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Center
Witness: Ajay K. Arora
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File No.: ER-2021-0240
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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2021-0240

SURREBUTTAL TESTIMONY

OF

AJAY K. ARORA

ON

BEHALF OF

UNION ELECTRIC COMPANY

d/b/a Ameren Missouri

**St. Louis, Missouri
November 5, 2021**

SURREBUTTAL TESTIMONY

OF

AJAY K. ARORA

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1 **Q. Please state your name and business address.**

2 A. Ajay K. Arora, Union Electric Company d/b/a Ameren Missouri ("Ameren
3 Missouri" or "Company"), One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

4 **Q. Are you the same Ajay K. Arora that filed direct and rebuttal testimony in this**
5 **proceeding?**

6 A. Yes, I am.

7 **Q. What is the purpose of your surrebuttal testimony in this proceeding?**

8 A. I am responding to Missouri Industrial Energy Consumers ("MIEC") witness Greg
9 Meyer's rebuttal testimony regarding the Company's High Prairie Energy Center, which was
10 acquired by the Company for Renewable Energy Standard ("RES") compliance after the
11 Commission granted the Company a certificate of convenience and necessity ("CCN") for the
12 facility in 2018.

13 **Q. What does Mr. Meyer propose?**

14 A. Exactly how his proposals would work is not entirely clear insofar as he appears
15 to advocate for a reduction in the costs included in determining the Company's RESRAM¹ rate,
16 including reductions arising from periods not covered by any RESRAM rate filing. Given that the
17 purpose of this rate review is to set a revenue requirement upon which base rates would be based,
18 Mr. Meyer's proposals do not seem to make any sense. He also appears to advocate for changes to

¹ Renewable Energy Standard Rate Adjustment Mechanism.

1 Fuel Adjustment Clause ("FAC") recoveries, also arising from periods not covered by any FAC
2 rate filings and again, it is unclear how these proposals would work in the context of setting base
3 rates in this case.² Regardless, the substance of Mr. Meyer's position is essentially the same as it
4 was in his direct testimony, that is, he is asking the Commission use hindsight to deny the Company
5 recovery of legitimate, prudently-incurred RES compliance costs in the absence of any evidence
6 to support a conclusion that the Company has acted imprudently. As I discussed in my rebuttal
7 testimony,³ not only does his position violate MIEC's agreement not to challenge the prudence of
8 our decision to acquire the High Prairie facility⁴ – an agreement with which this Commission
9 ordered MIEC to comply⁵ – but it also is at war with the well-established prohibition on judging a
10 utility's decision using hindsight. Therefore, in the end it does not matter what Mr. Meyer is
11 proposing or how it would work because his proposals are completely without merit and should
12 be rejected.

13 **Q. Even if in hindsight the current economics of the High Prairie facility are less**
14 **favorable than you thought they would be when you signed the Build Transfer Agreement**
15 **("BTA"), has Mr. Meyer presented any evidence whatsoever that the Company acted**
16 **imprudently when it signed the BTA?**

17 A. No, and neither has any other party. As discussed in my rebuttal testimony, it is true
18 that the parties, the experts, and the United States Fish and Wildlife Service ("USFWS") were
19 mistaken that operating the facility at night from April 1 to October 31⁶ at a cut-in speed of 6.9
20 meters per second (when temperatures were above a certain level) would fully avoid the

² The Company's attorneys will address these legal and procedural problems with Mr. Meyer's approach in the Company's position statement and briefs.

³ Company witness John Reed also addressed the regulatory and economic policy concerns with Mr. Meyer's position in his rebuttal testimony.

⁴ File No. EA-2018-0202, *Third Stipulation and Agreement*, ("CCN Stipulation"), p.3-4, paragraph 12.

⁵ File No. EA-2018-0202, *Order Approving Third Stipulation and Agreement*, issued October 24, 2018.

⁶ The Company has resumed full operations at the facility, including at night, as of November 1, 2021.

1 endangered bat species that were known to be present at the site. It is also true that, at this time,
2 the facility's economics have been affected negatively, since we elected not to operate it at night
3 during that period. It is equally true that the evidence available to the Company, the parties, and
4 USFWS when the *decision to acquire the facility was made* was that the facility would likely
5 provide a cost-effective means of meeting the Company's legal obligation to comply with the
6 Missouri RES.

7 **Q. What were the Company's RES compliance requirements at the time the**
8 **decision to enter into the BTA was made?**

9 A. We needed a large quantity of Renewable Energy Certificates ("RECs") (that would
10 require 700 – 800 megawatts ("MW") of Missouri⁷ wind generation) by January 1, 2021, when the
11 RES compliance threshold increased to 15% of our retail sales. Consequently, we asked for and
12 received three CCNs from the Commission for 857 MW of Missouri wind generation to meet our
13 RES requirements. As was our position in the CCN case – a position with which the Commission's
14 Staff explicitly agreed⁸ – the obligation to comply with the RES is a long-term (permanent)
15 compliance obligation best met by ownership and operation of renewable generation that will
16 produce RECs that the Company will retire in compliance with its RES obligations.

17 **Q. What were the Company's alternatives to meet its needs?**

18 A. As outlined in my testimony in the CCN case, the Company selected the High
19 Prairie project after an extensive request for proposal process that culminated in the selection of
20 three wind projects in Missouri to be built for RES compliance. Developing renewable generation

⁷ Or, 875 – 1,000 MW of non-Missouri wind generation.

⁸ File No. EA-2018-0202, Cedric E. Cunigan Surrebuttal Testimony, p. 3, ll. 1-3. ("Staff does not object to this method [ownership of renewable generation] of RES compliance. The RES rule has no expiration and is a long term requirement. REC purchases are short term solution for a long term compliance issue.").

1 is a complex endeavor on many fronts, including navigating the process of completing extensive
2 transmission studies required by the applicable regional transmission organization,⁹ obtaining
3 access to land as well as local permits, completing environmental studies and obtaining necessary
4 permits, timely obtaining necessary project components like wind turbine generators, and
5 maximizing production tax credits ("PTCs"). Based on what we knew at the time, High Prairie was
6 a highly favorable project for several reasons. First, it had an advantageous place in MISO's
7 generation queue, including the fact that the existence of the new Mark Twain transmission line
8 made it likely transmission interconnection costs would be low. Second, it was located in close
9 proximity to Ameren Missouri's load and its location was expected to produce a favorable impact
10 on energy sales revenues. Third, it was a large project that was expected to produce a lot of RECs
11 for compliance, and it was a Missouri project, which under the RES meant that for each REC it
12 produced, the Company would receive 1.25 RECs for purposes of RES compliance. This also
13 produced economic benefits for Missouri as opposed to another state, including construction,
14 permanent jobs, and substantial tax revenues. The next two most viable projects available at the
15 time were the Outlaw (now known as the Atchison Energy Center) and the Brickyard Hills
16 projects, both of which were also located in Missouri. As noted, the Commission granted the
17 Company CCNs for all three projects but unfortunately, high transmission interconnection costs
18 for Brickyard Hills led to the decision to cancel that project. I should note that even if Brickyard
19 Hills had worked out, we would have been short of the MW needed for RES compliance without
20 High Prairie. There were no other projects available in Missouri with all project development
21 aspects advanced enough for timely compliance with the Missouri RES at that time.

⁹ The Midcontinent Independent System Operator, Inc. ("MISO") for High Prairie.

1 **Q. To be clear, is the entire facility in service and operating?**

2 A. Yes, the entire 400 MW is in service and operating. As Renew Missouri witness
3 James Owens points out¹⁰ (and regardless of the impropriety of disallowing investment and costs
4 of the facility based on hindsight, and where there is a lack of imprudence), Mr. Meyer's proposal
5 to disallow around 28% of such costs makes no sense. It makes no sense because to acquire the
6 400 MW that is producing energy sales and PTCs required the full investment that we made. Put
7 another way, had we invested 28% less we would, today, be producing roughly 28% fewer
8 megawatt-hours ("MWh") and 28% fewer PTCs. Mr. Meyer's proposal, however, retains the
9 benefit of those additional MWhs and PTCs for customers without customers having to pay for
10 them in clear contravention of the RES statute and the RESRAM mechanism implemented under
11 that statute, which requires that customers pay the RES compliance costs (and receive the RES
12 compliance benefits).

13 **Q. Does Mr. Meyer's position account for the fact that since High Prairie is sited**
14 **in Missouri the Company receives 1.25 RECs per MWh generated to comply with the RES?**

15 A. No, he ignores or overlooks the important fact that even if we had access to
16 alternative projects (which as I explained earlier we did not at that time), we would have had to
17 have built a project in another state that was roughly 25% larger and 25% more expensive (and
18 perhaps more) to produce the same number of RECs for RES compliance. Rates customers would
19 pay would then have reflected those higher costs.

20 **Q. You pointed out in your rebuttal testimony and above that MIEC should not**
21 **be making these arguments at all given the requirement that it comply with the agreement it**
22 **made as reflected in the CCN Stipulation. Mr. Owen posits that MIEC may be attempting to**

¹⁰ File No. ER-2021-0240, James Owens Rebuttal Testimony, p. 8, ll. 16-23.

1 **take the position that it was Ameren Missouri's decision to curtail at night this past summer**
2 **that was imprudent. How do you respond to such an attempt, if in fact that is the point MIEC**
3 **is trying to make?**

4 A. First of all, such an argument is tantamount to using hindsight to challenge the
5 prudence of the decision to acquire High Prairie in the first place and does violate the CCN
6 Stipulation. This is especially true since MIEC provides not so much as a hint as to any fact that
7 would indicate that the Company's decision earlier this year to curtail operations at night after it
8 had taken eight Indiana bats was an imprudent decision. To the contrary, no reasonable person
9 could possibly believe that the prudent thing for us to have done was to continue to operate at night
10 given the level of take we were seeing and the terms of our Incidental Take Permit ("ITP"). When
11 we made that decision we had come to understand, as had UWFWS, that we simply did not know
12 the operating parameters at which we could safely operate at night without taking more endangered
13 bats. We were not going to jeopardize our ITP or our relationship with USFWS because doing so
14 would not be in our customers' best interest. Moreover, doing so would create long-term
15 roadblocks to increasing production at night during bat season once we are able to investigate and
16 pursue mitigation measures that we hope, and believe, will allow us to operate at a greater capacity
17 factor at night during the bat season in the future.

18 **Q. What prudent steps are you taking now that it is understood that raising cut-**
19 **in speeds at night during the bat season alone still risks take of Indiana bats?**

20 A. As outlined in our response to Staff Data Request 855, which I have attached to my
21 testimony as Schedule AAR-S1, we are actively and diligently pursuing three different
22 technologies, the goal of each of which is to deter, detect, or avoid endangered bats at night during
23 the bat season. To the extent successful, these mitigation measures will allow us to increase

1 production in the future during that period, which will produce more energy revenues and PTCs
2 to be credited to customers via the RESRAM. We expect to complete testing of two of the three
3 technologies sometime during summer 2022 and the third by summer 2023. While I cannot tell the
4 Commission at this time exactly which mitigation measures we will fully deploy or what we expect
5 production at night during the bat season will be over the long-term, I can say that we are and we
6 will prudently pursue all cost-effective means to improve the facility's capacity factor while
7 continuing to comply with our ITP.

8 **Q. Please summarize your position on MIEC's proposed disallowance.**

9 A. The parties to the CCN case¹¹ specifically agreed that it was in fact prudent for the
10 Company to acquire the facility where it is located, knowing that there was a significant presence
11 of Indiana bats during bat season. Indeed, the CCN Stipulation called out exactly where the facility
12 would be located: "to be constructed in Schuyler and Adair Counties in Missouri."¹² MIEC's
13 position in this case is a violation of the commitment it made in the CCN Stipulation.
14 Unfortunately, what everyone believed would avoid taking endangered bats – using a 6.9 meter
15 per second cut-in speeds – did not provide full avoidance. We are diligently working and will
16 continue to diligently work to maximize production at High Prairie in the future. There is, however
17 absolutely no basis to disallow any costs because there is no basis to conclude the decisions we
18 have made were imprudent.

19 **Q. Does this conclude your surrebuttal testimony?**

20 A. Yes, it does.

¹¹ File No. EA-2018-0202.

¹² File No. EA-2018-0202, *Third Stipulation and Agreement*, pp.2-4.

Ameren Missouri's
Response to MPSC Data Request - MPSC
ER-2021-0240

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues
for Electric Service

No.: MPSC 0855

1. Please list, describe and explain in detail all mitigation efforts that Ameren Missouri is planning to implement in order to minimize bat deaths caused by wind turbines at High Prairie. Provide the dates when all such mitigation efforts will be implemented and describe the anticipated impact that each such mitigation effort will have. 2. Please provide a copy of all documentation that Ameren Missouri has exchanged with all governmental agencies and other relevant parties that addresses the current voluntary curtailment and all requirements that Ameren Missouri is attempting to meet in order to restore normal or near normal operations of the High Prairie Wind Facility. Lisa Ferguson (Lisa.ferguson@psc.mo.gov)

RESPONSE

Prepared By: Craig J. Giesmann
Title: Senior Manager, Environmental Services
Date: 9-28-2021

1. Ameren Missouri is working on a multipronged strategy to minimize the impacts to protected bat species from operation of the High Prairie wind turbines and to ensure regulatory compliance. This multipronged approach includes outside engineering investigations of bat behaviors and habits, studies of meteorological tower data, development and procurement of an active curtailment system, development of a model curtailment system, as well as a trial installation and development of a deterrent system. These multiple efforts are intended to significantly reduce operational curtailments of the wind farm.

Additional Details of these efforts are as follows:

1) Deterrents

This technology utilizes ultra-sonic speakers mounted to the wind turbine to create an acoustic field in the same range as the bats' natural echo call. When a bat encounters the acoustic field, their ability to hear its own echo call is greatly diminished. This makes it difficult for the bat to forage and orient itself, so it chooses airspace without the ultrasonic noise and away from the turbine's rotor swept zone.

Ameren Missouri is purchasing and installing the deterrent system on 15 of the 175 turbines at High Prairie as a pilot project. The deterrents will be evaluated during the 2022 bat season to determine their effectiveness at deterring the particular species of bats at High Prairie before committing to installing them on all turbines. The equipment is scheduled to ship from the factory on Oct 18th and to be installed before the end of 2021.

2) Active curtailment

This technology monitors bat activity in real time and curtails turbines only when bats are at risk of fatality. Bat activity is monitored by means of an ultrasonic detector (i.e., microphone) mounted on a turbine nacelle.

The current equipment delivery and installation time is a minimum of 3 months from the time of purchase. Ameren Missouri is preparing to issue a request for proposal and then purchase and install an active curtailment type system for use during the 2022 bat season.

3) Model curtailment

Curtailment of wind turbines based on real time weather conditions when bats are known to be more likely to be active is referred to as a model based curtailment approach. The model will incorporate other variables into a curtailment strategy, such as temperature, barometric pressure, and turbine start-up speeds. This approach requires studying bat activity and weather conditions for a minimum period of one full bat season. This historic data is then used to predict conditions when bats are likely to be active and then curtails the turbines appropriately.

Assuming a one year study period during the 2022 bat season, the earliest this approach could be implemented is for the 2023 bat season. Ameren Missouri intends to request proposals for this work in late 2021 and early 2022.

2. Please see response to MPSC 0742-5. Ameren Missouri has participated in conference calls with the USFWS and MDC regarding the potential bat mitigation efforts described above, although no correspondence has been forwarded to the agencies at this time.

