Exhibit No. 212

Commission Staff – Exhibit 212
Claire M. Eubanks
Rebuttal Testimony
File Nos. ER-2021-0240 & GR-2021-0241

Exhibit No.:
Issue(s): *High Prairie Wind Curtailment*
Witness: *Claire M. Eubanks, PE*
Sponsoring Party: *MoPSC Staff*
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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

CLAIRE M. EUBANKS, PE

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

CASE NO. ER-2021-0240

Jefferson City, Missouri
October 2021

** Denotes Confidential Information **

REBUTTAL TESTIMONY OF

CLAIRE M. EUBANKS

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

CASE NO. ER-2021-0240

Q. Please state your name and business address.

A. Claire M. Eubanks and my business address is Missouri Public Service Commission, P.O. Box 360, Jefferson City, Missouri, 65102.

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

A. I am employed by the Missouri Public Service Commission ("Commission") as the Manager of the Engineering Analysis Department, Industry Analysis Division.

Q. Please describe your educational background and experience.

A. I received my Bachelor of Science degree in Environmental Engineering from the University of Missouri – Rolla, now referred to as Missouri University of Science and Technology, in May 2006. I am a licensed professional engineer in the states of Missouri and Arkansas. I began my career as a Project Engineer with Aquaterra Environmental Solutions, Inc., now SCS Aquaterra, an engineering consulting firm with locations across the Midwest. As a Project Engineer, I worked on a variety of engineering and environmental projects including landfill design, environmental sampling, construction oversight, and construction quality assurance. Over the course of my six years with Aquaterra I was promoted several times, eventually to Project Manager. As a Project Manager, I managed a variety of engineering projects primarily related to the design and environmental compliance of solid waste landfills, including performing as the Certifying Engineer for projects related to landfill design, construction plans and specifications, and construction quality assurance.

In November 2012, I began my employment with the Commission as a Utility Regulatory Engineer I. My primary job duties were primarily related to the Renewable Energy Standard, reviewing applications for Certificates of Convenience and Necessity, construction audits, and the development and evaluation of in-service criteria. In January 2017, I was promoted to Utility Regulatory Engineer II and in April of 2020, I was promoted to my current position.

Q. Did you contribute to Staff's Direct Cost of Service Report?

A. Yes. I provided testimony on in-service criteria in general, provided Staff's evaluation of solar in-service for the BJC solar facility, and contributed to the Construction Audit Report on the two wind facilities (Appendix 5 of the Cost of Service Report).

Q. What is the purpose of your rebuttal testimony?

A. I am responding to the Direct Testimony of The Office of the Public Counsel ("OPC") witness Dr. Geoff Marke and Missouri Industrial Energy Consumers ("MIEC") witness Greg R. Meyer, regarding the operational impacts of Ameren Missouri voluntarily ceasing nighttime operations of High Prairie Renewable Center ("High Prairie").

Q. Are any other Staff witnesses providing testimony related to High Prairie?

A. Yes. Staff witness J Luebbert presents an update to Staff's Direct Testimony regarding whether High Prairie has met the agreed upon in-service criteria. Staff witness Lisa M. Ferguson responds to Dr. Marke and Mr. Meyer regarding their proposed disallowance related to Ameren Missouri voluntarily ceasing nighttime operations of High Prairie.

Q. Please briefly summarize Dr. Marke and Mr. Meyer's direct testimony regarding the operational impacts of bat mitigation at High Prairie.

A. Both OPC and MIEC recommend a disallowance related to High Prairie because Ameren Missouri voluntarily stopped all nighttime operations due to wildlife concerns. Mr. Meyer raises concerns with the impact on depreciable life, consultant services related to monitoring High Prairie, the loss of production tax credits ("PTCs") and renewable energy credits ("RECs"). Dr. Marke also raises concerns with Ameren Missouri's Renewable Energy Standard ("RES") compliance.

Q. Why did Ameren Missouri voluntarily cease operating High Prairie at night?

A. A total of nine (9) Indiana bat fatalities have been discovered at High Prairie. Indiana bats are a federally endangered species. Ameren Missouri currently has an Incidental Take Permit ("ITP") for High Prairie issued by the United States Fish and Wildlife Service ("USFWS"). The ITP authorizes "the take of up to 72 Indiana bats, 18 northern long-eared bats, and 96 little brown bats over a non-renewable 6 year ITP."[1] The ITP requires Ameren Missouri to make operational changes based on the number of bat fatalities discovered, as described in its Habitat Conservation Plan ("HCP"). Ameren Missouri has made operational changes based on the number of bat fatalities as indicated in response to Staff Data Request No. 0714, that out of an abundance of caution it has ceased operation at night. Additionally, Ameren Missouri is evaluating mitigation measures and intends to consult with USFWS and the Missouri Department of Conservation ("MDC").

Q. What operational changes are required by the ITP related to the fatalities found during 2021?

[1] Permit Number: ESPER0011567 provided in Response to OPC Data Request 2004.

A. In the event three (3) Indiana bats are found in a monitoring year, the cut-in speed is increased by 0.5 m/s and continues to increase by 0.5 m/s for each additional fatality discovered.[2] The cut-in speed determines when the wind turbine blades will start rotating and generating power. A higher cut-in speed means that the wind turbines produce less energy as the wind needs to blow faster before the turbines will start rotating. Ameren Missouri represents that with the fatalities found to date the ITP would require them to operate with a cut in speed of 8.0 m/s.[3]

Q. Please describe the timing of wildlife permitting and bat fatalities.

A. TG High Prairie, LLC ("Terra-Gen"), developed the High Prairie Renewable Energy Center; therefore, initial permitting work was coordinated between USFWS and Terra-Gen. On June 5, 2020, USFWS provided a Technical Assistance Letter ("TAL") to Terra-Gen, which was valid for one year or until the project received an Incidental Take Permit ("ITP").

The site developer reported an Indiana bat fatality on October 2, 2020. It is believed the fatality occurred after testing and commissioning of the turbines on September 30, 2020. Ameren Missouri closed on the facility on December 22, 2020 and continued operations per the TAL.

Ameren Missouri revised its nighttime operations after finding evidence of an Indiana bat fatality on April 14, 2021. The High Prairie ITP was issued on May 14, 2021. From June 2, 2021 through June 21, 2021 seven additional Indiana bat fatalities occurred. Throughout that period, Ameren Missouri adjusted its operations of High Prairie several times, eventually

[2] Final Habitat Conservation Plan for the High Prairie Renewable Energy Center dated May 6, 2021, page 93.
[3] Response to Staff Data Request No. 0714.

pausing all nighttime operations starting on June 21, 2021. Ameren Missouri provided a summary of incidental takes and curtailment responses in response to Staff Data Request No. 0742. The summary is attached as Confidential Schedule CME-r1.

Q. What mitigation measures is Ameren Missouri evaluating?

A. Ameren Missouri is currently developing a strategy using deterrents, active curtailments, and model-based curtailments. Deterrents utilize ultra-sonic speakers mounted to individual wind turbines. The deterrents would encourage bats to choose airspace away from the ultra-sonic noise. Active curtailment is accomplished by monitoring bat activity in real time, allowing Ameren Missouri to curtail turbines when bats are at risk. Model-based curtailment is accomplished by real time weather measurements to model when bats are known to be active.

Q. Are these mitigation measures in effect currently?

A. No. Ameren Missouri is purchasing and installing the deterrent system for 15 of the turbines at High Prairie to study its effectiveness during the 2022 bat season (April 1, 2022 – October 31, 2022). Ameren Missouri is also preparing a request for proposal for an active curtailment system for use during the 2022 bat season. Finally, model-based curtailment requires time to study weather and bat activity. Ameren Missouri does not expect to implement this approach until the 2023 bat season.

Q. Dr. Marke raises concerns with Ameren Missouri's ability to meet its RES compliance obligations, what are those requirements?

A. The Missouri Renewable Energy Standard ("RES")[4] was enacted as a voter initiative petition in November 2008. Provisions of the resulting statute and regulations

[4] Mo. Rev. Stat. Section 393.1020 (2016).

require Ameren Missouri (and the other investor-owned utilities) to meet certain requirements regarding the use of renewable energy while not exceeding the one percent (1%) retail rate impact limit. For calendar year 2021 and thereafter, the RES requires Ameren Missouri to generate or purchase fifteen percent (15%) of its retail sales using renewable energy resources.[5] Ameren Missouri must derive two percent (2%) of the renewable energy requirement from solar energy.[6]

Compliance with the RES is demonstrated by retiring Renewable Energy Credits ("RECs"). A REC is a tradeable certificate that represents that one megawatt-hour (MWh) of electricity has been generated by a certified renewable energy resource. RECs can be banked for three (3) years before being utilized for future compliance purposes (i.e. retired).[7] RECs are tracked in the Commission-approved tracking system, the North American Renewables Registry, to ensure that the credits are used only once. Renewable energy resources that are located in Missouri qualify for an additional ¼ credit when retired for Missouri RES compliance (i.e. the additional ¼ credit is not eligible for compliance with other renewable standards or voluntary programs).

Q. Did Staff join a stipulation and agreement in case EA-2018-0202, regarding the High Prairie wind facility?

A. Yes.

Q. Did the Commission approve that stipulation and agreement?

A. Yes.

[5] Mo. Rev. Stat. Section 393.1030 .1(1) (2016).
[6] Mo. Rev. Stat. Section 393.1030.1 (2016).
[7] "An unused credit may exist for up to three years from the date of its creation." Mo. Rev. Stat. Section 393.1030.2 (2016).

Q. What does paragraph 4 of the Stipulation say as to Renewable Energy Standard compliance costs?

A. Paragraph 4 states in part that "The Signatories agree the costs of this Project are Renewable Energy Standard Compliance costs so long as the facility is certified by the Division of Energy as a renewable energy resource under 4 CSR 340-8.010."

Q. Who certifies renewable energy resources?

A. The Missouri Department of Natural Resources – Division of Energy ("MDNR") certifies renewable resources. MDNR has rules in place to revoke its certification for failure to remain in substantial compliance with environmental regulations.[8]

Q. Has the Division of Energy certified High Prairie as a renewable resource?

A. Yes.

Q. Is Ameren Missouri able to meet its Renewable Energy Standard ("RES") compliance obligations with less generation from High Prairie?

A. Yes, but Ameren Missouri will likely need to purchase additional RECs to comply. Ameren Missouri is expected to be short on RECs for 2022 and 2023 compliance.[9] Ameren Missouri's projection ** [redacted] ** The projected RECs include an additional ¼ credit because High Prairie is located in Missouri. ** [redacted] ** For 2021 through 2023 compliance

[8] 10 CSR 140-8.010(4)(C)4.B. states in part "Any of the following actions may result in revocation of certification as an eligible renewable energy generation facility… [f]ailure to remain in substantial compliance with all federal and state laws, regulations and rules for the protection of the environment…".
[9] Ameren Missouri Renewable Energy Standard Compliance Plan 2021-2023, filed April 15, 2021, Page 6.

years, Staff estimates an additional ** [redacted] **

Q. How much are renewable energy credits?

A. In a recent Ameren Missouri variance request, it noted that RECs were approximately $7 per REC currently. ** [redacted] **

Q. What impact does this lost generation have on RES compliance costs?

A. Assuming that full nighttime curtailment occurs in 2021 through 2023 and REC costs are $7/REC, Ameren Missouri would be potentially required to spend an additional $9.9 million (ranging from approximately $1 million to $4.7 million annually) on RES compliance.

Q. Are there any limitations on rate impact in the RES?

A. Yes. The rate impact on customers cannot exceed one percent (1%) as calculated by the retail rate impact calculation described in the Commission's rules.[10] Ameren Missouri last filed its calculation on April 15, 2021. ** [redacted] ** Due to these changes in assumptions since its last retail rate impact calculations, Staff recommends the Commission order Ameren Missouri to file retail rate impact calculations based on a range of REC prices and High Prairie curtailment scenarios.

Q. Does Staff have any other recommendations related to High Prairie curtailment?

[10] 20 CSR 4240-20.100(5).

A. Yes. Staff recommends the Commission order Ameren Missouri to provide Staff seasonal reporting on its wildlife mitigation efforts. The reports should be provided to Staff thirty (30) days after the end of each season (spring, summer, and fall). The reports should cover mortality monitoring, mitigation measures taken, and all curtailments at High Prairie. These reports should include at a minimum:

- Copies of its summaries of mortality reporting to USFWS (i.e. Seasonal Summaries);
- Copies of its most recent Annual Mortality Monitoring Report submitted to USFWS;
- Adaptive management responses (i.e., changes in cut-in speed and date of occurrence by individual wind turbine);
- Any other changes in operations not already required to be reported under Commission rule 3.190;
- Expenditures related to mitigation or monitoring of wildlife, separately by capital and expense, labor and non-labor by FERC account by month; and
- A calculation demonstrating the current economics of the facility (i.e., the revenues are fully covering all costs of owning and operating the facility as well as the return on and return of the investment).

Q. Going back to the stipulation and agreement in case EA-2018-0202, what does paragraph 9 of the stipulation and agreement say as to in-service criteria?

A. Paragraph 9 states that:

> In-Service Criteria: In-service criteria must be agreed upon and filed with the Commission on or before December 31, 2018 that would satisfy the fully operations and used for service standard in § 393.135, RSMo, and the applicable Internal Revenue Service requirements to qualify for Production Tax Credits. The Company, the Staff, and any other Signatory desiring to have input on the in-service criteria will work

together reasonably and in good faith to develop such in-service criteria by such date.

Q. Were in-service criteria agreed upon and filed with the Commission before December 31, 2018, in case EA-2018-0202?

A. No. However, Ameren Missouri and Staff jointly filed the agreed upon in-service criteria on January 22, 2019.

Q. Are those in-service criteria addressed in Staff's Cost of Service Report Wind Audit section, and the rebuttal testimony of Staff witness J Luebbert?

A. Yes. Staff presented its review of the agreed upon in-service criteria beginning on page 64 of Staff's Cost of Service Report with further details provided beginning on Page 53 of Appendix 5 of Staff's Cost of Service Report. Finally, Staff witness J Luebbert provides an update of Staff's review of in-service criteria in his rebuttal testimony.

Q. Does this conclude your rebuttal testimony?

A. Yes.

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-2021-0240

AFFIDAVIT OF CLAIRE M. EUBANKS, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW CLAIRE M. EUBANKS, PE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Rebuttal Testimony of Claire M. Eubanks, PE*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Claire M Eubanks

CLAIRE M. EUBANKS, 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 13th day of October 2021.

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

D Suzie Mankin

Notary Public

SCHEDULE CME-r1

HAS BEEN DEEMED

CONFIDENTIAL

IN ITS ENTIRETY