

Exhibit No.:
Issue(s): Decommissioning
Witness: Cedric E. Cunigan, PE
Sponsoring Party: MoPSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: EF-2024-0021
Date Testimony Prepared: February 27, 2024

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

CEDRIC E. CUNIGAN, PE

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

CASE NO. EF-2024-0021

*Jefferson City, Missouri
February 2024*

1
2
3
4
5
6
7

**TABLE OF CONTENTS OF
REBUTTAL TESTIMONY OF
CEDRIC E. CUNIGAN, PE
UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI
CASE NO. EF-2024-0021**

DECOMMISSIONING2

1 **REBUTTAL TESTIMONY OF**

2 **CEDRIC E. CUNIGAN, PE**

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

5 **CASE NO. EF-2024-0021**

6 Q. Please state your name and business address.

7 A. My name is Cedric E. Cunigan and my business address is Missouri Public
8 Service Commission, P.O. Box 360, Jefferson City, Missouri, 65102.

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

10 A. I am employed by the Missouri Public Service Commission (“Commission”) as
11 a Senior Professional Engineer in the Engineering Analysis Department of the Industry
12 Analysis Division.

13 Q. What is the purpose of your rebuttal testimony?

14 A. The purpose of my rebuttal testimony is to respond to Ameren Missouri witness
15 Jim Williams regarding Decommissioning.

16 Q. Please summarize Staff’s recommendations in this case.

17 A. Staff agrees with Ameren Missouri’s proposed estimate of decommissioning
18 costs of ** [REDACTED] **. ** Staff further recommends Ameren Missouri provide a more detailed
19 scope of work and estimate of the costs as they are developed. Staff recommends that, any bids
20 or estimates received during the pendency of this case should be provided to Staff for review
21 and closure cost estimates updated. Ameren should request and receive a bid for the work prior
22 to issuance of any bond. Also, should the Commission approve securitization for
23 decommissioning costs in the future, Staff agrees that a regulatory account (asset or liability)
24 be used to reconcile any differences between estimated and actual costs.

1 **DECOMMISSIONING**

2 Q. How much has Ameren estimated for decommissioning the Rush Island facility?

3 A. The Demolition Estimate was developed by Black and Veatch and is attached
4 to the Direct Testimony of Jim Williams as Schedule JW-D2. ** [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED] **

**

[REDACTED]

8

**

1 Section 2 of Schedule JW-D2 ** [REDACTED]

2 [REDACTED]

3 [REDACTED] **

4 Q. How accurate are the Order of Magnitude cost study (“OOM”) estimates?

5 A. The estimates are speculative, which Mr. Williams acknowledges in his direct
6 testimony when he states, “It should be noted that as a Class 4 estimate, it is reasonable to
7 expect that actual costs could vary from the estimate by plus or minus 30%.”¹

8 Q. What does Mr. Williams mean when he states that it is a Class 4 estimate?

9 A. A Class 4 estimate is an estimate based on a classification framework developed
10 by the Association for the Advancement of Cost Engineering (AACE).

11 Q. Please describe the AACE classification framework.

12 A. The AACE provides five different classifications of estimates with varying
13 degrees of accuracy and differing usages. The table below gives a general description of each
14 class for building and general construction industries.² As you can see from the chart,
15 a Class 4 estimate’s end usage is typically for a concept study or schematic design. Funds are
16 not typically authorized for rate recovery until you have a Class 3 level of detail or greater.

¹ Direct Testimony of Jim Williams page 10, lines 5-7.

² AACE International Recommended Practice No. 56R-08.

ESTIMATE CLASS	Primary Characteristic	Secondary Characteristic		
	MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES Expressed as % of complete definition	END USAGE Typical purpose of estimate	METHODOLOGY Typical estimating method	EXPECTED ACCURACY RANGE Typical variation in low and high ranges at an 80% confidence interval
Class 5	0% to 2%	Functional area, or concept screening	SF or m ² factoring, parametric models, judgment, or analogy	L: -20% to -30% H: +30% to +50%
Class 4	1% to 15%	or Schematic design or concept study	Parametric models, assembly driven models	L: -10% to -20% H: +20% to +30%
Class 3	10% to 40%	Design development, budget authorization, feasibility	Semi-detailed unit costs with assembly level line items	L: -5% to -15% H: +10% to +20%
Class 2	30% to 75%	Control or bid/tender, semi-detailed	Detailed unit cost with forced detailed take-off	L: -5% to -10% H: +5% to +15%
Class 1	65% to 100%	Check estimate or pre bid/tender, change order	Detailed unit cost with detailed take-off	L: -3% to -5% H: +3% to +10%

Table 1 – Cost Estimate Classification Matrix for Building and General Construction Industries

Q. Would funds need to be authorized sooner for the closure of a facility?

A. In some cases, closure funds are started earlier on in the life of an asset and they accrue over the life of that asset, so a Class 4 study might be used to initiate accrual of those funds. As more information is known, the estimates and accrual rate of closure funds could be adjusted. The difference with this case is that funds would not be accrued over time, but would occur all at once set at the time of the Commission’s order through securitization. If the cost securitized is too low, then the Company would be disadvantaged. If the cost securitized is too high, then customers would be overcharged. Any deviations in actual costs from the estimate would need to be corrected through other means. The Company acknowledges the same in the Direct Testimony of Steve M. Wills when he states, “the Company requests a regulatory account (asset or liability) to reconcile any differences between the estimates provided within this proceeding and the actual costs.”³

Q. Are the estimates reasonable?

³ Direct Testimony of Steve M. Wills page 10, lines 12-13.

1 A. Given that this is a Class 4, concept level study, and the caveat that the accuracy
2 is estimated to within +/- 30%, the estimates appear to be reasonable. I reiterate that an OOM
3 study is not typically used to authorize funds. ** [REDACTED]

4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]. ** Meaning not only is the accuracy limited, but there
9 will likely be additional costs not considered in this study. This type of study is more useful to
10 gauge the feasibility of a project in the early planning stages. ** [REDACTED]

11 [REDACTED]
12 [REDACTED]
13 [REDACTED]. ** Staff is not recommending using this value either, but is using this as
14 an example to show how widely estimates can vary at this level. Ameren should request bids
15 for the scope of work of this project and develop a more accurate estimate of the costs prior to
16 seeking recovery.

17 Q. Why is Staff recommending rate recovery of decommissioning costs on an
18 estimated basis in this proceeding?

19 A. Section 1. (7)(a) of the Securitization Statute includes the costs of
20 decommissioning and restoring the site of the electric generating facility as an item to include
21 in the energy transition costs.

22 Q. What is Staff's recommendation?

4 ** [REDACTED] **

Rebuttal Testimony of
Cedric E. Cunigan, PE

1 A. Staff agrees with Ameren Missouri's proposed estimate of decommissioning
2 costs of ** [REDACTED] **. ** Staff further recommends Ameren Missouri provide a more detailed
3 scope of work and estimate of the costs as they are developed. Ameren should request and
4 receive a bid for the work prior to issuance of any bond. Also, should the Commission approve
5 securitization for decommissioning costs in the future, Staff agrees that a regulatory account
6 (asset or liability) be used to reconcile any differences between estimated and actual costs.

7 Q. Does this conclude your testimony?

8 A. Yes.

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

In the Matter of the Petition of Union Electric)
Company d/b/a Ameren Missouri for a)
Financing Order Authorizing the Issue of) **File No. EF-2024-0021**
Securitized Utility Tariff Bonds for Energy)
Transition Costs related to Rush Island)
Energy Center)

AFFIDAVIT OF CEDRIC E. CUNIGAN, PE

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

COMES NOW CEDRIC E. CUNIGAN, PE, and on his oath states that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Cedric E. Cunigan, PE*; and that the same is true and correct according to his best knowledge and belief.

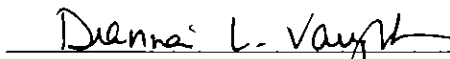
Further the Affiant sayeth not.



CEDRIC E. CUNIGAN, 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 20th day of February 2024.



Notary Public

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Cedric E. Cunigan, PE

PRESENT POSITION:

I am a Senior Professional Engineer in the Engineering Analysis Department, Industry Analysis Division, of the Missouri Public Service Commission.

EDUCATIONAL BACKGROUND AND WORK EXPERIENCE:

In May 2011, I earned a Bachelor of Science in Biological Engineering from the University of Missouri, in Columbia. In May 2013, I earned a Master of Business Administration, also from the University of Missouri. I began work with the Missouri Department of Natural Resources Solid Waste Management Program in August 2013. I started as a Technician and was promoted to an Environmental Engineer I in January 2014. I transferred to the Hazardous Waste Program in September 2014. In January 2015, I was promoted to an Environmental Engineer II. I ended employment with the Department of Natural Resources in January of 2017 and began work with the Missouri Public Service Commission as a Utility Engineering Specialist III. I received my professional engineer’s license in October 2021. In November 2022, I was promoted to Senior Professional Engineer.

Summary of Case Involvement:

Case Number	Utility	Type	Issue
EO-2017-0267	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2017-0270	KCP&L Greater Missouri Operations Company	Memorandum	RES Compliance Report
EO-2017-0272	KCP&L Greater Missouri Operations Company	Memorandum	RES Compliance Plan
EO-2018-0111	Macon Electric Cooperative & City of Marceline	Memorandum	Change of Supplier
EC-2018-0089	Union Electric Company d/b/a Ameren Missouri	Staff Report	Complaint Investigation
EO-2018-0285	Empire District Electric Company	Memorandum	RES Compliance Report and Plan

continued Cedric E. Cunigan, PE

Case Number	Utility	Type	Issue
EO-2018-0289	KCP&L Greater Missouri Operations Company	Memorandum	RES Compliance Report
EO-2018-0291	KCP&L Greater Missouri Operations Company	Memorandum	RES Compliance Plan
ER-2018-0145 & ER-2018-0146	KCPL & KCP&L Greater Missouri Operations Company	Cost of Service Report, Rebuttal, & Surrebuttal	Renewable Energy
WR-2018-0328	Middlefork Water Company	Depreciation Workpapers	Depreciation
EA-2018-0202	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
EC-2018-0376	Union Electric Company d/b/a Ameren Missouri	Staff Report	Complaint Investigation
EA-2019-0010 & EA-2019-0118	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
EA-2019-0021	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
EE-2019-0305	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2019-0320	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Report and Plan
EO-2019-0371	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements
EE-2020-0411	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Plan
ET-2020-0259	Empire District Electric Company	Memorandum	Renewable Energy Tariff
EO-2020-0323	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2020-0328	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Report and Plan
EA-2020-0371	Union Electric Company d/b/a Ameren Missouri	Staff Report	Certificate of Convenience and Necessity Application Requirements

Case Number	Utility	Type	Issue
WR-2020-0344	Missouri American Water Company	Cost of Service Report, Rebuttal, and Surrebuttal	Depreciation
SA-2021-0017	Missouri American Water Company	Staff Report	Depreciation
EO-2021-0032	Evergy	Staff Report	Solar Requirements 393.1665 RSMo
SA-2021-0120	Missouri American Water Company	Staff Report	Depreciation
EO-2021-0344	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2021-0352	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Report and Plan
ER-2021-0240	Union Electric Company d/b/a Ameren Missouri	Cost of Service Report, Rebuttal, and Surrebuttal	Depreciation
ER-2021-0312	Empire District Electric Company	Cost of Service Report, Direct, Rebuttal, and Surrebuttal	Depreciation
SR-2021-0372	Mid MO Sanitation, LLC	Disposition Agreement	Depreciation
WA-2021-0391	Missouri American Water Company	Staff Report	Depreciation
ER-2022-0129	Evergy Metro, Inc.	Direct, Rebuttal, Surrebuttal	Renewable Energy Tariff
ER-2022-0130	Evergy Missouri West	Direct, Rebuttal, Surrebuttal	Depreciation, Renewable Energy Tariff
EA-2022-0245	Union Electric Company d/b/a Ameren Missouri	Rebuttal, Surrebuttal	Certificate of Convenience and Necessity Application Requirements
EO-2022-0282	Empire District Electric Company	Memorandum	RES Compliance Report and Plan
EO-2022-0283	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Report and Plan
WA-2022-0311	Missouri American Water Company	Memorandum	Depreciation
ER-2022-0337	Union Electric Company d/b/a Ameren Missouri	Direct, Rebuttal, Surrebuttal, True-up Direct	Depreciation and Continuing Property Record
EA-2023-0017	Grain Belt Express, LLC	Rebuttal	Environmental Compliance and Route Selection
GC-2023-0143	Spire Missouri, Inc.	Staff Report	Complaint
ET-2023-0251	Evergy Metro, Inc.	Memorandum	Cogeneration and Net Metering
ET-2023-0252	Evergy Missouri West, Inc.	Memorandum	Cogeneration and Net Metering

continued Cedric E. Cunigan, PE

Case Number	Utility	Type	Issue
EO-2023-0358	Liberty	Memorandum	RES Compliance Report and Plan
EO-2023-0359	Union Electric Company d/b/a Ameren Missouri	Memorandum	RES Compliance Report and Plan
EE-2023-0409	Union Electric Company d/b/a Ameren Missouri	Staff Recommendation	Variance from RES Requirement
EO-2023-0423 & EO-2023-0424	Evergy Metro, Inc. & Evergy Missouri West, Inc.	Memorandum	In-Service Criteria and Public Comments