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Exhibit No.:	
Issue(s):	Planning Considerations
Witness:	Ross Hohlt
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

ROSS HOHLT

ON

BEHALF OF

AMEREN TRANSMISSION COMPANY OF ILLINOIS

St. Louis, Missouri
August 23, 2018

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DIRECT TESTIMONY

OF

ROSS HOHLT

CASE NO. EA-2018-0327

I. INTRODUCTION

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

A. My name is Ross Hohlt. My business address is 1901 Chouteau Avenue, St. Louis, Missouri 63103. I am a Consulting Engineer in the Transmission Planning Department within 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 Saint Louis University with a Bachelor of Science degree in Electrical Engineering in 2008. In 2008, I joined Ameren Services as an Associate Engineer in the Transmission Planning Department. Throughout the following ten years, I assumed roles of increasing responsibility within the group. In 2012, I was promoted to Engineer. In 2014, I was promoted to Career Engineer, and, in 2017, I was promoted to my current role of Consulting Engineer. I am a licensed Professional Engineer in the State of Missouri.

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

A. In my present position, I am responsible for reliability and economic analysis of the bulk electric system in Missouri and Illinois and subsequent capital project scoping and initiation, as well as supporting transmission business development activities, inter-regional coordination between MISO and SPP, and resource adequacy assessments performed by SERC

and MISO. I also assist on special projects from time-to-time, such as the project that is the subject of this proceeding.

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 a transmission planning perspective on the benefits of the proposed acquisition of assets from the City of Rolla acting by and through its Board of Public Works (commonly referred to as Rolla Municipal Utilities or "RMU") and the related construction of a new substation – the Dillon Substation – designed to network the acquired facilities with assets owned by Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri") and Sho-Me Power Electric Cooperative ("Sho-Me"). The proposed asset acquisition and construction activities (collectively "the Project") are described in the direct testimony of ATXI witness Sean Black. I will discuss the benefits to the other regional entities affected by the Project, including Ameren Missouri, RMU and the Sho-Me. I will also discuss, from a transmission planning perspective, concerns with an alternative third-party project proposal.

Q. Are you sponsoring any schedules as a part of your direct testimony?

A. Yes, I am sponsoring the following schedules:

- **Schedule RH-01 (Confidential)** – a diagram showing the location of the proposed Dillon Substation in relation to other Ameren Missouri circuits and substations in the region.

- **Schedule RH-02 (Confidential)** – a diagram depicting an internal alternative project design examined by ATXI.
- **Schedule RH-03 (Confidential)** - a diagram providing a general overview of the third-party proposal.

II. BENEFITS OF THE PROJECT

Q. From a planning perspective, how does the Project increase reliability for all entities involved?

A. In general, the Project increases operational flexibility and ability to maintain regional reliability with multiple facilities out of service. Specifically, the Project provides benefits to Ameren Missouri by segmenting the Clark-Osage-2 line, thereby reducing fault exposure to the Lakeside Substation and two Osage generating units. The Project provides benefits to RMU because an outage of Ameren Missouri's double circuit transmission lines on either side of the ring bus to be constructed at the new Dillon Substation would not result in total RMU load outage at its Alfermann Substation, which is important to RMU and its customers. Additional switching capability as a result of the installation of a 138 kV bus-tie breaker at Alfermann also would allow RMU the ability to keep both of its 138/34 kV transformers in service in the event of an outage of either 138 kV transmission source. That also means both 138 kV lines at Alfermann would be able to remain in service in the event of a transformer outage. Finally, the Project provides benefits to Sho-Me because installation of, and connection to, a new 138/69 kV transformer would provide a new high-voltage source to the coop's 69 kV system and address a projected reliability deficiency in the area.

Q. Please comment further on the operational benefits of the Project as applied to Ameren Missouri.

A. The Rolla area is located roughly in the middle of the approximately 95-mile Clark-Osage circuit. A line fault anywhere along that circuit would result in the loss of two generating units at Osage and one of the two Lakeside Sub 138/34 kV transformers. Installing a new substation along this circuit near Rolla reduces this exposure by approximately half. The installation of the 138 kV capacitor bank located at the Dillon Substation and connection to the adjacent Rivermines – Alfermann line would allow for increased voltage support to the area in the event of line or generation outages. In addition, construction of the Dillon Substation will provide additional switching capability, which will allow for greater operating flexibility when Ameren Missouri and ATXI need to perform maintenance activities. As a result, I view the Project as providing a substantial amount of reliability "upside" for Ameren Missouri.

The following diagram [Confidential] shows the location of the proposed Dillon Substation in relation to Ameren Missouri's Clark-Osage 2 circuit and other Ameren Missouri substations in the region:

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[redacted]

This diagram is also attached to my testimony as Schedule RH-01 (Confidential).

Q. Is the Project required in order to comply with internal planning criteria or to mitigate known or expected NERC compliance violations?

A. No. Although I provide an overview of the operational benefits of the Project to the involved entities, including Ameren Missouri, the Project is not required to comply with internal planning criteria or to mitigate known or expected NERC compliance violations. But, whether required or not, the Project has tangible benefits for Ameren Missouri and its customers, as I discuss herein.

Q. What operational benefits would the Project produce for RMU?

A. Presently, RMU's Alfermann Substation is supplied via two 138 kV lines connected independently to Ameren Missouri's Clark-Osage-2 and Rivermines-Maries-1 138 kV lines. These connections are hard taps, meaning there is no breaker protection. A fault on either Ameren Missouri line would cause an outage to the connected RMU line. Because Ameren Missouri's 138 kV lines are supported by common transmission towers, there is some risk that both lines could be lost as a result of a single event. For example, if a vehicle were to strike a tower where Ameren Missouri's lines cross Interstate 44 east of Rolla and cause significant damage such that both lines would have to be taken out of service, the Alfermann Substation would be totally disconnected from the transmission system[1]. Segmenting these lines and providing a dedicated position at Dillon Substation for the western supply line to Alfermann will eliminate common tower risks to RMU's load and significantly reduce exposure to single contingency events that would reduce Alfermann's load-serving capability.

Q. Please comment further on the operational benefits the Project would provide to Sho-Me.

A. The Project provides benefits to Sho-Me because the construction of the Dillon Substation would accommodate the installation of, and connection to, a new 138/69 kV transformer at the existing Macedonia Substation. This new source to the local 69 kV network would mitigate a projected reliability deficiency identified by Sho-Me. Allowing Sho-Me to connect to a position that would be installed at the new Dillon Substation would help alleviate these issues and add increased voltage support to the coop's system.

[1] I provide this example because this situation nearly materialized in August 2016. A truck traveling eastbound lost control and struck a lattice tower on the south side of the interstate. Although the accident caused significant damage to the structure, Alfermann did not lose service. We have, however, had difficulties scheduling permanent repairs to the facility, given the reliability issues implicated by the outages that would be required. These same concerns will not exist if the Project is constructed.

Q. Would Sho-Me bear the cost of the real estate acquisition and line work associated with this connection?

A. Yes. Sho-Me would be responsible for costs associated with extending its facilities to the new substation.

III. ALTERNATIVE OPTIONS EXPLORED BY ATXI

Q. Did ATXI explore any alternatives to the Project that were ultimately selected?

A. Yes. ATXI explored two other possible alternatives – one internal alternative and one third-party alternative - but ultimately concluded that those alternatives did not accomplish all of the necessary objectives, or were not cost-effective.

Q. Please describe in further detail the internal alternative ATXI explored.

A. The internal alternative we considered would have required ATXI to construct a new substation close to RMU's Alfermann Substation and then utilize the majority of RMU's 138 kV lines (the ones ATXI is proposing to acquire in this transaction) to loop Ameren Missouri's Clark-Osage-2 circuit into and out of the new substation. This would have resulted in two short, radial connections supplying Alfermann from the ATXI substation. Sho-Me could then have tied into their nearby 69kV lines located to the west of the proposed substation site.

On a map, this alternative would have looked something like the following:

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This diagram is also attached to my testimony as Schedule RH-02 (Confidential).

Q. What was the estimated cost of this alternative?

A. Detailed cost estimates were never developed, but the high-level planning estimate that was developed at the time this alternative was being considered was roughly comparable to the high-level planning estimate of the option that was ultimately selected.

Q. Why then was this option not selected?

A. ATXI ultimately decided not to move forward with this option because it did not accomplish all of the objectives sought by the affected parties. Having only two transmission supplies to the new substation, the source to Sho-Me's 69 kV network would have been weaker than the solution ultimately selected. In addition, RMU would have been left

with a total of approximately 1.5 miles of 138 kV conductor radially supplying the Alfermann Substation, which was not preferable.

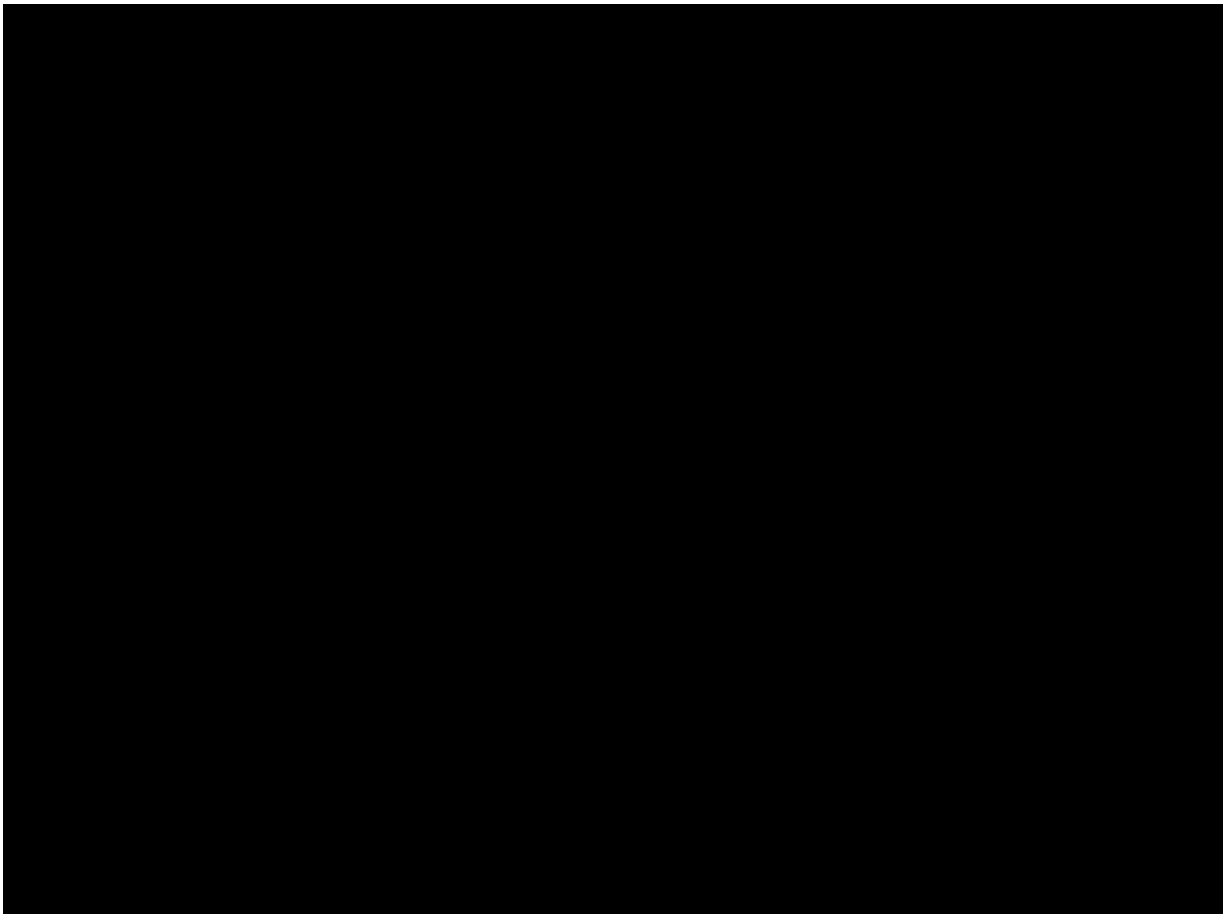
Q. Are you aware of the third-party proposal referenced in Sean Black's direct testimony?

A. Yes, I am generally aware that RMU previously had discussions with another transmission developer that proposed acquiring RMU's 138 kV assets and developing another project in the area.

Q. What is your understanding of the scope of that project?

A. Although I was not privy to specifics, such as routing, it is my general understanding that the third-party proposal involved disconnecting one of the RMU's lines from Ameren Missouri's transmission system and connecting to Sho-Me via a new substation and approximately 19 miles of new 161 kV line. A second new substation also would have needed to have been constructed near the Phelps Substation to avoid the creation of a three-terminal line on the Ameren Missouri Rivermines-Maries circuit.

Conceptually, this project would have looked something like the following:



This diagram is also attached to my testimony as Schedule RH-03 (Confidential).

Q. Would a project of this magnitude have cost significantly more than the one being proposed by ATXI?

A. Yes. A project of this magnitude would have cost significantly more than ATXI's current proposal – perhaps as much as double.

Q. Would a project of this nature have provided the same benefits to all of the parties involved?

A. No, this alternative lacked the more robust operational benefits the selected Project would provide to Ameren Missouri. While this project would have added breaker

protection to Ameren Missouri's Rivermines-Maries circuit, from a reliability perspective, it would be much more beneficial to segment the Clark-Osage circuit for the reasons cited above. This electrical configuration also introduced a possible double contingency scenario where the RMU's load would be supplied by the Sho-Me's 69 kV network, which the system would not have been able to support at most expected load levels.

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 ROSS HOHLT

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

Ross Hohlt, being first duly sworn on his oath, states:

1. My name is Ross Hohlt. I work in the City of St. Louis, Missouri, and I am employed by Ameren Services Company as Consulting Engineer in the Transmission Planning Department.

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 11 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.

Ross Hohlt

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 RH-01 IS CONFIDENTIAL IN ITS ENTIRETY

SCHEDULE RH-02 IS CONFIDENTIAL IN ITS ENTIRETY

SCHEDULE RH-03 IS CONFIDENTIAL IN ITS ENTIRETY