APPLICATION TO AMEND A CERTIFICATE OF CONVENIENCE AND NECESSITY FOR A PROPOSED 345-KV TRANSMISSION LINE WITHIN HALE, HOCKLEY, LUBBOCK, TERRY, AND YOAKUM COUNTIES

(TUCO TO YOAKUM)

DOCKET NO. 46042

Submit seven (7) copies of the application and all attachments supporting the application. If the application is being filed pursuant to P.U.C. SUBST. R. 25.101(b)(3)(D) or P.U.C. Subst. R. 25.174, include in the application all direct testimony. The application and other necessary documents shall be submitted to:

Public Utility Commission of Texas Attn: Filing Clerk 1701 N. Congress Ave. Austin, Texas 78711-3326

1. Applicant: Southwestern Public Service Company

Certificate Number: 30153

Street Address: 600 South Tyler Street

Mailing Address: Amarillo, TX 79105-1261

2. Please identify all entities that will hold an ownership interest or an investment interest in the proposed project but which are not subject to the Commission's jurisdiction.

N/A

3. **Person to Contact:** James M. Bagley

Title/Position: Manager Regulatory Administration

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Graves Dougherty Hearon & Moody, PC

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Mailing Address: 401 Congress Avenue, Suite 2200

Austin, TX 78701

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4. Project Description:

Name or Designation of Project:

SOUTHWESTERN PUBLIC SERVICE COMPANY'S APPLICATION TO AMEND A CERTIFICATE OF CONVENIENCE AND NECESSITY ("CCN") FOR A PROPOSED 345-kV TRANSMISSION LINE WITHIN HALE, HOCKLEY, LUBBOCK, TERRY, AND YOAKUM COUNTIES, TEXAS. THE PROJECT NAME IS TUCO TO YOAKUM.

Provide a general description of the project, including the design voltage rating (kV), the operating voltage (kV), the CREZ Zone(s) (if any) where the project is located (all or in part), any substations and/or substation reactive compensation constructed as part of the project, and any series elements such as sectionalizing switching devices, series line compensation, etc. For HVDC transmission lines, the converter stations should be considered to be project components and should be addressed in the project description.

Southwestern Public Service Company ("SPS"), a subsidiary of Xcel Energy Inc., is proposing to construct and operate a single circuit, 345-kilovolt ("kV") electric transmission line between the existing TUCO Substation, located in Hale County, Texas and the existing Yoakum Substation, located in Yoakum County ("Proposed Project"). The line will be located in Hale, Hockley, Lubbock, Terry and Yoakum Counties, Texas, depending on which route is selected. This application for the Proposed Project will hereinafter be referred to as the "Application."

The Proposed Project will involve the construction of a new transmission line that will begin at the existing TUCO Substation located in Hale County, approximately two miles north of the City of Abernathy, and will extend generally southwest until it reaches the Yoakum Substation, approximately one mile west-northwest of the intersection of Farm-to-Market Road 435 and County Road 260, located in Yoakum County. The Yoakum Substation will be expanded and will require an addition of a 345-kV terminal to accommodate the connection of the 345-kV transmission line proposed in this application. The TUCO Substation will also require an upgrade, which includes a 345-kV line terminal to accommodate the 345-kV transmission line to Yoakum Substation. The TUCO to Yoakum Project and the larger Proposed TUCO-Yoakum-Hobbs ("TYH") Project were recommended by the High Priority Incremental Load Study ("HPILS"). The HPILS was undertaken by the Southwest Power Pool ("SPP") to develop a transmission plan addressing the needs associated with increased network loads in the SPP footprint.

SPS is proposing 22 different routes for this portion of the Proposed Project. The links that comprise each route are as follows:

Route	Links	Route
		Length
A	1-2-6-7-14-15-19-30-52-54-56-65-77-105-126-146-159-160-161-	110.4
	162-163-164-165-172-180A-180B-186-190-191-192-193	
В	1-2-6-7-10-11-17-20-24-26-31-37-35-46-57-65-77-106-107-110-	108.8
В	116-126-131-147-160-168-169-175A-175B-181-184-189-193	
С	1-3-5-7-10-16-19-30-42-53-54-56-65-78-79-88-91-108-109-110-	110.7
C	116-126-131-147-160-168-176-195-180B-186-187-189-193	
	1-3-5-7-10-16-19-28-29-31-37-35-46-58A-58B-66-67-70-79-90-93-	103.4
D	112A-185-113B-113C-119-120-121-123-127-129-130B-133-149-	
	153-155-162-170-178-180A-180B-186-187-189-193	
E	1-3-5-7-10-11-12-18-21-25-26-31-34-44-55-56-65-78-79-90-92-	108.4

	108-109-110-116-126-146-167-175A-174-184-189-193	
F	1-3-5-7-10-16-19-28-29-31-37-38-40-58B-66-67-70-79-90-93-	106.3
	112A-112B-194-113C-119-120-122-124-127-128-146-167-175A-	
	174-184-189-193	
	1-3-5-7-10-11-17-23-25-26-31-37-38-40-58B-66-68-69-70-79-90-	106.4
G	93-112A-112B-194-113C-119-120-122-125-130A-130B-132-147-	
	160-168-169-175A-174-184-189-193	
	1-3-5-7-10-11-17-23-25-26-31-37-38-40-58B-66-67-70-79-90-93-	106.3
Н	112A-185-113B-113C-119-120-122-124-127-129-130B-134-136-	
	143-156-164-171-177-179-181-184-189-193	
	1-3-5-7-10-11-17-20-22-29-31-37-38-40-58B-66-68-71-81-83-93-	107.8
I	112A-112B-112C-115-116-126-131-147-160-168-169-175A-174-	
	184-189-193	
	1-2-6-7-10-11-17-20-22-29-31-37-38-40-58B-66-68-71-81-83-93-	110.7
J	112A-112B-194-113C-114-118-123-127-129-130B-134-135-150-	
	151-157-172-180A-180B-186-187-189-193	
K	1-2-13-15-19-30-42-43-44-45-46-58A-58B-59-72-80-88-89-107-	110.3
17	109-111-117-118-123-127-128-146-167-175A-174-184-189-193	
	1-3-5-7-10-16-19-28-29-31-34-44-45-46-58A-58B-59-60-73-75-84-	99.2
L	97A-96-120-121-123-127-129-130B-133-149-153-155-162-170-	
	177-179-181-184-189-193	
	1-2-6-7-10-11-17-23-25-26-31-37-38-40-58B-59-60-73-75-84-97A-	104.8
M	96-120-122-124-127-129-130B-134-136-143-156-164-171-177-	
	179-181-184-189-193	107.1
	1-3-5-7-10-11-17-20-24-26-31-34-44-45-46-58A-58B-59-60-73-75-	107.1
N	84-95-113A-113B-113C-119-120-122-125-130A-130B-132-147-	
	160-168-169-175A-174-184-189-193	100.0
_	1-3-5-7-10-11-12-18-21-25-26-31-37-38-40-58B-59-60-73-75-82-	108.8
О	83-93-94-113A-113B-113C-119-120-122-125-130A-130B-134-	
	135-153-154-168-169-175A-175B-182-186-187-189-193	101.0
	1-3-4-18-27-32-36-40-58B-59-60-73-75-84-97A-96-120-121-123-	101.0
P	127-129-130B-133-149-153-155-162-170-178-180A-180B-186-	
	187-189-193 1-3-5-7-10-11-12-18-27-32-39-41-47-49-50-62-76-86-99-102-104-	107.3
Q	130A-130B-132-147-160-168-169-175A-174-184-189-193	107.3
	1-3-4-18-27-33-41-47-49-50-61-73-75-84-97A-96-120-122-125-	100.3
R	130A-130B-133-149-153-155-162-170-177-179-181-184-189-193	100.5
S	1-3-5-7-10-11-12-18-27-32-39-41-47-49-50-62-74-75-84-97A-97B-	110.6
	98-104-130A-130B-132-147-160-161-162-163-164-165-172-180A-	110.0
	180B-186-187-189-193	
	1-3-5-7-10-11-12-18-27-32-39-41-47-49-50-62-76-86-87-98-104-	107.0
T	130A-130B-134-136-143-156-164-171-177-179-181-184-189-193	107.0
	1-3-4-18-27-32-39-41-47-49-50-62-76-86-99-103-142-143-156-	110.5
U	164-171-177-179-182-186-187-189-193	110.5
V	1-3-4-18-27-32-39-41-47-49-50-62-76-86-99-103-137-140-144-	110.4
	157-172-180A-180B-186-190-191-192-193	11011

Refer to Figures 3-2, 3-3 and 5-1 of the Environmental Assessment and Alternative Route Analysis for the Proposed TUCO to Yoakum 345-kV Transmission Line Project, Hale, Hockley, Lubbock, Terry, and Yoakum Counties, Texas ("EA"), Attachment 1, for the route maps which show the 184 primary links that comprise the 22 routes.

Refer to Attachment 14 for the link descriptions.

The proposed 345-kV single-circuit transmission line will be constructed using primarily two-pole H-frame steel structures for tangents and light angles. High angle structures and dead-end structures will be three-pole steel structures. The proposed transmission line will be constructed entirely on new right-of-way ("ROW") with a proposed easement width of 150 feet. In some circumstances, a wider easement may be necessary, but these locations and easement widths cannot be determined until the Public Utility Commission of Texas ("Commission" or "PUC") approved route is surveyed.

Design Voltage Rating (kV): 345 kV Operating Voltage Rating (kV): 345 kV

Normal Peak Operating Current Rating (A): 3000 amps

If the project will be owned by more than one party, briefly explain the ownership arrangements between the parties and provide a description of the portion(s) that will be owned by each party. Provide a description of the responsibilities of each party for implementing the project (design, Right-Of-Way acquisition, material procurement, construction, etc.).

SPS will own 100 percent of the Proposed Project.

If applicable, identify and explain any deviation in transmission project components from the original transmission specifications as previously approved by the Commission or recommended by a PURA §39.151 organization.

• Not applicable.

5. Conductor and Structures:

Conductor Size and Type:

Conductor will be 795 kcMIL, ACSS, 26/7 stranded, code name DRAKE/ACSS. Static wire will be one 3/8" EHS galvanized steel and one Optical Ground Wire.

 $Number\ of\ conductors\ per\ phase:\ \ 2\ (two)$

Continuous Summer Static Current Rating (A): 3000 Amps

Continuous Summer Static Line Capacity at Operating Voltage (MVA): 1793 MVA

Continuous Summer Static Line Capacity at Design Voltage (MVA): 1793 MVA

Type and composition of Structures:

The proposed transmission line will be built using primarily two-pole H-frame steel structures for tangents and light angles. Three-pole steel structures will be used for high angle structures and dead-end structures. The H-frames will be direct burial structures and the three-pole structures will utilize drilled pier foundations. Monopole structures and/or improved structure foundations may be used where necessary. Typical heights are shown on the attached drawings and are dependent upon the clearance requirements to be determined. Structure heights will be identified that will meet or exceed the minimum clearances required by the Texas Department of Transportation ("TxDOT") and the National Electrical Safety Code.

Height of Typical Structures:

The typical heights for the H-frame and three-pole structures are between 90 and 180 feet.

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Explain why these structures were selected; include such factors as landowner preference, engineering considerations, and costs comparisons to alternate structures that were considered. Provide dimensional drawings of the typical structures to be used in the project.

SPS is proposing H-frame structures over monopole structure as the standard structure type for this line for several reasons. The cost for an H-frame structure is less than that of the monopole structures. It is estimated that the cost of a tangent monopole is approximately \$9,900 more than a tangent H-frame structure. The estimated cost of a monopole angle structure is approximately \$19,900 more than a 3-pole angle structure, and the estimated cost of a monopole corner structure is approximately \$21,400 more than a 3-pole corner structure. Additional increased costs are expected to be incurred if SPS proposed to use a monopole 345-kV transmission line and are presented below. The cost savings from SPS proposing H-frame structures result from several areas of the design as stated below, however, they cannot be quantified at this time due to the number of variables associated with each of them.

- Structural Efficiency: H-frames are more structurally efficient than monopoles in withstanding the winds that occur in the region. For cross the line wind loads, H-frame structures behave as braced frames, transferring the horizontal wind loads into the ground as a downforce on the leeward leg and an up force on the windward leg. To resist longitudinal forces (loads in the direction of the conductors), there are two pole shafts to take the bending load.
- Foundation simplicity: Because of the relatively low bending moment at the ground line
 compared to large monopoles, tangent H-frames in the project region can be directly
 embedded in the ground and backfilled with compacted native soil. Large monopoles
 designed for 345-kV transmission lines for use with similar span lengths in the same
 region require drilled concrete pier foundations.
- Height: H-frame structures are shorter in height than a comparable monopole, because
 the phase conductors are configured horizontally across the structure instead of vertically.
 For 345-kV construction, the typical tangent H-frame structure can be 20 to 30 feet
 shorter than a comparable monopole structure.
- Fewer right-of-way improvements: The H-frame design proposed does not require concrete or large drill trucks for installation of tangent structure foundations, reducing the need for additional ROW road construction. Improving access roads to the level necessary to pass large cranes, drill rigs and concrete trucks that are necessary for the construction with monopoles is disruptive to the landscape and costly. The H-frame structures, because they are shorter and lighter than comparable monopoles, can be erected and serviced using modest size, off road capable equipment.

Refer to Attachment 2 for the following structure drawings:

- A typical 345-kV single-circuit steel three-pole 75°-100° corner structure is shown on SPS drawing SD-T40-709.
- A typical 345-kV single-circuit steel H-frame tangent structure is shown on SPS drawing SD-T40-710.
- A typical 345-kV single-circuit steel three-pole 10°-18° running angle structure is shown on SPS drawing SD-T40-711.
- A typical 345-kV single-circuit steel monopole tangent structure is shown on SPS drawing SD-T40-715.
- A typical 345-kV single-circuit steel monopole 75°-100° corner structure is shown on SPS drawing SD-T40-708.
- A typical 345-kV single-circuit steel monopole 6°-16° running angle structure is shown on SPS drawing SD-T40-716.

For joint applications, provide and separately identify the above-required information regarding structures for the portion(s) of the project owned by each applicant.

• Not applicable.

6. Right-of-way:

Miles of Right-of-Way: Approximately 99 to 111 miles.

Miles of Circuit: Approximately 99 to 111 miles.

Width of Right-of-Way: 150 feet.

Percent of Right-of-Way Acquired: 0%

In addition to the typical 150-foot easement, SPS will purchase a 50-foot easement for temporary work space adjacent to the permanent easement that will be used during construction to allow for a larger work area during construction. The 50-foot easement for temporary work space will be released after construction is complete. Additionally, where possible, SPS will purchase an additional 300 ft. x 300 ft. temporary easement for each angle that is 45 degrees or more on a temporary basis to ensure there is enough room for construction.

Provide a brief description of the area traversed by the transmission line. Include a description of the general land uses in the area and the type of terrain crossed by the line.

The study area is located within the Southern High Plains Physiographic Province. This province is located west of the North-Central Plains Province and is bounded to the south by the Edwards Plateau and Basin and Range provinces. This region is described as flat with playa lakes and local dune fields. Elevations within the Southern High Plains region range from 2,200 feet to 3,800 feet above mean sea level (amsl) (BEG 1996). Within the study area, elevations typically range between 3,000 and 3,800 feet amsl with elevations increasing to the north and west (BEG 1974, 1976). The land use is predominantly rural, with a mixture of rangeland/pastureland and irrigated cropland. Most of the habitable structures are associated with scattered rural properties.

7. Substations or Switching Stations:

List the name of all existing HVDC converter stations, substations or switching stations that will be associated with the new transmission line. Provide documentation showing that the owner(s) of the existing HVDC converter stations, substations and/or switching stations have agreed to the installation of the required project facilities.

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- Yoakum Substation.
- TUCO Substation.

These substations are owned by SPS.

For joint applications, provide and separately identify the above-required information for each route for the portion(s) of the project owned by each applicant.

Not applicable.

List the name of all new HVDC converter stations, substations or switching stations that will be associated with the new transmission line. Provide documentation showing that the owner(s) of the new HVDC converter stations, substations and/or switching stations have agreed to the installation of the required project facilities.

• Not applicable.

8. Estimated Schedule:

Estimated Dates of:	Start	Completion
Right-of-way and Land Acquisition	Following CCN approval	12 months following CCN approval
Engineering and Design	Ongoing	8 weeks before construction
Material and Equipment Procurement	Following CCN approval	6 weeks before construction
Construction of Facilities	As ROW is acquired	12 months following ROW acquisition
Energize Facilities	Following completion of construction	Within 30 days of completion of construction

9. Counties:

For each route, list all counties in which the route is to be constructed.

The proposed routes are located in Hale, Hockley, Lubbock, Terry, and Yoakum Counties, Texas.

10. Municipalities:

For each route, list all municipalities in which the route is to be constructed.

- City of Lubbock;
- City of New Deal; and
- Town of Opdyke West.

For each applicant, attach a copy of the franchise, permit or other evidence of the city's consent held by the utility, if necessary or applicable. If franchise, permit, or other evidence of the city's consent has been previously filed, provide only the docket number of the application in which the consent was filed. Each applicant should provide this information only for the portion(s) of the project which will be owned by the applicant.

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Refer to Attachment 3 for the Franchise Agreements for the cities of Lubbock and New Deal.

11. Affected Utilities:

Identify any other electric utility served by or connected to facilities in this application.

- Lyntegar Electric Cooperative ("LEC");
- Golden Spread Electric Cooperative ("GSEC");
- Lamb County Electric Cooperative ("LCEC");
- South Plains Electric Cooperative ("SPEC"); and
- Lubbock Power and Light ("LPL").

Describe how any other electric utility will be affected and the extent of the other utilities' involvement in the construction of this project. Include any other electric utilities whose existing facilities will be utilized for the project (vacant circuit positions, ROW, substation sites and/or equipment, etc.) and provide documentation showing that the owner(s) of the existing facilities have agreed to the installation of the required project facilities.

The addition of the proposed transmission line will increase system reliability and capacity and will benefit LEC, GSEC, LCEC, SPEC and LPL because they will be able to serve additional load in their service area. Since SPS owns the substation affected by the Proposed Project, LEC, GSEC, LCEC, SPEC and LPL will not be directly involved in the construction of facilities proposed under this Application.

12. Financing:

Describe the method of financing this project. For each applicant that is to be reimbursed for all or a portion of this project, identify the source and amount of the reimbursement (actual amount if known, estimated amount otherwise) and the portion(s) of the project for which the reimbursement will be made.

The Proposed Project will be financed through internally-generated funds.

13. Estimated Costs:

Provide cost estimates for each route of the proposed project using the following table. Provide a breakdown of "Other" costs by major cost category and amount. Provide the information for each route in an attachment to this application.

Refer to Attachment 4 for the estimated cost table.

The Lesser Prairie-Chicken ("LPC") Interstate Working Group drafted a LPC Range-Wide Conservation Plan ("RWP") as a voluntary measure implemented by the Western Association of Fish and Wildlife Agencies ("WAFWA") and the Foundation for Western Fish and Wildlife (Van Pelt et al. 2013). SPS is a participant of the WAFA program and is required to evaluate potential project impacts of enrolled facilities and pay mitigation costs for associated potential impacts to LPC habitat. Even though the Final Rule listing the LPC as a threatened species has been vacated, SPS remains a participant in its WAFWA Conservation Agreement and all appropriate conservation measures will continue to be implemented for enrolled facilities. SPS has included these potential mitigation costs for each of its proposed routes in the estimated cost table.

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For joint applications, provide and separately identify the above-required information for the portion(s) of the project owned by each applicant.

• Not applicable.

14. Need for the Proposed Project:

For a standard application, describe the need for the construction and state how the proposed project will address the need. Describe the existing transmission system and conditions addressed by this application. For projects that are planned to accommodate load growth, provide historical load data and load projections for at least five years. For projects to accommodate load growth or to address reliability issues, provide a description of the steady state load flow analysis that justifies the project. For interconnection projects, provide any documentation from a transmission service customer, generator, transmission service provider, or other entity to establish that the proposed facilities are needed. For projects related to a Competitive Renewable Energy Zone, the foregoing requirements are not necessary; the applicant need only provide a specific reference to the pertinent portion(s) of an appropriate commission order specifying that the facilities are needed. For all projects, provide any documentation of the review and recommendation of a PURA §39.151 organization.

SPS is a member of, and its entire transmission system is located within, the SPP. The SPP is an organization that meets the requirements of Public Utility Regulatory Act ("PURA") § 39.151 as an independent system operator. SPS does not operate in the Electric Reliability Council of Texas ("ERCOT") region, and ERCOT takes no position on SPS's transmission projects.

The Proposed Project will connect the existing TUCO Substation in Hale County, Texas to the existing Yoakum Substation in Yoakum County, Texas, as part of the larger TYH Project. This Application is the second of two CCN filings in Texas that cover the Texas portion of the transmission line from the TUCO Substation to Yoakum Substation. The Proposed Project was identified by the SPP's HPILS as needed for reliability to alleviate loading violations on the underlying network and voltage violations due to insufficient power supply to network load additions.

In April 2013, the SPP board of directors ("BOD") directed SPP staff to conduct the HPILS to develop a transmission plan to address the needs associated with network load additions in the SPP footprint that had not been accounted for in previous planning efforts or in models being used in planning efforts underway at the time. The SPP BOD recognized the need to timely and cost-effectively address system needs that could not otherwise be accomplished by waiting for completion of SPP's next scheduled planning efforts to incorporate these load growth assumptions. The HPILS was conducted in accordance with the high priority study provisions outlined in the SPP Open Access Transmission Tariff and the HPILS scope document, which was approved by the SPP Transmission Working Group and the Markets and Operations Policy Committee in June and July of 2013, respectively. In accordance with the HPILS scope, a cost-effective transmission plan was developed to address reliability needs over a 10-year period.

The HPILS focused on the reliability needs in the SPP footprint to satisfy SPP reliability criteria and member utility planning criteria. Individual projects were targeted to meet the various reliability needs that include six states: Kansas, Louisiana, Nebraska, New Mexico, Oklahoma, and Texas, all of which are in the SPP region. Three model years – 2015, 2018, and 2023 – were used in the study, which employed two different models with different forecasting methodologies.

The HPILS identified reliability solutions in the study years in the West Texas/New Mexico area that would alleviate loading violations on the underlying network and the voltage violations due to insufficient power supply to the network load in the service area. As detailed in Attachment 5 to this Application, the HPILS analyzed the potential solutions using both reliability and economic analyses and identified the TYH Project as the best solution for the area.

Based on the need analysis in the HPILS, SPP issued a Notification to Construct ("NTC") letter to SPS. The SPP NTC letter, sent to SPS under Project ID 30376 directs SPS to: (1) build a 345-kV transmission line from the TUCO Substation in Hale County, Texas to the Yoakum Substation in Yoakum County, Texas (Network Upgrade ID number 50447); and (2) install a new 345/230 kV 644 MVA transformer at Yoakum Substation (Network Upgrade ID number 50451). This Application is the second of two CCN filings in Texas that covers the Texas portion of the overall TYH Project. Other projects within the NTC include Network Upgrade 50457, i.e., the Yoakum-Stateline (Hobbs) 345-kV segment of the TYH Project, which was filed on June 25, 2015 and approved by the PUCT on March 22, 2016 in Docket No. 44726. The need addressed in this CCN filing is the same identified for the first related CCN filing in Docket No. 44726. The original need date specified by the NTC was June 1, 2020. However, SPS received a new NTC from the SPP on May 17, 2016 with an updated, accelerated in-service need date of June 1, 2017 under Project ID 31068. The accelerated need date was based on the SPP's analysis in the 2016 Integrated Transmission Planning Near-Term ("ITPNT") Assessment. Although SPP has provided SPS with the new NTC, a copy of the final ITPNT assessment has not been released.

Attached to this Application is the 9-year Summer Load Forecast from 2015 to 2023 for the transmission system within the Texas Central Plains, including the Gaines, Hale, Hockley, Lubbock, Terry, and Yoakum county service areas. This load forecast shows the total combined loads submitted by SPS and rural electric cooperatives to SPP to develop and build the HPILS power flow models for the study. The forecast indicates there is increasing load growth in the area for the next nine years and supports the need for the additional transmission capacity that the proposed transmission line will provide.

Please refer to Attachment 5 for a copy of the High Priority Incremental Load Study Report.

Please refer to Attachment 6 for a copy of the SPP NTC Letter dated December 3, 2014.

Please refer to Attachment 7 for a copy of SPS's letter accepting the SPP NTC Letter dated February 23, 2015.

Please refer to Attachment 8 for a copy of the revised SPP NTC Letter dated (May 17, 2016).

Please refer to Attachment 9 for the Summer Load Forecast from 2015 to 2023 for the transmission system within the Texas Central plains service areas.

Please refer to Attachment 10 for a graph depicting the 5-Year Historical Load as of December 31, 2015.

Please refer to Attachment 11 for the Summer Load Forecast from 2016 to 2026 for the transmission system within the Texas Central Plains service areas as of March 14, 2016.

Existing Transmission System

SPS's existing transmission system in the Texas Central Plains service area consists of 38 miles of 345-kV transmission lines, 338 miles of 230-kV transmission lines, 689 miles of 115-kV transmission lines, and 525 miles of 69-kV transmission lines.

The Texas Central Plains service areas are connected to the SPS generating system which in material part includes, the gas-fired Jones, coal-fired Tolk, and the gas-fired Plant X. The total 2016 Summer capacity of the Jones, Tolk, and Plant-X Plants is approximately 2,311 MW.

15. Alternatives to Project:

For a standard application, describe alternatives to the construction of this project (not routing options). Include an analysis of distribution alternatives, upgrading voltage or bundling of conductors of existing facilities, adding transformers, and for utilities that have not unbundled, distributed generation as alternatives to the project. Explain how the project overcomes the insufficiencies of the other options that were considered.

Because an in-depth analysis was conducted by SPP in the HPILS and the 2016 ITPNT, no additional analysis was conducted by SPS to provide additional alternatives.

The focus of the HPILS was to identify transmission-based solutions to address reliability needs. The HPILS did not study distribution as a possible solution because the problem of providing power to the network loads in the service area and the associated reliability issues existed on the transmission side. Additionally, because the projected load increase is so large, it could not be serviced with solely distribution solutions. None of the alternatives listed in the question would satisfy the reliability needs to alleviate loading violations on the underlying network and the voltage violations due to insufficient power supply to the network load in the service area.

The HPILS discusses additional transmission reinforcements that are required and the evaluation of alternatives to the TYH Project. The TYH Project itself is a product of SPP's in-depth analysis to develop cost-effective solutions. The TYH Project is a variation of the TUCO-Amoco-Hobbs Project for which a conditional NTC was previously issued, but was identified for re-evaluation under the HPILS. Thus, the HPILS includes an evaluation of alternatives to a previously-identified project. Based on the analysis conducted in the HPILS, the TYH Project was determined to be a more cost-effective solution and the best solution for this area. The alternatives discussion addressed for this Proposed Project is the same identified for the first related CCN filing in Docket No. 44726.

16. Schematic or Diagram:

For a standard application, provide a schematic or diagram of the applicant's transmission system in the proximate area of the project. Show the location and voltage of existing transmission lines and substations, and the location of the construction. Locate any taps, ties, meter points, or other facilities involving other utilities on the system schematic.

Refer to Attachment 12.

17. Routing Study:

Provide a brief summary of the routing study that includes a description of the process of selecting the study area, identifying routing constraints, selecting potential line segments, and the selection of the routes. Provide a copy of the complete routing study conducted by the utility or consultant. State which route the applicant believes best addresses the requirements of PURA and P.U.C. Substantive Rules.

The EA for this Proposed Project was prepared by POWER Engineers, Inc. ("POWER") with input from SPS. The objective of the routing study was to develop and evaluate an adequate number of geographically diverse alternative transmission line routes to allow the Commission to conduct a proper evaluation for the proposed transmission line. SPS and POWER used a comprehensive transmission line routing and evaluation methodology to delineate and evaluate alternative transmission line routes in compliance with PURA § 37.056(c)(4)(A)-(D), 16 Tex. Admin. Code ("TAC") § 22.52(a)(4), and 16 TAC § 25.101(b)(3)(B), including the PUC's policy of prudent avoidance.

The first step in the development of alternative routes was to select a study area. This area needed to encompass the endpoints of the Proposed Project (TUCO Substation and the Yoakum Substation) and include a sufficiently large area in which feasible, geographically diverse, forward progressing alternative routes could be located. The length of the study area from north to south is approximately 62 miles, depending on the location of measurement, and the width of the study area from west to east is approximately 50 miles, encompassing a total area of approximately 2,100 square miles. The study area is shown in Figures 2-2 and 3-3 of the EA, Attachment 1.

In an effort to minimize potential impacts to sensitive environmental and land-use features, a constraints mapping process was used to develop and refine possible alternative routes. The geographic locations of environmentally sensitive and other restrictive areas within the study area were identified and considered during alternative route development. These constraints were mapped on topographic base maps. Environmental and land use data used by POWER in the delineation and evaluation of alternative routes were drawn from a variety of sources, including readily available Geographic Information System ("GIS") coverage with associated metadata; maps and published literature; information files and records from numerous federal, state, and local regulatory agencies; meetings with stakeholders; and reconnaissance surveys of the study area.

POWER and SPS used the composite constraints map, in conjunction with existing aerial photography, to identify preliminary alternative links to connect the Proposed Project's endpoints. The 191 preliminary alternative links are shown in Figure 3-1 of the EA, Attachment 1.

The preliminary alternative links were presented at four public open-house meetings, over a two-week timeframe. Following the public open-house meetings, SPS and POWER performed an analysis of the input, comments, and information received at the open-house meetings, and from follow-up meetings and communications with landowners, interested public stake-holders, and governmental agencies and offices. The purpose of this analysis was to determine whether there were any issues warranting modification to the preliminary alternative links and identify potential new links not presented at the meeting. Several preliminary alternative links were modified as a result of landowner feedback to address issues such as to improve roadway crossings, to minimize potential tree clearing and to reduce potential impacts to pivot irrigation systems. Modifications to the 191 preliminary alternative links resulted in development of 184 primary alternative links. The primary alternative links are shown in Figures 3-2, 3-3 and 5-1 of the EA, Attachment 1.

POWER and SPS identified primary alternative routes using each of the 184 primary alternative links in at least one route. The 184 primary alternative links produce numerous possible forward

progressing route combinations. While all of the links and potential route combinations are viable and constructible, 22 primary alternative routes were selected that, when combined, form an adequate number of reasonable and geographically diverse primary alternative routes that reflect all of the previously discussed routing considerations.

POWER evaluated all of the alternative routes based on its evaluation criteria as discussed in Sections 4 and 5 of the EA, including the factors set forth in PURA and PUC Substantive Rules, and considering the environmental conditions present along each route and comments received from the public, and local, state, and federal agencies; and field reconnaissance of the study area. POWER determined that Alternative Route L best meets the PUC routing criteria related to land use, aesthetics, ecology, and cultural resources and best meets the requirements of PURA and the PUC Substantive Rules. POWER's assessment of Alternative Route L is supported by the following criteria. Alternative Route L:

- has the shortest overall length;
- runs parallel to existing compatible corridors and apparent property boundaries for approximately 92% of its length;
- has the longest length of ROW parallel to existing transmission lines;
- has no length of ROW across known habitat of federally listed endangered or threatened species;
- crosses no parks/recreational areas;
- crosses no cemeteries within 1,000 feet of the ROW centerline;
- has no heliports within 5,000 feet of the ROW centerline;
- has no commercial AM radio transmitters located within 10,000 feet of the ROW centerline:
- has no length of ROW through upland woodlands;
- has no length of ROW through bottomland/riparian woodlands;
- has no length of ROW across open water (lakes, ponds);
- has no river crossingss;
- has no crossings of National Register of Historic Places listed properties; and
- has no additional National Register of Historic Places listed properties within 1,000 feet of ROW centerline.

Following POWER's review of the 22 primary alternative routes, SPS undertook a further evaluation to consider the reliability, constructability, operation, maintenance, and the cost to construct each alternative route. The final evaluation by the SPS project team resulted in the identification of Alternative Route L as the route that SPS believes best addresses the requirements of PURA and PUC Substantive Rules for reasons

including those identified above by POWER, and because it is the least expensive route based on estimated costs, has the 4th fewest habitable structures within 500 feet of the centerline, and has the 3rd fewest number of transmission line crossings. While all proposed alternative routes and combinations of links comprising those routes are viable and constructible, both SPS and POWER believe that Alternative Route L best addresses the requirements of PURA and PUC Substantive Rules.

18. Public Meeting or Public Open House:

Provide the date and location for each public meeting or public open house that was held in accordance with P.U.C. Proc. R. 22.52. Provide a summary of each public meeting or public open house including the approximate number of attendants, and a copy of any survey provided to attendants and a summary of the responses received. For each public meeting or public open house provide a description of the method of notice, a copy of any notices, and the number of notices that were mailed and/or published.

SPS hosted four public open-house meetings within the affected communities to solicit comments from landowners, public officials, and other interested residents and persons regarding the preliminary alternative links. The meetings were held over a two week timeframe.

Tuesday January 6, 2015	Thursday January 8, 2015	Tuesday January 13, 2015	Thursday January 15, 2015
5:30 – 7:30 p.m. MST 6:30 – 8:30 p.m. CST	5:30 – 7:30 p.m.	5:30 – 7:30 p.m.	5:30 – 7:30 p.m.
Hobbs Event Center 5101 N. Lovington Hwy Hobbs, NM 88240	Denver City High School Auditorium 601 Mustang Drive Denver City, TX 79323	Brownfield Middle School Auditorium 1001 E. Broadway St. Brownfield, TX 79316	Legacy Event Center 1500 14th Street Lubbock, TX 79401

A public open-house meeting notice was submitted to 3,059 landowners who own property located within 500 feet of the preliminary alternative links' centerlines. This notice included maps of the combined three project study areas and depicting the preliminary alternative links for each of the three projects, a questionnaire, a copy of the *landowner bill of rights*, a copy of *Landowners and Transmission Line Cases at the PUC*, and a survey permission form. A copy of the notice is included in Appendix B of the EA, Attachment 1.

A total of 271 individuals attended the meetings according to the sign-in sheet, with 62 submitting questionnaire responses at the meetings and another 100 landowners submitting comments by email/mail. A copy of the questionnaire is included in Appendix B of the EA, Attachment 1.

Meeting Location	Number of Open House Attendees	Number of Questionnaires Submitted
Hobbs, NM	14	2
Denver City, TX	26	5
Brownfield, TX	101	18
Lubbock, TX	130	37
N/A	N/A	100 (sent by email or mail)
TOTALS	271	162

As discussed in Section 17 of this Application, modifications were made to the 191 preliminary alternative links after these meetings that resulted in the development of 184 primary alternative

links. Landowners that were impacted by the modifications that were not originally invited to the public open-house meetings were sent a letter with a map notifying them of the Proposed Project and inviting them to contact SPS to discuss the project over the phone or at a meeting. A copy of the letter and map are including in Attachment 13.

Refer to Appendix A of the EA, Attachment 1, for a list of federal, state, and local agencies and officials that received notice of the project, and Appendix B for a sample copy of the notice letters sent to landowners regarding the open house meeting.

Refer to Appendix B of the EA, Attachment 1, for a copy of the questionnaire.

19. Routing Maps:

Base maps should be a full scale (one inch = not more than one mile) highway map of the county or counties involved, or other maps of comparable scale denoting sufficient cultural and natural features to permit location of all routes in the field. Provide a map (or maps) showing the study area, routing constraints, and all routes or line segments that were considered prior to the selection of the routes. Identify the routes and any existing facilities to be interconnected or coordinated with the project. Identify any taps, ties, meter points, or other facilities involving other utilities on the routing map. Show all existing transmission facilities located in the study area. Include the locations of radio transmitters and other electronic installations, airstrips, irrigated pasture or cropland, parks and recreational areas, historical and archeological sites (subject to the instructions in Question 27), and any environmentally sensitive areas (subject to the instructions in Question 29).

Please refer to Figure Nos. 3-1, 3-2 and 5-1 in the EA/Routing Study, included as Attachment 1 to this Application.

Provide aerial photographs of the study area displaying the date that the photographs were taken or maps that show (1) the location of each route with each route segment identified, (2) the locations of all major public roads including, as a minimum, all federal and state roadways, (3) the locations of all known habitable structures or groups of habitable structures (see Question 19 below) on properties directly affected by any route, and (4) the boundaries (approximate or estimated according to best available information if required) of all properties directly affected by any route.

Please refer to Figure Nos. 3-3 and 5-1 in the EA/Routing Study, included as Attachment 1 to this Application.

For each route, cross-reference each habitable structure (or group of habitable structures) and directly affected property identified on the maps or photographs with a list of corresponding landowner names and addresses and indicate which route segment affects each structure/group or property.

Please refer to Figure 5-1 of the EA, Attachment 1, for the Alternative Route Maps depicting the 22 alternative routes for the Proposed Project. Refer to Tables 5-2 through 5-23 in Appendix D of the EA, Attachment 1 for the habitable structures list (by route and distance) and Attachment 14, for a list of the landowner names and addresses cross-referenced to the transmission line route link that affects each structure and property.

20. Permits:

List any and all permits and/or approvals required by other governmental agencies for the construction of the proposed project. Indicate whether each permit has been obtained.

Below is a list of permits that may be required for construction of the Proposed Project depending on which route is selected:

- Consultation with the U.S. Army Corps of Engineers will occur following the Commission's approval of this Application to determine appropriate requirements under Section 404/Section 10 Permit criteria (not yet obtained).
- Consultation with the U.S. Fish and Wildlife Service will occur following the Commission's approval of this Application to determine appropriate requirements under the Endangered Species Act (not yet obtained).
- If the approved route triggers Federal Aviation Administration ("FAA") criteria regarding proximity to airports, SPS will file a Notice of Construction form with the FAA (not yet obtained).
- Depending on the location of structures, and road crossing permits might be required by the counties in which the approved route is located (not yet obtained).
- A Storm Water Pollution Prevention Plan will be prepared and a Notice of Intent will be submitted at least 48 hours prior to the beginning of construction to the Texas Commission on Environmental Quality under the Texas Pollutant Discharge Elimination System General Permit (not yet obtained).
- Cultural resources clearance will be obtained from the Texas Historical Commission ("THC") for the Proposed Project if necessary. Clearance will be obtained after the Commission has approved a route.
- Texas Department of Transportation ("TxDOT") permit(s) will be required for crossing state-maintained roadways or using TxDOT ROW to access the project (not yet obtained).
- SPS will submit an application for a wire crossing to railways affected by the approved route. No construction will occur at any crossing until a permit is obtained.

21. Habitable structures:

For each route list all single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline if the proposed project will be constructed for operation at 230-kV or less, or within 500 feet of the centerline if the proposed project will be constructed for operation at greater than 230-kV. Provide a general description of each habitable structure and its distance from the centerline of the route. In cities, towns or rural subdivisions, houses can be identified in groups. Provide the number of habitable structures in each group and list the distance from the centerline of the route to the closest and the farthest habitable structure in the group. Locate all listed habitable structures or groups of structures on the routing map.

Table 4-1 in the EA, Attachment 1 identifies, by route, the number of all habitable structures located within 500 feet of the centerline of the proposed routes. Tables 5-2 through 5-23 of the

EA, Attachment 1, provide a general description of each habitable structure and its distance from the centerline of the route. The habitable structures are shown on Figure 5-1 of the EA, Attachment 1.

22. Electronic Installations:

For each route, list all commercial AM radio transmitters located within 10,000 feet of the center line of the route, and all FM radio transmitters, microwave relay stations, or other similar electronic installations located within 2,000 of the center line of the route. Provide a general description of each installation and its distance from the center line of the route. Locate all listed installations on a routing map.

No commercial AM radio towers were identified within 10,000 feet of any of the alternative route centerlines. There are six FM radio transmitters, microwave towers, or other electronic installations within 2,000 feet of the center line of the route. Tables 5-2 and 5-23 in the EA, Attachment 1, provide a general description of the electronic installations and their distances from the centerline of the alternative routes. The locations of the listed electronic installations are shown on Figure 5-1 of the EA, Attachment 1.

23. Airstrips:

For each route, list all known private airstrips within 10,000 feet of the center line of the project. List all airports registered with the Federal Aviation Administration (FAA) with at least one runway more than 3,200 feet in length that are located within 20,000 feet of the center line of any route. For each such airport, indicate whether any transmission structures will exceed a 100:1horizontal slope (one foot in height for each 100 feet in distance) from the closest point of the closest runway. List all listed airports registered with the FAA having no runway more than 3,200 feet in length that are located within 10,000 feet of the center line of any route. For each such airport, indicate whether any transmission structures will exceed a 50:1 horizontal slope from the closest point of the closest runway. List all heliports located within 5,000 feet of the center line of any route. For each such heliport, indicate whether any transmission structures will exceed a 25:1 horizontal slope from the closest point of the closest landing and takeoff area of the heliport. Provide a general description of each listed private airstrip, registered airport, and heliport; and state the distance of each from the center line of each route. Locate and identify all listed airstrips, airports, and heliports on a routing map.

Table 4-1 of the EA, Attachment 1 identifies the number of airports, airstrips, and heliports for each of the alternative routes. Table 4-2 of the EA, Attachment 1 identifies each airport, airstrip, and heliport and indicates which routes will likely exceed horizontal slope for each FAA-registered airport. Tables 5-2 through 5-23 of the EA, Attachment 1 provide the distance each airport, airstrip, or heliport from the centerline of each route.

After the PUC approves a route for the Proposed Project, and engineering and pole placement along the route is finalized, SPS will provide the FAA Notice of Proposed Construction or Alteration (FAA Form 7560-1) for all transmission structures proposed to be located within the specified distances of the airport listed in Table 4-2 of the EA, Attachment 1. The result of this notification and subsequent coordination with the FAA could include changes in the line design and/or potential requirements to add markers.

24. Irrigation Systems:

For each route identify any pasture or cropland irrigated by traveling irrigation systems (rolling

or pivot type) that will be traversed by the route. Provide a description of the irrigated land and state how it will be affected by each route (number and type of structures etc.). Locate any such irrigated pasture or cropland on a routing map.

Table 4-1 in the EA, Attachment 1 identifies, by route, the length of ROW through land irrigated by traveling systems (rolling or pivot type). Figure 3-2 in the EA, Attachment 1 shows land irrigated by traveling systems (rolling or pivot type).

25. Notice:

Notice is to be provided in accordance with P.U.C. PROC. R. 22.52.

A. Provide a copy of the written direct notice to owners of directly affected land. Attach a list of the names and addresses of the owners of directly affected land receiving notice.

Refer to Attachment 14 for: (1) a sample copy of the notice letter; (2) the link descriptions with attached maps; PUCT Landowner Brochure, Comments Form, and Intervenor Form, and Landowner Bill of Rights, all of which were included with each notice packet; and (3) the list of landowners to whom notice was sent.

B. Provide a copy of the written notice to utilities that are located within five miles of the routes.)

Refer to Attachment 15 for a copy of the notice letter and list of utilities receiving notice. Also, refer to Attachment 14, for the link descriptions and maps included with each notice.

C. Provide a copy of the written notice to county and municipal authorities.

Refer to Attachment 16 for a copy of the notice letter and list of county and municipal authorities receiving notice. Also, refer to Attachment 14, for the link descriptions and maps included with each notice.

D. Provide a copy of the notice that is to be published in newspapers of general circulation in the counties in which the facilities are to be constructed. Attach a list of the newspapers that will publish the notice for this application. After the notice is published, provide the publisher's affidavits and tear sheets.

Refer to Attachment 17 for a copy of the newspaper notice, link descriptions, and newspaper that will publish the notice. Also, refer to Attachment 14, for a copy of the maps used for the newspaper notice.

For a CREZ application, in addition to the requirements of P.U.C. Proc. R. 22.52 the applicant shall, not less than twenty-one (21) days before the filing of the application, submit to the Commission staff a "generic" copy of each type of alternative published and written notice for review. Staff's comments, if any, regarding the alternative notices will be provided to the applicant not later than seven days after receipt by Staff of the alternative notice. Applicant may take into consideration any comments made by Commission staff before the notices are published or sent by mail.

• Not applicable.

26. Parks and Recreation Areas:

For each route, list all parks and recreational areas owned by a governmental body or an organized group, club, or church and located within 1,000 feet of the center line of the route.

Provide a general description of each area and its distance from the center line. Identify the owner of the park or recreational area (public agency, church, club, etc.). List the sources used to identify the parks and recreational areas. Locate the listed sites on a routing map.

POWER reviewed federal and state databases and county/local maps to identify any parks and/or recreational areas within the study area. There are no parks and recreation areas within 1,000 feet of any route.

27. Historical and Archeological Sites:

For each route, list all historical and archeological sites known to be within 1,000 feet of the center line of the route. Include a description of each site and its distance from the center line. List the sources (national, state or local commission or societies) used to identify the sites. Locate all historical sites on a routing map. For the protection of the sites, archeological sites need not be shown on maps.

POWER conducted a literature review and records search at the THC and The Texas Archeological Research Laboratory at the University of Texas at Austin to identify known historical and archeological sites located within 1,000 feet of the alternative routes. Table 4-1 in the EA, Attachment 1 identifies, by route, the number of archeological or historical sites and the number of National Register of Historic Places within 1,000 feet of the centerline of the proposed routes. Tables 5-2 through 5-23 of the EA, Attachment 1, provide a general description of each archeological or historical site and National Register of Historic Places site and its distance from the centerline of the route.

28. Coastal Management Program:

For each route, indicate whether the route is located, either in whole or in part, within the coastal management program boundary as defined in 31 T.A.C. §503.1. If any route is, either in whole or in part, within the coastal management program boundary, indicate whether any part of the route is seaward of the Coastal Facilities Designation Line as defined in 31 T.A.C. §19.2(a)(21). Using the designations in 31 T.A.C. §501.3(b), identify the type(s) of Coastal Natural Resource Area(s) impacted by any part of the route and/or facilities.

None of the routes are located within the coastal management program boundary as defined in 31 TAC § 503.1.

29. Environmental Impact:

Provide copies of any and all environmental impact studies and/or assessments of the project. If no formal study was conducted for this project, explain how the routing and construction of this project will impact the environment. List the sources used to identify the existence or absence of sensitive environmental areas. Locate any environmentally sensitive areas on a routing map. In some instances, the location of the environmentally sensitive areas or the location of protected or endangered species should not be included on maps to ensure preservation of the areas or species.

Refer to the EA for the Proposed TUCO to Yoakum 345-kV Transmission Line Project in Hale, Hockley, Lubbock, Terry, and Yoakum Counties, Texas.

Within seven days after filing the application for the project, provide a copy of each environmental impact study and/or assessment to the Texas Parks and Wildlife Department (TPWD) for its review at the address below. Include with this application a copy of the letter of transmittal with which the studies/assessments were or will be sent to the TPWD.

Wildlife Habitat Assessment Program Wildlife Division Texas Parks and Wildlife Department 4200 Smith School Road Austin, Texas 78744

The applicant shall file an affidavit confirming that the letter of transmittal and studies/assessments were sent to TPWD.

A copy of the Application, including the EA, Attachment 1, was sent to TPWD on the day of the filing of this Application. Refer to Attachment 18 for a copy of the transmittal letter.

At the request of the Office of Public Utility Counsel ("OPUC"), only copies of the link descriptions and maps were sent to OPUC on the day of the filing of this Application. Refer to Attachment 19 for a copy of the transmittal letter.

AFFIDAVIT

STATE OF TEXAS

COUNTY OF POTTER

I, James M. Bagley, after first being duly sworn state the following: I am filing this application as Manager, Regulatory Administration. I am qualified and authorized to file and verify this application, and am personally familiar with the information supplied in this application; and to the best of my knowledge, all information provided, statements made, and matters set forth in this application and attachments are true and correct; and all requirements for the filing of this application have been satisfied. I further state that this application is made in good faith and that this application does not duplicate any filing presently before the commission.

AFFIANT

James M. Bagley

SUBSCRIBED AND SWORN TO BEFORE ME, a Notary Public in and for the state of Texas, this 24

day of June 2016.

SEAL

MARY C. JOHNSON NOTARY PUBLIC, STATE OF TEXAS

My Commission Expires 08-28-201

My Commission Expires: 8-28-16