

Exhibit No.:
Issue(s): Variable Fuel Expense
Witness: Shawn E. Lange, PE
Sponsoring Party: MoPSC Staff
Type of Exhibit: Surrebuttal and True-Up Direct
Testimony
Case No.: ER-2022-0337
Date Testimony Prepared: March 13, 2023

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

SURREBUTTAL/TRUE-UP DIRECT TESTIMONY

OF

SHAWN E. LANGE, PE

**UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI**

CASE NO. ER-2022-0337

*Jefferson City, Missouri
March 2023*

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1 **SURREBUTTAL/TRUE-UP DIRECT TESTIMONY**

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4 **UNION ELECTRIC COMPANY,**
5 **d/b/a AMEREN MISSOURI**

6 **CASE NO. ER-2022-0337**

7 Q. Please state your name and business address.

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

10 Q. Are you the same Shawn E. Lange, PE who filed direct and rebuttal testimony
11 in this case?

12 A. Yes, I am.

13 **EXECUTIVE SUMMARY**

14 Q. What is the purpose of your surrebuttal and true-up direct testimony?

15 A. My surrebuttal testimony addresses my response to Union Electric Company,
16 d/b/a Ameren Missouri (“Ameren Missouri”) witness Mark J. Peters’ rebuttal testimony related
17 to Staff’s production cost modeling of Atchison and Ameren Missouri witness Ajay K. Arora’s
18 rebuttal testimony related to Staff’s wind profile used for High Prairie. My true-up direct
19 testimony includes updated results to the variable fuel and purchased power expense for
20 Ameren Missouri.

21 **SURREBUTTAL TESTIMONY**

22 Q. In Ameren Missouri witness Mr. Peters’ rebuttal testimony,¹ he stated his
23 concern with the production profile for the Atchison County Renewable Energy Center

¹ Mark J. Peters Rebuttal Page 1 line 16 through Page 4 line 19.

1 (“Atchison”), which is used in the calculation of the normalized market energy revenues and
2 production tax credits components of the Renewable Energy Standard Rate Adjustment
3 Mechanism (“RESRAM”). Is his concern reasonable?

4 A. No. In his rebuttal testimony, Mr. Peters states²:

5 By March 1, 2021, trial operations had been completed for 120 MW,
6 and on September 9, 2021, trial operations were completed for an
7 additional 174.4 MWs, bringing the total to 294.4 MWs. That is just
8 under the ultimate, full 299 MW capability of the facility. Since
9 Staff’s data period only extends through June 30, 2022, this means
10 that there is less than one full year of data with the facility having at
11 least 294.4 MWs in commercial operation. It also means that Staff
12 included in its calculations data from a time period prior to the full
13 operation of the plant, which is not representative of ongoing plant
14 operations. That is not sufficient to establish a reasonable
15 normalized annual profile.

16 In reviewing the reasonableness of its normalized generation profile, Staff reviewed the
17 generation output for the facility. For 2022, the first full calendar year of generation for the
18 facility, the output of the facility was ** [REDACTED] **. This amount is consistent with the
19 Staff level of generation modeled for the facility for direct ** [REDACTED] ** and true-up
20 direct ** [REDACTED] **. All of these are below the Ameren Missouri modeled level of
21 ** [REDACTED] **. In other words, Mr. Peters is concerned that Staff’s normalized
22 Atchison generation levels are too low, but Staff’s normalized generation levels for Atchison
23 are consistent with a year of full Atchison operation.

24 Q. Did Staff inquire with Ameren Missouri as to whether the facility operated
25 differently under trial operation and commercial operation?

² Mark J. Peters Rebuttal Page 3 line 9 through line 17.

1 A. Yes. In response to Staff Data Request No. 0558 asking for the difference in
2 operations before and after trial operations, Ameren Missouri stated:

3 There was no difference in operation of the facility during
4 commissioning (trial operations) of the site, other than the number
5 of turbines available for operation on any given day, as the facility
6 had phased in operations.

7 Given this response, and the similarity of Staff's estimated normalized output compared
8 to the actual output of the full site, Mr. Peters' concern is unfounded.

9 Q. Does the actual output of the full site suggest that Ameren Missouri's normalized
10 annual output is higher than expected?

11 A. Yes. For first full calendar year of generation for the facility, the output
12 of the facility was ** [REDACTED] **. The Ameren Missouri modeled level is
13 ** [REDACTED] **.

14 Q. At page 3 lines 9 – 17 of his rebuttal testimony, Mr. Arora discusses his belief
15 that "Staff's profile is not a reasonable representation of the normalized output of High Prairie."
16 Is Mr. Arora correct that the Staff High Prairie normalized profile is unreasonable?

17 A. No. For calendar year 2022, the first full year of voluntary restrictions,
18 the output of the facility was approximately³ ** [REDACTED] **. This amount is consistent
19 with the Staff level of generation modeled for the facility for direct ** [REDACTED] **.
20 Please see Staff witness Claire M. Eubanks's surrebuttal testimony for additional information
21 on this topic.

³ As adjusted to remove all negative generation amounts.

1 Q. At page 22, lines 9-12 of his rebuttal testimony Mr. Arora states that “the profile
2 Staff is using is based on use of a minimum cut-in speed of 5.0 m/s even though, as discussed
3 above, everyone understood when the CCN was granted that operations at night from April to
4 October might very well have to be conducted using a 6.9 m/s minimum cut-in speed.”
5 What cut in speed was used by Ameren Missouri in its production modeling of High Prairie?

6 A. Staff’s understanding is that Mr. Peters used the 5.0 m/s wind profile to
7 determine the amount of wind generation from High Prairie to include in his production cost
8 model run for direct. I determined this by comparing the hourly generation for High Prairie
9 in Mr. Peters’ workpaper entitled “19 WIND - ENERGY CAPACITY REVENUE
10 RESRAM.xlsx” with taking the average of the 5.0 m/s wind profile and the 5.0 m/s wind
11 profile adjusted to remove generation at night during the bat season. The result is a difference
12 of 7.07 MWhs over the entire year.

13 **TRUE-UP DIRECT TESTIMONY**

14 Q. What is the purpose of your True-up direct testimony?

15 A. The purpose of my True-up direct testimony is to provide the variable fuel and
16 purchase power expense incorporating all known and measurable changes as of December 31,
17 2022, as well as to discuss any revisions from my direct testimony.

18 Q. How have you revised your production model for true-up?

19 A. I have updated the time periods reflected in certain model assumptions to change
20 the ending period from the update cut off to the true-up cut off. I have also made certain
21 modifications to the modeling associated with the Cape Girardeau Renewable Energy Center
22 meeting in-service.

Surrebuttal and
True-Up Direct Testimony of
Shawn E. Lange, PE

1 Q. What changes were made to the modeling associated with Cape Girardeau?

2 A. In direct testimony, Staff did not model the Cape Girardeau Renewable Energy
3 Center as part of Ameren Missouri's generation portfolio. With the asset meeting the in-service
4 criteria, this asset is modeled as being a part of Ameren Missouri's generation portfolio in
5 Staff's True-up Direct fuel model. Staff witness Amanda Coffey's true-up direct testimony
6 discusses Staff's recommendation to find the Cape Girardeau Renewable Energy Center solar
7 facility fully operational and used for service.

8 Q. What is the value of the variable fuel and purchase power expense?

9 A. The Staff calculates the variable fuel and purchased power expense for Ameren
10 Missouri for known and measureable changes through December 31, 2022, to be \$443,584,439.

11 Q. What is the true up value of the real time deviation?

12 A. The adjustment for real time deviation is ** [REDACTED] **. **

13 Q. What is your recommendation?

14 A. I recommend that the Commission adopt the updated variable fuel and purchase
15 power expense that Staff modeled, as well as the updated value of physical bilateral margins,
16 financial swaps, and real time deviation.

17 Q. Does this conclude your Surrebuttal and True-Up Direct testimony?

18 A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

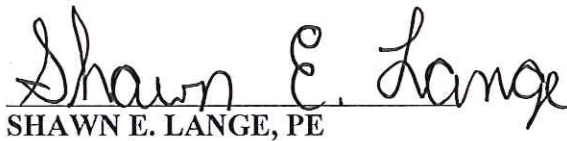
In the Matter of Union Electric Company)
d/b/a Ameren Missouri's Tariffs to Adjust)
Its Revenues for Electric Service) Case No. ER-2022-0337

AFFIDAVIT OF SHAWN E. LANGE, PE

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW SHAWN E. LANGE, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Surrebuttal/True-Up Direct Testimony of Shawn E. Lange, PE*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.


SHAWN E. LANGE, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 8th day of March 2023.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070


Notary Public