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Exhibit No.:	
Issue(s):	Construction Overview
Witness:	Luke Wollin
Sponsoring Party:	Ameren Transmission Company of Illinois
Type of Exhibit:	Direct Testimony
Case No.:	EA-2018-0327
Date Testimony Prepared:	August 23, 2018

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. EA-2018-0327

DIRECT TESTIMONY

OF

LUKE WOLLIN

ON

BEHALF OF

AMEREN TRANSMISSION COMPANY OF ILLINOIS

St. Louis, Missouri
August 23, 2018

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DIRECT TESTIMONY

OF

LUKE WOLLIN

CASE NO. EA-2018-0327

I. INTRODUCTION

Q. Please state your name, business address, and present position.

A. My name is Luke Wollin. My business address is 1901 Chouteau Avenue, St. Louis, Missouri 63103. I am the Director of Transmission Design Engineering for Ameren Services Company ("Ameren Services"). I am testifying in this proceeding on behalf of Ameren Transmission Company of Illinois ("ATXI").

Q. Please summarize your professional experience and educational background.

A. I graduated from Southern Illinois University Edwardsville in 2001 with a Bachelor of Science degree in Electrical Engineering. I obtained an MBA from Washington University in St. Louis in 2008. I am a licensed Professional Engineer in Missouri (2007020347) and Illinois (062.061923) and a certified Project Management Professional (1484706).

Upon receiving my bachelor's degree, I worked for two years as a Project Engineer for Sachs Electric, an electrical contractor located in St Louis. In 2003, I began my career at Ameren Services as a Substation Design Engineer, a position I held for eight years. In that position I designed and managed several large transmission substation projects. In 2010, I became a Project Manager within Ameren Services' Transmission organization, where I

oversaw a portfolio of projects, each over $25M. In 2013, I was promoted to Manager, Project Management. In that position, I led a team of roughly eight Project Managers. In 2015, I was promoted to my current position as the Director of Transmission Design Engineering.

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

A. In my current position, I lead the Ameren Services Transmission Engineering Design Department, consisting of Transmission Line Design, Transmission Civil and Structural Design, Transmission Substation Design, Transmission Relay Design, and Transmission Drafting. These groups develop new transmission line routes, design the mechanical and electrical aspects of transmission line structures and foundations, design high voltage substation physical layouts, design substation site grading, foundations and steel structure requirements, specify and purchase required electrical substation equipment, design and purchase protective relay schemes and equipment, and develop and approve mechanical and electrical construction drawings for transmission substations and transmission lines for voltages that are typically 138 kV and greater. The Transmission Engineering and Design Team includes a team of approximately 70 engineers and 25 draftsmen, as well as external consultant engineering design personnel.

Q. Have you previously provided testimony before the Missouri Public Service Commission?

A. No, I have not.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide an overview of the line and substation-related work that ATXI will undertake as a part of the Project (as defined and described in the direct testimony of ATXI witness Sean Black). In sum, ATXI will construct

a new substation, the Dillon Substation, and perform line work necessary to integrate that substation with the other adjacent electrical facilities. ATXI will also perform some additional work associated with the existing Alfermann Substation owned by Rolla Municipal Utilities ("RMU"), though no additional external line work will be required to integrate those facilities.

Q. Are you sponsoring any schedules with your testimony?

A. Yes, I am sponsoring the following schedules:

- **Schedule LNW-01 (Confidential)** – Diagram depicting the proposed layout for the new Dillon Substation and the associated connections
- **Schedule LNW-02 (Confidential)** – Higher-level aerial image depicting the line work into and out of the new Dillon Substation

II. OVERVIEW OF SUBSTATION WORK

Q. Please provide an overview of the proposed Dillon Substation.

A. A new 138 kV ring bus substation, named Dillon Substation, will be constructed by ATXI where the 2.83-mile line segment from RMU's Alfermann Substation ("the West Line") connects to the existing Ameren Missouri Clark-Osage-2 138 kV line. ATXI intends to own this substation parcel in fee and to own and operate all of the substation equipment and facilities.

Q. Please describe those facilities in further detail.

A. ATXI will construct the proposed 138 kV Dillon Substation as an initial five breaker 138 kV ring bus, with five 138 kV line positions. A 138 kV breaker and position for a 28MVAR 138 kV capacitor bank for voltage support for the area will also be installed at the Dillon Substation. Twelve breaker disconnect switches will be installed on standard steel switch stands for breaker isolation. Five motor-operated line disconnect switches will be

installed to allow isolation of ring bus line terminals from the incoming transmission lines with local and remote operation. Instrument transformers will be installed on all ring bus line terminals for voltage indication and sensing for relay metering and protection. Two 138 kV power potential transformers will be installed to provide station power from the transmission system. All substation structures will be our standard tubular steel design. The substation will contain one relay control enclosure that will house all substation protective relaying and control, Supervisory Remote Terminal (SCADA RTU), relay communications, 125V DC battery system and station service panels.

Q. Have you included a schedule depicting the layout of the proposed new substation?

A. Yes. Schedule LNW-01 **(Confidential)** is a diagram depicting the layout of the proposed new substation. This schedule is designated as **Confidential** because it contains detailed information about critical infrastructure.

Q. What are the operational benefits of the proposed new substation?

A. The Dillon Substation will connect adjacent Ameren Missouri lines via circuit breakers and, in doing so, increase reliability to the transmission system by virtue of this additional segmentation. The new substation will also promote additional operational flexibility in that it will allow us to switch lines for maintenance activities or forced outages while reducing the impact to other transmission and distribution facilities.

RMU's Alfermann Substation and Sho-Me Power Electric Cooperative's ("Sho-Me's") Macedonia Substation will be directly connected to a dedicated ring bus position at Dillon, which will maintain a transmission supply to the City of Rolla and the area 69 kV network in the event of multiple forced outages on Ameren Missouri's 138kV lines. The bus tie breaker

addition at Alfermann will allow ATXI and RMU greater operational flexibility during maintenance or forced outages of RMU's 138/34 kV transformers and ATXI's transmission lines. Further operational benefits of the Project are discussed by ATXI witness Ross Hohlt in his direct testimony.

Q. Will the new substation site be secured as required by applicable protocol?

A. Yes. The substation yard will be fully enclosed by chain-link fencing and will only be accessible by authorized personnel. It will be physically protected by security equipment as required by NERC and defined by internal policies.

Q. Are all known costs associated with the proposed new substation reflected in the overall Project costs?

A. Yes. All known costs associated with the Dillon Substation are reflected in the $27.6M Project cost identified by Sean Black. This includes the costs to acquire the substation parcel and construct and install the facilities I referenced above.

Q. Please provide an overview of the work ATXI will perform at the existing Alfermann Substation.

A. ATXI will add additional transmission equipment at RMU's Alfermann Substation to allow transmission ties to be established between the ATXI's new Dillon Substation and Ameren Missouri's Rivermines Substation.

Q. Specifically, what equipment does ATXI intend to install?

A. ATXI will construct a new 138 kV bus tie position and establish two 138 kV transmission buses at Alfermann. One new 138 kV breaker will be installed with two breaker maintenance disconnect switches. Additional instrument transformers will be installed on both

line terminals for voltage indication and sensing for relay metering and protection. Two 138 kV power potential transformers will be installed to provide station power to ATXI-owned equipment from the transmission system. The substation will contain one relay control enclosure that will house all ATXI-owned substation protective relaying and control, Supervisory Remote Terminal (SCADA RTU), relay communications, 125V DC battery system, and station service equipment. ATXI will obtain from RMU all legal rights necessary to construct, access and maintain all facilities installed on the Alfermann Substation property. Please see the direct testimony of Sean Black for more information in this regard.

Q. Will the facilities to be installed at the Alfermann Substation site be secured as required by applicable protocol?

A. Yes. The substation yard containing the RMU and ATXI facilities will be fully enclosed by chain-link fencing and will only be accessible by authorized personnel. The ATXI enclosure and equipment will be physically protected by security equipment as required by NERC and defined by internal policies.

Q. Are all known costs associated with this work at Alfermann reflected in the overall Project costs?

A. Yes. All known costs associated with this Alfermann re-work are reflected in the $27.6M Project cost identified by Sean Black, including the costs to construct and install the facilities I referenced above.

III. OVERVIEW OF LINE WORK

Q. In addition to the substation work identified above, does the Project involve any line work?

A. Yes, but just the work on the existing lines necessary to integrate the new Dillon Substation and the existing lines.

Q. Please explain further.

A. There are currently three lines adjacent to the site of the proposed Dillon Substation: (1) Ameren Missouri's Clark-Osage 2 line, (2) Ameren Missouri's Rivermines-Maries 1 line, and (3) the RMU West Line that runs south to Alfermann. Once the Dillon Substation is constructed, all of those lines will connect to the ring bus at Dillon. For purposes of this discussion, the Clark-Osage 2 line will become Dillon-Clark and Dillon-Osage. The Rivermines-Maries 1 line will become Dillon-Maries, Dillon-Alfermann, and Alfermann-Rivermines. The current RMU West Line will connect to Dillon in order to provide the desired networked solution and will become the Dillon-Alfermann Line. In essence, the existing three (3) line segments will become five (5) line segments. Schedule LNW-02 **(Confidential)** provides an illustrative example[1] of the intended configuration. Also shown on Schedule LNW-02 is Sho-Me's Dillon-Macedonia line that will connect to the bus, at an open, north-facing line position.

Q. Where new structures will be required to facilitate connection to the Dillon Substation, will those structures be steel or wood?

A. Any new structures required to connect to Dillon will be steel monopole structures. They will not have any guy wires or above-ground anchors.

Q. Are all known costs associated with the required line work reflected in the overall Project costs?

[1] While electrically correct, the schedule does not, for example, show the precise locations of the final easement corridors or the exact locations of any additional transmission structures.

A. Yes. All known costs associated with line work to be performed by ATXI are included in the $27.6M Project cost identified by Sean Black. This would include the costs to integrate the new substation with the existing Clark-Osage 2, Rivermines-Maries 1, and RMU West Line, as well as the work required to install the capacitor bank at the Dillon Substation. The Project costs do not include the line work associated with connecting the Sho-Me line, which will be the responsibility of Sho-Me.

Q. Will there be any line work associated with the RMU East Line that ATXI intends to acquire?

A. The existing RMU East Line, as described in the direct testimony of Sean Black, will become the Alfermann-Rivermines line. The vacated section of line between the Dillon Substation and the existing RMU East Line tap point will be re-purposed to connect the capacitor bank at the Dillon Substation to the Alfermann–Rivermines line.

Q. Will this transaction require any line work into or out of the Alfermann Substation?

A. No. No line work into or out of the Alfermann Substation will be required at this time.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Ameren Transmission Company of Illinois for Authority To Acquire Electric Transmission Facilities from Rolla Municipal Utilities and for a Certificate of Public Convenience and Necessity to Own, Operate, Maintain, and Otherwise Control And Manage those Facilities.	)))))))	File No. EA-2018-0327

AFFIDAVIT OF LUKE WOLLIN

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

Luke Wollin, being first duly sworn on his oath, states:

1. My name is Luke Wollin. I work in the City of St. Louis, Missouri, and I am employed by Ameren Services Company as Director of Transmission Design Engineering for Ameren Transmission Company of Illinois.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Ameren Transmission Company of Illinois consisting of 8 pages, and accompanying Schedule(s), if any, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Luke Wollin

Subscribed and sworn to before me this 13th day of August, 2018.

Notary Public

My commission expires: 3/7/2021

CATHLEEN A DEHNE
Notary Public – Notary Seal
St. Louis City – State of Missouri
Commission Number 17119727
My Commission Expires Mar 7, 2021

SCHEDULE LNW-01 IS CONFIDENTIAL IN ITS ENTIRETY

SCHEDULE LNW-02 IS CONFIDENTIAL IN ITS ENTIRETY