

Exhibit No.:  
Issues: Certificate of Convenience  
And Necessity  
Witness: Shawn E. Lange  
Sponsoring Party: MO PSC Staff  
Type of Exhibit: Surrebuttal Testimony  
Case No.: EA-2015-0146  
Date Testimony Prepared: November 16, 2015

**MISSOURI PUBLIC SERVICE COMMISSION**

**COMMISSION STAFF DIVISION**

**SURREBUTTAL TESTIMONY**

**OF**

**SHAWN E. LANGE**

**AMEREN TRANSMISSION COMPANY OF ILLINOIS**

**CASE NO. EA-2015-0146**

*Jefferson City, Missouri  
November 2015*

Staff Exhibit No. 30  
Date 1/25/16 Reporter JL  
File No. EA-2015-0146

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of the Application of Ameren )  
Transmission Company of Illinois for Other )  
Relief or, in the Alternative, a Certificate of )  
Public Convenience and Necessity )  
Authorizing it to Construct, Install, Own, )  
Operate, Maintain and Otherwise Control )  
and Manage a 345,000-volt Electric )  
Transmission Line from Palmyra, Missouri )  
to the Iowa Border and an Associated )  
Substation Near Kirksville, Missouri )

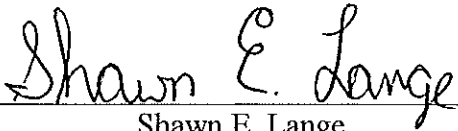
Case No. EA-2015-0146

**AFFIDAVIT OF SHAWN E. LANGE**

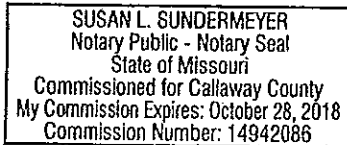
**STATE OF MISSOURI** )  
) ss  
**COUNTY OF COLE** )

COMES NOW Shawn E. Lange and on his oath declares that he is of sound mind and lawful age; that he contributed to the attached Surrebuttal Testimony; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

  
\_\_\_\_\_  
Shawn E. Lange

Subscribed and sworn to before me this 16<sup>th</sup> day of November, 2015.



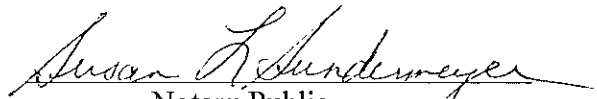
  
\_\_\_\_\_  
Notary Public

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OF

SHAWN E. LANGE

AMEREN TRANSMISSION COMPANY OF ILLINOIS

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**SURREBUTTAL TESTIMONY**

**OF**

**SHAWN E. LANGE**

**AMEREN TRANSMISSION COMPANY OF ILLINOIS**

**CASE NO. EA-2015-0146**

Q. Please state your name and business address.

A. My name is Shawn E. Lange and my business address is Missouri Public Service Commission, P.O. Box 360, Jefferson City, MO 65102.

Q. Are you the same Shawn E. Lange that filed rebuttal testimony in this proceeding?

A. Yes, I am.

**Overview**

Q. What is the purpose of your surrebuttal testimony?

A. I will discuss the topic of electric fences that was brought up in local public hearings and address points that were brought up by Neighbors United witnesses Dr. Dennis Smith and Mr. William E. Powers.

**Electric Fence Chargers**

Q. Does Staff agree with Mr. Tandy Hawkins' statement at the Shelbyville Local Public Hearing:

“...that electric fences can carry charges even without being plugged into a charger. My electric fence representatives, who I buy chargers from, tell me that I will have trouble with my chargers blowing out”<sup>1</sup>?

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<sup>1</sup> Shelbyville Local Public Hearing Transcript pg. 41, lines 12-15

1           A.    It is possible, that due to the placement of the proposed Mark Twain project  
2 and any fence, induced voltage and/or induced current may occur on the fence thus creating  
3 potential issues for the owner. "Any insulated conductive object may deliver a shock that is  
4 relative to the size of the conductive object (e.g. the length it runs along a transmission  
5 line)".<sup>2</sup> Depending on the configuration of the fence and the route of the proposed Mark  
6 Twain Project, it is also possible to use low impedance chargers, filters, and/or additional  
7 grounding to mitigate this effect<sup>3</sup>.

8           Any modification equipment that may be needed to address the possible problems  
9 with the electric fences would be dealt with during the negotiation process with ATXI. The  
10 negotiation process occurs after a Certificate of Convenience and Necessity is granted by the  
11 Commission. During the negotiation process the affected landowners would be able to  
12 present evidence of the problems ATXI's transmission line poses to their electric fences and  
13 this evidence would be taken into consideration when compensation is awarded during the  
14 easement proceedings.

15           Additionally, Staff witness Daniel I. Beck discusses compensation issues in the  
16 excerpted testimony below<sup>4</sup>:

17           1.    Every landowner from whom ATXI requires an easement will be  
18 contacted personally, and ATXI will negotiate with each such landowner in  
19 good faith on the terms and conditions of the easement, its location, and  
20 compensation therefor. They will be shown a specific, surveyed location for  
21 the easement and be given specific easement terms.

22           2.    After construction is completed, every landowner will be contacted  
23 personally to ensure construction and clean-up was done properly, to discuss  
24 any concerns, and to settle any damages that may have occurred.  
25

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<sup>2</sup> Induced Voltage and Current Report submitted by Golder Associates Inc. February 2013 pg. 12

<sup>3</sup> Electrostatic and Electromagnetic Effects of Overhead Transmission Lines, Rural Electrification Administration; REA Bulletin 62-4; May 1976

<sup>4</sup> Daniel I. Beck Rebuttal Schedule DB-R-2-3 Conditions 1 and 2

1 **Dr. Smith Rebuttal**

2 Q. Does Staff agree with Dr. Smith that “there are recent peer reviewed studies  
3 that support prior studies showing adverse health effects”<sup>5</sup>?

4 A. Yes. Studies, including but not limited to the following, show correlation  
5 between Non-Ionizing electromagnetic fields (“EMF”) and health effects:

- 6 • Wertheimer, N. and Leeper, E. Electrical wiring configurations and childhood cancer.  
7 Am J Epidemiology. 1979;109(3):273-284
- 8 • Childhood leukemia close to high-voltage power lines – the Geocap study, 2002–  
9 2007. British Journal of Cancer (2013), 1–8 | doi: 10.1038/bjc.2013.128
- 10 • Bioinitiative 2012, A Rationale for Biologically based Exposure Standards for Low-  
11 Intensity Electromagnetic Radiation
- 12 • Electromagnetic fields act via activation of voltage-gated calcium channels to produce  
13 beneficial or adverse effects. J. Cell. Mol. Med. Vol XX, No X, 2013 pp. 1-9.

14 Q. Have any studies been performed that indicate that the correlation between  
15 Non-Ionizing and negative health effects is tenuous at best?

16 A. Yes. Studies, including but not limited to the following, indicate that the  
17 correlation between Non-Ionizing EMF and negative long-term health effects is tenuous at  
18 best:

- 19 • International Agency for Research on Cancer, IARC Monographs on the Evaluation  
20 of Carcinogenic Risks to Humans, Vol. 80: Static and Extremely Low-Frequency  
21 (ELF) Electric and Magnetic Fields (Lyon, France, IARC Press, 2002).
- 22 • National Radiological Protection Board (NRPB), Advice on Limiting Exposure to  
23 Electromagnetic Fields (0-300 GHz), Vol. 15, No. 2 (Didcot, UK, 2004).
- 24 • International Committee on Electromagnetic Safety, IEEE Standard for Safety Levels  
25 with Respect to Human Exposure to Electromagnetic Fields 0 to 3 kHz C95.6-2002  
26 (Piscataway, NJ, IEEE, 2002) (Reaffirmed 2007).

27 Q. Does Staff agree with Neighbors United witness Dr. Smith’s statement:

28 “There is enough evidence linking EMF exposure from High Voltage  
29 Overhead Lines (HVOL) to childhood leukemia and other health  
30 problems such as breast cancer to cause the International Agency for  
31 Research on Cancer (IARC) to list EMF as a Group 2B carcinogen  
32 risk”<sup>6</sup>?

<sup>5</sup> Dr. Smith Rebuttal Pg. 3 lines 16-17

<sup>6</sup> Dr. Smith Rebuttal Pg. 4 lines 24-27

1  
2 A. Yes, the IARC has classified radiofrequency electromagnetic field as a Group  
3 2B carcinogen.<sup>7</sup>

4 Q. What is a Group 2B carcinogen?

5 A. A Group 2B carcinogen is a type of agent that has less than limited data  
6 showing carcinogenic effects in humans and less than sufficient data showing carcinogenic  
7 effects in animals.<sup>8</sup>

8 Q. Does Staff agree with Dr. Smith's statement "the [World Health Organization]  
9 [(WHO)] comments in some of its literature that even if risk is proven, it is minimal"<sup>9</sup>?

10 A. Yes. The WHO stated "[d]espite many studies, the evidence for any effect  
11 remains highly controversial. However, it is clear that if electromagnetic fields do have an  
12 effect on cancer, then any increase in risk will be extremely small. The results to date contain  
13 many inconsistencies, but no large increases in risk have been found for any cancer in  
14 children or adults."<sup>10</sup>

15 **Powers Rebuttal**

16 Q. What points will you discuss with regard to Mr. Powers' rebuttal?

17 A. I will focus my surrebuttal on two points Mr. Powers made in his rebuttal.  
18 First, Mr. Powers' testimony below:

19 "Q. Is it true that Ameren Mo opted not to pursue a 300 MW wind  
20 project in the Adair Wind Zone, despite the fact that the project output  
21 would be fully deliverable via the existing 161 kV transmission system  
22 at no cost to Ameren Mo customers?

23 A. Yes"<sup>11</sup>

<sup>7</sup> [http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf) pg. 1 accessed 11/3/2015

<sup>8</sup> [http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf) pg. 5 accessed 11/3/2015

<sup>9</sup> Dr. Smith Rebuttal Pg. 7, lines 5-6

<sup>10</sup> <http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html>

<sup>11</sup> Powers Rebuttal Pg. 13, lines 3-6

1 Finally, I will discuss Mr. Powers' assumptions used to determine load shedding via air  
2 conditioner cycling programs was able to reduce the peak of the Adair substation by  
3 approximately half.<sup>12</sup>

4 Q. Does Staff agree with Mr. Powers that "Ameren Mo opted not to pursue a 300  
5 MW wind project in the Adair Wind Zone, despite the fact that the project output would be  
6 fully deliverable via the existing 161 kV transmission system at no cost to Ameren Mo  
7 customers"<sup>13</sup>?

8 A. No. While Mr. Powers' scenario would not have the ratepayers of Ameren  
9 Missouri ("AMMO") directly paying for the interconnection upgrade costs, those costs would  
10 generally be reflected in the Purchase Power Agreement ("PPA") prices and would be paid  
11 for by AMMO ratepayers.

12 Obtaining Energy Resource Interconnection Service with Mid-continent Independent  
13 System Operator ("MISO") requires the generator to pay for upgrade costs for constraints that  
14 are injection related. Many renewables, like the proposed wind farm in the Adair wind zone,  
15 are independent power producers ("IPP") and IPPs generally recover their generation costs  
16 through pricing mechanisms in the PPA contract. As such, if AMMO were to be a buyer,  
17 AMMO's customers would be paying at least some generation costs. Even though it may not  
18 be dollar for dollar, generally speaking, an increase in the cost the wind developer will face to  
19 start generating will be taken into account when determining the price point of the PPA for  
20 the energy and/or renewable energy credit(s).

21 Q. Does Staff have other issues with Mr. Powers' testimony?

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<sup>12</sup> Powers Rebuttal Pg. 29, line 7 through Pg. 31, line 20

<sup>13</sup> Powers Rebuttal Pg. 13, lines 3-6



Surrebuttal Testimony of  
Shawn E. Lange

1           A.     Yes, in particular Mr. Powers' assumptions used to determine demand  
2 response programs costs of approximately \$2.6 million dollars to reduce the peak load on the  
3 Adair Substation by half.<sup>14</sup>

4           Q.     What is Staff's issue with Mr. Powers' assumption that peak load on the Adair  
5 Substation can be reduced by half?

6           A.     Staff questions the reasonableness of Mr. Powers' assumption that peak load  
7 on the Adair Substation can be reduced by half. To reduce the peak load on the Adair  
8 Substation by half, most or all AMMO customers served by the Adair Substation would have  
9 to participate in an air conditioner cycling program. An air conditioner cycling program, like  
10 the one Mr. Powers refers to, typically falls under Missouri Energy Efficiency and Investment  
11 Act ("MEEIA"). However, AMMO customer participation in MEEIA is uncertain because as  
12 of November 21, 2015, AMMO's proposed cycle 2 MEEIA portfolio of programs has been  
13 rejected by the Commission.<sup>15</sup>

14          Q.     Does this conclude your surrebuttal testimony?

15          A.     Yes.

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<sup>14</sup> Powers Rebuttal Pg. 29 line 7 through Pg. 31 line 20

<sup>15</sup> EO-2015-0055 Report and Order Pg. 19