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Issue(s)	Line Design
Witness	Jessica Timmermann
Sponsoring Party	ATXI
Type of Exhibit	Direct Testimony
Case No.	EA-2022-0099
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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO.

EA-2022-0099

DIRECT TESTIMONY

OF

JESSICA TIMMERMANN

ON

BEHALF OF

AMEREN TRANSMISSION COMPANY OF ILLINOIS

St. Louis, Missouri
December 21, 2021

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JESSICA TIMMERMANN

FILE NO. EA-2022-0099

Submitted on Behalf of

AMEREN TRANSMISSION COMPANY OF ILLINOIS

I. INTRODUCTION

Q. Please state your name, business address, and professional title.

A. My name is Jessica Timmermann. I work for Ameren Services Company (Ameren Services) at 1901 Chouteau Avenue, St. Louis, Missouri 63103 as the Supervising Engineer in the Transmission Line Design Department.

Q. Please summarize your professional experience and educational background.

A. In December 2008, I received a Bachelor's of Science in Civil Engineering from Southern Illinois University located in Edwardsville, Illinois. After graduation, I started with Ameren Services working in the Civil Engineering group. After working in that group for about 2.5 years, I transitioned into Transmission Line Design. I worked as an Engineer in Transmission Line Design until my recent promotion to Supervisor of the same group in April 2020. I obtained a Professional Engineering License in the State of Illinois in June 2013 and maintain that certification.

Q. What are your duties and responsibilities in your current position?

A. As Supervising Engineer in the Transmission Line Design Department, I

supervise a team of engineers in completing transmission line design on behalf of Ameren's transmission-owning entities, including Ameren Transmission Company of Illinois (ATXI).

Q. Have you previously testified before the Commission?

A. Yes, in Case No. EA-2021-0087 (ATXI's Limestone Ridge Project).

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your direct testimony?

A. I support ATXI's request for a Certificate of Convenience and Necessity (CCN) and related Commission approvals authorizing ATXI to construct, acquire, and operate certain transmission assets as part of the "Project" described in the direct testimony of ATXI witness Sean Black (ATXI Exhibit 1.0). Specifically, I describe the line-related elements of the Project. These include certain existing line facilities (the Existing Line), an interest in which, as Mr. Black explains, ATXI and MJMEUC will acquire from the City of Sikeston (Sikeston), including the Sikeston Board of Municipal Utilities (SBMU). The Project also includes a new transmission line (the New Line) that ATXI will construct as part of the Project, as well as certain new or modified line facilities that ATXI will construct outside the new Comstock substation (the Area Connections) to connect it to the grid.

Q. Are you sponsoring any schedules with your direct testimony?

A. Yes. I am sponsoring the following schedules:

- JT-D1 – Aerial image of the Existing Line;
- JT-D2 – Aerial image depicting the proposed route of the New Line;
- JT-D3 – Example of typical tangent wood structure;
- JT-D4 – Example of typical deadend wood structure;
- JT-D5 – Aerial image depicting the proposed routes of the Area Connections; and
- JT-D6 – Example of typical deadend steel structure.

III. THE EXISTING LINE

Q. Please describe the location of Existing Line, an interest in which ATXI and MJMEUC will acquire from Sikeston/SBMU.

A. The Existing Line is a single-circuit 161 kV transmission line that extends south from Southwestern Power Administration's (SWPA) existing Sikeston substation and terminates at Associated Electric Cooperative Inc.'s (AECI) existing New Madrid substation. ATXI will acquire an interest in the approximately 28 miles of the Existing Line spanning those two stations. **Schedule JT-D1** is an aerial image of the Existing Line. The Existing Line is also depicted as the solid green line on the diagram embedded in the direct testimony of Mr. Black.

Q. Please describe the facilities associated with the Existing Line.

A. The Existing Line operates at 161 kV. It is composed of three phases of

795 kcm 26/7 ACSR "Drake" conductor and two phases of 7/16" 7 strand extra high strength (EHS) shield wire. Structure types for the Existing Line consist of wood H-frame tangent structures for in line structures and wood H-frame structures with down wires or "guys" at angled structure locations. The average structure height on the Existing Line is 70 feet. The width of the right-of-way is generally 100 feet.

Q. Will ATXI actually operate the Existing Line?

A. No. As Mr. Black explains, per the Operation and Maintenance Services Agreement, SBMU will continue to operate and maintain the Existing Line as it does today.

Q. Will there be any line work associated with the Existing Line?

A. No. Outside of the work necessary to integrate the Existing Line with the New Line and one of the Area Connections (see below), ATXI does not intend to perform any work on the Existing Line.

IV. THE NEW LINE

Q. Please generally describe the New Line.

A. As Mr. Black explains, ATXI will construct an approximately 1.2-mile single-circuit 161 kV transmission line extending east from the Existing Line near the SWPA New Madrid substation to New Madrid. Specifically, the new facilities will extend from the Existing Line to Municipal Light & Power's (MPL) existing North Primary Substation, located just outside of New Madrid. The New Line will connect the Existing Line to New Madrid's electrical system. **Schedule JT-D2** is an aerial image

depicting the proposed route of the New Line, which generally parallels other existing lines owned by New Madrid. The New Line is also depicted as the dashed purple line on the diagram embedded in the direct testimony of Mr. Black.

Q. Please describe the proposed route of the New Line.

A. As **Schedule JT-D2** depicts, the New Line will begin on the Existing Line's alignment, between structures 169 and 171. It will then run approximately 1.2 miles northeast to MPL's existing North Primary Substation.

Q. Does the route cross any existing electric, gas, or telephone conduit, wires, cables, or lines of any regulated or nonregulated utilities, railroad tracks, or underground facilities?

A. Yes. The route crosses above existing overhead and underground electric lines, and an underground gas line. It also has one crossing over Union Pacific railroad. A list of all electric, gas, and telephone conduit, wires, cables, and lines of regulated and nonregulated utilities, railroad tracks, and each underground facility that the proposed construction will cross is provided as Appendix C to ATXI's Application in this proceeding.

Q. What is the proposed right-of-way width for the New Line?

A. The proposed right-of-way width for the New Line is 100 feet.

Q. Why is a right-of way of that width needed?

A. Based on the proposed line design, a 100 foot right-of-way is needed to provide adequate clearance from the 161 kV transmission line conductors to the edge of

the right-of-way for operational and maintenance purposes.

Q. Has ATXI acquired any real estate rights along the proposed corridor of the New Line?

A. Yes. To construct the New Line, ATXI ultimately needs property rights from four different landowners, who own a total of seven distinct parcels. ATXI has voluntarily obtained, from each of these landowners, an option which, once exercised, will result in ATXI having the necessary rights to construct and own the New Line.

Q. What are the technical specifications of the New Line?

A. Again, the proposed New Line will be a 161 kV single circuit overhead transmission line, approximately 1.2 miles long. The New Line will run from the Existing Line, between structures 169 and 171, to MPL's existing North Primary Substation. ATXI will construct the proposed line using single wood pole structures with crushed rock backfill. Where the transmission line angle is greater than 15°, a single wood pole with guy wires and above ground anchors will be used. Pole heights will range from 75 feet to 115 feet. The New Line will be constructed with three phases of 2-477 kcmil 30/7 "Hen" ACSR/T2 and a single 3/8" 7-strand EHS shield wire. The New Line will be designed for a minimum 22 foot clearance to grade at the maximum operating temperature, which meets or exceeds the National Electrical Safety Code (NESC).

Q. Approximately how many new structures will the New Line require?

A. The New Line will require approximately eighteen (18) new structures.

Q. What are the specifications for those new structures?

A. As indicated above, most of the new structures will be single wood pole structures. **Schedule JT-D3** is an example of a typical tangent wood structure that will be used along the New Line.

Q. Does any aspect of the new line-work vary from the standard line design structures you described above?

A. Yes, there will be a few deadend structures at locations with line angles greater than 15°. Like the tangent structures, these structures will be single wood poles with crushed rock backfill. They will be different, however, in that they will be supported by guy wires and below-ground anchors. **Schedule JT-04** is an example of a typical deadend wood structure.

Q. How, specifically, will the New Line connect to the Existing line?

A. Via what is referred to as a "Hard Tap" configuration. The new tap structure will be a 3-pole wood-guyed structure placed in line with the alignment of the Existing Line. Existing conductor and shield wire will be transferred and dead-ended onto the new tap structure. An additional circuit will be installed from the new tap structure to MPL's North Primary Substation. This additional circuit will electrically connect to the Existing Line via jumpers.

Q. Is that a reliable configuration for the anticipated amount of load that will initially be associated with the Project?

A. Yes. Especially given that the load currently associated with the Project could be served via alternate means in the event of an interruption in transmission service. While a Hard Tap configuration might not be ideal for higher loads that cannot be served from secondary sources, the configuration is adequate here given the anticipated load level and the availability of secondary resources. If this load increases materially – for example as a result of future development generally referenced by Mr. Black – ATXI may need to revisit this configuration. But for now, this configuration represents a reliable and cost effective solution.

V. THE AREA CONNECTIONS

Q. Please describe the need for the Area Connections.

A. As a part of the Project, it will be necessary for ATXI to "tie together" the Comstock substation with the other electrical assets in the area. I refer, collectively, to these line connections as the Area Connections.

Q. Please describe in further detail the Area Connections facilities.

A. The Area Connections consist of six (6) lines connecting the new Comstock substation with other adjacent assets. **Schedule JT-D5** is an aerial image depicting the proposed routes of the Area Connections. The Area Connections are also depicted as the dashed orange lines on the diagram embedded in the direct testimony of Mr. Black.

Some of these lines will be new and some will be modifications of or to existing lines. These lines range from 0.1 miles to 0.4 miles in length. A further description of

these connections is as follows:

a. One line will connect the Existing Line1 to the new Comstock substation. This segment of line, which will be approximately 0.4 miles, is new construction, though it can also be thought of as an extension or modification of the Existing Line. Please see the westernmost, dashed orange line labeled "Area Connection (a)" on the diagram embedded in Mr. Black's testimony.

b. Two lines (really circuits) will connect the new Comstock substation with other existing assets owned by SBMU. These circuits are currently connected to the SWPA substation and will essentially be modified to terminate at the Comstock substation as a part of the Project. Please see the two dashed orange lines labeled "Area Connections (b): To Sikeston Xfmr/Gen" on the diagram embedded in Mr. Black's testimony.

c. One new line will connect the new Comstock substation directly with the SWPA Sikeston substation. Please see the easternmost, dashed orange line labeled "Area Connection (c)" on the diagram embedded in Mr. Black's testimony.

d. Ameren Missouri currently has a transmission line – the Miner line – that terminates at the SWPA Sikeston substation. As a part of the Project, this line will be modified (split in the area of the Comstock substation) and the two ends will also be re-terminated at the new station. Please see the two blue/dashed

[1] In the commercial documents, item (a) is more closely associated with the Existing Line (as opposed to the Area Connections) as, once complete, it will be subject to the same ownership structure as the reminder of the Existing Line.

orange lines labeled "Area Connections (d)" on the diagram embedded in Mr. Black's testimony.

ATXI may also help facilitate the connection, to the Comstock substation, of a SBMU-owned distribution line. That connection has been omitted from the diagram embedded in Mr. Black's testimony and from the costs presented in the direct testimony of ATXI witness Stephanie Thomson (ATXI Exhibit 2.0), as it is uncertain at this time whether the connection will be required. Should it be required, ATXI and SBMU will coordinate regarding the connection of that line, which will ultimately be paid for by SBMU.[2]

Q. Do the Area Connections cross any existing electric, gas, or telephone conduit, wires, cables, or lines of any regulated or nonregulated utilities, railroad tracks, or underground facilities?

A. Yes. The Area Connections cross above existing overhead and underground electric lines, an underground sewer line, a drainage ditch, an underground communication line, and an underground water line. They also cross Southwestern Power Administration's existing 161 kV overhead transmission line. Again, a list of all electric, gas, and telephone conduit, wires, cables, and lines of regulated and nonregulated utilities, railroad tracks, and each underground facility that the proposed construction will cross is provided as Appendix B to ATXI's Application in this proceeding.

[2] That line, along with the lines/circuits referenced by items (b) and (c) above, are referred to in the commercial documents as the "Sikeston Owned Area Connections."

Q. Will any right-of-way be needed for the Area Connections?

A. Yes, right-of-way will be needed for the Area Connections.

Q. What is the proposed right-of-way width?

A. The proposed right-of-way width for all lines is 100 feet.

Q. Why is a right-of way of that width needed?

A. Based on the proposed line design, a 100 foot right-of-way is needed to provide adequate clearance from the 161 kV transmission line conductors to the edge of the right-of-way for operational and maintenance purposes.

Q. Does ATXI believe it will be able to obtain, voluntarily, the real estate interests it needs to construct the Area Connections?

A. Yes. Most of the Area Connections will be located on property owned by Sikeston or SWPA. ATXI is in discussions with Sikeston about obtaining an easement necessary to facilitate the Project and with SWPA about obtaining a license[3] for the same. The only portion of any Area Connection that will be located on land owned by any other third party is the southern portion of the new Area Connection (the connection represented by sub (a) above) that will connect the new Comstock substation with the Existing Line. A portion of this line (see the east-west portion in the figure embedded in Mr. Black's testimony) affects a private landowner. Sikeston has already obtained the necessary easement from this landowner and will assign rights to ATXI and MJMEUC as required.

[3] SWPA prefers a license as opposed to an easement.

Q. What are the technical specifications of the Area Connections?

A. The Area Connections will be 161 kV, overhead transmission lines ranging from 0.1 to 0.4 miles in length. The two proposed circuits from the new Comstock substation to SBMU's Startup and Generator at the SBMU Power Station (the circuits referenced in item (b) above) will be built as a double circuit line. All other Area Connection lines will be single circuit. The majority of the Area Connections will be built with wood structures, both tangent and deadends, with crushed rock backfill. There will be three steel deadend structures on drilled pier concrete foundations installed for the Area Connections. These steel structures will be self-supported and will not require any down wires or "guys." The Area Connections will be constructed with three phases of 1192 kcm 54/19 ACSS "Grackle" conductor and a single lightning shield wire, which provides communication and system protection. The Area Connections will be designed for a minimum 22 foot clearance to grade at the maximum operating temperature, which meets or exceeds the NESC. **Schedule JT-D3** is an example of a typical wood tangent structure that will be installed along the Area Connections and **Schedule JT-D4** is an example of a deadend wood tangent structure that will be installed along the Area Connections. There will also be three steel deadend structures on drilled pier concrete foundations. **Schedule JT-D6** is an example of these types of steel structures.

Q. Approximately how many new structures will the Area Connections require?

A. The Area Connection will require approximately twelve (12) new structures.

VI. LINE WORK COSTS

Q. Are all known costs associated with the transmission line work reflected in the Project costs contained in Ms. Thomson's direct testimony?

A. Yes. The numbers contained in Ms. Thomson's direct testimony reflect the currently estimated cost of all transmission line work – both from a total and an AMMO Pricing Zone allocated cost perspective.

VII. CONCLUSION

Q. Does this conclude your direct testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Ameren Transmission Company of Illinois for a Certificate of Public Convenience and Necessity under Section 393.170, RSMo. relating to Transmission Investments in Southeast Missouri.	))))))	File No. EA-2022-0099

AFFIDAVIT OF JESSICA TIMMERMANN

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Jessica Timmermann, being first duly sworn on her oath, states:

My name is Jessica Timmermann and on my oath declare that I am of sound mind and lawful age; that I have prepared the foregoing *Direct Testimony*; and further, under the penalty of perjury, that the same is true and correct to the best of my knowledge and belief.

Jessica Timmermann

Jessica Timmermann

Dated: December 17, 2021