.[29]

The respondents were asked to rank 15 criteria in routing the project that they considered to be the most important.[30] The most important were: minimizing length across cropland; maximizing distance from residences, businesses, and schools; maximizing length along property boundary lines; minimizing impacts on streams and rivers; maximizing length along highways or other roads; and

[27] Application Attachment 1 at 89-90.

[28] Application Attachment 1 at 90.

[29] Application Attachment 1 at 91.

[30] Application Attachment 1 at 91.

maximizing length along existing transmission lines.[31]

Q. In your opinion, would construction of the proposed project on Route 16 mitigate the concerns expressed by members of the community at the open houses and in comments by intervenors?

A. In my opinion, Route 16 would mitigate some of the concerns I have summarized here. Route 16 crosses the 6th least amount of cropland of any of the proposed alternative routes at 16.16 miles of its 17.69 miles. Route 16 has the smallest number of habitable structures within 500 feet of its centerline of any of the proposed routes at 5. Route 16 has the 9th highest percentage of its length running parallel and adjacent to existing transmission line right-of-way, apparent property lines, and other existing right-of-way (including roadways) at 49.26% of its total length.[32]

I will specifically address additional issues regarding recreational and park areas, historical values, aesthetic values, environmental integrity, engineering constraints, costs, moderation of impact on the affected community and landowners, and right-of-way later in my testimony.

Q. Are property values and the impact on future or potential development factors that are considered by the Commission in a CCN proceeding under PURA § 37.056(c)(4) or in 16 TAC § 25.101(b)(3)(B)?

[31] Application Attachment 1 at 91.

[32] Application, Attachment 1 at Table 4-1.

A. No. PURA and the Commission's rules do not list these two issues as factors that are to be considered by the Commission in a CCN proceeding. However, these rules do require consideration of using or paralleling existing right-of-way, which may minimize concerns about the impact on property values or planned development.

Q. Are there any routes that did not receive specific opposition from intervenors?

A. No.

C. RECREATIONAL AND PARK AREAS

Q. Are any parks or recreational areas located within 1,000 feet of the centerline of any of the alternative routes?

A. No. No parks or recreational areas are within the study area nor within 1,000 feet of the centerline of any of the proposed routes.[33]

D. HISTORICAL VALUES

Q. Are there possible impacts from the proposed project on archeological and historical values, including known cultural resources crossed by any of the proposed alternative routes or that are located within 1,000 feet of the centerline of any of the alternative routes?

A. There are 10 previously recorded archeological or historical sites within 1,000 feet

[33] Amended Application at 16.

of the centerline of any of the proposed alternative routes.[34] There are no cemeteries or properties listed on the National Register of Historic Places within 1,000 feet of any of the centerlines of any proposed alternative routes.[35] Additionally, no route crosses any recorded archeological or historical site.[36] Route 16 has zero archeological or historical sites located within 1,000 feet of its centerline, which is tied with six other proposed alternative routes.[37] The other proposed alternative routes range from seven routes, including Route 16, having zero to Route 1 which has 5 historical or archeological sites within 1,000 feet of its centerline.[38] Route 16 has the second least length crossing areas of high archeological potential at 2.87 miles. The length of the proposed alternative routes that cross areas of high archeological potential ranges from 2.50 miles for Route 6 to 5.06 miles for Route 20.[39]

If any further archeological or cultural resources are found during construction of the proposed transmission line, AEP Texas should immediately cease work in the vicinity of the archeological or cultural resources, and should immediately notify the Texas Historical Commission.

E. AESTHETIC VALUES

[34] Application Attachment 1 at 113.

[35] Application at 17.

[36] Application at 17.

[37] Application Attachment 1 at Table 4-1.

[38] Application Attachment 1 at Table 4-1.

[39] Application Attachment 1 at Table 4-1.

Q. In your opinion, which of the proposed alternative routes would result in a negative impact on aesthetic values, and which portions of the study area will be affected?

A. In my opinion, all of the proposed alternative routes would result in a negative impact on aesthetic values, some routes more than others, depending on the visibility from homes and public roadways. Temporary effects would include views of the actual transmission line construction (e.g. assembly and erection of the structures) and of any clearing of right-of-way. Permanent effects would involve the visibility of the structures and the lines. I therefore conclude that aesthetic values would be impacted throughout the study area, and that these temporary and permanent negative aesthetic effects will occur on any proposed alternative routes approved by the Commission. However, Route 16 is tied with nine other routes for the least of its length estimated to be in the foreground visual zone of US and State Highways, tied with 15 other routes for the least of its length in the foreground visual zone of parks and recreational areas, and has the 6th least of its length within the foreground visual zone of farm-to-market roads.[40]

F. ENVIRONMENTAL INTEGRITY

Q. Please provide a general description of the area traversed by the proposed alternative routes.

A. The area traversed by the project is within the Coastal Prairies Sub-Province of the Gulf Coastal Plains Physiographic Province. The Coastal Prairies Sub-Province is

[40] Application Attachment 1 at Table 4-1.

characterized by level terrain with deltaic sand and mud bedrock types. The study area has its lowest elevation of approximately 10 feet above mean sea level to 50 feet above mean sea level.[41]

Q. What was involved in your analysis of the environmental impact of the proposed project?

A. I reviewed the information provided in the application and the EA, the direct testimonies and statements of position of the intervenors, responses to requests for information, and the letters from TPWD to Ms. Rachelle Robles, dated December 7, 2021.[42]

Q. Based on your review of the information identified above, in your opinion, will the proposed project present a significant negative impact to environmental integrity?

A. I do not believe so. Transmission lines do not often create many long-term impacts on soils. Most of those impacts will be during intial construction and would be erosion and soil compaction; however, AEP Texas will employ erosion control during initial construction.[43] Impacts on vegetation would be the result of clearing and maintaining the right-of-way, and the length of upland woodland or brushland along the right-of-way of the proposed alternative routes ranges from 0 miles for

[41] Application at 49.

[42] Attachment JP-3.

[43] Application Attachment 1 at 116-117.

Route 7 to 0.52 miles for Route 3.[44] The length of bottomland or riparian woodlands along the right-of-way of the proposed alternative routes ranges from 0 miles feet for Routes 8, 10, 14, and 15 to 0.20 miles for Routes 3, 11, and 19.[45] Power does not anticipate encountering endangered or threatened plant or animal species in the study area, and in the unlikely event they are encountered, AEP Texas should attempt to span or avoid them as much as practicable. None of the proposed alternative routes cross any known occupied habitat for any federally-listed endangered or threatened species.[46] However, construction of some of the alternative routes could, at some locations, present a negative impact on the environment, particularly in sensitive areas such as wetlands and woodlands.

Q. In your opinion, how would construction of the proposed project on Route 16 compare from an environmental perspective to construction on the other routes?

A. Route 16 ranks well among the proposed alternative routes in most environmental integrity categories.[47] Route 16 is tied for the least distance across NWI mapped wetlands at 0.01 miles, is tied for the shortest distance across 100-year floodplains at 0.32 miles, is tied for the shortest distance across open water at 0 miles, is tied for third for the number of stream crossings at 7. In its letters dated December 7, 2021 TPWD selected Route 13 as the route having the least potential impact on

[44] Application Attachment 1 at Table 4-1.

[45] Application Attachment 1 at Table 4-1.

[46] Application Attachment 1 at Table 4-1.

[47] Application at Attachment 1 at Table 4-2.

environmental integrity.[48]

Q. Do you conclude that Route 16 is acceptable from an environmental and land use perspective?

A. Yes. I do not think any of the routes in this project are unacceptable from an environmental and land use perspective, I conclude that Route 16 performs among the best from this perspective.

G. ENGINEERING CONSTRAINTS

Q. Are there any possible engineering constraints associated with this project?

A. There are no specific engineering constraints that are not present in a usual transmission line project. In my opinion, all of the possible constraints can be adequately addressed by using design and construction practices and techniques that are usual and customary in the electric utility industry.

Q. Are there any special circumstances in this project that would warrant an extension beyond the seven-year limit for the energization of the lines?

A. No, AEP Texas has not described any special circumstances that would merit an extension of this limit for this project.

H. COSTS

Q. What are AEP Texas' estimated costs of constructing the proposed project on

[48] Attachment JP-3 at 3-4.

each of the proposed alternative routes?

A. Attachment 3 of the application list AEP Texas' estimated costs of constructing each proposed route as well as in AEP Texas Inc.'s Response to Commission Staff's First Request for Information attached to this testimony as Attachment JP-4. The table below shows the total estimated cost for each of the routes from least expensive to the most expensive proposed alternative route:

Route	Estimated Cost of the Route
Route 20	$68,513,000.00
Route 16	**$68,973,000.00**
Route 17	$69,363,000.00
Route 18	$70,564,000.00
Route 6	$70,686,000.00
Route 13	$71,208,000.00
Route 12	$71,512,000.00
Route 5	$71,792,000.00
Route 4	$71,990,000.00
Route 3	$74,372,000.00
Route 1	$76,223,000.00
Route 7	$76,755,000.00
Route 2	$78,305,000.00
Route 11	$81,884,000.00
Route 19	$83,799,000.00
Route 14	$86,654,000.00
Route 9	$87,650,000.00
Route 15	$91,865,000.00
Route 8	$92,491,000.00
Route 10	$92,545,000.00

As the table illustrates, Route 16 is the second least expensive proposed alternative route.

Q. Could you briefly discuss the least expensive route and why Route 16 is still preferred?

A. Yes. Routes 20 has more habitable structures within 500 feet of its centerline, has more of their length across NWI mapped wetlands, crosses a larger area of high archeological potential, crosses more cropland, crosses more FEMA mapped 100-year flood plains, and makes less use of parallel and compatible right-of-way overall and as a percentage of their length.

Q. Do AEP Texas' estimated costs of constructing the proposed project appear to be reasonable?

A. After reviewing AEP Texas' estimates, the estimated costs for the alternative routes are about what I would expect. However, the reasonableness of the final installed cost of the completed project will be determined at a future date in the course of transmission cost-of-service proceedings.

I. MODERATION OF IMPACT ON THE AFFECTED COMMUNITY AND LANDOWNERS

Q. Do the Commission's rules address routing alternatives intended to moderate the impact on landowners?

A. Yes. Under 16 TAC § 25.101(b)(3)(B), "the line shall be routed to the extent reasonable to moderate the impact on the affected community and landowners unless grid reliability and security dictate otherwise."

Q. Subsequent to filing its application, has AEP Texas made or proposed any routing adjustments to accommodate landowners?

A. Not to my knowledge.

Q. Has AEP Texas proposed any specific means by which it will moderate the impact of the proposed project on landowners or the affected community other than adherence to the Commission's orders, the use of good utility practices, acquisition of and adherence to the terms of all required permits, and what you have discussed above?

A. Not to my knowledge.

J. RIGHT-OF-WAY

Q. Do the Commission's rules address routing along existing corridors?

A. Yes. The following factors are to be considered under 16 TAC § 25.101(b)(3)(B):

(i) Whether the routes utilize existing compatible rights-of-way, including the use of vacant positions on existing multiple-circuit transmission lines;

(ii) Whether the routes parallel existing compatible rights-of-way;

(iii) Whether the routes parallel property lines or other natural or cultural features; and

(iv) Whether the routes conform with the policy of prudent avoidance.

1. USE AND PARALLELING OF EXISTING, COMPATIBLE RIGHT-OF-WAY (INCLUDING APPARENT PROPERTY BOUNDARIES)

Q. Describe how AEP Texas proposes to use existing, parallel, or compatible right-of-way for the proposed project.

A. Each proposed alternative route parallels apparent property boundaries and parallels or utilizes existing compatible rights-of-way. The percentage of Route 16's length that parallels or utilizes existing compatible right-of-way and apparent property boundaries is approximately 49.26% of its length. The table below summarizes the overall length, the length parallel to compatible rights-of-way or to property boundaries, and the total percentage of parallel rights-of-way used by the proposed alternative routes. Existing pipeline rights-of-way are not listed as compatible rights-of-way under 16 TAC § 25.101(b)(3)(B).

Route	Length (Miles)	Length Parallel to Right-of-Way (Miles)	Percentage
Route 19	20.39	12.33	60.47%
Route 2	19.28	11.07	57.43%
Route 7	15.58	8.72	55.98%
Route 11	20.58	11.09	53.89%
Route 12	17.63	9.50	53.87%
Route 1	20.26	10.74	53.01%
Route 18	17.14	8.79	51.26%
Route 3	18.93	9.51	50.24%
Route 16	**17.69**	**8.71**	**49.26%**
Route 8	21.67	10.38	47.90%
Route 6	18.67	8.84	47.35%
Route 17	17.15	8.07	47.05%
Route 4	16.63	7.57	45.50%
Route 13	16.64	7.41	44.53%
Route 5	18.05	7.82	43.35%
Route 14	20.75	8.87	42.75%
Route 9	21.08	9.01	42.74%
Route 10	22.83	7.63	33.42%
Route 20	18.01	5.86	32.54%
Route 15	22.38	7.05	31.49%

As the chart shows, Route 20 is the 7th shortest route and has the 9th highest percentage of compatible right-of-way compared to the other alternative routes.

Q. Could you briefly discuss the route with a higher percentage of compatible right-of-way and why Route 16 is still preferred?

A. Yes. All of the routes are more expensive, have more habitable structures within 500 feet of their centerlines, have more of their lengths across NWI mapped wetlands, and have more of their length across areas of high archeological site potential. Routes 1, 2, 3, 7, 11, and 19 also have more of their length across FEMA mapped 100-year floodplains.

2. PARALLELING OF NATURAL OR CULTURAL FEATURES

Q. Describe how AEP Texas proposes to parallel natural or cultural features for the proposed project.

A. None of the proposed alternative routes parallel natural or cultural features.

K. PRUDENT AVOIDANCE

Q. Define prudent avoidance.

A. Prudent avoidance is defined by 16 TAC § 25.101(a)(6) as follows: "The limiting of exposures to electric and magnetic fields that can be avoided with reasonable investments of money and effort."

Q. How can exposure to electric and magnetic fields be limited when routing

transmission lines?

A. Exposure to electric and magnetc fields can primarily be limied when routing transmission lines by proposing alternative routes that would minimize, to the extent reasonable, the number of habitable structures located in close proximity to the proposed routes.

Q. How many habitable structures are located in close proximity to each of the proposed alternativeroutes?

A. The table below ranks the number of habitable structures that are within 500 feet of the centerline of the proposed alternative routes in this project.

Route	Number of habitable structures
Route 16	**5**
Route 2	7
Route 6	8
Route 7	8
Route 1	9
Route 11	9
Route 19	10
Route 17	11
Route 20	11
Route 5	12
Route 10	12
Route 15	12
Route 9	15
Route 14	15
Route 8	16
Route 13	17
Route 12	18
Route 18	18
Route 3	20
Route 4	23

There are five habitable structures that are within 500 feet of the centerline of

Route 16, the least of any route.

Q. Do you conclude that AEP Texas' proposed alternative routes have minimized, to the extent reasonable, the number of habitable structures located in close proximity to the routes?

A. AEP Texas has designed its proposed segments in such a way as to minimize, to the extent reasonable, the number of habitable structures located in close proximity to the routes. However, some routes perform better in this area than others.

VI. CONCLUSION

Q. In your opinion, is any one of the proposed alternative routes better than <u>all</u> of the other routes in <u>all</u> respects?

A. No.

Q. If no proposed alternative route is better than all of the others in all respects, why have you recommended Route 20 instead of the other proposed alternative routes?

A. In summary, after analyzing all the factors that the Commission must consider under PURA § 37.056 and 16 TAC § 25.101, I conclude that Route 16 best meets the criteria of PURA and the Commission's rules because: (1) Route 16 is the 2nd least expensive proposed route at $68,973,000.00 which is only $460,000.00 more than the cheapest route; (2) Route 16 has the least number of habitable structures within 500 feet of the centerline of any of the proposed routes with 5; (3) Route 16

is tied with Route 6 for the least length of its right-of-way across potential CNRAs in the TCMP, and has the least length across NWI mapped wetlands at 52.80 feet and across FEMA mapped 100-year floodplains at 0.32 miles; and (4) Route 16 has the second least length of its its right-of-way across areas of high archeological site potential with 2.87 miles and has no recorded cultural resource sites within 1,000 feet of its right-of-way. Route 16, like all of the proposed alternative routes, has some advantages and some disadvantages as I have discussed in my testimony. However, I consider Route 16 overall to have the most advantages and to be comparatively superior to the other proposed alternative routes when weighing all of the factors described in my testimony.

Q. Does this conclude your testimony?

A. Yes

Attachment JP-1

Qualifications of John Poole

JOHN R. POOLE, P.E.

Texas Board of Professional Engineers, Texas P. E. License #133982

EDUCATION

B.A., History/Mathematics, Southwestern University, 2000

BSEE, The University of Texas Cockrell School of Engineering, 2014
Grade Point Average 3.32

Technical Cores: Energy Systems and Renewable Energy, Electronics and Integrated Circuits

Related Courses: Circuit Theory, Linear Systems & Signals, Embedded Systems, Software Design, Vector Calculus, Electronic Circuits, Power Systems, Discrete Mathematics, Solid-state Electronic Devices, Electromagnetic Engineering, Power Electronics Laboratory, Automatic Control, Fundamentals of Electronic Circuits, Engineering Design, Power Systems, Power Quality & Harmonics, Digital Logic Design, Analog Integrated Circuit Design

PROFESSIONAL EXPERIENCE

PUBLIC UTILITY COMMISSION OF TEXAS
Engineering Specialist **2/15-Present**

Responsible for analyzing and providing recommendations regarding issues related to electric facility planning, construction, operations, and maintenance.

UNIVERSITY OF TEXAS AT AUSTIN
Solar powered three-phase motor drive/Dr. Ross Baldick **2/14-12/14**

Worked in a five-person team to design and implement a solar-powered motor system with a Maximum PowerPoint Tracker and a three-phase H-Bridge. Personal responsibility included project National Electrical Code (NEC) compliance.

UNIVERSITY OF TEXAS AT AUSTIN
Solar Vehicle Team (UTSVT)/Dr. Gary Hallock **9/14-12/14**

Coordinated team of 5 for the design, lay-out, and wiring of solar array for the new UTSVT vehicle. Research and execution of solar cell lamination techniques.

UNIVERSITY OF TEXAS AT AUSTIN **12/04-9/14**
Administrative Associate

Managed billing and collections for two departments independently.
Provided timely and efficient customer service to University cell phone users.
Worked as part of Returned Checks team in Student Accounts Receivable, managing high call volumes and communicating effectively with team.

Attachment JP-2

List of Previous Testimony

Application of LCRA Transmission Services Corporation to Amend its Certificate of Convenience and Necessity for the Proposed Blumenthal Substation and 138-kV Transmission Line in Blanco, Gillespie, and Kendall Counties, SOAH Docket No. 473-15-1589, PUC Docket No. 43599

Application of Brazos Electric Power Cooperative Inc. to Amend a Certificate of Convenience and Necessity for a 138-kV Transmission Line in Denton County, SOAH Docket No. 473-15-2855, PUC Docket No. 44060

Application of Entergy Texas, Inc. for Approval to Amend its Distribution Cost Recovery Factor, SOAH Docket No. 473-16-0076, PUC Docket No. 45083

Application of Southwestern Electric Power Company for Approval of a Distribution Cost Recovery Factor, SOAH Docket No. 473-16-3306, PUC Docket No. 45712

Application of Southwestern Public Service Company for Authority to Change Rates, SOAH Docket No. 473-16-2520, PUC Docket No. 45524

Application of LCRA Transmission Services Corporation to Amend a Certificate of Convenience and Necessity for the Round Rock-Leander 138-kV Transmission Line in Williamson County, SOAH Docket No. 473-16-4342, PUC Docket No. 45866

Joint Application of AEP Texas North Company and Electric Transmission Texas, LLC to Amend their Certificates of Convenience and Necessity for the AEP TNC Heartland to ETT Yellowjacket 138-kV Transmission Line in McCulloch and Menard Counties, SOAH Docket No. 473-17-0907, PUC Docket No. 46234

Application for the City of Lubbock Through Lubbock Power and Light for Authority to Connect a Portion of its System with The Electric Reliability Council of Texas, PUC Docket No. 47576

Application of Oncor Electric Delivery Company, LLC to Amend a Certificate of Convenience and Necessity for a 345/138-kV Transmission Line in Loving, Reeves, and Ward Counties, SOAH Docket No. 473-18-0373, PUC Docket No. 47368

Application of Rayburn Country Electric Cooperative, Inc. to Amend its Certificate of Convenience and Necessity for a 138-kV Transmission Line in Fannin County, Texas, SOAH Docket No. 473-18-0582, PUC Docket No. 47448

Application of Oncor Electric Delivery Company, LLC to Amend a Certificate of Convenience and Necessity for a 345-kV Transmission Line in Crane, Ector, Loving, Reeves, Ward, and Winkler Counties, Texas, SOAH Docket No. 473-18-2800, PUC Docket No. 48095

Application of Rayburn Country Electric Cooperative, Inc. to Amend a Certificate of Convenience and Necessity for the Lower Bois d'Arc Water Treatment Line Project in Fannin and Hunt Counties, Texas, SOAH Docket No. 473-18-2500, PUC Docket No. 47884

Application of Electric Transmission Texas, LLC to Amend Certificates of Convenience and Necessity for the Stewart Road 345-kV Transmission Line in Hidalgo County, SOAH Docket No. 473-18-3045, PUC Docket No. 47973

Joint Application of Rayburn Country Electric Cooperative and Lone Star Transmission LLC to Transfer Load to ERCOT, and For Sale of Transmission Facilities and Transfer of Certification Rights in Henderson and Van Zandt Counties, Texas, PUC Docket No. 48400

Application of South Texas Electric Cooperative, Inc. to Amend its Certificate of Convenience and Necessity for the Proposed Palmas to East Rio Hondo 138-kV Transmission Line in Cameron County, Texas, PUC Docket No. 48490

Application of CenterPoint Energy Houston Electric, LLC to Amend a Certificate of Convenience and Necesity for a 345-kV Transmission Line in Brazoria, Matagorda, and Wharton Counties, SOAH Docket No. 473-19-1857, PUC Docket No. 48629

Joint Application of Sharyland Utilities, LP and City of Lubbock, Acting by and Through Lubbock Power & Light, for a Certificate of Convenience and Necessity for the Proposed Wadsworth to New Oliver to Farmland 345-kV Transmission Line in Lubbock and Lynn Counties and the Proposed Southeast to New Oliver to Oliver 115-kV Transmission Line in Lubbock County, SOAH Docket No. 473-19-2405, PUC Docket No. 48909

Application of AEP Texas Inc. for Authority to Change Rates, SOAH Docket No. 473-19-4421, PUC Docket No. 49494

Application of AEP Texas Inc. to Amend its Certificate of Convenience and Necessity for the Three Rivers to Borglum to Tuleta 138-kV Transmission Line in Live Oak and Bee Counties, SOAH Docket No. 473-19-5729, PUC Docket No. 49347

Application of LCRA Transmission Services Corporation to Amend its Certificate of Convenience and Necessity for the Proposed Mountain Home 138-kV Transmission Line Projects in Gillespie, Kerr, and Kimble Counties, Texas, SOAH Docket No, 473-19-6766, PUC Docket No. 49523

Application of Southwestern Public Service Company for Authority to Change Rates, SOAH Docket No. 473-19-6677, PUC Docket No. 49831

Complaint of Terry and Sara Faubion against Texas-New Mexico Power Company, SOAH Docket No. 473-20-1773, PUC Docket No. 50095

Complaint of Jaime Leonardo Sloss against AEP Texas Inc., SOAH Docket No. 473-20-3116, PUC Docket No. 50284

Application of the City of Lubbock, Acting By and Through Lubbock Power & Light, to Establish Initial Wholesale Transmission Rates and Tariffs, SOAH Docket No. 473-21-0043, PUC Docket No. 51100

Application of Rayburn Country Elecric, Inc. to Amend its Certificate of Convenience and Necessity for the New Hope 138-kV Transmission Line in Collin County, SOAH Docket No. 473-20-4592, PUC Docket No. 50812

Application of Sharyland Utilities, L.L.C. for Authority to Change Rates, SOAH Docket No. 473-21-1535, PUC Docket No. 51611

Application of the City of San Antonio, Acting by and Through The City Public Service Board (CPS Energy) to Amend its Certificate of Convenience and Necessity for the Proposed Scenic Loop 138-kV Transmission Line in Bexar County, SOAH Docket No. 473-21-0247, PUC Docket 51023

Application of Southwestern Electric Power Company for Authority to Change Rates, SOAH Docket No. 473-21-0538, PUC Docket 51415

Application of AEP Texas Inc. to Amend its Certificate of Convenience and Necessity for the Angstrom-to-Grissom Double-Circuit 345-kV Transmission Line in Bee, Refugio, and San Patricio Counties, SOAH Docket No. 473-21-2084, PUC Docket 51912

Application of El Paso Electric Company for Advanced Metering System (AMS) Deployment Plan, AMS Surcharge, and Non-Standard Metering Service Fees, SOAH Docket No. 473-21-2607, PUC Docket 52040

December 7, 2021

Ms. Rachelle Robles
Public Utility Commission
P.O. Box 13326
Austin, TX 78711-3326

RE: PUC Docket No. 52656: Application of AEP Texas to amend its Certificate of Convenience and Necessity for the proposed Angstrom to Naismith 345-kilovolt Double-Circuit Transmission Line, San Patricio County, Texas

Dear Ms. Robles:

The Texas Parks and Wildlife Department (TPWD) has received and reviewed the Environmental Assessment (EA) and Route Analysis regarding the proposed transmission line project referenced above. TPWD offers the following comments and recommendations concerning this project.

Please be aware that a written response to a TPWD recommendation or informational comment received by a state governmental agency may be required by state law. For further guidance, please see the Texas Parks and Wildlife Code, §12.0011. For tracking purposes, please refer to TPWD Project ID #47661 in any return correspondence regarding this project.

Project Description

American Electric Power Texas, Incorporated (AEP Texas) proposes to construct a new double-circuit 345-kilovolt (kV) transmission line in San Patricio County, Texas. The new transmission line would be located between the existing AEP Angstrom Station, located approximately four miles east of Sinton, Texas, and extending southeast to the proposed Naismith Station, located approximately 0.30 mile north of State Highway (SH) 35 and approximately one mile east of Farm-to-Market Road (FM) 136.

The proposed transmission line would be constructed on steel lattice structures ranging in height from 132 to 162 feet. The proposed transmission line would require a 150-foot-wide permanent right-of-way (ROW) and would be approximately 19 miles long, depending on which route is selected.

AEP Texas retained Power Engineers, Incorporated (POWER) to prepare an Environmental Assessment (EA) to support its application to the Texas Public Utility Commission (PUC) to amend its Certificate of Convenience and Necessity

(CCN). The EA is intended to provide information and address requirements of §37.056(c)(4)(A)-(D) of the Public Utility Regulatory Act (PURA), PUC Procedural Rule §22.52(a)(4), the PUC's CCN application form, and PUC Substantive Rule §25.101.

Previous Coordination

TPWD's Wildlife Habitat Assessment Program provided information and recommendations regarding the preliminary study area for this project to POWER on November 17, 2020. This letter is included in Appendix A of the EA. The TPWD Texas Natural Diversity Database (TXNDD) provided rare resources data to POWER on September 24, 2020.

Comment: Please review the TPWD correspondence in Appendix A and consider the recommendations provided as they remain applicable to the project as proposed.

Proposed Route Evaluation

POWER's Recommended Route

POWER evaluated 20 primary alternative routes comprised of various combinations of 61 primary alternative route links. Forty-two separate environmental and land use criteria were used to evaluate each route.

POWER recommended Alternative Route 16 as the route that best addressed the requirements of PURA, and in their opinion, best balances land use, ecology, cultural resources, and certain PUC routing criteria, including that Route 16:

- is the seventh shortest route, at 17.69 miles;
- has the sixth shortest length across cropland, at 16.16 miles;
- is tied with one other route for having the third shortest length of ROW across bottomland/riparian woodland, at 0.02 miles;
- is tied with four other routes for having the shortest length of ROW across National Wetland Inventory (NWI) mapped wetlands, at 0.01 miles;
- is tied with two other routes for the third-fewest number of stream crossings, with 7; and
- is tied with six other routes for the shortest length across 100-year floodplains, at 0.32 miles.

AEP Texas' Recommended Route

In contrast to POWER's recommendation, AEP Texas recommended Alternative Route 17 as the route that best addressed the requirements of PURA and PUC Substantive Rules regarding certification criteria and presents an appropriate balance of the routing factors.

TPWD's Recommended Route

In addition to the review of the EA, CCN application, and publicly available Geographic Information System (GIS) data, TPWD evaluated potential impacts to fish and wildlife resources using the following 13 criteria from Table 4-1 in the EA:

- length of primary alternative route;
- length of ROW parallel and adjacent to existing transmission ROW;
- length of ROW parallel and adjacent to other existing ROW;
- length of ROW across cropland;
- length of ROW across pasture/rangeland;
- length of ROW across upland woodlands/brushlands;
- length of ROW across bottomland/riparian woodlands;
- length of ROW across NWI wetlands;
- length of ROW across open water;
- number of stream crossings;
- number of river crossings;
- length of ROW parallel (within 100 feet) to streams or rivers; and
- length of ROW across 100-year floodplains.

After evaluation of the 20 routes filed with the CCN, TPWD selected **Alternative Route 13** based primarily on the following factors that **Route 13**:

- is the third shortest route, at 16.64 miles;
- is tied with one route as the shortest route through pasture/rangeland, at 0.35 miles;
- is tied with two other routes as the fourth shortest route through woodlands/brushlands, at 0.24 miles;
- is tied with two other routes as the sixth shortest route through bottomland/riparian woodlands, at 0.05 miles (264 feet);
- is tied with one route as the second shortest route across NWI wetlands, at 0.02 miles (105.6 feet);
- does not cross any open water;
- does not parallel any streams;
- is tied with two other routes as having the third-fewest number of stream crossings (seven); and

- is tied with six other routes as having the shortest length across floodplains, at 0.32 miles.

The EA indicates that the extent of field investigation included reconnaissance surveys of the study area. The EA does not include information based on field surveys to determine which route would best minimize impacts to important, rare, and protected species. Therefore, TPWD's routing recommendation is based solely on the natural resource information provided in the CCN application and the EA, as well as publicly available information examined using GIS applications.

Recommendation: Of the 20 alternative routes evaluated in the EA, **Alternative Route 13** appears to be the route that causes the least adverse impacts on natural resources. TPWD's primary recommendation to the PUC is to select a route that minimizes the fragmentation of intact lands because such a route should have the least adverse impacts on natural resources. TPWD believes the State's long-term interests are best served when new utility lines and pipelines are sited where possible in or adjacent to existing utility corridors, roads, or rail lines instead of fragmenting intact lands. Of the proposed routes, **Alternative Route 13** would appear to be the preferred route.

Implementation of Beneficial Management Practices

In several sections, the EA states that no significant impacts to avian species would occur due to the applicant implementing their Avian Protection Plan. The AEP Avian Protection Plan was not included in the application documentation.

Recommendation: TPWD recommends that the AEP Avian Protection Plan be included in environmental assessment documents. Due to lack of inclusion in the EA, TPWD is unable to agree that implementation of the AEP Avian Protection Plan would result in minimizing potential impacts to avian species.

A review of the EA indicates that a portion of the information and recommendations provided in TPWD's November 17, 2020, scoping letter were acknowledged; however, the EA did not present commitments to implement several BMPs recommended to avoid or minimize potential impacts to fish and wildlife resources.

Recommendation: TPWD recommends AEP Texas and the PUC utilize the following BMPs, which are more fully described in TPWD's November 17, 2020, letter, when specifically applicable to the project:

- mark lines across portions of routes most attractive to birds, e.g., creeks, drainages, wetlands, floodplains;
- survey for active bird nests and avoid disturbance until young have fledged from the nest;

- use existing bridges to cross creeks to avoid temporary stream crossings for construction equipment;
- educate employees and contractors of state-listed species that are susceptible to project activities and potentially occurring within the area;
- utilize a biological monitor during construction;
- allow wildlife to safely leave the site on their own, without harassment or harm
- use a TPWD-permitted individual to translocate state-listed threatened species that will not readily leave the site on their own;
- use wildlife escape ramps in trenches and inspect trenches for trapped wildlife prior to backfilling;
- avoid the use of erosion control blankets containing polypropylene fixed-intersection mesh; and
- revegetate and maintain ROW with native vegetation for the benefit of wildlife, including pollinators.

TPWD appreciates the opportunity to review and comment on this EA. If you have any questions, please do not hesitate to contact Habitat Assessment Biologist Mr. Russell Hooten by email at russell.hooten@tpwd.texas.gov or by (361) 825-3240. Thank you for your favorable consideration.

Sincerely,

John Silovsky
Wildlife Division Director

JS:RH:bdk

cc: Mr. Randal E. Roper, AEP Texas
Ms. Meredith Longoria
Mr. John Davis
Mr. Russell Hooten

SOAH DOCKET NO. 473-22-0493
PUC DOCKET NO. 52656

APPLICATION OF AEP TEXAS INC.	§	**BEFORE THE STATE OFFICE**
TO AMEND ITS CERTIFICATE OF	§	
CONVENIENCE AND NECESSITY	§	
FOR THE ANGSTROM TO NAISMITH	§	**OF**
DOUBLE-CIRCUIT 345-KV	§	
TRANSMISSION LINE IN	§	**ADMINISTRATIVE HEARINGS**
SAN PATRICIO COUNTY	§	

AEP TEXAS INC.'S RESPONSE TO COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION

DECEMBER 20, 2021

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APPLICATION OF AEP TEXAS INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE ANGSTROM TO NAISMITH DOUBLE-CIRCUIT 345-KV TRANSMISSION LINE IN SAN PATRICIO COUNTY	§	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

AEP TEXAS INC. RESPONSE TO COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION

Question: STAFF RFI NO. 1-1

Please refer to Attachment 1 of the Application at Table 4-1, and Attachment 3 of the Application. Please describe any rationale or explanation regarding why the cost estimates for "Procurement of Materials and Equipment" and "Construction of Facilities (Contract)" for Route 17 Transmission Facilities are significantly lower than Route 17 compared to the other routes that have shorter or comparable lengths (specifically Routes 4, 7, 12, 13, 16, 18, and 20).

By agreement with Staff, this request has been modified to read as follows:

Please refer to Attachment 1 of the Application at Table 4-1, and Attachment 3 of the Application. Please describe any rationale or explanation regarding why the "cost estimates for Procurement of Materials and Equipment" and "Construction of Facilities (Contract)" for Route 17 Transmission Facilities are significantly lower for Route 17 when compared to other routes that have shorter or comparable lengths (specifically Routes 4, 7, 12, 13, 16, 18, and 20).

Response: STAFF RFI NO. 1-1

In reviewing the data supporting Attachment 3 to the Application in response to this request for information, AEP Texas determined that there is an error in the cost estimates for "Procurement of Materials and Equipment" and "Construction of Facilities (Contract)" for Route 17. Further review of the data supporting Attachment 3 revealed that there is a similar error for Route 6. The corrected cost estimates for Routes 6 and 17 are set out below. AEP Texas is also providing a corrected Attachment 3 to the Application as Attachment STAFF 1-1 to this response. AEP Texas will file an errata to its Application to reflect these corrections.

Estimated Costs	**Route 6 Corrected**	**Route 17 Corrected**
Right-of-way and Land Acquisition	$13,016,000	$12,200,000
Engineering and Design (Utility)	$1,228,000	$1,228,000
Engineering and Design (Contract)	$1,935,000	$1,861,000
Procurement of Material and Equipment	$14,569,000	$13,799,000
Construction of Facilities (Utility)	$10,000	$10,000
Construction of Facilities (Contract)	$42,897,000	$40,265,000
Other	$-	$-
Estimated Total Cost	**$73,655,000**	**$69,363,000**

Prepared by: Randal Roper, Regulatory Case Manager, AEP Texas Inc.

Sponsored by: Stan A Krause, Transmission Line Engineering Manager, AEPSC

Estimated Costs of Alternative Routes

ROUTE	ESTIMATED COST
1	$ 76,223,000
2	$ 78,305,000
3	$ 74,372,000
4	$ 71,990,000
5	$ 71,792,000
6	$ 73,655,000
7	$ 76,755,000
8	$ 92,491,000
9	$ 87,650,000
10	$ 92,545,000
11	$ 81,884,000
12	$ 71,512,000
13	$ 71,208,000
14	$ 86,654,000
15	$ 91,865,000
16	$ 68,973,000
17	$ 69,363,000
18	$ 70,564,000
19	$ 83,799,000
20	$ 68,513,000

Route 1 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	13,828,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	2,001,000
Procurement of Material and Equipment	$	14,918,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	44,238,000
Other	$	-
Estimated Total Cost	**$**	**76,223,000**

Route 2 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	13,323,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,991,000
Procurement of Material and Equipment	$	15,808,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	45,945,000
Other	$	-
Estimated Total Cost	**$**	**78,305,000**

Route 3 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	13,157,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,981,000
Procurement of Material and Equipment	$	14,718,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	43,278,000
Other	$	-
Estimated Total Cost	**$**	**74,372,000**

Route 4 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	11,945,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,866,000
Procurement of Material and Equipment	$	14,707,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	42,234,000
Other	$	-
Estimated Total Cost	**$**	**71,990,000**

Route 5 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	12,673,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,890,000
Procurement of Material and Equipment	$	14,264,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	41,727,000
Other	$	-
Estimated Total Cost	**$**	**71,792,000**

Route 6 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	13,016,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,935,000
Procurement of Material and Equipment	$	14,569,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	42,897,000
Other	$	-
Estimated Total Cost	**$**	**73,655,000**

Route 7 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	13,427,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,973,000
Procurement of Material and Equipment	$	15,344,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	44,773,000
Other	$	-
Estimated Total Cost	**$**	**76,755,000**

Route 8 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	14,525,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	2,171,000
Procurement of Material and Equipment	$	19,498,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	55,059,000
Other	$	-
Estimated Total Cost	**$**	**92,491,000**

Route 9 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	14,218,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	2,112,000
Procurement of Material and Equipment	$	18,210,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	51,872,000
Other	$	-
Estimated Total Cost	**$**	**87,650,000**

Route 10 Transmission Facilities		**TOTAL**
Right-of-way and Land Acquisition	$	15,165,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	2,206,000
Procurement of Material and Equipment	$	19,049,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	54,887,000
Other	$	-
Estimated Total Cost	**$**	**92,545,000**

Route 11 Transmission Facilities		**TOTAL**
Right-of-way and Land Acquisition	$	14,015,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	2,083,000
Procurement of Material and Equipment	$	16,439,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	48,109,000
Other	$	-
Estimated Total Cost	**$**	**81,884,000**

Route 12 Transmission Facilities		**TOTAL**
Right-of-way and Land Acquisition	$	12,454,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,895,000
Procurement of Material and Equipment	$	14,308,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	41,617,000
Other	$	-
Estimated Total Cost	**$**	**71,512,000**

Route 13 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	11,945,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,848,000
Procurement of Material and Equipment	$	14,508,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	41,669,000
Other	$	-
Estimated Total Cost	**$**	**71,208,000**

Route 14 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	14,052,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	2,090,000
Procurement of Material and Equipment	$	17,989,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	51,285,000
Other	$	-
Estimated Total Cost	**$**	**86,654,000**

Route 15 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	14,895,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	2,195,000
Procurement of Material and Equipment	$	18,987,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	54,550,000
Other	$	-
Estimated Total Cost	**$**	**91,865,000**

Route 16 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	12,496,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,852,000
Procurement of Material and Equipment	$	13,500,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	39,887,000
Other	$	-
Estimated Total Cost	**$**	**68,973,000**

Route 17 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	12,200,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,861,000
Procurement of Material and Equipment	$	13,799,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	40,265,000
Other	$	-
Estimated Total Cost	**$**	**69,363,000**

Route 18 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	12,200,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,879,000
Procurement of Material and Equipment	$	14,128,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	41,119,000
Other	$	-
Estimated Total Cost	**$**	**70,564,000**

Route 19 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	13,917,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	2,088,000
Procurement of Material and Equipment	$	17,104,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	49,452,000
Other	$	-
Estimated Total Cost	**$**	**83,799,000**

Route 20 Transmission Facilities	**TOTAL**	
Right-of-way and Land Acquisition	$	12,647,000
Engineering and Design (Utility)	$	1,228,000
Engineering and Design (Contract)	$	1,860,000
Procurement of Material and Equipment	$	13,273,000
Construction of Facilities (Utility)	$	10,000
Construction of Facilities (Contract)	$	39,495,000
Other	$	-
Estimated Total Cost	**$**	**68,513,000**

Estimated Costs of Substation Terminations

Angstrom Station Termination	TOTAL	
Right-of-way and Land Acquisition	$	-
Engineering and Design (Utility)	$	493,000
Engineering and Design (Contract)	$	78,000
Procurement of Material and Equipment	$	2,980,000
Construction of Facilities (Utility)	$	46,000
Construction of Facilities (Contract)	$	1,840,000
Other	$	-
Estimated Total Cost	**$**	**5,437,000**

Naismith Station	TOTAL	
Right-of-way and Land Acquisition	$	2,438,000
Engineering and Design (Utility)	$	246,000
Engineering and Design (Contract)	$	1,008,000
Procurement of Material and Equipment	$	14,658,000
Construction of Facilities (Utility)	$	324,000
Construction of Facilities (Contract)	$	6,658,000
Other	$	-
Estimated Total Cost	**$**	**25,332,000**

SOAH DOCKET NO. 473-22-0493
PUC DOCKET NO. 52656

APPLICATION OF AEP TEXAS INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE ANGSTROM TO NAISMITH DOUBLE-CIRCUIT 345-KV TRANSMISSION LINE IN SAN PATRICIO COUNTY	§	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

AEP TEXAS INC. RESPONSE TO COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION

Question: STAFF RFI NO. 1-2

Please refer to Attachment 1 of the Application at Table 4-1, and Attachment 3 of the Application. Please explain if there is a significant difference in the cost of the different links in the project aside from turning structures or the number of structures. Please identify and explain if certain links have engineering difficulties that necessitate higher "Materials and Equipment" and/or "Construction of Facilities (Contract)" costs.

Response: STAFF RFI NO. 1-2

The AEP Texas cost estimates do not reflect that certain links have engineering difficulties that necessitate higher "Materials and Equipment" and/or "Construction of Facilities (Contract)" costs. See AEP Texas' response to Staff 1-1 with respect to cost discrepancies in the Company's application.

Prepared by: Randal Roper, Regulatory Case Manager, AEP Texas Inc.

Sponsored by: Stan A Krause, Transmission Line Engineering Manager, AEPSC