

**Application For A Certificate of Convenience and Necessity
For A Proposed Transmission Line**

**APPLICATION FOR A
CERTIFICATE OF CONVENIENCE AND NECESSITY
FOR A PROPOSED TRANSMISSION LINE WITHIN
HANSFORD, SHERMAN, AND MOORE COUNTIES,
TEXAS**

DOCKET NO. 38283

Submit seven (7) copies of the application and all attachments to:

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

**Application For A Certificate of Convenience and Necessity
For A Proposed Transmission Line**

1. Applicant (Utility) Name: Southwestern Public Service Company (SPS)

Certificate Number: 30153

Street Address: 600 South Tyler Street

Amarillo, TX 79101

Mailing Address: P.O. Box 1261

Amarillo, TX 79105-1261

2. Person to Contact: James M. Bagley

Title/Position: Manager Regulatory Administration

Phone Number: 806-378-2868

Mailing Address: P.O. Box 1261

Amarillo, TX 79105-1261

Email Address: James.Bagley@xcelenergy.com

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Title/Position: Project Manager

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Legal Counsel: Jerry F. Shackelford

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Mailing Address: 816 Congress Avenue, Suite 1650

Austin, TX 78701

Email Address: Jerry.F.Shackelford@xcelenergy.com

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3. Project Description:

Name or Designation of Project

SOUTHWESTERN PUBLIC SERVICE COMPANY'S APPLICATION TO AMEND A CERTIFICATE OF CONVENIENCE AND NECESSITY FOR A PROPOSED 230 kV TRANSMISSION LINE WITHIN HANSFORD, SHERMAN, AND MOORE COUNTIES, TEXAS. THE PROJECT NAME IS HITCHLAND TO MOORE.

Design Voltage Rating (kV): 230 kV

Operating Voltage Rating (kV): 230 kV

Normal Peak Operating Current Rating (A): 1371 amps

The proposed project will provide a new 230 kV source to the Dumas, Texas area through the construction of approximately 55-63 miles of new 230 kV line from the existing Hitchland Substation located in the northern/central Texas Panhandle region near the Oklahoma-Texas state line to the existing Moore County Substation located near Dumas, Texas. The existing Hitchland Substation is served from SPS's 345 kV transmission line circuit J03 which is the 345 kV transmission line referred to as the "tie line" from Potter County Substation north of Amarillo, Texas to Garden City, Kansas to Lamar, Colorado. This project is one part in six of the TXN Upgrades (Texas North Transmission Upgrades) required to serve load growth in the Texas and Oklahoma Panhandle areas.

The proposed transmission line project is presented with a preferred route and seven alternate routes consisting of a combined 24 links. Depending on the route chosen, the proposed line will be between 55 and 63 miles in length. The proposed new 230 kV transmission line will be constructed using primarily two-pole steel H-frame structures with a few single-pole steel structures. Steel structures are used for their greater reliability, lower life-time maintenance cost compared to wood structures, and resistance to grass fires. H-frame structures are the primary structures because of their greater strength for a given cost and their lower typical structure height (to lessen visual impact). Single-pole structures are used as appropriate for areas with right-of-way restrictions (typically irrigation wells). The proposed transmission line will be constructed on new right-of-way consisting of a proposed easement width of 90 feet. The substation upgrades for the project will consist of constructing a 230 kV three terminal ring bus configuration at the existing Moore County Substation to supply the existing 230/115 kV transformer at Moore County Substation, terminate the existing 230 kV line back to Potter County Interchange, terminate the proposed new 230 kV line from the Hitchland Substation and add a 230 kV line terminal at Hitchland Substation.

The need for this transmission line was determined by the Southwest Power Pool (SPP) as a part of their regional studies. The SPP issued a Notification to Construct this line as a result of this determination. Specifically, this line will improve transmission reliability in the area by providing a second 230 kV source

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to Moore County Substation. Additionally, this line will supplement the operation of the 345 kV transmission line that connects Potter County Substation to Hitchland Substation.

All routes describe below will begin at the Hitchland Substation and end at the Moore County Substation.

Route 1 (A-D-F-K-K1-X)

Alternative Route 1 is approximately 59 miles (311,492 feet). **Link A** parallels an existing SPS transmission line on the east side in a southerly direction for approximately 3,489 feet. The Link crosses the central portion of Sections 10 and 30 before ending at the intersection of Links A, D, and C. **Link D** begins at the intersection of Links A, D and C. The Link travels in a southwesterly direction for approximately 18,263 feet through Sections 30, 1, 289, 290, and 287 and crossing two tributaries of Coldwater Creek. The Link then turns due west for approximately 7,132 feet through the central portions of Sections 287 and 242. The Link turns due south following the western boundary of Sections 242, 243, and 244. This portion of the Link also crosses one tributary of Coldwater Creek and is approximately 12,939 feet. The Link ends at the intersection of Links D, E and F. **Link F** begins at the intersection of Links D, E and F. The Link travels due west paralleling the southern boundary of Section 237 crossing two tributaries of Coldwater Creek. The Link is approximately 5,143 feet in length and ends at the intersection of Links F, H and K. **Link K** begins at the intersection of Links F, H and K. The Link travels west paralleling the south side of County Road ("CR") F and the northern boundary of Sections 197, 188 and 149 for approximately 14,534 feet before crossing to the north side of CR F. This portion of the Link crosses the south side of Oslo Church and also crosses Ranch Road 1262 and CR 6. The Link then travels to the northwest for approximately 1,631 feet to avoid a habitable structure bisecting the southwest corner of Section 148. The Link then heads southwest for approximately 1,758 feet bisecting the southeast corner of Section 141. The Link parallels the southern boundary of Section 141 and a portion of Section 100 for approximately 6,338 feet before crossing to the northern boundary of Section 101. The Link then continues due west paralleling the south side of CR F and the northern boundaries of Sections 101, 92, and 53 for approximately 14,075 feet. The Link then crosses to the north side CR F at Section 45 where it parallels the southern boundary of Sections 45 and 4 for 9,083 feet. This portion of the Link also crosses a tributary to Frisco Creek. At that point in Section 4 the Link heads southwest and bisects the northwest corner of Section 5 for approximately 2,089 feet to intersection of CR 29 and CR F. The Link then travels due west paralleling the north side of CR F and the southern boundary of Section 12 for approximately 5,298 feet. The Link then heads due south paralleling the west side of CR 28 and the eastern boundary of Section 20 for approximately 1,995 feet. The Link then heads due west and travels through the central portions of Sections 20, 41, and 50 crossing Frisco Creek and two tributaries to Frisco Creek before terminating at an existing SPS transmission line. This portion of the Link is approximately 12,069 feet in length. The Link then parallels the existing SPS transmission line on the east side in a southwesterly direction for approximately 36,855 feet through Sections 50, 51, 70, 81, 82, 98, 99, 113, 128 and 127 into Section 144.

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This portion of the Link crosses four tributaries to Frisco Creek and Ranch Road 2349 and Ranch Road 119. The Link then heads due south paralleling the eastern boundary of Sections 144, 145, 146, 147, 148, 149, 150 and 18 for approximately 39,437 feet. The Link then crosses to the western boundaries of Sections 1, 2, 3, and 4 for approximately 18,813 feet still heading due south. This portion of the Link will cross State Highway 15, Ranch Road 119, CR P and one tributary to Frisco Creek and two tributaries to Coldwater Creek. The Link will terminate at the intersection of Links K, K1, and P. **Link K1** begins at the intersection of Links K, K1, and P. The Link heads due south paralleling the western boundaries of Sections of 5 and 6, crossing one tributary to Coldwater Creek and CR V for approximately 10,387 feet. This portion of the Link double circuits an existing SPS transmission line. At the intersection of Sections 6, 7, 12 and 13 and Ranch Road 119 and CR W, the Link heads due west parallel to the southern boundaries of Section 13 and 24 and double circuiting an existing SPS transmission line for approximately 6,637 feet. The Link then continues due south double circuiting an existing SPS transmission line for approximately 74,288 feet. This portion of the Link parallels the eastern boundaries of Sections 25, 26, 27, 4, 27, 34, 57, 64, 87, 94, 117, 1, 143, and 144 while crossing North Palo Duro Creek and Farm Road 1573, CR W, CR BB, CR CC, CR EE, Texas North Western Railroad, FM 281, CR D, CR E, and terminates at CR F. The Link terminates at the intersection of Links K1, W and X. **Link X** begins at the intersection of Links K1, W and X. The Link goes to the south on the east side of an existing SPS transmission line paralleling the western boundary of Section 166 for approximately 5,055 feet. At Ranch Road 119, the Link heads to the west paralleling the south side of the existing SPS transmission line and the northern boundary of Section 168 for approximately 4,913 feet. The Link terminates at the Moore County Substation.

Route 2 (A-C-G-J-P-K1-X)

Alternative Route 2 is approximately 55 miles (288,336 feet). **Link A** parallels an existing SPS transmission line on the east side in a southerly direction for approximately 3,489 feet. The Link crosses the central portion of Sections 10 and 30 before ending at the intersection of Links A, D, and C. **Link C** begins at the intersection of Links A, D and C. The Link travels due south through the central portion of Section 30 for approximately 2,556 feet. The Link then turns in a southwesterly direction towards the southwest corner of Section 30 and crossing through Section 1, 2, into Section 290 and a tributary of Coldwater Creek for approximately 10,424 feet. In Section 290, the Link heads in a more southerly direction crossing through portions of Sections 291, 286, and 285. This portion of the Link is approximately 12,059 feet in length and crosses two tributaries to Coldwater Creek. The Link then turns to the southwest for approximately 5,015 feet crossing through Sections 285 and 244 and crossing SH 136. The entire Link parallels the east side of the existing SPS transmission line. The Link ends at the intersection of Links C, E, and G. **Link G** begins at the intersection of Links C, G and E. It travels in a southwesterly direction through Sections 245 and 236 and ends at the eastern boundary of Section 197. The Link is approximately 10,335 feet in length and crosses two tributaries of Coldwater Creek while

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paralleling the east side of an existing SPS transmission line. The Link terminates at the intersection of Links G, H, I and J. **Link J** begins at the intersection of Links G, H, I and J. The Link travels in a southwesterly direction paralleling the east side of an existing SPS transmission line for its entirety. The Link travels for approximately 6,922 feet through Section 198 and into Section 187 and crosses one tributary to Coldwater Creek and crosses Ranch Road 1262 before turning due west for approximately 4,293 feet crossing through the central portion of Section 187 and a tributary to Coldwater Creek. The Link then travels in a southwesterly direction for approximately 3,225 feet bisecting the southeast corner of Section 150. At that point the Link turns due west and travels for approximately 2,723 feet in Section 150. At the western boundary of Section 150, the Link turns south and parallels the western boundary of Sections 150 and 151 for approximately 5,934 feet, crossing one tributary of Coldwater Creek. At the intersection of Sections 151, 152, 137 and 138, the Link turns to the west and parallels the northern boundary of Section 137 for approximately 5,364 feet while crossing a tributary of Coldwater Creek. At the intersection of Sections 138, 137, 103 and 104 the Link turns to the south for approximately 10,949 feet while paralleling western boundary of Sections 137 and 136. At the intersection of Sections 136, 135, 105 and 106, the Links travels for approximately 27,312 feet in a southwesterly direction through Sections 106, 107, 86, 85, 37, 61, and 36. This portion of the Link crosses three tributaries of Coldwater Creek and State Highway (“SH”) 15. The Link then travels in south southwesterly direction for approximately 23,449 feet crossing through Sections 36, 35, 34, 15, 16, and 17 and crosses Coldwater Creek, ending at the intersection of Link J, P, and O. **Link P** begins at the intersection of P, J, and O. Link P travels due west for approximately 12,450 feet paralleling the south side of an existing SPS transmission line and the southern boundaries of Sections 17, 2, and 17 before turning to the southwest. The Link continues to parallel an existing SPS transmission line along the east side of the line for approximately 14,998 feet while crossing Sections 21, 34, 39, 40, 51, and 58 and a tributary of Coldwater Creek. At the intersection of Sections 58, 59, 68 and 69, the Link turns due west for approximately 10,673 feet paralleling the southern boundary of Sections 69 and 4. The Link terminates at the intersection of P, K, and K1. **Link K1** begins at the intersection of Links K, K1, and P. The Link heads due south paralleling the western boundaries of Sections 5 and 6, crossing one tributary to Coldwater Creek and CR V for approximately 10,387 feet. This portion of the Link double circuits an existing SPS transmission line. At the intersection of Sections 6, 7, 12 and 13 and CR W and Ranch Road 119, the Link heads due west parallel to the southern boundaries of Section 13 and 24 and double circuiting an existing SPS transmission line for approximately 6,637 feet. The Link then continues due south double circuiting an existing SPS transmission line for approximately 74,288 feet. This portion of the Link parallels the eastern boundaries of Sections 25, 26, 27, 4, 27, 34, 57, 64, 87, 94, 117, 1, 143, and 144 while crossing North Palo Duro Creek and Farm Road 1573, CR W, CR BB, CR CC, CR EE, Texas North Western Railroad, FM 281, CR D, CR E, and terminates at CR F. The Link terminates at the intersection of Links K1, W and X. **Link X** begins at the intersection of Links K1, W and X. The Link goes to the south on the east side of an existing SPS transmission line paralleling the western boundary of Section 166 for approximately 5,055 feet. At Ranch Road 119, the Link heads to the

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west paralleling the south side of the existing SPS transmission line and the northern boundary of Section 168 for approximately 4,913 feet. The Link terminates at the Moore County Substation.

Route 3 (A-D-F-H-I-M-Q-S-U-W-X)

Alternative Route 3 is approximately 63 miles (330,304 feet). **Link A** parallels an existing SPS transmission line on the east side in a southerly direction for approximately 3,489 feet. The Link crosses the central portion of Sections 10 and 30 before ending at the intersection of Links A, D, and C. **Link D** begins at the intersection of Links A, D and C. The Link travels in a southwesterly direction for approximately 18,263 feet through Sections 30, 1, 289, 290, and 287 and crossing two tributaries of Coldwater Creek. The Link then turns due west for approximately 7,132 feet through the central portions of Sections 287 and 242. The Link turns due south following the western boundary of Sections 242, 243, and 244. This portion of the Link also crosses one tributary of Coldwater Creek and is approximately 12,939 feet. The Link ends at the intersection of Links D, E and F. **Link F** begins at the intersection of Links D, E and F. The Link travels due west paralleling the southern boundary of Section 237 crossing two tributaries of Coldwater Creek. The Link is approximately 5,143 feet in length and ends at the intersection of Links F, H and K. **Link H** begins at the intersection of Links H, F, and K. The Link travels due south parallel to the western boundary of Section 236 for approximately 2,241 feet before crossing the eastern boundary of Section 197. The Link continues to the south paralleling the eastern boundary of Section 197 for approximately 2,623 feet. The Link terminates at the intersection of Links G, H, I and J. **Link I** begins at the intersection of Links G, H, I and J. It travels due south along the eastern boundary of Sections 198, 199, 200, 201, 202, 203, 204, 205, and 206. Link I is approximately 48,210 feet in length and crosses Coldwater Creek, two tributaries of Coldwater Creek and two tributaries to North Palo Duro Creek. The Link crosses CR G, CR H, CR I, Ranch Road 2535, CR L, CR M, CR N, and CR O and ends at the north side of CR P. The Link terminates at the intersection of Links I, B, M and L. **Link M** begins at the intersection of Links B, I, L, and M. Link M heads due south paralleling the eastern boundaries of Section 207, 208, 209, 210, and 211 and the west side of a portion of CR 8 for approximately 18,638 feet while crossing SH 15 and CR S. Then the link turns west along the south boundary of Section 211 and north of Ranch Road 2018, crossing CR 7 for approximately 5,280 feet. The Link terminates at the intersection of Links M, N, R and Q. **Link Q** begins at the intersection of Links M, N, R, and Q. The Link travels due west paralleling the north side of Ranch Road 2018 and along the southern boundaries of Sections 174, 163, 126, 115 and 78 for approximately 26,467 feet, crossing CR 4. At the intersection of CR 2 and Farm Road 2018, the Link turns to the south for approximately 17,189 feet. This portion of the Link parallels the eastern boundary of Sections 68, 69, 70 and 71 while crossing CR W. The Link then crosses to the east side of CR 2 and parallels the western boundaries of Sections 74 and 73 for approximately 8,750 feet. At CR Z, the Link turns to the east for approximately 2,946 feet paralleling the north side of CR Z and the southern boundary of Section 73. At CR 2, the Link turns to the south where it parallels the western boundary of Sections 4 and 9 for approximately 10,809 feet and the east side of CR-2 for approximately

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8,750 feet crossing FM 520. The Link then turns to the west for approximately 15,845 feet paralleling the northern boundary of Sections 15, 14, and 13. This portion of the Link crosses one tributary of North Palo Duro Creek and ends at Farm to Market Road ("FM") 1060. At FM 1060, the Link turns to the south for approximately 5,121 feet paralleling the east side of FM 1060 and the western boundary of Section 13. North of CR CC, the Link crosses to the west side of FM 1060 and parallels the eastern boundaries of Sections 46 and 75 while crossing North Palo Duro Creek for approximately 10,428 feet. The Link terminates at the intersection of Links R, Q and S. **Link S** begins at the intersection of Links R, Q and S. Link S goes to the west paralleling the southern boundaries of Sections 75, 74, and 73 for approximately 15,146 feet while crossing a tributary of North Palo Duro Creek. The Link bisects the northwest corner of Section 78 for approximately 1,085 feet before turning to the south. The Link parallels the eastern boundary of Sections 79 and 102 for approximately 9,732 feet while crossing two tributaries of North Palo Duro Creek. At the Texas North Western Railroad and Cemetery Road, the Link turns to the west. The Link parallels the southern boundaries of Sections 102, 101, and 100 for approximately 15,680 feet while crossing CR 26. The Link terminates at the intersection of Links S, T, and U. **Link U** begins at the intersection of Links S, T, and U. Link U goes to the south paralleling the west side of CR 24 and the eastern boundaries of Sections 112, 125, 138 and 149 for approximately 21,071 feet while crossing the Texas North Western Railroad, Ranch Road 281, and a tributary to South Palo Duro Creek. The Link turns to the west at the intersection of Sections 150, 151, 152 and 149 and parallels the southern boundaries of Sections 149 and 148 while crossing two tributaries of South Palo Duro Creek. This portion of the Link is approximately 10,642 feet. The Link terminates at the intersection of Links U, T, and W. **Link W** begins at the intersection of Links U, T and W. Link W travels to the west paralleling the southern boundary of Section 147 for approximately 5,019 feet. At Texas Beef Road, the Link crosses to the south side of CR F and parallels the road and the northern boundary of Sections 165 and 166 for approximately 10,488 feet crossing FM 119. The Link terminates at the intersection of Links K1, X and W. **Link X** begins at the intersection of Links K1, W and X. The Link goes to the south on the east side of an existing SPS transmission line paralleling the western boundary of Section 166 for approximately 5,055 feet. At Ranch Road 119, the Link heads to the west paralleling the south side of the existing SPS transmission line and the northern boundary of Section 168 for approximately 4,913 feet. The Link terminates at the Moore County Substation.

Route 4 (B-L-N-R-S-T-W-X)

Alternative Route 4 is approximately 63 miles (332,502 feet). **Link B** heads in a southeasterly direction for approximately 8,146 feet, double circuiting an existing SPS transmission line through Section 10 and Section 30 before turning due south. The Link then parallels the eastern boundary of Sections 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19, 18 and 17 while double circuiting an existing SPS transmission line and crossing CR D, CR E, CR F, CR G, CR H, Ranch Road 2535, CR M, and CR O for approximately 68,914 feet. The Link then turns due west paralleling the southern boundary of Sections 17, 14, 302, 275, 254, and

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227. This portion of the Link crosses SH 136, CR 10, CR 9 and a tributary of North Palo Duro Creek for approximately 31,866 feet. The Link ends at the intersection of Links B, I, M, and L. **Link L** begins at the intersection of Links L, I, B and M. The Link travels due west parallel to the southern boundary of Section 206 for approximately 3,639 feet. The Link then turns in a southwesterly direction bisecting the northwest corner of Section 207 for approximately 1,570 feet. The Link heads due south paralleling the east side of Ranch Road 1262 and the western boundary of Section 207 for approximately 3,222 feet before crossing to the eastern boundary of Section 178 and paralleling it and the eastern boundary of Sections 178, 177, and 176. This portion of the Link is approximately 11,511 feet in length and parallels CR 7 and crosses North Palo Duro Creek and SH 15. The Link terminates at the intersection of Links L, O, and N. **Link N** begins at the intersection of Links O, L, and N. The Link travels due south paralleling the eastern boundary of Section 175 and 174 along the west side of CR 7 for approximately 12,932 feet. The Link terminates on north side of Ranch Road 2018 at the intersection of Links M, N, R and Q. **Link R** begins at the intersection of Links M, N, Q, and R. Link R travels to the south for approximately 5,555 feet along the west side of CR 7 and the eastern boundaries of Sections 173 and a portion of 172, crossing ranch road 2018. At Section 172, to avoid a house, the Link crosses the section line and CR 7 to parallel the east side of CR 7 and the western boundary of Section 213 for approximately 1,614 feet. The Link then crosses the section line and CR 7 to parallel the west side of CR 7 and the eastern boundary of Sections 172 and 171 for approximately 5,160 feet. The Link crosses the section line and CR 7 again at Hanna's Draw Creek to parallel the western boundary of Sections 214, 215, and 216 for approximately 12,442 feet. The Link crosses the section line to parallel the eastern boundary of Sections 169, 1, 10, 11, 22, and 23 while crossing two tributaries of North Palo Duro Creek, North Palo Duro Creek, FM 520, and CR CC for approximately 27,960 feet. The Link turns to the west at the intersection of Sections 23, 24, 33, and 34, and parallels the southern boundary of Section 23 for approximately 2,538 feet. The Link continues to the west parallel to the northern boundaries of Sections 34 and 4 for approximately 7,005 feet while crossing one tributary to North Palo Duro Creek. The Link continues to the west paralleling the southern boundaries of Sections 30, 29, 28, and 27 for approximately 19,298 feet while crossing two tributaries of North Palo Duro Creek. The Link crosses to the southern boundary of Section 26 to avoid a habitable structure but immediately begins paralleling the northern boundaries of Sections 35 and 36 for 5,990 feet. The Link then crosses the section line to parallel the southern boundary of Section 25 for approximately 3,277 feet before crossing the section line to parallel the northern section boundary of Section 36 for approximately 1,660 feet and returning to the southern boundary of Section 25 for approximately 1,005 feet before terminating at the intersection of Links R, Q and T. **Link S** begins at the intersection of Links R, Q and S. Link S goes to the west paralleling the southern boundaries of Sections 75, 74, and 73 for approximately 15,146 feet while crossing a tributary of North Palo Duro Creek. The Link bisects the northwest corner of Section 78 for approximately 1,085 feet before turning to the south. The Link parallels the eastern boundary of Sections 79 and 102 for approximately 9,732 feet while crossing two tributaries of North Palo Duro Creek. At the Texas North Western Railroad and Cemetery Road, the Link turns to the west. The Link parallels

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the southern boundaries of Sections 102, 101, and 100 for approximately 15,680 feet while crossing CR 26. The Link terminates at the intersection of Links S, T, and U. **Link T** begins at the intersection of Links S, U, and T. Link T heads to the west paralleling the southern boundaries of Sections 99 and 98 for approximately 9,979 feet while crossing one tributary to North Palo Duro Creek. The Link bisects the northwest corner of Section 113 to the southwest for approximately 1,564 feet while double circuiting an existing SPS transmission line. The Link then turns to the double circuiting an existing SPS transmission line and the eastern boundaries of Sections 114 and 123. The Link crosses the section line and parallels the western boundaries of Sections 139 and 148 for approximately 8,924 feet while crossing the Texas North Western Railroad. The Link terminates at the intersection of Links U, T, and W. **Link W** begins at the intersection of Links U, T and W. Link W travels to the west paralleling the north side of CR F and the southern boundary of Section 147 for approximately 5,019 feet. At Texas Beef Road, the Link crosses to the south side of CR F and parallels the road and the northern boundary of Sections 165 and 166 for approximately 10,488 feet crossing FM 119. The Link terminates at the intersection of Links K1, X and W. **Link X** begins at the intersection of Links K1, W and X. The Link goes to the south on the east side of an existing SPS transmission line paralleling the western boundary of Section 166 for approximately 5,055 feet. At Ranch Road 119, the Link heads to the west paralleling the south side of the existing SPS transmission line and the northern boundary of Section 168 for approximately 4,913 feet. The Link terminates at the Moore County Substation.

Route 5 (B-L-O-P-K1-X)

Alternative Route 5 is approximately 62 miles (324,689 feet). **Link B** heads in a southeasterly direction for approximately 8,146 feet, double circuiting an existing SPS transmission line through Section 10 and Section 30 before turning due south. The Link then parallels the eastern boundary of Sections 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19, 18 and 17 while double circuiting an existing SPS transmission line and crossing CR D, CR E, CR F, CR G, CR H, Ranch Road 2535, CR M, and CR O for approximately 68,914 feet. The Link then turns due west paralleling the southern boundary of Sections 17, 14, 302, 275, 254, and 227. This portion of the Link crosses SH 136 CR 10, CR 9 and a tributary of North Palo Duro Creek and is approximately 31,866 feet. The Link ends at the intersection of Links B, I, M, and L. **Link L** begins at the intersection of Links L, I, B and M. The Link travels due west parallel to the southern boundary of Section 206 for approximately 3,639 feet. The Link then turns in a southwesterly direction bisecting the northwest corner of Section 207 for approximately 1,570 feet. The Link heads due south paralleling the east side of Ranch Road 1262 and the western boundary of Section 207 for approximately 3,222 feet before crossing to the eastern boundary of Section 178 and paralleling it and the eastern boundary of Sections 178, 177, and 176. This portion of the Link is approximately 11,511 feet in length and parallels CR 7 and crosses North Palo Duro Creek and SH 15. The Link terminates at the intersection of Links L, O, and N. **Link O** begins at the intersection of Links L, N, and O. The Link travels due west paralleling the southern boundaries of Sections 176 and 161 for approximately 6,080 feet and then crosses the section line to parallel the northern

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boundaries of Sections 162, 127, 114, and 79 along the south side of CR S for approximately 19,348 feet. This portion of the Link crosses CR 4. The Link then bisects the northwest corner of Section 79 for approximately 1,391 feet in a southwesterly direction crossing Ranch Road 1573 before paralleling the north side of CR S. The Link continues to the west along the north side of CR S and southern boundaries of Sections 65, 32, and 17 while crossing a tributary to Coldwater Creek for approximately 11,943 feet. The Link ends at the intersection of Links O, J, and P. **Link P** begins at the intersection of P, J, and O. Link P travels due west for approximately 12,450 feet paralleling the south side of an existing SPS transmission line and the southern boundaries of Sections 17, 2, and 17 before turning to the southwest. The Link continues to parallel an existing SPS transmission line along the east side of the line for approximately 14,998 feet while crossing Sections 21, 34, 39, 40, 51, and 58 and a tributary of Coldwater Creek. At the intersection of Sections 58, 59, 68 and 69, the Link turns due west for approximately 10,673 feet paralleling the southern boundary of Sections 69 and 4. The Link terminates at the intersection of P, K, and K1. **Link K1** begins at the intersection of Links K, K1, and P. The Link heads due south paralleling the western boundaries of Sections 5 and 6, crossing one tributary to Coldwater Creek and CR V for approximately 10,387 feet. This portion of the Link double circuits an existing SPS transmission line. At the intersection of Sections 6, 7, 12 and 13 and CR W and Ranch Road 119 the Link heads due west parallel to the southern boundaries of Section 13 and 24 and double circuiting an existing SPS transmission line for approximately 6,637 feet. The Link then continues due south double circuiting an existing SPS transmission line for approximately 74,288 feet. This portion of the Link parallels the eastern boundaries of Sections 25, 26, 27, 4, 27, 34, 57, 64, 87, 94, 117, 1, 143, and 144 while crossing North Palo Duro Creek and Farm Road 1573, CR W, CR BB, CR CC, CR EE, Texas North Western Railroad, FM 281, CR D, CR E, and terminates at CR F. The Link terminates at the intersection of Links K1, W and X. **Link X** begins at the intersection of Links K1, W and X. The Link goes to the south on the east side of an existing SPS transmission line paralleling the western boundary of Section 166 for approximately 5,055 feet. At Ranch Road 119, the Link heads to the west paralleling the south side of the existing SPS transmission line and the northern boundary of Section 168 for approximately 4,913 feet. The Link terminates at the Moore County Substation.

Alternative Route 6 (A-D-F-H-I-L-O-P-K1-X)

Alternative Route 6 is approximately 60 miles (316,105 feet). **Link A** parallels an existing SPS transmission line on the east side in a southerly direction for approximately 3,489 feet. The Link crosses the central portion of Sections 10 and 30 and crosses County Road (CR) B before ending at the intersection of Links A, D, and C. **Link D** begins at the intersection of Links A, D and C. The Link travels in a southwesterly direction for approximately 18,263 feet through Sections 30, 1, 289, 290, and 287 and crossing two tributaries of Coldwater Creek. The Link then turns due west for approximately 7,132 feet through the central portions of Sections 287 and 242. The Link turns due south following the western boundary of Sections 242, 243, and 244. This portion of the Link also crosses one tributary of Coldwater

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Creek and is approximately 12,939 feet. The Link ends at the intersection of Links D, E and F. **Link F** begins at the intersection of Links D, E and F. The Link travels due west paralleling the southern boundary of Section 237 crossing two tributaries of Coldwater Creek. The Link is approximately 5,143 feet in length and ends at the intersection of Links F, H and K. **Link H** begins at the intersection of Links H, F, and K. The Link travels due south parallel to the western boundary of Section 236 for approximately 2,241 feet before crossing the eastern boundary of Section 197. The Link continues to the south paralleling the eastern boundary of Section 197 for approximately 2,623 feet. The Link terminates at the intersection of Links G, H, I and J. **Link I** begins at the intersection of Links G, H, I and J. It travels due south along the eastern boundary of Sections 198, 199, 200, 201, 202, 203, 204, 205, and 206. Link I is approximately 48,210 feet in length and crosses Coldwater Creek, two tributaries of Coldwater Creek and two tributaries to North Palo Duro Creek. The Link crosses CR G, CR H, CR I, Ranch Road 2535, CR L, CR M, CR N, and CR O and ends at the north side of CR P. The Link terminates at the intersection of Links I, B, M and L. **Link L** begins at the intersection of Links L, I, B and M. The Link travels due west parallel to the southern boundary of Section 206 for approximately 3,639 feet. The Link then turns in a southwesterly direction bisecting the northwest corner of Section 207 for approximately 1,570 feet. The Link heads due south paralleling the east side of Ranch Road 1262 and the western boundary of Section 207 for approximately 3,222 feet before crossing to the eastern boundary of Section 178 and paralleling it and the eastern boundary of Sections 178, 177, and 176. This portion of the Link is approximately 11,511 feet in length and parallels CR 7 and crosses North Palo Duro Creek and SH 15. The Link terminates at the intersection of Links L, O, and N. **Link O** begins at the intersection of Links L, N, and O. The Link travels due west paralleling the southern boundaries of Sections 176 and 161 for approximately 6,080 feet and then crosses the section line to parallel the northern boundaries of Sections 162, 127, 114, and 79 along the south side of CR S for approximately 19,348 feet. This portion of the Link crosses CR 4. The Link then bisects the northwest corner of Section 79 for approximately 1,391 feet in a southwesterly direction crossing Ranch Road 1573 before paralleling the north side of CR S. The Link continues to the west along the north side of CR S and southern boundaries of Sections 65, 32, and 17 while crossing a tributary to Coldwater Creek for approximately 11,943 feet. The Link ends at the intersection of Links O, J, and P. **Link P** begins at the intersection of P, J, and O. Link P travels due west for approximately 12,450 feet paralleling the south side of an existing SPS transmission line and the southern boundaries of Sections 17, 2, and 17 before turning to the southwest. The Link continues to parallel an existing SPS transmission line along the east side of the line for approximately 14,998 feet while crossing Sections 21, 34, 39, 40, 51, and 58 and a tributary of Coldwater Creek. At the intersection of Sections 58, 59, 68 and 69, the Link turns due west for approximately 10,673 feet paralleling the southern boundary of Sections 69 and 4. The Link terminates at the intersection of P, K, and K1. **Link K1** begins at the intersection of Links K, K1, and P. The Link heads due south paralleling the western boundaries of Sections 5 and 6, crossing one tributary to Coldwater Creek and CR V for approximately 10,387 feet. This portion of the Link double circuits an existing SPS transmission line. At the intersection of Sections 6, 7, 12 and 13 and CR W and Ranch Road

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119, the Link heads due west parallel to the southern boundaries of Section 13 and 24 and double circuiting an existing SPS transmission line for approximately 6,637 feet. The Link then continues due south double circuiting an existing SPS transmission line for approximately 74,288 feet. This portion of the Link parallels the eastern boundaries of Sections 25, 26, 27, 4, 27, 34, 57, 64, 87, 94, 117, 1, 143, and 144 while crossing North Palo Duro Creek and Farm Road 1573, CR W, CR BB, CR CC, CR EE, Texas North Western Railroad, FM 281, CR D, CR E, and terminates at CR F. The Link terminates at the intersection of Links K1, W and X. **Link X** begins at the intersection of Links K1, W and X. The Link goes to the south on the east side of an existing SPS transmission line paralleling the western boundary of Section 166 for approximately 5,055 feet. At Ranch Road 119, the Link heads to the west paralleling the south side of the existing SPS transmission line and the northern boundary of Section 168 for approximately 4,913 feet. The Link terminates at the Moore County Substation.

Alternative Route 7 (A-C-G-I-M-Q-S-U-W-X)

Alternative Route 7 is approximately 61 miles (322,398 feet). **Link A** parallels an existing SPS transmission line on the east side in a southerly direction for approximately 3,489 feet. The Link crosses the central portion of Sections 10 and 30 and crosses County Road (CR) B before ending at the intersection of Links A, D, and C. **Link C** begins at the intersection of Links A, D and C. The Link travels due south through the central portion of Section 30 for approximately 2,556 feet. The Link then turns in a southwesterly direction towards the southwest corner of Section 30 and crossing through Section 1, 2, into Section 290 and a tributary of Coldwater Creek for approximately 10,424 feet. In Section 290 the Link heads in a more southerly direction crossing through portions of Sections 291, 286, and 285. This portion of the Link is approximately 12,059 feet in length and crosses two tributaries to Coldwater Creek. The Link then turns to the southwest for approximately 5,015 feet crossing through Sections 285 and 244 and crossing SH 136. The entire Link parallels the east side of the existing SPS transmission line. The Link ends at the intersection of Links C, E, and G. **Link G** begins at the intersection of Links C, G and E. It travels in a southwesterly direction through Sections 245 and 236 and ends at the eastern boundary of Section 197. The Link is approximately 10,335 feet in length and crosses two tributaries of Coldwater Creek while paralleling the east side of an existing SPS transmission line. The Link terminates at the intersection of Links G, H, I and J. **Link I** begins at the intersection of Links G, H, I and J. It travels due south along the eastern boundary of Sections 198, 199, 200, 201, 202, 203, 204, 205, and 206. Link I is approximately 48,210 feet in length and crosses Coldwater Creek, two tributaries of Coldwater Creek and two tributaries to North Palo Duro Creek. The Link crosses CR G, CR H, CR I, Ranch Road 2535, CR L, CR M, CR N, and CR O and ends at the north side of CR P. The Link terminates at the intersection of Links I, B, M and L. **Link M** begins at the intersection of Links B, I, L, and M. Link M heads due south paralleling the eastern boundaries of Section 207, 208, 209, 210, and 211 and the west side of a portion of CR 8 for approximately 18,638 feet while crossing SH 15 and CR S. Then the link turns west along the south boundary of Section 211 and north of Ranch Road 2018, crossing CR 7 for approximately 5,280 feet.

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The Link terminates at the intersection of Links M, N, R and Q. **Link Q** begins at the intersection of Links M, N, R, and Q. The Link travels due west paralleling the north side of Ranch Road 2018 and along the southern boundaries of Sections 174, 163, 126, 115 and 78 for approximately 26,467 feet, crossing CR 4. At the intersection of CR 2 and Farm Road 2018, the Link turns to the south for approximately 17,189 feet. This portion of the Link parallels the eastern boundary of Sections 68, 69, 70 and 71 while crossing CR W. The Link then crosses to the east side of CR 2 and parallels the western boundaries of Sections 74 and 73 for approximately 8,750 feet. At CR Z, the Link turns to the east for approximately 2,946 feet paralleling the north side of CR Z and the southern boundary of Section 73. At CR 2, the Link turns to the south where it parallels the western boundary of Sections 4 and 9 for approximately 10,809 feet and the east side of CR-2 for approximately 8,750 feet crossing FM 520. The Link then turns to the west for approximately 15,845 feet paralleling the northern boundary of Sections 15, 14, and 13. This portion of the Link crosses one tributary of North Palo Duro Creek and ends at FM 1060. At FM 1060, the Link turns to the south for approximately 5,121 feet paralleling the east side of FM 1060 and the western boundary of Section 13. North of CR CC, the Link crosses to the west side of FM 1060 and parallels the eastern boundaries of Sections 46 and 75 while crossing North Palo Duro Creek for approximately 10,428 feet. The Link terminates at the intersection of Links R, Q and S. **Link S** begins at the intersection of Links R, Q and S. Link S goes to the west paralleling the southern boundaries of Sections 75, 74, and 73 for approximately 15,146 feet while crossing a tributary of North Palo Duro Creek. The Link bisects the northwest corner of Section 78 for approximately 1,085 feet before turning to the south. The Link parallels the eastern boundary of Sections 79 and 102 for approximately 9,732 feet while crossing two tributaries of North Palo Duro Creek. At the Texas North Western Railroad and Cemetery Road, the Link turns to the west. The Link parallels the southern boundaries of Sections 102, 101, and 100 for approximately 15,680 feet while crossing CR 26. The Link terminates at the intersection of Links S, T, and U. **Link U** begins at the intersection of Links S, T, and U. Link U goes to the south paralleling the west side of CR 24 and the eastern boundaries of Sections 112, 125, 138 and 149 for approximately 21,071 feet while crossing the Texas North Western Railroad, Ranch Road 281, and a tributary to South Palo Duro Creek. The Link turns to the west at the intersection of Sections 150, 151, 152 and 149 and parallels the southern boundaries of Sections 149 and 148 while crossing two tributaries of South Palo Duro Creek. This portion of the Link is approximately 10,642 feet. The Link terminates at the intersection of Links U, T, and W. **Link W** begins at the intersection of Links U, T and W. Link W travels to the west paralleling the southern boundary of Section 147 for approximately 5,019 feet. At Texas Beef Road, the Link crosses to the south side of CR F and parallels the road and the northern boundary of Sections 165 and 166 for approximately 10,488 feet crossing FM 119. The Link terminates at the intersection of Links K1, X and W. **Link X** begins at the intersection of Links K1, W and X. The Link goes to the south on the east side of an existing SPS transmission line paralleling the western boundary of Section 166 for approximately 5,055 feet. At Ranch Road 119, the Link heads to the west paralleling the south side of the existing SPS transmission line and

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the northern boundary of Section 168 for approximately 4,913 feet. The Link terminates at the Moore County Substation.

Alternate Route 8 (Preferred Route) (A-D-F-H-I-L-N-R-S-U-W-X)

Alternative Route 8 is approximately 61 miles (324,128 feet). **Link A** parallels an existing SPS transmission line on the east side in a southerly direction for approximately 3,489 feet. The Link crosses the central portion of Sections 10 and 30 before ending at the intersection of Links A, D, and C. **Link D** begins at the intersection of Links A, D and C. The Link travels in a southwesterly direction for approximately 18,263 feet through Sections 30, 1, 289, 290, and 287 and crossing two tributaries of Coldwater Creek. The Link then turns due west for approximately 7,132 feet through the central portions of Sections 287 and 242. The Link turns due south following the western boundary of Sections 242, 243, and 244. This portion of the Link also crosses one tributary of Coldwater Creek and is approximately 12,939 feet. The Link ends at the intersection of Links D, E and F. **Link F** begins at the intersection of Links D, E and F. The Link travels due west paralleling the southern boundary of Section 237 crossing two tributaries of Coldwater Creek. The Link is approximately 5,143 feet in length and ends at the intersection of Links F, H and K. **Link H** begins at the intersection of Links H, F, and K. The Link travels due south parallel to the western boundary of Section 236 for approximately 2,241 feet before crossing the eastern boundary of Section 197. The Link continues to the south paralleling the eastern boundary of Section 197 for approximately 2,623 feet. The Link terminates at the intersection of Links G, H, I and J. **Link I** begins at the intersection of Links G, H, I and J. It travels due south along the eastern boundary of Sections 197, 198, 199, 200, 201, 202, 203, 204, 205, and 206. Link I is approximately 48,210 feet in length and crosses Coldwater Creek, two tributaries of Coldwater Creek and two tributaries to North Palo Duro Creek. The Link crosses CR G, CR H, CR I, Ranch Road 2535, CR L, CR M, CR N, and CR O and ends at the north side of CR P. The Link terminates at the intersection of Links I, B, M and L. **Link L** begins at the intersection of Links L, I, B and M. The Link travels due west parallel to the southern boundary of Section 206 for approximately 3,639 feet. The Link then turns in a southwesterly direction bisecting the northwest corner of Section 207 for approximately 1,570 feet. The Link heads due south paralleling the east side of Ranch Road 1262 and the western boundary of Section 207 for approximately 3,222 feet before crossing to the eastern boundary of Section 178 and paralleling it and the eastern boundary of Sections 178, 177, and 176. This portion of the Link is approximately 11,511 feet in length and parallels CR 7 and crosses North Palo Duro Creek and SH 15. The Link terminates at the intersection of Links L, O, and N. **Link N** begins at the intersection of Links O, L, and N. The Link travels due south paralleling the eastern boundary of Section 175 and 174 along the west side of CR 7 for approximately 12,932 feet. The Link terminates on north side of Ranch Road 2018 at the intersection of Links M, N, R and Q. **Link R** begins at the intersection of Links M, N, Q, and R. Link R travels to the south for approximately 5,555 feet along the west side of CR 7 and the eastern boundaries of Sections 173 and a portion of 172, crossing ranch road 2018. At Section 172, the Link crosses the section line and CR 7 to parallel the east side of CR 7 and the

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western boundary of Section 213 to avoid a house for approximately 1,614 feet. The Link then crosses the section line and CR 7 to parallel the west side of CR 7 and the eastern boundary of Sections 172 and 171 for approximately 5,160 feet. The Link crosses the section line and CR 7 again at Hanna's Draw Creek to parallel the western boundary of Sections 214, 215, and 216 for approximately 12,442 feet. The Link crosses the section line to parallel the eastern boundary of Sections 169, 1, 10, 11, 22, and 23 while crossing two tributaries of North Palo Duro Creek, North Palo Duro Creek, FM 520, and CR CC for approximately 27,960 feet. The Link turns to the west at the intersection of Sections 23, 24, 33, and 34, and parallels the southern boundary of Section 23 for approximately 2,538 feet. The Link continues to the west parallel to the northern boundaries of Sections 34 and 4 for approximately 7,005 feet while crossing one tributary to North Palo Duro Creek. The Link continues to the west paralleling the southern boundaries of Sections 30, 29, 28, and 27 for approximately 19,298 feet while crossing two tributaries of North Palo Duro Creek. The Link crosses to the southern boundary of Section 26 to avoid a habitable structure but immediately begins paralleling the northern boundaries of Sections 35 and 36 for 5,990 feet. The Link then crosses the section line to parallel the southern boundary of Section 25 for approximately 3,277 feet before crossing the section line to parallel the northern section boundary of Section 36 for approximately 1,660 feet and returning to the southern boundary of Section 25 for approximately 1,005 feet before terminating at the intersection of Links R, Q and T. **Link S** begins at the intersection of Links R, Q and S. Link S goes to the west paralleling the southern boundaries of Sections 75, 74, and 73 for approximately 15,146 feet while crossing a tributary of North Palo Duro Creek. The Link bisects the northwest corner of Section 78 for approximately 1,085 feet before turning to the south. The Link parallels the eastern boundary of Sections 79 and 102 for approximately 9,732 feet while crossing two tributaries of North Palo Duro Creek. At the Texas North Western Railroad and Cemetery Road, the Link turns to the west. The Link parallels the southern boundaries of Sections 102, 101, and 100 for approximately 15,680 feet while crossing CR 26. The Link terminates at the intersection of Links S, T, and U. **Link U** begins at the intersection of Links S, T, and U. Link U goes to the south paralleling the west side of CR 24 and the eastern boundaries of Sections 112, 125, 138 and 149 for approximately 21,071 feet while crossing the Texas North Western Railroad, Ranch Road 281, and a tributary to South Palo Duro Creek. The Link turns to the west at the intersection of Sections 150, 151, 152 and 149 and parallels the southern boundaries of Sections 149 and 148 while crossing two tributaries of South Palo Duro Creek. This portion of the Link is approximately 10,642 feet. The Link terminates at the intersection of Links U, T, and W. **Link W** begins at the intersection of Links U, T and W. Link W travels to the west paralleling the southern boundary of Section 147 for approximately 5,019 feet. At Texas Beef Road, the Link crosses to the south side of CR F and parallels the road and the northern boundary of Sections 165 and 166 for approximately 10,488 feet crossing FM 119. The Link terminates at the intersection of Links K1, X and W. **Link X** begins at the intersection of Links K1, W and X. The Link goes to the south on the east side of an existing SPS transmission line paralleling the western boundary of Section 166 for approximately 5,055 feet. At Ranch Road 119, the Link heads to the west paralleling the south side of the existing SPS transmission line and

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the northern boundary of Section 168 for approximately 4,913 feet. The Link terminates at the Moore County Substation.

4. Conductor and Structures:

Conductor Size and Type

Conductor for the 230 kV circuit will be 795 kcmil, ACSR, 26/7 stranded, code name Drake. The static wire will be 3/8" EHS galvanized steel.

Type of Structures

The proposed transmission line will be built using primarily two-pole steel H-frame structures with a few single-pole steel structures. Typical heights are shown on the attached drawings and are dependent on the clearance requirements to be determined. Highway crossings will utilize structures whose heights are greater than the minimum heights required by the Texas Department of Transportation (TxDOT) and/or the National Electric Safety Code (NESC).

Height of Typical Structures

The typical heights for these structures will be between 80 and 135 feet.

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 chose H-frame steel structures over wood structures, in part, because of the low maintenance cost, strength of the line during adverse conditions, resistance to fire damage, and increased span lengths. The primarily agricultural land use of the area was an additional factor in selecting this type of structure since a self-supporting H-frame structure minimizes the impact to both farmers and landowners because it eliminates the need for guy wires on the landowner's property, which results in a smaller footprint than a guyed structure. The installed cost for a direct burial wood H-frame, single circuit structure would be approximately \$18,600. Estimated cost of the proposed steel H-frame, single circuit steel structures would be \$20,300. Steel poles would require fewer structures and would make it easier to span existing irrigation systems offsetting the additional cost. During the public meeting held for this project, landowners voiced no opposition to the structures proposed for this project. With fewer structures that are needed with steel, the overall cost difference per mile of the steel vs. wood is negligible.

Typical 230 kV two-pole steel H-frame tangent structures are shown on SPS drawing T-10-421.

Typical 230 kV two-pole steel H-frame corner structures are shown on SPS drawing T-10-427.

Typical 230 kV single-pole steel vertical tangent structures are shown on SPS drawing T-10-429.

Refer to Attachment 2.

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5. Right-of-way:

Miles of Right-of-Way

The proposed project is approximately 55 to 63 miles depending on the approved route.

Miles of Circuit

The proposed project is approximately 61 to 96 miles depending on the approved route.

Width of Right-of-Way

90 feet

Percent of Right-of-Way Acquired

No new or expanded right-of-way was acquired prior to filing this application.

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

The project area is located in Hansford, Sherman, and Moore Counties, Texas. The area described is from just south of the Texas and Oklahoma state line to southwest of Sunray, Texas. The land uses in the area range from dry land farming, irrigated farming, Conservation Reserve Program (CRP) grass, open rangeland, and natural gas and oil exploration and production. The terrain can be characterized as flat to gently rolling.

6. Substations or Switching Stations:

List the name of all existing substations or switching stations that will be associated with the proposed new transmission line.

- Hitchland Substation
- Moore County Substation

List the name of all new substations or switching stations that will be associated with the proposed new transmission line.

None.

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7. Estimated Schedule:

<u>Estimated Date of:</u>	<u>Start</u>	<u>Completion</u>
Right-of-way Acquisition	Following route selection	6 months following CCN approval
Construction of Facilities	Following right-of-way acquisition	12 months following right-of-way acquisition
Energize Facilities	-----	1 month following completion of construction

8. Counties:

List all counties in which preferred or alternate routes are proposed to be constructed.

Hansford, Sherman, and Moore Counties, Texas

9. Municipalities:

List all municipalities in which preferred or alternate routes are proposed to be constructed.

None.

Attach a copy of the franchise, permit or other evidence of the city's consent held by the utility. 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.

None.

10. Affected Utilities:

Identify any other electric utility served by or connected to facilities proposed in this application. Include any utilities sharing proposed facilities (double circuit structures, substation equipment) or right-of-way.

- Tri-County Electric Cooperative, Inc. (TCEC)
- North Plains Electric Cooperative, Inc. (NPEC)
- Rita Blanca Electric Cooperative, Inc. (RBEC)

Describe how any other electric utility will be affected and the extent of the other utilities' involvement in the construction of this project.

The new line will cross areas that are certificated to TCEC, NPEC, and RBEC. As a result, construction coordination between SPS and these electric cooperatives may be required when SPS crosses their distribution circuits and 69 kV transmission line circuits. However, all construction for this project will be completed by SPS.

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11. Financing:

Describe the method of financing this project. If the applicant is to be reimbursed for this project, or a portion of this project, identify the source and the amount of the contribution in aid of construction.

The proposed project will be financed through internally-generated funds.

12. Estimated Costs:

Refer to Attachment 3.

13. Need for the Proposed Project:

Describe the need for the proposed construction. Describe the existing transmission system and conditions addressed by this application. Provide historical load data and load projections for at least five years to justify projects planned to accommodate load growth. State how the proposed facilities will meet the projected demand and provide a written description of the steady state load flow analysis that justifies the project. Provide any documentation of the review and recommendation of a PURA §39.151 organization. Provide any documentation showing the proposed facilities are needed to provide service to a new transmission service customer.

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 PURA Section 39.151 as an independent system operator. The SPP as a Regional Transmission Operator (RTO) has determined that there is a need for the proposed transmission line, and has issued a notice for SPS to construct the proposed transmission line.

Refer to Attachment 4, page 4 (SPP Notification to Construct Letter SPP-NTC-20004, Project ID: 156, Upgrade ID: 10326).

The proposed 230 kV transmission line from Hitchland Substation to Moore County Substation is one of nine transmission system upgrades grouped together and referred to by SPP under the project name “Multi - Hitchland - Texas Co. 230 kV and 115 kV” and referred to by SPS as the “Texas North Upgrades”. This group of transmission system upgrades was developed by SPP and SPS through long-range planning processes to be the most effective group of transmission system upgrades that would compliment each other to achieve the capacity and reliability requirements necessary to improve the transmission reliability in the Texas Panhandle area, and to maintain the bulk electric transmission capacity from adjacent transmission systems north of Texas.

As part of the Texas North Upgrades, the proposed 230 kV transmission line from Hitchland Substation to Moore County Substation will improve transmission reliability by providing a second 230 kV source to Moore County Substation, and further enhance the bulk electric transmission system by creating a stronger secondary path to supplement the operation of the existing 345 kV line from Hitchland Substation to Potter County Substation.

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Existing Transmission System

The SPS transmission system north and east of Amarillo, Texas consists of approximately 220 miles of 345 kV line, 275 miles of 230 kV line, 887 miles of 115 kV line, and 225 miles of 69 kV line, serving approximately 845 MVA of load during the summer peak loading season. From this area, there are five transmission tie-lines connecting to adjacent transmission systems in Kansas and Oklahoma: one 345 kV tie-line and one 115 kV tie-line connecting SPS transmission north into Kansas, one 230 kV tie-line and two 115 kV tie-lines tying east into Oklahoma. The transmission system in this area has a total of approximately 931 MW of generation with approximately 600 MW from wind, 91 MW from gas, and 240 MW from cogeneration. There is a total of approximately 380 MVAR of reactive power support supplied to this area with approximately 175 MVAR from generation and 205 MVAR from switched capacitor banks. The area load is made up primarily of agricultural and oil and gas industry production and facilities.

The strong tie to transmission systems north of Texas is through the 345 kV line from Potter County Interchange (North of Amarillo, Texas) to Hitchland Interchange (located at the Texas/Oklahoma border) to Finney Breaker Station (located south of Garden City, Kansas). This transmission tie-line provides the SPS transmission system access to generation in Kansas and Nebraska needed to cover SPS's own generation deficiencies during periods of peak load, or to cover the contingency (unplanned) loss of one of the Tolk Generating Units (540 MVA). This transmission tie-line has become an essential element to the SPS transmission system to reliably serve firm transmission service to wholesale and retail load. This transmission tie-line also provides the SPS system operators the needed flexibility to coordinate scheduled generation outages for maintenance. It is important to maintain this tie-line's import capability.

Load History:

In the area north of Amarillo, Texas, SPS serves the communities of Borger, Boys Ranch, Canadian, Dalhart, Dumas, Groom, Miami, Pampa, Panhandle, Perryton, Shamrock, Spearman, Stratford, Wheeler, White Deer, and a number of smaller communities. This area has a mixture of customer classes including residential, commercial, agricultural, and industrial with the majority of the electrical demand attributed to agricultural and oil and gas related industries. SPS continues to experience increased electrical demand from the electrification of irrigation wells and the addition of industries related to agriculture. The growth in the oil and gas industry has also contributed to the increased electrical demand. Over the last eight years, the electrical load in this area has increased by 20.54%, with an average load growth rate of 2.78% per year. Table 13.1 below illustrates ten years of historical growth in the summer peak load served by SPS to the area north of Amarillo, Texas.

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Table 13.1: Area Load History

Load Data (MW) July 2000 - July 2009		
Year	Load	%Change
2000	701	-
2001	681	-2.85%
2002	681	0.00%
2003	728	6.90%
2004	732	0.55%
2005	752	2.73%
2006	794	5.59%
2007	809	1.89%
2008	869	7.42%
2009	845	-2.76%
Average Growth Per Year (%)		2.78%
Total 9 Year Growth (%)		20.54%

Load Forecast:

The electrical load in this area is expected to continue to grow steadily, and the forecasted loads are included in the system planning models. Table 13.2 illustrates the forecasted loads for this area used in the transmission system planning models.

Table 13.2: Forecasted and Modeled Area Loads

Year	Summer Load (MW)
2010	872.4
2011	903.6
2014	948.6
2019	1039.4

Project Development and Powerflow Studies:

The Texas North Upgrades is a group of projects developed through SPS's and SPP's long range planning process. These projects were developed in 2007 to improve the transmission reliability in the Texas Panhandle area, and to maintain the bulk electric transmission capacity from adjacent transmission systems north of Texas. The current scope of projects that make up the Texas North Upgrades is summarized in the following list.

- Increase the 230/115 kV transformer capacity at Moore County Substation. SPS completed this project in 2008.
- Create a new transmission source north of Moore County Substation from the 345 kV line near the Texas/Oklahoma border called the Hitchland Substation. SPS has started construction on this project.

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- Construct a new breaker station to coordinate the 115 kV between Hitchland Substation and Moore County Substation. SPS has started construction on this project.
- Construct a new 115 kV line from Dallam County Substation to Sherman County Substation. SPS has filed an application to amend the certificate of convenience and necessity to include this line (PUC Docket Number 37104).
- Construct a new 230 kV line to from Dallam County Substation to Channing Substation to Northwest Substation. This line will provide a much needed backup source to the communities of Channing, Tascosa, and Boys Ranch, and will initially be operated at 115 kV. SPS has filed an application to amend the certificate of convenience and necessity to include this line (PUC Docket Number 37771).
- Construct a new 230 kV line from Hitchland Substation to Moore County Substation to provide a backup 230 kV supply to Moore County Substation. This project is the subject of this application.
- Construct a new 230 kV line from Hitchland Substation to a new 230/115 kV Ochiltree County substation north of Perryton, Texas. This new line and substation will provide the much-needed backup transmission to the communities in the northern Texas Panhandle that are currently served from some long 115 kV transmission lines. This project will be the subject of a future CCN application.
- Construct a new 230 kV line from Hitchland Substation to Pringle Substation. This line will provide a necessary backup to the 230 kV line from Hitchland Substation to Moore County Substation. This project will be the subject of a future CCN application.

To sustain reliable transmission service to the SPS transmission system, and to maintain the bulk electric transmission capacity from adjacent transmission systems north of Texas, SPS proposes in this application to construct between 54 to 63 miles of 230 kV transmission line from the Moore County Substation to the Hitchland Substation.

Planning Criteria / Philosophy

As discussed above, SPS is a member of the SPP, which has issued a notification to construct (NTC) dated February 13, 2008 for SPS to construct this project. SPS does not operate in the Electric Reliability Council of Texas (ERCOT) region and ERCOT takes no position on SPS's transmission projects. SPP and SPS have determined the need for this proposed project through internal system planning in conformance with SPP criteria and NERC's Planning Standards summarized as follows:

- Under system intact normal system operation, the loading on any transmission element will not exceed that element's normal rating and service voltage levels will be maintained within normal acceptable levels.
- Under single-contingency conditions, the loading on any transmission element will not exceed its emergency rating, and service voltage levels will be maintained within emergency limits.

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SPS's assessments of its portion of the interconnected transmission system are planned such that the transmission system can be operated to supply projected customer demands and projected firm (non-recallable reserved) transmission service under contingency conditions defined as:

- The loss of a single transmission element such as a generator, transmission line, or transformer,
- The loss of multiple transmission elements due to common failure such as a bus fault, breaker failure, multi-circuit transmission line (common structure or common corridor), or other combinations of transmission elements removed from operation by a single event.

SPS re-evaluated the need for the Texas North Upgrades by modeling the transmission system before and after the recommended projects using the latest SPP system models. The base case models were recreated by removing each of the projects in the Texas North Upgrades with the exception of the increased 230/115 kV transformer capacity at Moore County Substation. It was necessary to leave the increased capacity at Moore County Substation so that the system intact overload would not be reported in every single-contingency tested. Table 13.3 illustrates the single-contingency conditions without the Texas North Upgrades reporting the number of buses with low voltage and the percent of overload above the emergency ratings.

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Table 13.3: Contingency Conditions without the Texas North Upgrades

Contingency (Outaged Transmission Element)	Limiting Elements	Transmission Loading Above Emergency Rating, or Number of Low Voltage Services		
		2010	2011	2014 ¹
Texas Farms to Ochiltree 115 kV line	Number of buses with low voltage	2	6	8
Texas Farms to Spearman Substation 115 kV line	Number of buses with low voltage	4	9	9
Spearman Interchange to Spearman Substation 115 kV line	Texas County Interchange to TC-McMurry 115 kV line	-	107.2%	137.3%
	Number of buses with low voltage	9	11	25
Spearman Interchange to Pringle Interchange #1	Spearman Interchange to Pringle Interchange #2	111.3%	115.2%	119.7%
Spearman Interchange to Pringle Interchange #2	Spearman Interchange to Pringle Interchange #1	115.3%	119.3%	124.6%
Moore County to RB-Hogue 115 kV line	Moore County to Etter Rural Substation 115 kV line	100.1%	-	-
	Number of buses with low voltage	2	-	2
Hilmar Cheese Plant to Etter Rural Substation 115 kV line	Number of buses with low voltage	4	4	4
Moore County to Etter Rural Substation 115 kV line	Dalhart Substation to RB-Hogue 115 kV line	139.2%	139.4%	147.2%
	Moore County to RB-Hogue 115 kV line	152.0%	153.1%	153.3%
	Number of buses with low voltage	6	6	7
Pringle Interchange 230/115 kV transformer	Pringle Interchange to Riverview Station 115 kV line	-	-	101.5%
Pringle Interchange to Harrington Station 230 kV line	Pringle Interchange to Riverview Station 115 kV line	-	-	101.5%
	Number of buses with low voltage	-	-	1
Moore County Interchange 230/115 kV transformer	Riverview Station to Herring Substation 115 kV line	-	109.4%	113.9%
	Number of buses with low voltage	10	10	15
Moore County to Potter County 230 kV line	Riverview Station to Herring Substation 115 kV line	-	109.4%	113.9%
	Number of buses with low voltage	10	10	15

To further illustrate the magnitude of the single-contingency conditions, Table 13.4, below, illustrates the minimal level of post contingency load shed that would be required to mitigate the contingency overloading and low voltages to return conditions back to an acceptable emergency level.

¹ The 2019 cases were omitted because the powerflow base case models would not reach a solution without the Hitchland Substation.

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Table 13.4: Minimal Load Shed to Satisfy Emergency Contingency Conditions

Contingency (Outaged Transmission Element)	Contingency Load Shed (MVA) to Return to Allowable Emergency Conditions.		
	2010	2011	2014
Texas Farms to Ochiltree 115 kV line	1.1	4.2	8.3
Texas Farms to Spearman Substation 115 kV line	2.1	5.2	10.4
Spearman Interchange to Spearman Substation 115 kV line	7.3	10.4	16.5
Spearman Interchange to Pringle Interchange #1	24.3	29.9	36.0
Spearman Interchange to Pringle Interchange #2	30.5	37.4	44.8
Moore County to RB-Hogue 115 kV line	1.1	3.2	1.1
Hilmar Cheese Plant to Etter Rural Substation 115 kV line	8.3	9.3	9.3
Moore County to Etter Rural Substation 115 kV line	10.4	12.4	13.5
Pringle Interchange 230/115 kV transformer	0	0	2.7
Pringle Interchange to Harrington Station 230 kV line	0	0	2.7
Moore County Interchange 230/115 kV transformer	26.2	36.7	41.54
Moore County to Potter County 230 kV line	26.2	36.7	41.54

The Texas North Upgrades create an essential new source to the 115 kV load serving transmission north of Moore County Substation, and the additional 230 kV transmission lines from Hitchland Substation to Moore County and Pringle substations maintain the bulk electric transmission capacity from adjacent transmission systems north of Texas.

SPS has already completed the first improvement project by increasing the 230/115 kV transformer capacity at Moore County Substation, and SPS has already started construction of the Hitchland Substation located at the Texas/Oklahoma border. SPS has also filed applications to amend the certificate of convenience and necessity to include the 115 kV lines from Dallam County Substation to Sherman County Substation and from Dallam County Substation to Channing Substation to Northwest Substation. With this progress, the following additional powerflow study was performed for this application.

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Powerflow Studies Going Forward:

The proposed 230 kV transmission line from Hitchland Substation to Moore County Substation will provide a second 230 kV source to Moore County Substation, and further enhance the bulk electric transmission system by creating a stronger secondary path to supplement the operation of the existing 345 kV line from Hitchland Substation to Potter County Substation. To reflect the conditions that should be present by the end of 2010, new models were created that included the Hitchland 345/230/115 kV substation with all of the 345 kV and 115 kV connections completed, but without the 230 kV line from Hitchland Substation to Moore County Substation Table 13.5 illustrates the study results indicating the conditions before and after the 230 kV line from Hitchland Substation to Moore County Substation.

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Table 13.5: Contingency Conditions Before and After the Proposed 230 kV line from Hitchland Substation to Moore County Substation.

Contingency (Outaged Transmission Element)	Limiting Elements	2010	2011		2014		2019	
		BASE CASE % Loading	BASE CASE % Loading	TEST CASE % Loading	BASE CASE % Loading	TEST CASE % Loading	BASE CASE % Loading	TEST CASE % Loading
SYSTEM INTACT	Hitchland 230/115 kV transformer	-	-	-	-	-	101.7	-
Potter Co. to Moore Co. 230 kV line	Hitchland 230/115 kV transformer	-	-	-	-	-	114.0	-
Moore Co. 230/115 kV transformer	Hitchland 230/115 kV transformer	-	-	-	-	-	114.0	111.3
Hitchland 230/115 kV transformer	Moore Co. 230/115 kV transformer	-	-	-	-	-	NC	104.9
Potter Co. 345/230 kV transformer ²	Hitchland 230/115 kV transformer	115.2	111.7	-	107.8	-	150.2	102.2
Potter Co. to Hitchland Substation 345 kV line ³	Hitchland 230/115 kV transformer	115.2	111.7	-	107.8	-	150.2	102.2
Hitchland to Moore Co. 230 kV line	Hitchland 230/115 kV transformer	NA	NA	-	NA	-	NA	101.7
TUCO to Oklaunion 345 kV line ⁴	Hitchland 230/115 kV transformer	-	-	-	-	-	NC	-
Texas Farms to Ochiltree 115 kV line	Hitchland 230/115 kV transformer	-	-	-	-	-	106.9	-
Texas Farms to Spearman Sub 115 kV line	Hitchland 230/115 kV transformer	-	-	-	-	-	107.3	-
Spearman Interchange to Spearman Sub 115 kV line	Hitchland 230/115 kV transformer	-	-	-	-	-	109.0	-
Spearman Interchange to Pringle 115 kV line	Hitchland 230/115 kV transformer	-	-	-	-	-	106.0	-
Pringle 230/115 kV transformer	Hitchland 230/115 kV transformer	-	-	-	-	-	107.1	-
Texas Phase-shifter ⁵ to Liberal 115 kV line	Hitchland 230/115 kV transformer	-	-	-	-	-	102.2	-
Wheeler Co. to Elk City 230 kV line ⁶	Hitchland 230/115 kV transformer	-	-	-	-	-	106.0	-

Note: NA = Not Applicable since the element is not in the case model.

NC = Indicates that the case model did not reach a solution under the contingency.

- = indicates no loading issues found in that contingency.

BASE CASE = Cases **without** the proposed 230 kV line from Hitchland Substation to Moore County Substation.

TEST CASE = Cases **with** the proposed 230 kV line from Hitchland Substation to Moore County Substation.

The remaining overload conditions reported in Table 13.5 for the 2019 summer case will be mitigated with the 230 kV lines from Hitchland Substation to Pringle Substation and from Hitchland Substation to Ochiltree Substation that will be the subject of future CCN applications.

² Part of the 345 kV tie-line north to Kansas.

³ 345 kV tie-line north to Kansas.

⁴ 345 kV tie-line east to Oklahoma.

⁵ 115 kV tie-line north to Kansas.

⁶ 230 kV tie-line east to Oklahoma.

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Routing Considerations

An evaluation was made to see if there would be any potential problems from routing the proposed 230 kV line from Hitchland Substation to Moore County Substation along the existing 345 kV or 115 kV transmission lines. This study created a set of summer models reflecting the same import conditions as observed in Table 13.5 except that the existing wind farm connected at Hitchland Substation was dispatched at nameplate capacity of 240 MW. Table 13.6 illustrates the results of this evaluation using the same SPP models in all other aspects.

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Table 13.5: Re-testing the Contingency Conditions for Multiple Circuit Outages.

Contingency (Outaged Transmission Element)	Limiting Elements	2010	2011	2014	2019
		BASE CASE % Loading	BASE CASE % Loading	BASE CASE % Loading	BASE CASE % Loading
SYSTEM INTACT	Hitchland 230/115 kV transformer	-	-	-	121.0
Potter Co. to Moore Co. 230 kV line	Hitchland 230/115 kV transformer	-	-	110.3	130.3
Moore Co. 230/115 kV transformer	Hitchland 230/115 kV transformer	110.3	110	110.3	130.4
Hitchland 230/115 kV transformer	Moore Co. 230/115 kV transformer	-	-	-	NC
Potter Co. 345/230 kV transformer	Hitchland 230/115 kV transformer	164.2	162.3	154	NC
Potter Co. to Hitchland 345 kV line	Hitchland 230/115 kV transformer	164.2	162.3	154	NC
Hitchland to Moore Co. 230 kV line	Hitchland 230/115 kV transformer	NA	NA	-	NA
TUCO to Oklaunion 345 kV line	Hitchland 230/115 kV transformer	108.8	107.9	103.7	NC
Texas Farms to Ochiltee 115 kV line	Hitchland 230/115 kV transformer	105.8	105	104.8	125.2
Texas Farms to Spearman Sub 115 kV line	Hitchland 230/115 kV transformer	105.8	105.1	105	125.5
Spearman Interchange to Spearman Sub 115 kV line	Hitchland 230/115 kV transformer	106.4	106.1	106.1	126.6
Spearman Interchange to Pringle 115 kV line	Hitchland 230/115 kV transformer	102.8	102.4	102.5	123.1
Pringle 230/115 kV transformer	Hitchland 230/115 kV transformer	103.5	103.3	103.3	124.0
Texas Phase-shifter to Liberal 115 kV line	Hitchland 230/115 kV transformer	102.2	100.4	100.1	121.4
Wheeler Co. to Elk City 230 kV line	Hitchland 230/115 kV transformer	-	-	-	125.2
Lasley to Sherman 115 kV line	Hitchland 230/115 kV transformer	-	-	-	117.4
Hitchland to DWS Frisco 115 kV line	Hitchland 230/115 kV transformer	-	-	-	103.3
Hitchland to Hansford 115 kV line	Hitchland 230/115 kV transformer	-	-	-	104.6
DWS Frisco to Lasley 115 kV line	Hitchland 230/115 kV transformer	-	-	-	103.3
Lasley to Moore County 115 kV line	Hitchland 230/115 kV transformer	-	-	-	117.8

Note: NA = Not Applicable since the element is not in the case model.
 NC = Indicates that the case model did not reach a solution under the contingency.
 - = indicates no loading issues found in that contingency.
 BASE CASE = Cases **without** the proposed 230 kV line from Hitchland Substation to Moore County Substation.

The reported “base case” contingency conditions in Table 13.5 illustrate the potential double circuit outage of the proposed 230 kV line with the other listed contingencies. From these results it is clear that the routing of the proposed 230 kV line from Hitchland Substation to Moore County Substation, if routed along either the existing 345 kV line or along any of the existing 115 kV lines could create an undesirable overload conditions if the other proposed 230 kV lines are not built, or their construction is delayed. The specific contingencies in **bold text** indicate the potential problems of constructing the proposed 230 kV line from Hitchland Substation to Moore County Substation in a common corridor.

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Table 13.6 illustrates that all of the previously observed problems are mitigated with the completion of all the proposed projects in the Texas North Upgrades. Only 2014 and 2019 summer cases are illustrated because all projects included in the Texas North Upgrades are expected to be in service by 2014 summer.

Table 13.6: System Intact and Contingency Conditions after the Texas North Upgrades

Contingency (Outaged Transmission Element)	Limiting Elements	2014	2019
SYSTEM INTACT	None	-	-
Potter Co. to Moore Co. 230 kV line	None	-	-
Moore Co. 230/115 kV transformer	None	-	-
Hitchland 230/115 kV transformer	None	-	-
Potter Co. 345/230 kV transformer	None	-	-
Potter Co. to Hitchland 345 kV line	None	-	-
Hitchland to Moore Co. 230 kV line	None	-	-
TUCO to Oklaunion 345 kV line	None	-	-
Texas Farms to Ochiltree 115 kV line	None	-	-
Texas Farms to Spearman Sub 115 kV line	None	-	-
Spearman Interchange to Spearman Sub 115 kV line	None	-	-
Spearman Interchange to Pringle 115 kV line	None	-	-
Pringle 230/115 kV transformer	None	-	-
Texas Phase-shifter to Liberal 115 kV line	None	-	-
Wheeler Co. to Elk City 230 kV line	None	-	-
Lasley to Sherman 115 kV line	None	-	-
Hitchland to DWS Frisco 115 kV line	None	-	-
Hitchland to Hansford 115 kV line	None	-	-
DWS Frisco to Lasley 115 kV line	None	-	-
Lasley to Moore County 115 kV line	None	-	-
‘-’ = indicates no loading issues found in that contingency.			

Summary:

This section of the application illustrates how the Texas North Upgrades are needed to improve the transmission reliability in the Texas Panhandle area, and to maintain the bulk electric transmission capacity from adjacent transmission systems north of Texas. This section also demonstrates how the proposed 230 kV line from Hitchland Substation to Moore County Substation will improve reliability by providing a second 230 kV source to Moore County Substation, and further enhance the bulk electric transmission system by creating a stronger secondary path to supplement the operation of the existing 345 kV line from

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Hitchland Substation to Potter County Substation. The tables above also illustrate how potential problems could be created by routing the proposed 230 kV line from Hitchland Substation to Moore County Substation along common corridors of the existing 345 kV or 115 kV lines, and not constructing the remaining 230 kV lines of the Texas North Upgrades.

14. Alternatives to Proposed Project:

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 proposed project. Explain how the proposed project overcomes the insufficiencies of the other options that were considered.

When the projects of the Texas North Upgrades were developed, combinations of other transmission projects were studied to find the most effective group of projects that would compliment each other to achieve the capacity and reliability requirements to improve the transmission reliability in the Texas Panhandle area, and to maintain the bulk electric transmission capacity from adjacent transmission systems north of Texas. However, every combination of transmission projects evaluated included the construction of the 230 kV line from Hitchland Substation to Moore County Substation. Then, at the time when SPP issued a notice for SPS to construct the proposed 230 kV line from Hitchland Substation to Moore County Substation, there were no options given to SPS. Furthermore, subsequent transmission service has been based upon SPP studies that included all of the projects listed in the Texas North Upgrades previously ordered to be built by the SPP.

The proposed 230 kV line from Hitchland Substation to Moore County Substation will create a second transmission source to Moore County Substation by connecting it to the new source at Hitchland Substation. In addition, the proposed 230 kV line when connected at Moore County Substation would complete the important parallel path to the 345 kV line from Hitchland Substation to Potter County Substation, and thereby compliment the operation of the 345 kV line. By these benefits the proposed 230 kV line from Hitchland Substation to Moore County Substation will complement the function of existing SPS transmission facilities and other proposed projects listed in the Texas North Upgrades.

Since there were no alternative projects developed, and the SPP orders do not include any options, the following is offered to comply with the instructions of this application.

Project Alternative 1: Construct 50 miles of 230 kV line from Potter County Substation to Moore County Substation.

This project alternative would provide another 230 kV source to Moore County Substation, and would be of the same approximate length as the proposed 230 kV line from Hitchland Substation to Moore County

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Substation. However, this alternative project only offers a duplication of an existing 230 kV line originating from the same source at Potter County Substation, and would not compliment the transmission functions of the 345 kV line from Hitchland Substation to Potter County Substation. The costs for this project alternative would be essentially the same without offering the benefits of the proposed project. Therefore SPS rejects this project alternative.

Project Alternative 2: Distribution Alternative, or Distributed Generation at Distribution Voltage Levels.

The purpose of the proposed 230 kV project as part of the Texas North Upgrades is to improve the transmission reliability in the Texas Panhandle area, and to maintain the **bulk electric transmission capacity** from adjacent transmission systems north of Texas. Building additional distribution facilities will not achieve either of these purposes. Therefore, there is no distribution alternative to the proposed 230 kV line from Hitchland Substation to Moore County Substation.

Project Alternative 3: Upgrading Voltage, Bundling of Conductors of existing Facilities, or adding Transformers.

As mentioned before, the benefits of the proposed 230 kV line are to provide a new source to Moore County Substation, and to compliment the function of the 345 kV line from Hitchland Substation to Potter County Substation. Upgrading voltage, bundling conductors of existing facilities, or adding transformers will accomplish neither of these benefits. SPS did not pursue project alternatives of this nature after considering the proposed 230 kV line from Hitchland Substation to Moore County Substation, its benefits, and SPP's notification to construct.

Project Alternative 4: Adding Generation.

This project alternative proposes the construction of a natural gas generation plant at the Moore County Substation. The plant's rating would match the capacity needed to backup the contingency loss of the 230/115 kV transformer at Moore County Substation of 250 MW. This plant would provide the necessary power to meet the normal growth in load, and would be available as an alternate source under contingency conditions for the area served by Moore County Substation.

This project alternative differs from that considered in Project Alternative 3, because this power generation would not only cover the contingency loss of the existing Moore County 230/115 kV transformer, but would also cover the contingency loss of the existing 230 kV line from Potter County Substation to Moore County Substation. The estimated installed cost for a gas turbine generator with a 250 MW rating is estimated at \$900 per kW is approximately \$225,000,000. This cost does not include permitting, fuel supply interconnection or transmission interconnection. SPS rejects this project alternative due to its prohibitive capital cost relative to SPS's proposed project.

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The proposed project to construct a 230 kV line from Hitchland Substation to Moore County Substation as part of the Texas North Upgrades and recommended by SPP surpasses the project alternatives presented in this application by cost and performance.

15. Schematic or Diagram:

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

Refer to Attachment 5.

16. 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 preferred and alternate routes. Provide a copy of the complete routing study conducted by the utility or consultant.

The environmental assessment (EA) and alternative routing analysis for these projects were produced by PBS&J with input from SPS Siting and Land Rights personnel and is included as Attachment 1 to the Application.

The first step in the selection of alternative routes was to select a study area. This area needed to encompass both project termination points, which are the existing Hitchland Substation and the existing Moore County Substation. It also needed to include a large enough area within which an adequate number of alternative routes could be located. The study area for the proposed 230 kV transmission line is approximately 33 miles east to west and 40 miles north to south located in Hansford, Hutchinson, Sherman, and Moore Counties of the Texas Panhandle.

The data used by PBS&J and SPS in the delineation of alternative routes included published literature (documents, reports, maps, aerial photography, etc.) and information obtained from local, state, and federal agencies including information obtained from county appraisal district maps and records. Aerial photography acquired from the National Agriculture Imagery Program dated 2008; U.S. Geological Survey (USGS) topographic maps, TxDOT county maps, and ground reconnaissance surveys were used throughout the selection and evaluation of alternative routes. Ground reconnaissance of the study area and computer-based evaluation of digital aerial imagery were utilized for both refinement and evaluation of alternative routes.

The next step in the process was to identify routing constraints within the study area. These consisted of

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habitable structures, out buildings and barns, irrigation wells, traveling irrigation systems, cemeteries, historic sites, archaeological sites, wetlands, parks, churches, schools, and endangered or threatened species habitat, electrical distribution lines, as well as underground utilities and above ground communication towers. Additionally, where possible, existing compatible right-of-ways (ROW), property lines, and roadways were utilized or paralleled.

After preliminary routes were identified, modifications were made based on the results of field evaluation and review of high-resolution aerial photography. In order to solicit public opinion about the project, these preliminary routes were presented at a public open-house meeting at the Golden Age Center in Gruver, Texas on June 26, 2008, April 7, 2009, and April 21, 2009 between the hours of 5:00 p.m. and 8:00 p.m. Based on landowner comments/input some new links were added and others were dropped completely.

After careful consideration and study of all possible routes within the approximate 1,320 square mile area, along with possible constraints and landowner input, PBS&J and SPS Siting and Land Rights personnel selected a preferred route and seven alternate routes for this project. Each route includes secondary links that may be considered. The potential routes were evaluated comparing all routes from a strictly environmental viewpoint, based upon the measurement of 35 separate environmental criteria and the consensus opinion of PBS&J's group of evaluators.

PBS&J's group of evaluators selected Alternative Route 8 as the preferred route. Alternative Route 8 would have minimum impact to habitable structures within 300 ft of the route centerline. The length of route is the average of all alternative routes. Alternative Route 8 will have no impact on private airstrips and the least amount of impact on FAA registered airports. The route also has a minimal amount of high archeological/historical site potential.

SPS selected Alternative Route 8 as the preferred route based on a review of potential environmental impacts, land use, engineering constraints, maintenance and construction considerations, community values, estimated costs, system operations, and landowner input.

Refer to Attachment 1, Table 7-1.

17. 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 Procedural Rule §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. Provide a description of the method of notice, a copy of any notices, and the number of notices that were mailed and/or published.

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Originally, the project was designed as a 115 kV transmission line. When the project was changed to a 230 kV transmission line, two additional public meeting were held. Therefore, in total, SPS and PBS&J conducted three public open-house meetings in conjunction with the proposed line.

- The first meeting was held on June 26, 2008 at the Golden Age Center located at 109 East Broadway in Gruver, Texas from 5:00 p.m. to 8:00 p.m. Of the 327 directly affected landowners invited, 49 attended.
- The second meeting was held on April 7, 2009 at the Golden Age Center located at 109 East Broadway in Gruver, Texas from 5:00 p.m. to 8:00 p.m. Of the 363 directly affected landowners invited, 13 attended.
- The third meeting was held on April 21, 2009 at the Golden Age Center located at 109 East Broadway in Gruver, Texas from 5:00 p.m. to 8:00 p.m. Of the 363 directly affected landowners invited, 25 attended.

At the meetings, rather than a formal presentation in speaker-audience format, SPS and PBS&J staff set up several information stations. Each station was devoted to a particular aspect of the routing study and was manned by SPS and/or PBS&J staff. Each station had maps, illustrations, photographs, and/or text explaining each particular topic. Interested citizens and property owners were encouraged to visit each station in order, so that the entire process could be explained in the general sequence of project development. The information station format is advantageous because it allows attendees to process information in a more relaxed manner and allows them to focus on their particular area of interest and ask specific questions. More importantly, the one-on-one discussions with SPS and PBS&J staff encouraged more interaction from those citizens who might be hesitant to participate in a speaker-audience format.

At the first station, visitors signed in and were handed a questionnaire, which solicited comments on citizen concerns as well as an evaluation of the information presented at the open house. At the completion of the meeting, landowner attendees were asked to complete a routing questionnaire. A total of 23 questionnaires were completed by those attending the meetings.

Refer to Attachment 1, Appendix B for copies of the letters inviting landowners to the meetings and the questionnaire.

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18. Routing Maps:

Base maps should be a full scale (one inch = one mile) highway map of the county or counties involved, or a U.S.G.S. 7-minute topographical map, or other map of comparable scale with sufficient cultural and natural features to permit location of the proposed route in the field. Provide a map (or maps) that shows the study area, routing constraints, and all routes or line segments that were considered prior to the selection of the preferred and alternate routes. Identify the preferred and alternate routes and any existing facilities to be interconnected or coordinated with the proposed project. Locate 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 location of the habitable structures, radio transmitters and other electronic installations, airstrips, irrigated pasture or cropland, parks and recreational areas, historical and archeological sites, and any environmentally sensitive areas.

Refer to Figures 2-3 and 7-1 from Attachment 1 for the Route Maps.

Refer to Attachment 6 for the Highway Maps.

19. Permits:

List any permits or approvals required by other governmental agencies for the construction of the proposed project. Indicate whether or not permits have been obtained.

All routes would require highway-crossing permits for State Highways. Permits from Sherman County will be obtained for crossing county roads. The appropriate permits will be obtained after the CCN is approved and prior to construction. Permits will also be obtained from the Texas North Western Railway Company for any crossing of a railroad.

20. Habitable structures:

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 of a transmission project of 230kV or less, or within 500 feet of the centerline of a transmission project greater than 230kV. Provide a general description of each habitable structure and its distance from the centerline of the proposed project. 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 to the closest habitable structure in the group. Locate all listed habitable structures or groups of structures on the routing map.

Tables 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8 and 7-1 in PBS&J's EA report (Attachment 1) provides the number and location of habitable structures within 300 feet of the eight primary alternative routes. There are five habitable structures located within 300 feet of the proposed centerline of Alternative Route 8. Four

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of these habitable structures are newly affected. Habitable structures located within 300 feet of the primary alternative routes consist of houses, barns, and mobile homes.

21. Electronic Installations:

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

There are no AM radio transmitters within 10,000 feet of any of the routes.

Each of the alternative routes would be within 2,000 feet of a communication tower. The transmitter is approximately 771 feet from all of the alternative routes and is located on Link X.

Refer to Attachment 1, Figure 7-1.

22. Airstrips:

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 the proposed project. Indicate whether any transmission structures will exceed a 100:1 horizontal 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 the proposed project. 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 the proposed project. 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 private airstrip, registered airport, and registered heliport; and state the distance of each from the center line of the proposed transmission line. Locate all airstrips, airports, and heliports on a routing map.

All of the alternative routes fall within 20,000 feet of a FAA-registered airstrip. Alternative Routes 3, 4, 5 and 7 fall within 20,000 feet of two FAA-registered airstrips while the others all fall within 20,000 feet of one FAA-registered airstrip.

Approximate distances for each link within 20,000 feet of the FAA-registered airstrips are as follows:

- Gruver Municipal Airport within 20,000 feet of Link B – approximately 16,429 feet
- Gruver Municipal Airport within 20,000 feet of Link M – approximately 18,068 feet
- Sunray Airport within 20,000 feet of Link K – approximately 3,329 feet
- Sunray Airport within 20,000 feet of Link T – approximately 10,450 feet
- Sunray Airport within 20,000 feet of Link U – approximately 19,134 feet
- Sunray Airport within 20,000 feet of Link W – approximately 16,119 feet

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- Sunray Airport within 20,000 feet of Link X – approximately 16,596 feet

Alternative Routes 3 and 7 fall within 10,000 feet of a private airstrip. Approximate distances for each link within 10,000 feet of the private airstrip are as follows:

- Private airstrip within 10,000 feet of Link Q – approximately 5,579 feet

There are no known heliports within 5,000 feet of any of the routes.

Refer to Attachment 1, Figure 7-1

23. Irrigation Systems:

Identify any pasture or cropland irrigated by traveling irrigation systems (rolling or pivot type) that will be traversed by the proposed project. Provide a description of the irrigated land and state how it will be affected by the proposed project (number and type of structures etc.). Locate any such irrigated pasture or cropland on a routing map.

A portion of each primary alternative route crosses cropland irrigated by circle-pivot or other above-ground mechanical means. The sprinklers range in radius from less than one-eighth mile to one-half mile in length. The routes selected will not interfere with any of the existing center pivot sprinkler systems and no rolling type irrigation systems exist near the project. Where the sprinklers overlap the potential easement location, transmission lines will be designed in such a manner as to span the length of the sprinkler overlap area.

Refer to Attachment 1, Figure 7-1.

24. Notice:

Notice is to be provided in accordance with Procedural Rule §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 7. (A map was included with the notice.)

- B. *Provide a copy of the written notice to utilities that are located within five miles of the proposed transmission line.*

Refer to Attachment 8. (A map and a copy of the route descriptions were included with the notice.)

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

Refer to Attachment 9. (A map and a copy of the route descriptions were included with the notice.)

D. *Provide a copy of the notice that is to be published in newspapers of general circulation in the counties in which the proposed 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 10.

A copy of the EA was sent to the Texas Parks and Wildlife Department on the date the application was filed.

25. Parks and Recreation Areas:

List all parks and recreational areas owned by a governmental body or an organized group, club, or church located within 1,000 feet of the center line of the project. 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 or club). List the sources used to identify the parks and recreational areas. Locate the listed sites on a routing map.

There are no parks within 1,000 feet of the proposed centerline of any of the alternative routes.

26. Historical and Archeological Sites:

List all historical and archeological sites known to be within 1,000 feet of the center line of the proposed project. Include a description of the site and its distance to the center line of the project. 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.

The county record files at the Texas Archeological Research Laboratory were used to identify any known historical and archeological sites known to be within 1,000 feet of the center line. Alternative Route 8 crosses one previously recorded site (41MO264) and has 25.84 miles of high probability area.

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27. Coastal Management Program:

Indicate whether the proposed project is located, either in whole or in part, within the coastal management program boundary as defined in 31 T.A.C. §503.1. If the project is, either in whole or in part, in the coastal management program, indicate whether if any part of the proposed facilities are seaward of the Coastal Facilities Designation Line as defined in 31 T.A.C. §19.2(a)(21). Identify the type(s) of Coastal Natural Resource Area(s) using the designations in 31 T.A.C. §501.3(b) impacted by any part of the proposed facilities.

The proposed project is not located within the coastal management program boundary as defined in 31 T.A.C. 503.1.

28. Environmental Impact:

Provide copies of any environmental impact studies 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 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 insure preservation of the areas or species.

Refer to “Environmental Assessment and Alternative Route Analysis for the Hitchland to Moore 230 kV Transmission Line Project Hansford, Sherman, and Moore Counties, Texas,” labeled as “Attachment 1” to the Application.

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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 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 _____
(Applicant's Authorized Representative)

SUBSCRIBED AND SWORN TO BEFORE ME, a Notary Public in and for the state of Texas, this _____ day of May 2010.

SEAL

Notary Public

My Commission Expires: _____