BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF SOUTHWESTERN PUBLIC SERVICE COMPANY'S APPLICATION FOR EXPEDITED: (1) ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AUTHORIZING CONSTRUCTION AND OPERATION OF A 345 KV TRANSMISSION LINE AND ASSOCIATED FACILITIES IN EDDY AND LEA COUNTIES, NEW MEXICO; (2) APPROVAL OF THE LOCATION OF THE 345 KV TRANSMISSION LINE; (3) DETERMINATION OF RIGHT OF WAY WIDTH AND (4) AUTHORIZING ACCRUAL OF AN ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION FOR THE TRANSMISSION LINE AND ASSOCIATED FACILITIES,	)	**CASE NO. 14-_____-UT**
SOUTHWESTERN PUBLIC SERVICE COMPANY,	)	
APPLICANT.	)	

DIRECT TESTIMONY

of

ROLAND C. AZCARRAGA

on behalf of

SOUTHWESTERN PUBLIC SERVICE COMPANY

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GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
AFUDC	Allowance for Funds Used During Construction
Commission	New Mexico Public Regulation Commission
CCN	Certificate of Public Convenience and Necessity
HPILS	High Priority Incremental Load Study
ITP	Integrated Transmission Planning
ITPNT	ITP Near-Term
kV	kilovolt
NTC	Notification to Construct
PSCo	Public Service Company of Colorado, a Colorado corporation
Proposed Project	345 kV transmission line and associated substation facilities in Eddy and Lea Counties, New Mexico
ROW	right-of-way
SPP	Southwest Power Pool
SPS	Southwestern Public Service Company, a New Mexico corporation
UE	Utility Engineering
Xcel Energy	Xcel Energy Inc.

LIST OF ATTACHMENTS

Attachment	Description
RCA-1	SPS Vicinity Map of Southeast New Mexico Service Area Facilities
RCA-2	Potash Junction-Roadrunner 345 kV Transmission Line Project One-Line Diagram
RCA-3	SPP Delivery Point Network Study, DPA-2011-June-073
RCA-4	SPP Notification to Construct Letter, SPP-NTC-200257
RCA-5	SPS Intercontinental Potash SIS Load Interconnection Study Report No. 110801

Case No. 14-____-UT
Direct Testimony
of
Roland C. Azcarraga

I. WITNESS IDENTIFICATION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Roland C. Azcarraga, and my business address is 600 S. Tyler Street, Amarillo, Texas 79101.

Q. On whose behalf are you testifying?

A. I am filing testimony on behalf of Southwestern Public Service Company, a New Mexico corporation ("SPS") and wholly-owned subsidiary of Xcel Energy Inc. ("Xcel Energy"). Xcel Energy is a registered holding company that owns several electric and natural gas utility operating companies and a regulated natural gas pipeline company.[1]

Q. By whom are you employed and in what position?

A. I am employed by SPS as a Senior Engineer Transmission Planning.

Q. Please briefly outline your responsibilities as Senior Engineer Transmission Planning.

A. My duties include performing planning studies for new transmission facilities required for generation, customer additions, and studies for

[1] Xcel Energy is the parent company of four wholly-owned electric utility operating companies: Northern States Power Company, a Minnesota corporation; Northern States Power Company, a Wisconsin corporation; Public Service Company of Colorado, a Colorado corporation ("PSCo"); and SPS. Xcel Energy's gas pipeline subsidiary is WestGas InterState, Inc.

compliance work associated with the North American Electric Reliability Corporation transmission reliability standards. I am responsible for submitting budget items for improvements to the transmission system that are needed to integrate the requests as outlined in the results of the studies. I am also responsible for providing fault studies, short circuit reduction models, one-line model diagrams to our department and consultants for on-going power flow, dynamics, electromagnetic transient programs, and harmonics studies.

Q. Describe your educational background.

A. I received my Bachelor of Science in Electrical Engineering degree in 1980 from Mapua Institute of Technology in Manila, Philippines.

Q. Please describe your professional experience.

A. In 1980, I worked as an entry-level engineer for an electrical contracting company (P.G. Tomas Inc.). In 1982, I worked as a field engineer for an oil refining and marketing company (Caltex, Phil). In 1983, I moved to the United States and worked for an electrical contractor (B&G Electric Co.) in Pampa, Texas. I joined American Smelting and Refining Company in 1990 as an engineer for the copper refinery plant in Amarillo. I joined Utility Engineering ("UE") in 1996 and was assigned to SPS substation design, and

then in 2000 I was assigned to UE power plant design. I transferred to SPS Electrical Operations Transmission Engineering as a commissioning engineer in 2001. In 2006, I assumed my current position as a Senior Planning Engineer for the SPS Transmission Planning Department.

Q. Do you hold any professional licenses?

A. Yes. I am a registered Professional Engineer in the State of Texas.

Q. Are you a member of any professional organizations?

A. Yes. I am a senior member of the Institute of Electrical and Electronic Engineers.

Q. Have you testified before any regulatory authorities?

A. Yes. I have filed testimony with the Public Utility Commission of Texas.

II. ASSIGNMENT AND OVERVIEW OF THE FILING

Q. What is the purpose of your testimony?

A. My testimony supports SPS's application for New Mexico Public Regulation Commission ("Commission") approval of a certificate of public convenience and necessity ("CCN") for the proposed construction and operation of a 345 kilovolt ("kV") transmission line, and the associated facilities in Eddy and Lea Counties, New Mexico ("Proposed Project"), as well as the related location approval of the 345 kV transmission line from the Potash Junction Substation to the proposed Roadrunner Substation. I will also explain why the transmission line and Roadrunner Substation will be built to 345 kV specifications, but will initially be operated at 230 kV.

My testimony provides an overview of SPS's transmission system and operations in the service area, explain SPS's need for the Proposed Project, describes the proposed 345 kV transmission line and Roadrunner Substation, and discusses how SPS's filing satisfies the requirements for issuance of a CCN for the Proposed Project and for location approval of the proposed 345 kV transmission line. Finally, I will provide the cost estimate for the Proposed Project, including SPS's request for an allowance for used during construction ("AFUDC").

Q. Please identify the other SPS witnesses who provide testimony in support of SPS's Application, and generally describe the subjects they will address.

A. In addition to my pre-filed testimony, the following witnesses are filing testimony in support of SPS's Application: (1) Jason Brunner's testimony discusses SPS's request for Commission determination of the right-of-way ("ROW") width for the proposed 345 kV transmission line, and also the circuit design and type of construction required for the Proposed Project; (2) Scott Morris' testimony discusses the route selection and SPS's location approval request for the proposed 345 kV transmission line, and provides the schematic diagram showing the proposed transmission line and its interconnection to the grid; and (3) Howard C. Higgins' testimony evaluates the potential environmental, biological, and cultural resource impacts of the Proposed Project, and also supports SPS's request for location approval of the 345 kV transmission line. Further, Mr. Higgins' testimony discusses the permits required from the United States Bureau of Land Management ("BLM") and the New Mexico State Lands Office ("NMSLO").

Q. Briefly describe the facilities that are associated with the Proposed Project.

A. SPS proposes to locate, construct, and operate the Proposed Project, which will connect the existing Potash Junction Substation to the proposed Roadrunner Substation in order to serve existing and new retail load customers and provide increased reliability for SPS's southeastern New Mexico transmission system. Because a new retail load customer recently requested to connect approximately 80 megawatts ("MW") of new load onto SPS's existing 115 kV transmission network, the Proposed Project is needed to mitigate the voltage and thermal violations during system intact and single contingency conditions in Eddy and Lea Counties, New Mexico (referred to as SPS's southeastern New Mexico service area) due to the impact of the new load.

Q. Please describe SPS's southeastern New Mexico transmission system.

A. SPS's existing transmission system in Eddy and Lea Counties, New Mexico, consists of 36 miles of 345 kV transmission line, 113 miles of 230 kV transmission line, 314 miles of 115 kV transmission line, and 128 miles of 69 kV transmission line. The southeastern New Mexico service area is fed from SPS's gas fired Cunningham Plant and the gas fired Lea Power Partners-Hobbs Plant at 230 kV level, and from SPS's gas fired Maddox Plant at 115 kV level. The total nameplate generating capacity of the

Cunningham and Maddox Plants is approximately 650 MW, while the Hobbs Plant is approximately 532 MW.

The Cunningham Plant and Hobbs Plant are interconnected by two 115 kV transmission lines and a 230 kV transmission line, while Cunningham and Maddox Plants are interconnected by a 115 kV transmission line.

The Eddy County Substation is connected to the north at Chaves County Substation by a 230 kV transmission line and connected to the northeast from Texas by a 345 kV transmission line to SPS's Tolk Plant. The Eddy County and Potash Junction Substations are fed at 230 kV level from Cunningham Plant. The Eddy County, Seven Rivers, Pecos, and Potash Junction Substations are inter-connected by a 230 kV transmission line which makes up the 230 kV loop in SPS's southeastern New Mexico service area. The PCA, Potash Junction, Carlsbad, and Pecos Substations are connected by a 115 kV transmission line.

The PCA Substation is fed from the Cunningham Plant at 115 kV level, while Monument and Taylor Substations are fed at 115 kV level from the Maddox Plant.

The Monument, Oil Center, Whitten, Jal, West Hobbs, and Taylor Substations are inter-connected by a 115 kV transmission line which make up the 115 kV transmission loop in SPS's southeast New Mexico service area. This loop is inter-connected by a 115 kV transmission line to the west from the Potash Junction, Wipp, and Red Bluff Substations.

Please refer to Attachment RCA-1 for a vicinity map of the southeast New Mexico service area facilities.

III. DESCRIPTION OF THE PROPOSED PROJECT

Q. Please describe the transmission line and associated facilities that are included in the Proposed Project.

A. The Proposed Project will involve the construction of a 345 kV transmission line that will be initially operated at 230 kV. This line will connect SPS's existing Potash Junction Substation, located approximately 17 miles northeast of Carlsbad, New Mexico, to the proposed Roadrunner Substation to be located approximately 22 miles northwest of Jal, New Mexico.

At the Potash Junction Substation, the existing 230 kV straight bus structure will be re-configured to a four breaker ring-bus design expandable to future breaker and a half design. A new breaker terminal will be added to connect the proposed 345 kV transmission line to the new Roadrunner Substation. At the new Roadrunner Substation, the 230 kV bus will be constructed initially as a single breaker terminal, expandable to future breaker and a half design, to accommodate the proposed 345 kV transmission line, and a 230/115 kV 252 MVA autotransformer. The 115 kV bus arrangement will be initially constructed to four breaker ring with four 115 kV terminals, expandable to breaker and a half design to accommodate future115 kV terminals to the retail load customer. Please refer to

Attachment RCA-2, which is the electrical one-line diagram of the Proposed Project.

Q. When does SPS expect the Proposed Project to be placed in service?

A. SPS plans to have the Proposed Project in service on or before October 31, 2015 based on the need for the Proposed Project and the associated construction schedule timeline. Individual transmission lines and bus structures may be completed in stages before that date.

IV. POWER SYSTEM STUDIES TO EVALUATE THE NEED FOR THE PROJECT

Q. Please identify and describe the studies that have been performed to evaluate SPS's need for the Proposed Project.

A. The Southwest Power Pool ("SPP") conducted several studies that address the need for the proposed transmission line project. The SPP, in its Integrated Transmission Planning study for the Near-Term period, 2014-2019 ("ITPNT"), identifies the need for new transmission facilities in order to improve reliability in the southern New Mexico area. Another study prepared by the SPP, addresses a specific recent request from a new potash mining customer for service on SPS's 115 kV transmission system in its southeast New Mexico service area. Please refer to Attachment RCA-3 for a copy of the SPP Delivery Point Network Study, DPA-2011-June-073. A third study, also prepared by the SPP, is the High Priority Incremental Load Study ("HPILS"), which demonstrates the need for the Proposed Project and recommends that the line be both developed and operated at 345 kV. This study has been completed and is currently being reviewed by stakeholder groups at the SPP.

Q. Please describe the ITPNT study.

A. The ITPNT study focuses on transmission reliability in determining what transmission upgrades are required in SPP member systems to meet reliability criteria. The ITPNT examines all member systems of the SPP and results in members being assigned Notifications to Construct ("NTCs") to build and own specific projects to improve and maintain network reliability.

The ITPNT study is one of three studies that the SPP does on a cyclical basis. The study covers a forward looking period of 1-6 years and is done annually. The other two studies are the ITP10, a look at the 10th planning year, and the ITP20, a look at the 20th planning year.

Q. What SPS reliability needs were identified by the SPP in the ITPNT study that would be addressed by the Proposed Project?

A. The SPP identified the following reliability issues for SPS's transmission system in southeastern New Mexico: (1) the overload of the Potash Junction Substation 230/115 kV, 150 MVA transformer for loss of the Pecos Substation-Potash Junction 230 kV transmission line; and (2) the overload of the Monument Substation-West Hobbs Switching Station 115 kV transmission line for loss of the Maddox Plant-Sanger Switching Station 115 kV transmission line. The Proposed Project addresses these overloads. The

Proposed Project will also address the low voltage violations at IMC #1 Substation 115 kV bus for the outage of the IMC #1 tap to Intrepid West tap 115 kV transmission line.

Q. Did SPP issue a NTC related to the ITPNT?

A. Yes. A copy of the SPP NTC letter is provided as Attachment RCA-4. The specific NTC associated with the Proposed Project is Project ID 30569, on pages 1 and 2 of the letter (Network Upgrade IDs 50708 and 50709).

Q. Please describe the studies that were performed by the SPP and SPS in relation to the new mining load request.

A. SPS distribution made a request to the SPP for a new delivery point onto SPS's 115 kV transmission system in the southeastern New Mexico service area under Attachment AQ of the SPP OATT. Attachment AQ provides the guidance and study procedures for adding, modifying, or deleting delivery points for load serving entities. The SPP provided a report in its Delivery Point Network Study DPA-2011-June-073 (dated 11/11/2011), provided as Attachment RCA-3, which concluded that there would be significant impacts due to the addition of the new 80 MW Potash Mine load, and recommends that SPS construct transmission facilities to mitigate overloads and voltage violations.

SPS's Transmission Planning Department also conducted a study of the impact of the new mining load in southeastern New Mexico. Attachment RCA-5 is a copy of the study conducted by SPS in response to the retail mining load customer's transmission service request to interconnect approximately 80 MW of new load on SPS's local 115 kV transmission system. The study determined the impact of the request to interconnect the new load on the local SPS transmission system at a delivery point near Jal, New Mexico, and identified the need for several projects in order to mitigate thermal and voltage violations during system intact and single contingency events created by the new load. The study tabulated the thermal and voltage violations (Appendix B), and also tabulated the required upgrades (Table 2), which includes the following projects:

- Build a 230/115 kV substation near to the potash mine load center and run T41 in and out of this new substation. The 115 kV bus would be of ring bus configuration.
- Build approximately 45 miles of new 230 kV line using 795 ACSR conductors from Potash Junction Substation to the new substation, and 1 mile of 115 kV 795 ACSR line from the new substation to the customer load center.

- Provide a new breaker terminal at Potash Junction Substation and modify the existing 230 kV straight bus configuration to a ring bus expandable to a breaker and half configuration.
- Load side revenue metering needs to be installed at the customer station.

At that time, only one 115 kV feed had been requested by the customer, although as their in-service date gets closer, multiple 115 kV service feeds may be necessary due to the size of the load. The studies performed by SPS and SPP agreed on the recommended configuration of the Proposed Project, and associated substation facilities.

Q. Please describe SPP's HPILS study.

A. The HPILS addresses the exceptional load growth in various regions of the SPP. These regions include western Nebraska, southern Kansas, western and eastern Oklahoma, and southeast New Mexico. The load growth in all of these areas, except western Nebraska and eastern Oklahoma, is due to oil and gas drilling and processing.. The southeast New Mexico load growth was due to the continued high expansion of oil and gas facilities in the Avalon and Bone Springs shale deposits. The HPILS study examined a 10 year period, and made recommendations for projects to address the load

service and network reliability issues over that period. The HPLIS is currently being finalized by the SPP, and SPS will provide a copy of the HPILS following publication of the final report by the SPP.

Q. Were NTCs recommended as a result of the HPILS?

A. Yes. The HPILS recommends the following NTCs related to the Proposed Project be issued:

- Project ID-30637, Upgrade ID- 50871 – Convert 230 kV Potash-Roadrunner 230 kV line to 345 kV operation;
- Project ID-30637, Upgrade ID- 50863 - Convert 230 kV Road Runner substation to 345 kV. Install any necessary 345 kV terminal equipment; and
- Project ID-30637, Upgrade ID- 50862 - Install new 345/115 kV 448 MVA transformer at new Road Runner substation. Install any necessary 115 kV terminal equipment.

The proposed in-service dates of the conversion of the Proposed Project to 345 kV operation is 2018.[2]

[2] Although not receiving an NTC through the HPILS process, an additional 115 kV transmission line from the Roadrunner 115 kV bus to a new distribution substation called Battle Axe Substation will also be constructed to serve developing energy facility growth.

Q. Are the proposed recommended NTCs the basis for SPS's decision to build the Proposed Project at 345 kV?

A. Yes, as previously stated, the proposed transmission line and Roadrunner Substation will be built to 345 kV specifications, but will initially be operated at 230 kV because it is needed to meet the ITPNT NTC and serve the retail load service request. Until additional 345 kV infrastructure is in place, which is expected to be available by 2018, the 230 kV source at Potash Junction is the only viable source available to meet the area reliability requirements and the customer in-service date requirement for the proposed 80 MW retail load addition on to the SPS transmission grid.

The Proposed Project is one piece of a larger plan to serve and expand the existing transmission system that could respond to the current load inter-connection requests in-service dates and projected load increases from retail customers in SPS's southeastern New Mexico service area. The proposed HPILS projects will add 345 kV infrastructure projects in the next three years to the service area, which include adding 345 kV terminations at the Potash Junction Substation and the conversion of the Proposed Project to 345 kV systems. Building the transmission line at 345 kV now is more cost

effective than converting from 230 kV to 345 kV later and takes advantage of economies of scale and scope.

Q. Has SPS received the recommended NTCs from the HPILS study?

A. No, not at the time of the filing of my testimony. SPS expects additional NTCs in early May, and will supplement its filing once the NTCs are issued by the SPP.

Q. Other than the operating voltage level, are there any other specification differences between what is described in the ITPNT NTC, the proposed HPILS NTC, the study results from the AQ studies, and the Proposed Project?

A. No.

V. ESTIMATED COSTS ASSOCIATED WITH PROPOSED PROJECT

Q. What is the total estimated cost of the Proposed Project?

A. The total estimated cost for the Proposed Project is approximately $54 million. The estimated costs for each component and the Proposed Project are tabulated below.

Substation		
Roadrunner	$	11,552,970.00
Potash Junction	$	2,815,807.00
Land	$	170,000.00
Total Substation Cost	**$**	**14,538,777.00**
Transmission		
345 kV	$	36,025,015.00
115 kV	$	1,010,809.00
Total Transmission Cost	**$**	**37,035,824.00**
Right of Way	$	1,350,845.00
AFUDC	$	1,083,941.00
Estimated Total Project Cost	**$**	**54,009,387.00**

The estimated costs include Allowance for Funds Used During Construction ("AFUDC"). SPS calculated an estimated AFUDC for each element of the Proposed Project and the total AFUDC is a percent of the estimated cost. The actual AFUDC will be calculated upon completion of the Proposed Project.

Q. Is SPS requesting approval of AFUDC in this proceeding?

A. Yes. The AFUDC costs are an eligible expense. When the final costs are reported on the Proposed Project, the AFUDC costs incurred in the construction of the project will be included in the final project cost.

Q. Why is the cost estimate in the NTC letter lower than your cost estimate?

A. The original project cost estimate submitted to SPP last year for the NTC for both the substation and transmission line projects was for a 230 kV transmission line design. At the time of the submission, the transmission line routing details had not yet been established and therefore the overall transmission line NTC cost estimate used is lower because it was based on an internal SPS unit dollar cost per mile rate.

Subsequently, the project scope was revised from 230 to 345 kV voltage design as soon as SPS learned from SPP early this year that the

HPILS would recommend 345 kV terminations at the Potash Junction Substation including the proposed transmission line 345 kV conversion. This resulted in a significant increase in the overall project cost due to material and labor cost increases. Other aspects also affected the overall project cost estimate such as routing changes that added additional angle, dead-end, and tangent structures around oil well areas, external construction labor cost, engineering supervision, project management, and increased dollar rates used in the SPS estimating software. The HPILS cost estimate, rather than the last year's estimate, was used for this testimony, thus the difference. SPS expects SPP to issue a modified NTC letter reflecting the HPILS cost estimate in the upcoming weeks.

VI. CONCLUSION

Q. Please summarize the conclusion reached in your testimony.

A. My testimony establishes the Proposed Project will serve the public convenience and necessity in New Mexico by providing needed transmission capacity to maintain the reliability of SPS's transmission system in the southeastern area of New Mexico. Therefore, I recommend that the Commission: (1) issue a CCN that authorizes the construction and operation of the Proposed Project; and (2) based on my testimony and witness Higgins testimony, grant location approval for the proposed 345 kV transmission line and associated facilities.

Q. Were Attachments RCA-1 and RCA-2 prepared by you or under your direct supervision and control?

A. Yes.

Q. Are Attachments RCA-3 through RCA-5 true and correct copies?

A. Yes.

Q. Does this conclude your pre-filed testimony?

A. Yes.

VERIFICATION

STATE OF TEXAS)
) ss.
COUNTY OF POTTER)

Roland C. Azcarraga, first being sworn on his oath, states:

I am the witness identified in the preceding testimony. I have read the testimony and the accompanying attachments and am familiar with their contents. Based upon my personal knowledge, the facts stated in the direct testimony are true. In addition, in my judgment and based upon my professional experience, the opinions and conclusions stated in the testimony are true, valid, and accurate.

ROLAND C. AZCARRAGA

SUBSCRIBED AND SWORN TO before me this 15th day of April, 2014.

Notary Public, State of Texas
My Commission Expires: 11/19/15

SEAN L. FREDERIKSEN
MY COMMISSION EXPIRES
November 19, 2015