

Exhibit No. 157

Exhibit No.:
Issue(s): *Weather Normalization,
Energy Efficiency
Adjustment*
Witness: *Hari K. Poudel, PhD*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Direct Testimony*
Case Nos.: *ER-2022-0337*
Date Testimony Prepared: *February 15, 2023*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF/ RATE DESIGN DEPARTMENT

REBUTTAL TESTIMONY

OF

HARI K. POUDEL, PhD

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

Case No. ER-2022-0337

*Jefferson City, Missouri
February 2023*

1 **REBUTTAL TESTIMONY**

2 **OF**

3 **HARI K. POUDEL, PhD**

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 Hari K. Poudel, and my business address is P.O. Box 360,
9 Jefferson City, Missouri, 65102.

10 Q. By whom are you employed, and in what capacity?

11 A. I am employed by the Missouri Public Service Commission (“Commission”) as
12 an Economist in the Tariff/Rate Design Department in the Industry Analysis Division.

13 Q. Please describe your educational and work background.

14 A. I received a Ph.D. in Public Policy and a master’s degree in Public Health from
15 the University of Missouri, Columbia, and another master’s degree in Agricultural Economics
16 from University of Hohenheim, Germany.

17 In January of 2020, I began working for the Missouri Department of Health and
18 Senior Services as a research/data analyst. I was employed with the Division of Community and
19 Public Health from January 2020 until October 2021. I started my career with the Commission
20 as an Economist in October 2021.

21 Q. Are you the same Hari K. Poudel that filed direct testimony in this case?

22 A. Yes.

23 Q. What is the purpose of your testimony?

1 A. The purpose of my rebuttal testimony is to respond to Union Electric
2 Company d/b/a Ameren Missouri (“Ameren Missouri”) witness Nicholas Bowden, PhD
3 regarding Ameren Missouri’s weather normalization and Missouri Energy Efficiency
4 Investment Act (MEEIA) annualization adjustment.

5 **WEATHER NORMALIZATION**

6 Q. Are there differences in the parameters of the regression analyses used by
7 Ameren Missouri and Staff?

8 A. Yes. Staff used the Auto Regressive Moving Average (ARMA) model in the
9 regression analyses. However, Ameren Missouri didn’t use this model in their regression
10 analyses. ARMA is one of the models that used in the electricity price forecasting. The model
11 is used to test for autocorrelation in time series data. The statistical software utilized by
12 the Company and the Staff has the capability to detect autocorrelation. However, Company
13 didn’t use it in their regression analysis. Staff used the AR1¹ that helps in improving
14 the estimation of the future energy consumption. There is some correlation between
15 energy consumed in the past and the energy used in the future along with the impact of
16 the weather. In order to reflect the relationship between the past and the future energy
17 consumption behavior of customers, Staff’s analysis kept the AR1 term in the in the energy
18 forecast modeling.

19 **MEEIA ADJUSTMENT**

20 Q. Does Staff have concerns with Ameren Missouri’s MEEIA annualization
21 adjustment procedure?

¹ An AR(1) is an autoregressive term that refers to the current value based on the immediately preceding value,

1 A. No. Both Staff and Company follow the same procedure mentioned in the
2 “Ameren Missouri 2019-24 MEEIA Energy Efficiency Plan.”²”

3 Q. Do the input data (deemed energy-efficient measures) used in the adjustment
4 calculation differ in any way?

5 A. When computing the MEEIA adjustment, Staff unintentionally entered the wrong
6 data for the 3M and 4M rate classes.

7 Q. Will Staff correct the errors in the true-up?

8 A. Yes. Staff will correct the errors in true-up.

9 **CONCLUSION**

10 Q. Does this conclude your rebuttal testimony?

11 A. Yes. It does.

² The plan is designed to implement the results of the Company’s Integrated Resource Planning (“IRP”) analyses filed with the Commission.

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 HARI K. POUDEL, PhD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW HARI K. POUDEL, PhD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Hari K. Poudel, PhD*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

HARI K. POUDEL, PhD

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 14th day of February 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