Exhibit No.:	
Issue(s):	High Prairie Energy Center
Witness:	Ajay K. Arora
Type of Exhibit:	Rebuttal Testimony
Sponsoring Party:	Union Electric Company
File No.:	ER-2024-0319
Date Testimony Prepared:	January 17, 2024

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2024-0319

REBUTTAL TESTIMONY

OF

AJAY K. ARORA

ON

BEHALF OF

UNION ELECTRIC COMPANY

D/B/A AMEREN MISSOURI

St. Louis, Missouri
January, 2025

P

TABLE OF CONTENTS

REBUTTAL TESTIMONY

OF

AJAY K. ARORA

FILE NO. ER-2024-0319

I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A. My name is Ajay K. Arora. My business address is One Ameren Plaza, 1901 Chouteau Ave., St. Louis, Missouri.

Q. By whom are you employed and what is your position?

A. I am the Senior Vice President and Chief Development Officer for Ameren Missouri.

Q. Please describe your educational background and employment experience.

A. I received my Bachelor of Science Degree in Chemical Engineering from Panjab University (India) in May 1992. I received my Master of Business Administration degree from Tulane University in May 1998. I joined former Ameren Corporation subsidiary, Ameren Energy, in June 1998 and held trading and structuring positions in Ameren Energy before supervising the group that priced structured energy products for former Ameren Corporation subsidiary Ameren Energy Marketing Company's wholesale and retail customers from 2002 to 2004. From 2004 to 2007, I was responsible for the analytical group supporting Ameren Missouri's transition into the Midwest Independent Transmission System Operator, Inc. ("MISO"), including reviewing specific market design

issues in MISO.[1] In 2007, I led the Ameren Missouri Regional Transmission Organization cost-benefit study that was filed with the Missouri Public Service Commission ("Commission") in File No. EO-2008-0134, and I assumed responsibility for the Quantitative Analysis, Integrated Resource Planning, Load Analysis, and Operations Analysis groups. In January 2008, as part of my role as Director of Corporate Planning, I assumed the additional responsibility for the Asset and Trading Optimization group supporting Ameren Missouri. In November 2011, I assumed additional responsibilities for the corporate Project Management Oversight and Market Risk Management groups. These groups oversee large utility capital projects and commodity risk management. In November 2014, I assumed responsibility for the Environmental Services department as Vice President of Environmental Services and Generation Resource Planning. The Environmental Services department develops environmental policy and provides environmental compliance support, which includes the areas of energy delivery, generation, and transmission. In March 2018, I assumed leadership responsibility for Ameren Missouri's entire non-nuclear generation operations and energy management function as Vice President of Power Operations and Energy Management. I assumed the position of Vice President and Chief Renewable Development Officer in December 2020. I was promoted in September 2022 to Sr. Vice President and Chief Renewable Development Officer. In September last year, my responsibilities were expanded to include development responsibilities for all Ameren Missouri generation and my title was changed to Sr. Vice President and Chief Development Officer, to reflect those changed responsibilities.

[1] MISO is now known as the Midcontinent Independent System Operator, Inc.

Q. What are your responsibilities in your current position?

A. In my current role, my focus is on implementing Ameren Missouri's supply-side resources plan which will consist of significant dispatchable generation and dispatchable storage assets, along with clean, zero fuel cost renewable energy generation. This includes providing leadership, oversight and coordination of all generation resource planning, as well as construction, and providing thought leadership on renewable energy policy at the federal, state and local levels; and strategic planning for all energy generation and environmental matters. I also continue to lead the Ameren Missouri environmental services team associated with the operation and maintenance of energy centers and the energy delivery system.

Q. To what testimony or issues are you responding?

A. I am responding to direct testimonies filed by three witnesses respecting the High Prairie Energy Center ("High Prairie"), Staff witness ("Staff") Claire Eubanks, Office of the Public Counsel ("OPC") witness Manzell Payne, and Midwest Energy Consumers Group ("MECG") witness Greg Meyer. Company witnesses Steve Wills and John Reed also respond to these testimonies respecting the issues they have raised about High Prairie.

Q. Please summarize the key points in your testimony.

- There is not a shred of evidence that supports the conclusion that the Company acted imprudently when it acquired High Prairie or in its operation of it. This makes the disallowances in this case inappropriate, and the Commission should summarily reject them.
- Utilities are not guarantors of production. When the Commission determines a facility is needed – as here – absent imprudence on the utility's part and harm

resulting from that imprudence – customers properly bear the risk that facility economics are not as favorable as hoped. Utilities do not bear such downside risks just as utilities are not entitled to the upside if facility economics turn out better than expected due to the Commission's regulation of utility rates.

- The Company continues to prudently and diligently work to identify and implement solutions that it expects will ultimately improve facility production and thus facility economics. But it has – and it must – pursue these solutions carefully in order to ensure that it complies with the law, that is, complies with its Incidental Take Permit ("ITP") issued by the United States Fish and Wildlife Service ("USFWS"), and that it does not proceed in a manner that could ultimately hinder its ability to improve production at night during bat season for the remaining roughly two and one-half years of the permit term.
- While the proposed disallowances should not be made at all, they are conceptually flawed and would be inappropriate and unfair even if customers had been harmed by imprudence.

II. THE PERTINENT FACTS

Q. Please explain the facts relating to High Prairie operations and the presence of the endangered Indiana bat.

A. The record in the certificate of convenience and necessity ("CCN") case where the Commission approved the Company's acquisition of High Prairie[2] demonstrated that it was well understood when the project was being developed, when the Company executed the Build Transfer Agreement ("BTA") committing it to buy the facility (subject to Commission approval

[2] File No. EA-2018-0202.

of the CCN), when the parties signed the CCN Stipulation,[3] and when the Commission approved the CCN, that Indiana bats nested in trees at or near the site of the facility. As I discuss further below, it was also well-understood by all parties and, ultimately, the Commission, that the presence of Indiana bats could result in use of higher minimum cut-in speeds at night during bat season. OPC in particular provided extensive testimony in the CCN docket regarding the presence of the Indiana bat, and OPC expressed concerns in that testimony about the proximity to the endangered bats (i.e., about the siting of the facility) in the CCN case. OPC signed the CCN Stipulation recommending approval of the CCN, which also bound OPC and other parties not to challenge the prudence of the decision. This is as clear of an indication as I can imagine demonstrating that OPC did not believe, based on the information at that time – which included their knowledge of the potential for wildlife-related issues – that acquiring the facility was imprudent. The same conclusion applies to the other parties to the Stipulation, including the Staff, all of whom affirmatively agreed that acquiring the facility was prudent, an agreement that was approved by the Commission. They all agreed to this knowing that the facility may need to be curtailed at night during bat season due to the presence of endangered bats in the area.

More specifically, it was well understood in the CCN case and at the time the Commission approved the Stipulation that migration of the bats from a large hibernaculum (an abandoned lime-kiln quarry/mine) near Hannibal meant such bats would fly at night in the warmer months at or near the site. This is exactly why the BTA called for the project developer to apply for and ultimately obtain an ITP from the USFWS.[4] That permit would allow the

[3] File No. EA-2018-0202, *Order Approving Third Stipulation and Agreement,* issued October 24, 2018.
[4] As discussed below, the ITP works in concert with a Habitat Conservation Plan ("HCP") agreed upon with USFWS.

facility to take, incidental to its otherwise lawful operation of the wind facility, Indiana bats and other endangered bats without experiencing adverse enforcement actions under the federal Endangered Species Act ("ESA"). ***_____

_____

_____

_____

_____

_____***

Q. What was the significance of the ***____*?**

A. The ***_____

_____

_____

_____

_____

_____

_____

_____

_____

____***

Q. Is that one of the cases the Company modeled and presented to the Commission?

A. Effectively, yes it did. In the CCN case, the Company modeled a case that closely approximated a case where the cut-in speed at night during the entire life of the facility

P

would need to be 6.9 m/s during those hours. It did so by using three different power price scenarios: low, probability-weighted average, and high (all from its 2017 Integrated Resource Plan ("IRP")). In 10 of the 12 cases, the facility was expected to lower the Net Present Value of Revenue Requirements ("NPVRR") for customers over its life. In fact, the modeling did not "take credit" for the ***_____*** purchase price reduction that the developer would have paid, meaning the NPVRR results in this worst-case would have somewhat understated the reduction in revenue requirement, even if this worst-case was expected at the time the decision was made. And while it is absolutely true that 10 of the 12 modeling scenarios suggested the financial benefits of operating the facility would exceed the related costs (on a present value basis, thus lowering the NPVRR), given the Company's need for Renewable Energy Credits ("RECs") to meet its Renewable Energy Standard ("RES") compliance obligations, reducing the NPVRR was not a necessary condition for the Company to establish the need for the facility, or the prudence of acquiring it.

Q. You noted that USFWS issued the ITP. How did its issuance come about?

A. In broad terms, its issuance was the product of a process that started with detailed conservation studies conducted before we signed the BTA, specifically including studies of Indiana bats in the area and studies of other species as well. Consultations and discussions between the developer and USFWS had also started well before Ameren Missouri signed the BTA. In fact, Ameren Missouri participated in discussions with the developer and USFWS starting in late December 2017 and continuing into early 2018, before the BTA was signed (on April 6, 2018). As provided for by the BTA, Ameren Missouri continued to participate in the discussions with USFWS, along with the developer, from that time until issuance of the ITP in May 2021. A central topic of those discussions centered on the exact

P

terms that would be appropriate for the facility under the companion Habitat Conservation Plan ("HCP").

Q. What is an HCP?

A. As the name implies, it contains the details on how the wind facility developer is going to take steps to minimize the take of endangered species at the site, how the site will be monitored during operation to assess and track endangered species take that does occur, and often, as here, terms relating to mitigation of habitat loss or impact the wind facility may cause. The HCP also contains terms for how the operation of the plant may need to be adaptively managed to protect the covered species if take occurs at a level that would be expected to exceed the level of take contemplated by the ITP. Specific to High Prairie, it required the developer to purchase and restrict 217 acres of forested bat habitat in Schuyler and Adair Counties in Missouri as a means to offset the unavoidable take of the covered species by providing support for those species, including the Indiana bat. The amount of protected and conserved habitat was agreed to, based upon the population level effects, which USFWS expects to occur in relation to the take the facility would cause due to its operations. An HCP works together with an ITP essentially providing the terms and conditions under which a wind facility like High Prairie, where there is a risk of taking endangered species, will operate to minimize the impacts of the facility. The HCP also sets out the adaptive management plans for the facility should the incremental take rate, or projected take of endangered species, exceed the expected take assumed by the HCP/ITP. The HCP works hand-in-hand with the ITP in that the ITP will generally point to the HCP and require that it be followed, if adaptive management becomes necessary.

Q. What is "adaptive management"?

A. Adaptive management consists of operational steps a facility takes to further minimize or eliminate the take of endangered species beyond a baseline operational state for the facility. For example, the ITP and HCP approved by USFWS contemplated baseline operations at night during the warmer months using a cut-in speed of 5.0 m/s. But if excessive take of endangered species were to occur using those baseline operations, the HCP called for incrementally increasing the cut-in speed (i.e., adapting to the conditions).

Q. Did Ameren Missouri have an expectation regarding the terms of the HCP when it signed the BTA?

A. As the example I just discussed indicates, it did. All the discussions with USFWS from before the BTA was signed until late 2020 indicated that the HCP (and any ITP issued) would likely require the facility to operate with a minimum cut-in speed of 5.0 m/s at night during the warmer months and, in a worst-case, it might need to operate during those periods with a minimum cut-in speed of 6.9 m/s. We didn't have all the details of the extent of post-construction monitoring that would be needed or the exact take expectations under an eventual ITP, but we did have strong reason to believe that any adaptive management that required cut-in speeds above 5.0 m/s at night during the warmer months would not require use of a minimum cut-in speed of greater than 6.9 m/s. This is why we presented the modeling runs described earlier that approximated the facility's then-believed worst-case scenario, that is, if operation at night during bat season using a 6.9 m/s minimum cut-in speed was necessary to

avoid unlawfully taking the endangered Indiana bat. And as noted, we presented those results to the Commission in the CCN case.[5]

Q. Specifically, why did you have strong reason to believe that this 6.9 m/s "worst-case" was in fact the worst case?

A. This was the information being made available to us by USFWS, by the developer's environmental and endangered bat conservation consultants, by our own conservation experts with experience in this area and based upon our discussions with other renewable energy developers with experience in these matters. Specifically, the Company had begun discussions in 2016 with renewable energy developers as part of the Company's request for proposal process, including about conservation issues which exist at all potential development sites. This is particularly true throughout large parts of Missouri north of the Missouri River. We learned as part of that process that the consensus among those developers, conservation consultants who worked in this area, including with USFWS, and the USFWS itself was that a 6.9 m/s cut-in speed would provide full avoidance for endangered bats, including Indiana bats. Therefore, at worst, we would get the production from the facility at night during the warmer months that using a 6.9 m/s cut-in speed would provide. This was first discussed by Ameren Missouri with USFWS in a December 2017 meeting where USFWS indicated its opinion that a 6.9 m/s cut-in speed would provide full avoidance. This meeting included the developer, the developer's conservation consultant, Ameren Missouri, and the

[5] Based on actual 8,760 time series wind assessments we received from the project developer after we presented production estimates using a 38.5% net capacity factor (which we assumed equated to use of a 6.9 m/s minimum cut in speed at night during bat season), the developer provided the Company a profile from consultant DNV reflecting DNV's estimated capacity factor using a minimum cut-in speed of 6.9 m/s at night during bat seasons. The DNV profile was slightly different (a 37.8% net capacity factor). Consequently, had we had the DNV profile we would have modeled a 37.8% net capacity factor for the worst case. The difference, in terms of megawatt-hours per year, would have been 23,640 MWhs, or approximately 1.2% less than we modeled.

Missouri Department of Conservation ("MDC"). We were also aware of published USFWS guidance from 2016 (which was cited to and discussed in the CCN docket), that indicated full avoidance would exist using a cut-in speed of 6.9 m/s.[6] Finally, in February 2019, USFWS provided comments on the developer's then-draft HCP, which provided for adaptive management at a cut-in speed of no higher than 6.9 m/s (i.e., contemplated full avoidance at that speed). While USFWS had comments on a number of aspects of the draft HCP, USFWS raised no concerns whatsoever, and suggested no changes to the 6.9 m/s cut-in speed. In fact, USFWS commented on the adaptive management outlined in the draft (to increase cut-in speeds above 5.0 m/s "up to 6.9 m/s if complete avoidance of take is needed"), stating "[a]t that level of take you would want to avoid additional risk in the summer season – curtail 6.9." The message from the recognized experts in the field was clear: at worst, we might have to operate at night during the warmer months using a 6.9 m/s cut-in speed, in which case we would get the production we presented to the Commission and the parties in the CCN case. We had absolutely no reason to expect anything else.

Q. MECG witness Meyer accused the Company of "disavowing"[7] that the facility might need to operate at night during bat season using a minimum cut-in speed of 6.9 m/s. First of all, did you "disavow" this possibility?

A. No, as the quote Mr. Meyer himself references, I indicated we thought it was unlikely, but I most certainly did not refuse to acknowledge that operation at 6.9 m/s might be required. Indeed, I was very explicit: if we had to operate at that minimum cut-in speed at night

[6] File No. EA-2018-0202, Terry J. VanDeWalle Surrebuttal Testimony, p. 32-33 ll. 15-14 (Discussing the USFWS Northern Long-eared Bat Interim Conference and Planning Guidance, USFWS Regions 2, 3, 4, 5 and 6v (Jan. 2016), which indicates that USFWS considered use of a 6.9 m/s cut-in speed to constitute full avoidance).

[7] File No. ER-2022-0337, Greg R. Meyer Surrebuttal Testimony, pp. 11-13.

during bat season we would expect a production loss of about 1.8% in terms of lower capacity factor.[8]

Q. Why did you believe it was unlikely that the 6.9 m/s minimum cut-in speed would be necessary?

A. As explained above, we believed 6.9 m/s would *fully* avoid take of Indiana bats and we expected to have an ITP that allowed some take, which we in fact do have. Consequently, we didn't think we would have to fully avoid any take at all, which logically meant we would not have to operate using the minimum cut-in speed of 6.9 m/s but would be able to operate at a lower minimum cut-in speed.

Q. MDC raised a number of concerns about endangered species in the CCN case, including about the Indiana bat. Did MDC indicate during this December 2017 meeting that 6.9 m/s would not provide full avoidance?

A. No. What I understood from this discussion, coupled with other discussions like those I noted above, was that the consensus of experts in the field and conservation regulators was that 6.9 m/s would provide full avoidance. It was on that basis that we signed the BTA, but also included the provisions I alluded to earlier that would compensate us (and ultimately customers) if an ITP could not be obtained, in which case based on all the information available to us would have meant that we would need to operate the facility at night during bat season using a 6.9 m/s minimum cut-in speed to fully avoid taking Indiana bats.

Q. Did that consensus prove to be incorrect?

A. Yes, unfortunately it did.

[8] File No. EA-2018-0202, Ajay K. Arora Surrebuttal Testimony, p. 7, ll. 1-2.

Q. Please explain.

A. Since Ameren Missouri has operated the facility, it has taken nine Indiana bats – all but two of which were taken in the spring/early summer of 2021 at a time when neither the Company nor anyone else understood, or had a reason to understand, that operating at a minimum cut-in speed of 6.9 m/s would not provide full avoidance. For that reason, starting in June 2021 we have conservatively changed operations at the facility at night during bat season while working to find mitigation solutions with the ultimate goal of improving energy production at night during bat season without violating our existing or a future ITP.

Q. What are the exact facts relating to bat mitigation steps taken at the facility?

A. As noted, we signed the BTA in April 2018, based upon our clear understanding from regulators and industry experts alike, that at worst we would have to use a 6.9 m/s cut-in speed at night from April to October when temperatures were above 50 degrees. Interactions with USFWS as part of the ITP/HCP process then continued, as did that understanding. On June 5, 2020, USFWS issued a Technical Assistance Letter ("TAL") to the developer to document compliance with the Endangered Species Act. As I understand it, this is a common step in USFWS's ITP/HCP process pending finalization and issuance of an ITP for a wind facility. Attached to my testimony as Schedule AA-R1 is a copy of the TAL. The developer requested the TAL because it would soon begin operating some of the facility's turbines as part of its testing and commissioning procedure as and when turbines were completed. The developer desired protection from any adverse action by the USFWS should it take an endangered species, in the form of the TAL, which provided that assurance so long as operations were conducted using the operating parameters specified in the TAL.

Q. Did the TAL reflect your understanding of USFWS's guidance regarding facility operations?

A. It did. The TAL confirmed that the developer would implement certain avoidance efforts specified in the TAL and advised the developer that "[o]perating the Project in accordance with these avoidance measures will result in insignificant or discountable take of federally listed species" (i.e., what we understood to be "full avoidance"). The avoidance measures prescribed by USFWS were to use a cut-in speed of 6.9 m/s from 30 minutes before sunset to 30 minutes after sunrise when the temperature exceeds 50 degrees Fahrenheit.

Q. What are the key ITP/HCP terms that are now in place regarding avoidance?

A. The May 14, 2021, ITP initially required use of a cut-in speed of 5.0 m/s from 45 minutes prior to sunset to 45 minutes after sunset when the temperature is above 40 degrees F. The HCP reflects more stringent adaptive management measures such that cut-in speeds higher than 6.9 m/s must be used depending on Indiana bat takes at the facility. [9] These terms clearly reflect what USFWS and we now understand: that is, that the 6.9 m/s cut-in speed does not provide full avoidance. That understanding was acquired due to our take of Indiana bats from April to June 2021. As such, at that time we took the conservative and prudent step of not operating at night until mitigation measures could be deployed.

Q. Please update the Commission on those mitigation measures the Company is taking.

A. As previously discussed, upon learning that using the minimum cut-in speed of 6.9 m/s would not provide full avoidance – necessitating complete curtailment of the site at

[9] Due to the take of Indiana bats as discussed earlier, the minimum cut-in speed during the period and conditions just discussed is now 8.0 m/s under the terms of the ITP/HCP.

night during bat season in 2021 – we immediately began working to find measures to mitigate the further take of Indiana bats with the goal being to improve production at night during bat season on a going forward basis while at the same time protecting bats and our ability to continue to operate and improve production during the remainder of the ITP term. Our work indicated three (under the current state of technology in the industry) possible mitigation measures existed. We pursued use of all three.

Q. What are they?

A. The three measures are Acoustic Deterrents, Active Turbine Curtailment, and Model-Based Curtailment. I describe each in greater detail below:

- Acoustic Bat Deterrents: These deterrents emit ultrasound (not perceptible to humans) that has been determined to be unpleasant to bats, thereby deterring them from flying near those sounds.
- Active Turbine Curtailment (sometimes referred to as "DARC" and as now employed, referred to as EchoSense): This is a control technology where the system actively controls turbine operations using site-specific inputs and software (control logic) integrated with the turbine manufacturer's (Vestas') control system. The system only releases turbines when wind speeds are above a specified minimum cut-in speed and automatically curtails operating turbines when acoustic listening devices detect bat calls within proximity to a given turbine(s). The system is designed to allow turbine operations when bats are not at risk of being struck by a turbine blade but to curtail when that risk exists.
- Model-based Curtailment: This technology is designed to use multiple years of acoustic files from the site along with meteorological data to produce computer

algorithms detailing under what conditions bats are most likely to be present or absent on the landscape. This information could be used to control the turbines such that they would only run under the most favorable conditions.

Q. How were each of these measures investigated and pursued?

A. We implemented a pilot project using Acoustic Bat Deterrents in 2022. We studied the pilot project, and the engineering team determined that although there is some success (i.e., bats do tend to avoid this sound area), bats were still observed flying relatively near the devices and that the reach of these speakers was not far enough to completely protect the turbine. The deterrents are still in place and are activated during bat season, providing some level of avoidance, but based on the limited success, a larger roll-out of the technology was not advanced.

We also began deploying Active Curtailment, i.e., EchoSense, in 2022 and have continued to test and deploy it since then. This is our primary control technology and is currently set to only release turbines at night during bat season when wind speeds are above 8.0 m/s, which is the minimum cut-in speed at which we are required by the ITP to operate at night during bat season given the prior Indiana bat takes I discussed earlier. EchoSense uses a system of acoustic listening devices placed systematically across the site to listen for bat calls. It then uses control logic to shut down the turbines in the area of a bat call for a specified amount of time (currently set at 30 minutes) until being released (unless another call is heard which starts another clock (currently set at 10 minutes)).

Finally, our consultants continue to work on development of a Model Curtailment System which could be deployed at some point (likely operating it as a compliment to EchoSense) to further enhance production. This technology uses multiple years of acoustic files

from the site along with meteorological data to produce computer algorithms detailing under what conditions bats are most likely to be present or absent on the landscape.

Q. Based on your answer to the prior question it appears that the primary technology being deployed at this time is EchoSense. Please elaborate on its testing and use to-date.

A. We have operated EchoSense to various degrees in each of the years 2022 through 2024. The limited deployment of the system began in August 2022, when we released one turbine under EchoSense's control, increased that to five turbines in September of that year, and then five more in October. We also began using a "zoning" concept in September of 2022 where a bat detection in one zone would not result in curtailment of all turbines at the site. We experienced no bat takes during that early testing of the system. Our plan for 2023 was to start with 20 turbines under EchoSense's control at the start of bat season and to increase that total to 90 turbines in 2023, with three different control zones. We operated 20 turbines using EchoSense starting April 1 of that year. However, starting June 27, 2023, software issues resulted in EchoSense not properly curtailing certain turbines even though bats had been detected. As a result, we paused nighttime operations until August 4, after the software issues were addressed, releasing 32 turbines at night using EchoSense at that time. We then increased the number of operating turbines to 50 (on September 18) but paused the site at night starting September 26 (through the end of bat season, October 31) when a female Indiana bat was found at an operating turbine. This pause was consistent with taking conservative actions to preserve our ability to operate in the future within ITP requirements while we examined whether software or other issues might have led to the bat take on September 26. Once we examined the data and consulted with our experts and USFWS, our plan for 2024 was to release 50 turbines under

EchoSense at the start of bat season and to increase to 75 on May 29 (we released an additional three turbines on June 3 and planned to increase to 91 turbines on June 15).

Q. How did implementation of this plan in 2024 proceed?

A. The Company released the 50 turbines to operate using EchoSense at the start of bat season and increased that to 78 by June 3. However, the collapse of Turbine G-08 on April 28, 2024, required a sitewide curtailment (having nothing to do with conservation issues but to ensure site safety) from April 28 to May 15, 2024. This meant that we were able to operate the 50 turbines using EchoSense for most of April and the latter half of May but, and, as noted, by June 3 we had released a total of 78 turbines (but with deployment and testing interrupted for just over two weeks after the G-08 collapse). Unfortunately, a deceased Indiana bat was discovered at an operating turbine on June 10 which led us to cease operations at night in certain areas around Indiana bat maternity colonies because under the ITP, had we taken one more female Indiana bat we may have had to permanently shut down operations in those areas for the balance of the ITP's term. We were able to release 48 of the previously released turbines on June 11, 2024. There were no Indiana bat takes after their release. However, Turbine B-11 collapsed on August 24, 2024, forcing another safety-related curtailment of the site and again interrupting use and testing of EchoSense. Since the safety-related curtailment of most of the site continued for the rest of the 2024 bat season, we were unable to deploy more turbines using EchoSense and could not test the system further for the rest of 2024.

Q. What have you been able to determine from the testing and deployment of EchoSense thus far, despite the recent operational events that appear to have substantially interrupted the progress you planned to make in 2024?

A. We are seeing progress, and we will continue to diligently test and deploy EchoSense as the operational circumstances at the site allow. We will also prudently pursue further mitigation to the extent possible. In this regard, we continue to utilize industry research and development contacts to analyze if additional enhancements would be beneficial to the site.

Q. It appears that had the turbine collapses not occurred you would have been able to test and deploy EchoSense on a larger scale and would have been able to improve production at night during bat season. You also noted earlier that Ameren Missouri has acted conservatively in terms of its nighttime operations during bat season. Would you please provide the Commission with information on why the Company has proceeded conservatively as it works to improve nighttime production?

A. Yes. To understand why we have operated conservatively, including with our deployment of mitigation measures, it is important to understand the workings of the ITP and how it impacts our efforts to improve production at night during bat season. Under the current ITP, the term of which runs from May 14, 2021, to May 14, 2027, the Company may incidentally take a total of 72 Indiana bats (on average, 12 per year). The ITP measures the "take" in two ways. The first is based on actual bat carcasses found at operating turbines during post-construction monitoring required by the HCP, and the second is based on an estimation process, which uses statistical modeling to estimate actual take using post-construction monitoring data. Ameren Missouri's consultants utilize a software product, called "evidence

of absence" ("EOA") to perform statistical calculations and estimate total bat take for the site based on a number of site-specific parameters. The EOA measure simply recognizes that searchers will likely not find every single taken bat before the carcasses deteriorate or are removed from the area by, e.g., other animals.

Given the early takes in 2021 and the EOA formulas employed at that time, the 7 Indiana bats that were found translated to a EOA estimate of 63 Indiana bats taken in 2021. Under the ITP, this meant that the Company, during year 1 of the ITP term, was already deemed to have taken nearly 90% of the total Indiana bats it could incidentally take under the ITP for the entire 6-year ITP term. After 2023, when we took just one additional Indiana bat, the way the formula worked (it depends on, for example, searcher efficiency estimates) produced a similar EOA estimate after 2023, deeming (according to the algorithm) that the Company had taken 61 Indiana bats less than two years into the permit term -- just 11 below the total six-year permit limit. These ITP constraints dictated that we proceed with caution and that the prudent course of action was to slowly and methodically roll out mitigation technologies without increasing Indiana bat takes to or above lawful limits, which may have required a full shutdown at night during bat season for the entirety of the remaining 5 – 6 years of the ITP term and prevented any production improvement at night during bat season. While we have since worked with the USFWS to refine the formula underlying the calculation, which allowed a revision of the 2023 EOA estimate down to 45 bats (creating "headroom" for 27 more Indiana bats to be taken through May 14, 2027), with more than half of the permit term remaining at this time it remains important to carefully but diligently work to implement measures to improve production at night during bat season but to do so in a manner that will not cause the Company to hit permit limits prior to the end of the ITP term so that production and technology testing can be maximized

over the 6-year ITP term. Compliance with the current permit also positions the Company more favorably for a long-term ITP under which we currently expect to have greater latitude and significantly higher permitted take limits, all to the long-term benefit of the facility's production and ultimately the Company's customers.

Q. I take it you disagree with the notion that the Company has made decisions post-the acquisition of the facility that have reduced production below what it otherwise would have been?

A. I most certainly do disagree with such a notion. I should note that the Staff has implied that the Company somehow has not responded appropriately to the unfortunate fact that use of a minimum cut-in speed of 6.9 m/s does not provide full avoidance, including when Staff witness Eubanks attempted to defend her adjustment in File No. ER-2022-0337 by vaguely pointing to "risks brought on by the Company's own decisions."[10] Yet no party – in that case, in File No. ER-2021-0240, or in this case, points to a single fact that establishes that the Company has in any way acted imprudently with respect to any of the decisions it has made respecting operating High Prairie once it became apparent that it could not fully avoid Indiana bats using a minimum cut-in speed of 6.9 m/s. Does Staff contend that we acted imprudently when we decided to curtail at night during bat season in 2022 after we had actually found seven Indiana bats (by early June of a 6-month bat season that runs from April to September) when on average the ITP allowed us to take only 12 Indiana bats per year and when the EOA for 2021 indicated a take nearly 90% of the allowed take for the entire 6-year ITP term? There is no such evidence of record anywhere supporting such a claim. Surely the parties do not think it would have been a good idea to continue to operate at night in 2021 during bat season and risk a

[10] File No. ER-2022-0337 Claire E. Eubank, P.E. Surrebuttal Testimony, p. 23, ll. 1-2.

permanent inability to operate at night during bat season at all through May of 2027. Surely that would be imprudent. Does Staff contend, given the ITP terms, that the Company acted imprudently in carefully testing and deploying mitigation technologies and in adjusting planned deployments when additional bat takes have occurred post-2021? Again, there is no evidence to support such a claim.[11] When asked about this in the Company's last rate case, Staff witness Eubanks repeatedly mentioned the Company's decisions to voluntarily curtail at night once it became apparent that operation at a minimum cut-in speed of 6.9 m/s would not provide full avoidance but when asked, she was completely unable to provide any facts that if true would establish that those decisions were imprudent.[12] In fact, she agreed that the adjustment she was proposing "has nothing to do with whether or not those decisions [to curtail] were imprudent or not." Instead, she said, the adjustment is because "it [High Prairie] is not operational at night from April to October and that has a pretty big impact on customers."[13]

The bottom line is that the Company, USFWS, the experts, Staff, OPC, and MIEC were all mistaken about the minimum cut-in speed at which we could operate with full avoidance and not take endangered bats. But once the mistake became apparent, the Company has done and continues to do all that it can to mitigate the impact of that reality on production at night during bat season. And that is and was the only thing Ameren Missouri could do in this situation. The Company isn't a guarantor of production, even if lower production "has a pretty big impact on

[11] No party in any case, including this one, has explicitly based its adjustments on a claim that the Company's operation of the wind farm once the bat takes occurred has been imprudent. Dr. Geoff Marke for OPC explicitly testified in connection with File No. ER-2022-0337 that the Company has acted prudently when it has elected to curtail once it became apparent that use of a 6.9 m/s minimum cut-in speed would not constitute full avoidance. File No. ER-2022-0337, Dr. Geoff Marke Deposition, p. 47, ll. 3 – 18.
[12] See Schedule AA-R2, attached to my testimony, which is an excerpt from Ms. Eubanks' deposition in that case.
[13] Id.

customers" just as the Company isn't a beneficiary of higher production, even if that too would have a "pretty big impact [in the form of lower rates] on customers."

III. RATEMAKING ADJUSTMENTS SHOULD NOT BE MADE

Q. OPC, Staff, and MECG all propose different ratemaking adjustments that appear to be entirely grounded on arguments that essentially amount to a desire that the Company – regardless of fault – become a guarantor of a certain level of production at High Prairie. How do you respond?

A. First, I would point out that these parties' positions continue to reflect a push for the same result: to force the utility to guarantee the downside when things don't go as well as originally hoped, even though the utility does not get to keep the "upside" when things turn out better than originally hoped. Company witness John P. Reed addresses in detail the fundamental and critical flaws in this line of thinking and the inappropriateness of taking any ratemaking actions based on it in his rebuttal testimony.

Q. As you noted, Mr. Reed addresses the ratemaking and policy reasons that the requested adjustments should not be made. What in particular stands out to you as you evaluate these parties' positions?

A. I want to be clear that I fully understand that the Company has a monopoly service territory and thus is properly subject to regulation by the Commission. I also fully understand that the Commission's regulation "stands in" for competition for customers that does not exist given that monopoly. But having a monopoly brings both benefits (in general, a captive customer base within the service territory) and burdens. A key burden --- one that is fair as long as the regulatory construct is applied as intended – is that utilities are effectively capped on the returns they can earn. That is, if the utility is able for short-term periods to realize earnings that

would produce above-cost-of-capital returns, its rates are going to be reduced long-term so that over time, it will not be allowed to capture higher returns that, if it were in an unregulated, competitive business, it could keep. To operate under such a cap, which if properly applied is fair given the regulatory construct, while at the same time being subjected to guarantying outcomes for customers strikes me as particularly egregious, unfair, and counter to the entire regulatory compact.

As I discussed above, we knew – and we presented this to the Commission so it too knew – that the facility might have to operate at night during the bat season using a minimum cut-in speed of 6.9 m/s, that is, it may have to curtail operations due to conservation issues, and we all knew what production would have been expected to be under those circumstances. We knew what production to expect because as is true with all major wind facilities to be built, we had information that at that cut-in speed the "P50"[14] production value was expected to yield about a 38.5% net capacity factor (as noted earlier, a more detailed wind assessment from DNV Energy USA refined that estimate to 37.8%). And we knew the USFWS believed that the 6.9 m/s cut-in speed would provide full avoidance (so that the 38.5%/37.8% net capacity factor estimates should constitute the "worst case"), even given the known bat activity at the site – activity again known by all participants in the CCN case. There is not a shred of evidence that Ameren Missouri should have known better, was imprudent for agreeing to acquire the facility under the BTA, or has imprudently operated the facility since it acquired it. Indeed, two of the three parties now proposing revenue requirement adjustments (Staff and OPC) agreed that acquiring the facility under the BTA was prudent, and the founding and leading principal of Mr. Meyer's firm (Maurice Brubaker, representing the Missouri Industrial Energy Consumers

[14] The "P50" level means, according to the modeling, that the facility is expected to produce above or below this level 50% of the time.

("MIEC") in the CCN case) raised no concerns about the acquisition. Indeed, his client, MIEC, also agreed that the acquisition was prudent. But now that production so far has not lived up to expectations since everyone was incorrect about what cut-in speed it would take to provide full avoidance, the named parties urge the Commission to make Ameren Missouri a production guarantor. Yet I have no doubt that had production exceeded expectations, e.g., had in actual operation the Company been able to operate at a lower minimum cut-in speed at night during bat season than at 6.9 m/s and thus achieve higher capacity factors, none of these parties would have agreed to let Ameren Missouri keep the "excess profits." Instead, the parties would have welcomed the higher revenues that would have flowed through to customers' benefit via the Renewable Energy Standard Rate Adjustment Mechanism ("RESRAM"). I agree that all such benefits should pass through the RESRAM, but that gate should swing both ways.

The bottom line is that whatever the other parties want to call it – an "adjustment" based on a claim that the facility is not fully "used and useful," or a "performance" adjustment -- what they are all asking the Commission to do is use hindsight. They are asking the Commission to make a decision based on facts unknown to the Company or any other stakeholder at the time the decision to acquire High Prairie was made, all in an effort to deny the Company recovery of legitimate, prudently incurred RES compliance costs. And they are doing so in the absence of any evidence to support a conclusion that the Company acted imprudently. Such a position, under whatever name is given, is at war with the well-established prohibition on judging a utility's decision using hindsight. It is also, in its effect, based on the discredited "economic" used and useful standard addressed by Mr. Reed and seeks to impose the downside on the Company when the Company could not keep the upside.

Q. Do you have any other observations about the inappropriateness of forcing a utility to be a guarantor of performance for an asset the Commission (and the parties at the time) agreed was needed absent fault on the utility's part?

A. Yes. In CCN cases, it is often the case that other parties challenge the need for a new generating plant.[15] For example, Staff's sworn testimony in File No. EA-2022-0245, involving the Company's Boomtown solar facility CCN request, and in File No. EA-2022-0328, involving Evergy Missouri West's Persimmon Creek wind facility CCN request, claimed those facilities were not needed and in taking that position, Staff agreed that utilities are not guarantors of the performance of a generating facility when the facility is needed. Staff was right – they aren't – and when it suited Staff's argument in those case Staff admitted it. Specifically, Staff witness J Luebbert's Rebuttal Testimony in File No. EA-2022-0245 contains an extended discussion of why the Commission should view the *Tartan* factor of "need" in the manner advocated for by Staff. One of the pillars of Company witness Luebbert's argument is that when "need" meets Staff's claimed definition of the term, there is no risk that customers will pay rates that are higher than they should be because if the utility needs the facility to provide service, customers do – and indeed should – pay rates based on revenue requirements reflecting the full revenue requirement associated with that needed facility. In this regard, witness Luebbert states:[16]

> When supply-side investments, such as the Boomtown Solar project, of an IOU are included in the company's base rates, the risk of cost recovery shifts from the shareholders of the IOU to the captive ratepayers. At this point, shareholders can anticipate recovery of and return on[19] the initial investment. **If the assumptions relied upon to make the decision to build or purchase the resource prove to be incorrect or inaccurate**, ratepayers

[15] The need for High Prairie was not challenged.

[16] File No. EA-2022-0245, Rebuttal Testimony of J Luebbert, pp. 8 ll. 9-21, p. 9 ll. 11-17. Using oftentimes exact or nearly exact language, witness Luebbert makes these same statements in Rebuttal Testimony in File No. EA-2022-0328.

> will continue to pay for the resource throughout the life of the asset through Commission approved rates **while shareholders are shielded from the negative consequences of management's decision.**
>
> Q. How does the demonstration of need relate to the economic risks of the IOUs and its ratepayers?
>
> A. When any utility is building or purchasing an electric generating asset, **there are risks inherent in the decision**. When the asset addition is necessary to serve the load of ratepayers, there is a risk that costs exceed the revenues from the asset**. Once the utility clearly establishes that the resource addition is necessary to meet the needs of ratepayers**, a decision must be made by the IOU to ensure that the utility can continue to serve the customer's load. Then the economic efficiency of the decision and promotion of the public interest of the decision to build or purchase a specific asset is necessary to ensure that the choice of asset is sound. **Once the need is established and the project is determined to promote the public interest based upon the best information available at the time, it is reasonable for the ratepayers to assume the risk that the project selected is uneconomic. This assumption of risk is justified because absent the load of the ratepayers, the utility would not be obligated to invest in additional resources.**[17]
>
> (Emphasis added in bold; footnotes in quotes omitted)

Q. Why did Ameren Missouri need to invest in High Prairie?

A. Ameren Missouri needed High Prairie because it was statutorily mandated, based upon the load of its customers [ratepayers], to produce sufficient RECs to meet the Missouri RES.

Q. Was the need to construct High Prairie to meet its RES requirements established in the CCN case?

A. Absolutely. As noted, need was not challenged and indeed if the facility was not needed the Commission would not have granted the CCN. Indeed, Staff testified in the

[17] *Id*., p. 9 ll. 18-21 thru p. 10 ll. 1-10.

CCN docket that "Ameren Missouri has shown a need for the project, and should be granted a CCN.…"[18]

Q. Was there a risk that High Prairie's production might be lower than predicted when the Commission granted the CCN?

A. Yes, as discussed above, everyone knew that endangered bats were present at the facility and that curtailment at night during bat season might be necessary. What we didn't know is that curtailment above 6.9 m/s would become necessary but as with any generation project, there is always a risk that things one doesn't and can't know may negatively impact the project's economics once it is in actual operation. Yet here we are with parties seeking to reduce our revenue requirement by tens of millions of dollars because, as Mrs. Eubanks has put it "the reason behind it [Staff's adjustment] is because there's not as much generation as expected."[19] Mr. Meyer is similarly explicit, basing his adjustment on "underperformance," that is, generation at less than a 38.5% capacity factor, which is roughly what was expected had use of a minimum cut-in speed of 6.9 m/s allowed full avoidance.[20] OPC witness Payne similarly points to underperformance and to nothing else.[21] All of these parties positions run completely counter to the very clear statement put forward by Mr. Luebbert in the EA-2022-0245 case that "[o]nce the need is established and the project is determined to promote the public interest based upon the best information available at the time, it is reasonable for the ratepayers to assume the risk that the project selected is uneconomic."

[18] File No. EA-2018-0202, Surrebuttal Testimony of Cedric Cunigan, p. 3, ll. 15-16.
[19] File No. ER-2022-0337, Claire Eubanks' Deposition, p. 229, ll. 22-23.
[20] Mr. Meyer is quite open about the fact that he is not contending that Ameren Missouri should have known that operation at a minimum cut-in speed of 6.9 m/s would not fully avoid taking Indiana bats and that his adjustment is not based on any imprudent or unreasonable decisions by Ameren Missouri ("I'm not making any contention that they [Ameren Missouri] should have known that 6.9 would not still take bats"; "My adjustment is not based on that [that Ameren Missouri has made any imprudent or unreasonable decisions]." Greg Meyer Deposition, File No. ER-2022-0337, p. 7, 9-11, p. 7, l. 21 to p. 8, l. 3.
[21] Payne Rebuttal Testimony, p. 2, referencing that High Prairie's operations had caused it to "underperform."

Q. How would you respond to a contention that if the Company's rates (base rates, RESRAM recoveries) are not reduced the Company will have no accountability to regain production at High Prairie?

A. My response would be twofold. First, utilities who act prudently are entitled to have their rates set based upon their actual cost of service. They aren't guarantors of generation production or otherwise. When it comes to generation additions, they come to the Commission, and they present the evidence based on what they know or reasonably should have known at the time. If the Commission approves the facility, its performance is what it is, subject to imprudent operational decisions that result in harm to its customers.

Second, we have a tremendous incentive to regain production because if we simply sat on our hands in the face of now knowing that use of a cut-in speed of 6.9 m/s did not provide full avoidance instead of doing what we are doing – diligently pursuing measures to improve production – there is no doubt that the parties would pursue claims of imprudence against us.

Q. If these parties' recommendations were adopted, would shareholders be shielded from the negative consequences caused by the need to curtail operations at night during bat season?

A. Obviously not. Given Staff's proposal,[22] the Company would in effect under-recover its revenue requirement by $27.1million annually.[23] If OPC's position were sustained, forcing the Company to guarantee production would manifest itself by forcing the Company to write off between $142 million and $216 million of its rate base, even though neither OPC (nor

[22] As Company witness Wills discusses, it is clear from an overall review of Staff's direct case and its prior sworn testimony on the High Prairie issues that Staff is proposing a $27.1 revenue requirement reduction in this case. Company witness Steve Wills discusses the details of the various proposed adjustments in his rebuttal testimony.
[23] File No. ER-2024-0319, Claire M. Eubanks P.E. Direct Testimony, p. 5. Ll. 1 – 10.

any other party) has proven or even alleged any fault on Ameren Missouri's part.[24] Mr. Meyer's adjustment would effectively force an under-recovery of prudently-incurred RESRAM costs by creating a one-way (in customers' favor only) tracker that would require the imputation of whatever dollars it takes in each RESRAM adjustment to mimic (guaranty) production at a 38.5% capacity factor.

To put it another way, making the proposed adjustments would mean that the risks that Staff has previously sworn are appropriately borne by "captive ratepayers" once the Commission grants a CCN– as it did in the case of High Prairie -- would in fact be illegitimately shifted to and borne by Company shareholders.

Q. Hasn't Staff claimed that it is simply "providing an unbiased recommendation"?

A. Ms. Eubanks made that claim in our last rate review in connection with "questioning" the reasonableness of "decisions that have resulted in lower generation," i.e., the implied claims that once we realized we needed to curtail at night during bat season we somehow made poor decisions.[25] I addressed earlier why there is absolutely no evidence to back-up such a claim. The facts show that Staff's recommendation is anything but "unbiased." Staff properly recognizes that the Company has prudently pursued and invested in mitigation technologies in an effort to regain long-term production else Staff would presumably seek to "shift the risk" that such investments would be needed to the Company. In my opinion, this is because it is plain that it was prudent to pursue those investments which are clearly a consequence of the fact that using a minimum cut-in speed of 6.9 m/s does not provide full

[24] Such a rate base write-off would force a like reduction to Ameren Missouri's (and Ameren Corporation's) earnings in 2025 and as Mr. Reed discusses, create serious investor consequences and ultimately customer harm.

[25] File No. ER-2022-0337, Claire M. Eubanks, PE Surrebuttal Testimony, p. 22 ll. 19-21

avoidance. But when it comes to another consequence of that fact, the consequence that we have had to curtail at night during bat season, Staff takes a totally different stance. What's the difference? In effect, Staff's protestations to the contrary notwithstanding, Staff is using hindsight to question our acquisition of the facility in the first place and without saying so (see the CCN Stipulation), is implying that the curtailments are our fault – that we were imprudent – and thus deserve to bear the consequences.

Q. What other concerns exist with Staff's proposal?

A. As Mr. Wills' rebuttal testimony discusses, Staff proposes a base revenue requirement disallowance that will persist until rates are next reset. This guarantees customers $27.1 million annually despite there being no fault on the Company's part. But customers would not only receive the $27.1 million annually, they will also receive every dollar of incremental revenues (via the RESRAM) that the Company is able to produce above revenues that would be generated based upon the low level of production assumed by Staff to calculate Ms. Eubanks' $27 million adjustment. As Mr. Wills discusses, this approach would both give customers an annual $27.1 million base rate reduction and would in effect give them (double count) the same revenue stream used to calculate the $27.1 million if production is regained at the facility. Such a result is conceptually flawed and would plainly be wrong.

Q. You have provided specific comments on Staff's and Mr. Meyer's proposed adjustment. Please further address OPC witness Payne's approach.

A. OPC witness Payne's approach suffers from the same key flaw found in Staff's and Mr. Meyer's approaches because it makes the Company the guarantor of a certain level of production absent any fault on the Company's part respecting the level of

production that has actually occurred. Moreover, Mr. Payne's approach is conceptually flawed.

Q. Why?

A. Mr. Payne takes the "the utility is a guarantor of performance without fault" contention even further than Staff and Mr. Meyer. The former parties base their flawed guarantor argument on bat curtailments. However, Mr. Payne seeks to punish the Company not just because it and everyone else were mistaken about use of a minimum cut-in speed of 6.9 m/s allowing full avoidance but also because three turbines collapsed during 2024 because of manufacturing defects that were not in any way the Company's fault.

Q. Please explain.

A. On April 27, 2024, wind turbine G-08 collapsed. For safety reasons, and after conferring with the turbine manufacturer and service-provider, the entire site was prudently paused for 18 days until we were satisfied that the collapse did not indicate a larger and unsafe condition at the site. Since then, two additional wind turbines (B-11 and C-12) also collapsed ***

P

_____*** For safety reasons, a majority of the facility's turbines have been paused for a significant number of hours in 2024 as a result of the collapses. The high end of Mr. Payne's proposed adjustment, a 38% rate base disallowance, not only calculates the percentage of hours through November 18 of this year (the date he chose in advance of filing his direct testimony) that the turbines at the site were curtailed for bat mitigation reasons but also adds to that percentage the hours turbines were paused because they could not be safely operated due to the turbine collapses. To repeat, *none* of these reduced operations are grounded in any fault on the Company's part, on any imprudence, nor has anyone even claimed the Company has acted imprudently or is any way at fault.

The high end of Mr. Payne's proposed adjustment, a 38% rate base disallowance, not only calculates the percentage of hours through November 18 of this year (the date he chose in advance of filing his direct testimony) that the turbines at the site were curtailed for bat mitigation reasons but also adds to that percentage the hours turbines have not operated because they could not be safely operated due to the turbine collapses. To repeat, *none* of these reduced operations are grounded in any fault on the Company's part, on any imprudence, nor does anyone even claim the Company has acted imprudently or is any way at fault.

Q. Are there other problems with Mr. Payne's approach?

A. Yes, while his calculation should not be "fixed" – the premise is fundamentally flawed since the Company has not acted imprudently or is any way at fault, his calculation of the part of the rate base that should be disallowed is flat out wrong. Mr. Payne's calculation assumes that because the Company has prudently chosen not to operate

P

at night during bat season for certain of the hours in 2024 and for 25% of the 8,760 hours in 2023, this means that the facility's bat curtailment-related production reductions match the percentage of hours the facility was curtailed related to bat mitigation. This is not correct, as Mr. Wills' rebuttal testimony details. Indeed, this crude approach fails to account for the fact that the wind resource at High Prairie is significantly more robust in the late fall, the winter, and in the early spring than it is in the warmer – and often hot and muggy -- months of the year when the wind just doesn't blow very much at times. Failing to account for this means his 25% to 38% values are overstated.

IV. OTHER RELEVANT CONTEXT REGARDING THE PROPOSED HIGH PRAIRIE ADJUSTMENTS

Q. Stepping back, what do you make of the parties' positions regarding High Prairie in this case in light of positions taken in prior rate reviews and in the CCN case?

A. It appears the other parties are abandoning prior contentions and in one instance switching witnesses on the topic. But the end game is the same. The parties are attempting to convince the Commission to turn the Company into a production guarantor for a facility even though those same parties agreed that High Prairie was needed and that it was prudent to acquire the plant

Q. On what do you base this contention?

A. Regarding Staff and Mr. Meyer, the crux of their argument is that the Company's evidence was that the worst case was about a 38.5% capacity factor if bat mitigation was needed, that they "expected" to get that level of production, that they aren't getting it, and that the Company should be forced to bear the blame. In 2024, the facility's production has been reduced far more due to the safety-related curtailments from the turbine collapses than it

has been related to bat mitigation, but they (properly in this case) appear to recognize that there is no evidence that the turbine collapses are in any way the fault of the Company so they propose no adjustments related to them; they haven't tried to force the Company to guaranty production that isn't happening because of turbine defects the Company did not cause. The inference is that the true basis of their production guaranty positions are that they blame the Company (contend it has acted imprudently without any basis for doing so) for the fact that use of a cut-in speed of 6.9 m/s would not provide full avoidance of Indiana bats, never mind that the USFWS and other experts indicated that it would, but for obvious reasons (the CCN Stipulation) they don't want to admit it. Staff doesn't want to admit it at least in part because blaming the Company violates Staff's agreement not to claim imprudence. Mr. Meyer doesn't want to admit it probably because he recognizes he can't actually prove fault.

Q. What about OPC?

A. In my opinion, any reasonable person can easily see through OPC's position. OPC now has the benefit of hindsight, OPC has changed its tune (when it agreed that acquiring the facility was prudent) and now wants to Company to pay. OPC can't call its position for what it really is – a claim that the Company imprudently acquired the facility – because it agreed not to do so.

Q. On what do you base your opinion in this regard?

A. I base my opinion on OPC's positions in the CCN case and in File Nos. ER-2021-0240 and ER-2022-0337 (the Company's last two electric rate reviews). In those prior rate cases, OPC's then witness on High Prairie, Dr. Geoff Marke, presented various maps and charts, generally suggesting that the site is a bad one for a wind facility, and more or less said to the Company, "I told you so." That this was the crux of OPC's position in those cases is

established by the well documented initial objection to High Prairie reflected in Dr. Marke's CCN case testimony and his later rate review testimony. In the CCN case, Dr. Marke initially objected to the issuance of a CCN for the facility, but he had a fallback position: if a CCN were to be granted, the Commission should require that an ITP be obtained and/or use a cut-in speed *of 6.9 m/s at night during the warmer months*. His primary objection to acquiring the facility at all was due to the presence of the Indiana bat. His fallback position, however, demonstrates that Dr. Marke himself was of the opinion that using a minimum cut-in speed of 6.9 m/s would provide full avoidance so that, we all incorrectly understood, Indiana bats would not be taken. Those positions – taken on behalf of OPC – make it impossible for OPC to step out from behind the shadows now and claim imprudence on the Company's part for believing the same thing. As for Dr. Marke's objection to the facility in its entirety, OPC unequivocally agreed that it was in fact prudent for Ameren Missouri to acquire the facility under the BTA: "The Signatories agree that they shall not challenge the prudence of the decision to acquire the facility under the terms of the BTA."[26] While the signatories could challenge "the design, construction costs, interconnection costs, and all other project related costs," neither OPC's prior positions nor its position now have anything to do with design, construction, interconnection, etc. In fact, the CCN case also established well-defined in-service criteria to place High Prairie in service, and no party, including OPC, has challenged that the High Prairie facility is in fact in service. There is other evidence that the basis for OPC's position in the prior rate cases and here rests on its hindsight conclusion that the situation is the Company's fault, i.e., that the Company has acted imprudently.

Q. To what do you refer?

[26] File No. EA-2018-0202, CCN Stipulation and Agreement, ¶12, filed August 17, 2018, p. 3.

A. In his testimony in File No. ER-2022-0337, Dr. Marke pointed to documentation from a non-governmental organization ("NGO")[27] first published in 2019[28] (well after we had committed to the project under the BTA) that describes the organization's recitation of what it contends are "best practices" for siting wind-generating facilities.

The guidance, which was not even issued when the decision to construct the facility under the BTA was made, is not a "you may put a wind facility here but not here" document, as it states in describing the purpose of the maps that Dr. Marke points to:

> [the purpose of the map is] to serve as an important source of information to support screening early in the project siting process. It can be used to inform application of the WEGs [USFWS 2012 Land-based Wind Energy Guidance], specifically Tier 1 and Tier 2 evaluations. The map is not a "go/no-go map." Areas in white - those that have relatively low conservation value - are not "go areas" just as areas that are shaded are not "no-go areas." The map can be used as one source of information to inform Tier 1 and Tier 2 analyses, but it should not be the only source of information used. It was not intended to serve as a substitute for the WEGs, but rather used in conjunction with other appropriate information on habitat and species. The map does not replace the need to consider the data and information outlined in the WEGs, consult with state and federal wildlife agencies, or conduct detailed site-level analyses of impacts. In addition, there are other social and cultural factors that may make utility-scale renewable development inappropriate in some sites. If, however, proposed wind projects are located in an areas of high conservation value on the Site Wind Right map, we suggest a much more cautious and transparent approach to the WEGs. Specifically, we recommend that projects proposed in these areas make the following information available to state and federal wildlife agencies and, to the maximum extent possible, to the public: 1) results of the Tier 1 and Tier 2 evaluations, specifically whether projects are anticipated to have a low, moderate, or high probability of significant adverse impacts to wildlife and habitat; 2) how determinations were made about the significance of impacts; and 3) proposed measures for mitigating impacts to projects that will have a moderate or high probability of adverse impact to wildlife and habitat (USFWS 2012a).[29]

[27] The Nature Conservancy. Dr. Marke stated the publication was from 2021 but it was issued in 2019.
[28] Dr. Marke cited to the 2019 version in his File No. ER-2021-0240 Direct Testimony and cites to the 2021 version in his Direct Testimony in this case. Regardless, the substance of both reports is the same and as noted, the reports were not even issued until after we were already committed to the project.
[29] From the Nature Conservancy document cited by Dr. Marke in footnote 12 of his direct testimony, page 8, in the section entitled "How to Use the Site Wind Right Map."

The references in the above-quote from the Nature Conservancy document to "Tier 1 and Tier 2 analyses" point to the USFWS's 2012 Land-based Wind Energy Guidance. As testimony in the CCN docket indicated, development of the project was done using that USFWS guidance. As I noted, while the Nature Conservancy's guidance was not even available when the decisions about this project were made, we did just what the guidance said we should do when developing a project in a more sensitive area from a conservation perspective. We took a transparent and more conservative approach to conservation issues. Among other things, we (a) required the developer to obtain an ITP using a related HCP, or else face a significant financial penalty; (b) worked openly with the UWFWS; (c) transparently told the Commission (and the parties) to the CCN case that we would have to mitigate for Indiana bats by operating at certain times at a cut-in speed higher than the design capability of the turbines; and (d) presented direct evidence that it was possible that we would have to operate in what was then understood to be the worst case – using a cut-in speed of 6.9 m/s at night in the warmer months, which would reduce production.

Sure, it is true that Mr. Payne isn't bringing these same points up now, but it strains credulity to assume that Mr. Payne simply "arrived" at his opinions and approach in this case divorced from his office's prior and longstanding positions respecting High Prairie.

Q. Is there anything else about OPC's position in the CCN case that you find noteworthy regarding its position now?

A. Yes, there are two items. First, in the CCN case, OPC's position was that customers should be "held harmless" from any impacts arising from the presence of endangered bats at or near the facility, regardless of fault. What is OPC's position today? That the Company should guaranty the facility's production regardless of fault. There is simply no

daylight between that position and the OPC's hold harmless argument in the CCN case, which was not adopted. Indeed, not only did OPC seek a hold harmless condition on the CCN (which was not imposed) but so too did another party, MIEC, represented by Mr. Brubaker, who also proposed a production guarantee (he called it a "safeguard" to "ensure the receipt of value from the project as a result of achieving the expected capacity factor.").[30] Again, no daylight.

Second, until Mr. Payne suddenly became OPC's witness on the High Prairie issues, OPC continued to make clear that its High Prairie-related adjustments were grounded in claims that the Company imprudently acquired the site. Dr. Marke so stated in the Company's last rate review, when he claimed the facility was "improperly sited."[31] Dr. Marke, representing OPC, has specifically claimed that the Company is "responsible" for the lower production caused by the Indiana bat issues and that it is the Company that is culpable or blameworthy for those circumstances.[32] Dr, Marke is on record stating that he believes OPC – his office, his employer – made a mistake when it signed the Stipulation.[33] This is code for a claim that the Company has acted imprudently without coming out and saying as much, both because the evidence does not support such a claim and because OPC was bound not to make such an argument, yet, effectively, here we are.

Third, accepting OPC's proposal would force Ameren Missouri to take a write-off of between $142 million and $216 million to 2025 earnings. Company witness Reed addresses the extreme concerns such a forced write-off would raise.

[30] File No. 2018-0202 Maurice Brubaker Rebuttal Testimony, p. 8, ll. 9-11.
[31] Geoff Marke Rebuttal Testimony, p.13, l. 20. In his Direct Testimony on the High Prairie issue in File No. ER-2021-0241 (page 10, ll. 9-10), Dr. Marke out and out claimed that the Company made "poor managerial decisions to site [High Prairie] where it did."
[32] File No. ER-2022-0337, Geoff Marke Deposition, p. 43, l. 14 – 17, p. 44, l. 22 to p. 45, l. 10
[33] File No. ER-2022-0337, Geoff Marke Deposition, p. 9, l. 9 to p. 10, l. 11.

Q. Are there any other overarching regulatory concerns that arise from the arguments being made about High Prairie in this case?

A. Yes. The Commission has recently approved several CCNs for dispatchable peaking generation as well as renewable energy solar projects. The Commission has through its orders recognized the need for a balanced generation portfolio of dispatchable as well as least cost renewable energy projects. Further, it is entirely clear that the trend in the industry for a variety of compelling reasons suggests that a greater reliance on all types of assets – dispatchable as well as renewables -- will be needed in the future to meet the potential demand for on-demand capacity as well as energy around the clock that the Company may face as existing coal fired generation is retired at the end of its useful life and potentially more demand is present. Simply put, renewables must represent a meaningful part of the generating fleet of any utility going forward in order to provide least cost energy to serve customers. But if the perspective of the parties who have taken positions on this issue is allowed to prevail and utilities are unable to recover the cost of their renewable investments because of required perfection in the form of imposed production guarantees and massive rate base disallowances, renewables will become a second-class generating asset that is much riskier for utilities to invest in. Such a standard will, rather than recognizing the need for an overall balanced portfolio of peaking, baseload and renewable energy, instead result in a greater reluctance for utilities to make needed progress on building the next generation of clean energy and capacity resources needed to meet existing and future customers' long-term energy needs.

Q. Despite it being 100% clear that hindsight is not appropriate to use in determining the prudence of the decision to acquire the facility, just for a complete

evaluation of the issue, given hindsight and what has happened so far, would the Company still acquire the project if it could call for a "do over"?

A. Yes. The Company needs energy from a balanced mix of new peaking, baseload, and renewable energy resources for its current and potential future customer needs. The Company continues to evaluate request for proposals ("RFPs") and perform diligence in its efforts to acquire additional renewable facilities, including wind facilities, in furtherance of its resource plan that includes renewable resources as zero fuel cost resources to complement existing and future thermal units. In my recent experience evaluating projects, it is becoming increasingly clear that high quality sites and projects for new wind generation are becoming increasingly competitive, and challenging to identify, build, or acquire the energy needed from this resource to serve customers in a least cost manner. In fact, in the RFP responses we only got one wind project offered in Missouri. However, wind generation resources are important to the system because they provide diversity of supply benefits and are important to meet necessary customer reliability in various seasons. They also now cost about ***_____ _____*** more than High Prairie did. The High Prairie facility, since it was built at an extremely low cost as compared to wind projects being built today, even at the lower capacity factors experienced for the last two years, is still a valuable part of the Company's generation portfolio that the Company's customers will benefit from it having acquired.

Q. Please summarize your key points respecting High Prairie.

A. We estimated when we sought permission to acquire the High Prairie facility that we needed 700 to 800 MW of Missouri wind facilities for RES compliance. We conducted due diligence on all aspects of the facility, including in great detail with respect to conservation issues. We understood, as did the experts and regulators, and as did the parties to the CCN case, that operational mitigation measures (operation at 5.0 m/s at

P

night during the warmer months) would be required to protect bats. We understood, as did the experts and regulators, and as did the parties to the CCN case, that we might have to operate at the worst-case 6.9 m/s at night during the warmer months. We presented detailed evidence of all of those facts in the CCN case. The parties – Staff and OPC and Mr. Meyer's firm included – agreed that it was prudent for us to buy this facility in this location, and we did so, based on what we knew or reasonably could have known at the time. Using hindsight, we now know operation at night during the warmer months using a 6.9 m/s cut-in speed does not provide full avoidance of Indiana bats. We are diligently pursuing measures to mitigate the impact and to allow as much improved production as possible during the remainder of the ITP. There is no basis whatsoever for the adverse ratemaking proposals offered by Staff, MECG, and OPC in this case, which fail to demonstrate imprudence in any way, and which are improperly based on hindsight. Utilities are not production guarantors. They do not get to keep the "upside" if production turns out better than expected, nor are they responsible for the downside if production is lower than hoped. For that reason and others discussed in detail in Company witness Reed's rebuttal testimony, their proposals violate basic and well-settled regulatory and ratemaking principles. Consequently, their positions should be summarily rejected.

V. BOOMTOWN, HUCK FINN, AND CASS COUNTY SOLAR FACILITIES

Q. Staff witness Broderick Niemeyer's Direct Testimony indicates that at the time of its filing Staff had not yet determined if the in-service criteria agreed upon between the Company and the Staff in the CCN cases for the above-referenced facilities have been met. Has the Company provided information and data to Staff that establishes that the in-service criteria have been met for all three facilities?

A. Yes, on December 23, 2024, the Company supplemented its responses to Data Request Nos. 560 and 561, the cover sheets for which are attached to my testimony as Schedules AA-R4 and R5, respectively. The information provided in those supplemental responses establish that all in-service criteria for all three facilities were met on or before December 31, 2024, the true-up cutoff date in this case.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park DeVille Drive, Suite A
Columbia, Missouri 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

June 5, 2020

Mr. Mark Casper
TG High Prairie, LLC
437 Madison Ave, Suite 22A
New York, NY 10022

Dear Mr. Casper:

The U.S. Fish and Wildlife Service (USFWS or Service) has been coordinating with TG High Prairie, LLC (Applicant) on their application for an incidental take permit, for operations of the High Prairie Wind Facility (Project), a 400 MW wind energy facility in Adair and Schuyler Counties, Missouri. In March 2020 discussions with the Service, the Applicant requested a technical assistance letter (TAL) documenting their compliance with the Endangered Species Act (ESA) of 1973 (as amended).

Section 9(a)(1)(B) of the ESA, 16 U.S.C.§ 1538 (a)(1)(B), makes it unlawful for any person to "take" an endangered species. Take of threatened species is prohibited pursuant to 50 C.F.R. § 17.31, which was issued by the USFWS under the authority of Sections 4(d) and 9(a)(1)(G) of the ESA, 16 U.S.C. §§ 1533(d) and 1538(a)(1)(G), respectively. "Take" is defined by the ESA as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" 16 U.S.C. § 1532(19).

The Applicant's 2016 and 2018 pre-construction surveys[1] of the project area indicated presence of all Covered Species (i.e., Indiana bat, northern long-eared bat, and little brown bat) during the summer maternity season. In addition, results of mist-net surveys between June and August of 2016 and 2018 were used to estimate 8 Indiana bat maternity colonies, 12 northern long-eared bat maternity colonies, and 4 little brown bat maternity colonies within the Project Area.

To avoid potential effects to federally listed species (i.e. Indiana bat and northern long-eared bat) caused by the turbine operation, and pending Habitat Conservation Plan (HCP) completion and potential Incidental Take Permit (ITP) issuance, the Applicant agrees to implement all avoidance measures and monitoring efforts listed below. Operating the Project in accordance with these avoidance measures will result in insignificant or discountable take of federally listed species.

[1] Surveys were conducted according to the Service's 2016 "Range-wide Indiana Bat Survey Guidelines"

This TAL will be valid for up to a full year or until an ITP for the Covered Species is obtained and the Project begins operating under the ITP coverage.

Avoidance Measures

The Applicant commits to feathering all turbines during the spring migration period, summer maternity period, and fall migration period (March 15th- October 31st) for the first year of Project operations or until an ITP is obtained for the Covered Species (whichever is sooner), below a cut-in speed of 6.9 meters per second (m/s) for 0.5 hour before sunset to 0.5 hour after sunrise when the air temperature is above 50°F.

Turbines will be monitored and controlled based on wind speed on an individual basis (i.e., the entire facility will not alter cut-in speed at the same time, rather operational changes will be based on wind speed conditions specific to each turbine). Turbines will begin operating when the 10-minute rolling average wind speed is above 6.9 m/s; turbines will be feathered again if the 10-minute rolling average wind speed goes below 6.9 m/s during the course of the night.

Monitoring and Reporting Commitments

The Applicant commits to monitoring all turbines during the first year of Project operations, or until an ITP is obtained, whichever comes first. Monitoring will not occur at turbines which had not operated since the last visit, or which had only operated between 0.5 hour after sunrise and 0.5 hour before sunset. To document overall bat fatality rates, areas around operating turbines will be searched with a weekly search interval (I=7), and 10% of turbines will be assigned to full plots, and 90% of turbines will be searched on the roads and pads. Monitoring is designed to achieve a detection probability (g) of 0.1 (based on the assumptions outlined in the draft HCP).

Search Methods:
In all seasons, road and pad search plots will include the entire gravel turbine pad and all gravel access roads within 95 m (312 ft) of the turbine. At 60 m (197 ft) radius cleared-plot turbines, 23 transects will be spaced at approximately 16.4-foot intervals. Observers will walk at a rate of approximately 2 mph, scanning the ground for carcasses within 8.2 feet of each transect. The observer will start at one side of the circular plot and systematically search in a north/south or east/west direction, switching the search pattern on a weekly basis. At road/pad turbines, the observer will walk the access road starting at 312 feet from the turbine and walk towards the turbine, around the turbine, and back towards the starting point, searching out 8.2 feet on each side until the entire road/access pad is searched.

Searchers may be assisted by trained canines. Searchers will be familiar with and able to accurately identify bat species likely to be found in the Project area. Any unknown bats or suspected individuals of the covered species discovered during fatality searches will be sent to a qualified USFWS-approved bat expert for positive identification or may be sent for genetic testing to determine species and/or sex.

Any carcass of a listed species (or suspected listed species, prior to confirming ID) will be reported to the Service within 24 hours of finding.

Data Collection:
Data to be recorded for each search include date, start time, end time, observer, turbine area searched (including Universal Transverse Mercator [UTM] coordinates) and weather information. When a dead bat or bird is found, the observer will either record data, or place a flag near the carcass and continue the search. The observer will record data including the date, species, sex and age (when possible), observer name, turbine number, measured distance and bearing to turbine, habitat surrounding carcass, condition of carcass (intact, scavenged), and estimated time of death (e.g., less than one day, two days, etc.). The condition of each carcass found will be recorded using the following categories:

- Intact - a carcass that is completely intact, is not badly decomposed, and shows no sign of being fed upon by a predator or scavenger.
- Scavenged - an entire carcass that shows signs of being fed upon by a predator or scavenger, a portion(s) of a carcass in one location (e.g., wings, skeletal remains, portion of a carcass, etc.), or a carcass that has been heavily infested by insects
- Feather Spot - 10 or more feathers at one location indicating predation or scavenging of a bird carcass.

A digital picture of each detected carcass (all species, not just the covered species) will be taken before the carcass is handled and removed. All bat carcasses will be labeled with a unique number, bagged, and stored frozen as needed for future studies (with a copy of the original data sheet) at the Project operations and maintenance building. The Applicant will also collect a tissue sample from each bat carcass for submission to the USFWS and/or the Missouri Department of Conservation (MDC).

Bird carcasses will be identified and recorded as described above, but will not be collected and instead will be left in place. Bird carcasses will be noted to ensure carcasses are not recorded multiple times during surveys. All injured bats and birds observed in search plots also will be recorded (labeled as intact) and considered as fatalities for future analyses. The health of injured birds will be assessed in the field, and in consultation with a wildlife rehabilitator. If the bird is considered a candidate for rehabilitation by the wildlife rehabilitator, and able to be safely captured, the bird will be carefully captured by the observer and immediately transported to the nearest wildlife rehabilitation center, depending on the rehabilitation center availability. No injured bats will be transported from the facility due to the concern of spreading white-nose syndrome. Injured, non-myotis bat species will be humanely euthanized. Any bat that is euthanized will be placed in a plastic bag, labeled, and maintained similarly to the carcasses described above.

Carcasses found in non-search areas (e.g., near a turbine not included in the search area) or outside of the scheduled search time will be coded as incidental discoveries and will be documented in a similar fashion as those found during standard searches. Incidental discoveries found outside the scheduled search area will not be included in the calculation of fatality estimates. Those found outside scheduled search times, but within a scheduled search area, will

be included in estimates under the assumption that they would have been found during the next search had they not been found incidentally. Data on incidental discoveries will be included in all reports.

Annual Reporting:
Annual reports describing the avoidance measures implemented and the methods and results from mortality monitoring will be submitted to the Missouri Field Office within one year after the TAL goes into effect. Annual reports will include:

- Results from monitoring, including results of bias corrections (i.e., searcher efficiency trials, scavenger removal trials, and searchable area adjustments) and estimates of bat mortality;
- Raw data sheets (that include all bat and bird fatalities); and
- Spreadsheets showing the temperature, timing, and actual speeds at which the turbines were operational and feathered during the monitoring period.

In addition, the Applicant commits to the following while operating under the TAL for High Prairie Wind Facility:

1. The Applicant will implement the voluntary Bird and Bat Conservation Strategy plan pursuant to the USFWS's Wind Energy Guidelines that describes: (a) risks to wildlife associated with the Project, (ii) avoidance and minimization techniques incorporated into the design and operation Project, and (iii) post-construction mortality monitoring and reporting. That plan, including post-construction monitoring, will be in place at the start of operations. The Applicant should retain all bat carcasses and send tissue samples (protocol forthcoming) to the Missouri Ecological Services Field Office.

2. To reduce effects to all bat species in the area, the Applicant will limit tree clearing to between Nov 1- Mar 31, with the possible exception of supplemental tree-clearing necessary to accommodate any final layout design changes.

3. The measures outlined in this TAL will be superseded by the avoidance, minimization, and mitigation measures established in the HCP and the ITP, pending Service evaluation and determination of permit issuance.

This office is not authorized to provide guidance in regards to the USFWS Office of Law Enforcement (OLE) investigative priorities involving federally listed species. However, we understand that OLE carries out its mission to protect ESA-listed species through investigation and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of listed species; and by encouraging others to implement measures to avoid take of listed species. It is not possible to absolve individuals or companies from liability for unpermitted take of listed species, even if such take occurs despite the implementation of appropriate take avoidance measures. However, the OLE focuses its enforcement resources on individuals and companies that take listed species without identifying and implementing all reasonable, prudent and effective measures to avoid such take.

This office concludes that, if the Applicant follows the measures above, the High Prairie Wind Facility is unlikely to result in prohibited take of ESA listed species.

Thank you for your continuing coordination on project development. Should you have questions regarding this TAL, please contact Laurel Hill, 573/234-5038; Laurel_Hill@fws.gov, of my office.

Sincerely,

KAREN HERRINGTON
Digitally signed by KAREN HERRINGTON
Date: 2020.06.05 15:25:49 -05'00'

Karen Herrington
Field Supervisor

cc: MDC, Jefferson City, MO (J. Campbell)

Q. On page 11, I'm sorry, lines 8 to 10. My apologies. You state that Staff is not alleging signing of the BTA was imprudent. Right?

A. The signing of the BTA was -- was decisionally prudent because we agreed in a stip that it was decisionally --

Q. I mean --

A. -- prudent.

Q. -- you're not -- you're not making any allegation of imprudent with respect to the Company in High Prairie, are you?

A. I'm, again, making a recommendation based on the lost production at High Prairie because of the decisions that Ameren Missouri has made that have resulted in that lower production at High Prairie. It's a voluntary curtailment.

Q. But you're not alleging that Ameren Missouri has made any imprudent decisions?

A. I'm not alleging the signing of the BTA was imprudent.

Q. Okay.

A. No.

Q. Are you alleging that Ameren Missouri has made any imprudent decisions with respect to its acquisition, ownership, or operation of High Prairie?

A. No. But I'm also not saying that I fully reviewed all the decisions and would say that they were prudent.

Q. Okay. You say what is relevant is the decisions Ameren Missouri made which resulted in lower production at High Prairie. Right?

A. Yes.

Q. What decisions are those?

A. The voluntary curtailment of turbines starting shortly after receiving the incidental take permit that's contemplated by the Habitat Conservation Plan.

You are not alleging that the decision to curtail at night during bat season in 2021 and 2022, you're not alleging that those decisions were imprudent decisions, are you?

A. Ameren's witness describes those as conservative and, in previous testimony, voluntary. And in, you know, the discussion of this bat was killed then, so we did this, the ultimate reduction of operations overnight was based out of an abundance of caution.

Q. That may be so, but my question was are you alleging that their decision to voluntarily curtail in either 2021 or 2022 was an imprudent decision?

A. I don't think I've made that allegation.

Q. Have you reached the conclusion that those decisions were imprudent?

A. I have neither reached those conclusions nor dissuaded them.

Q. Your adjustment has nothing to do with whether or not those decisions were imprudent or not. Is that true?

A. That's true. It's that it is not operational overnight from April to October and that has a pretty big impact on customers.

ER-2024-0319

Schedule AA-R3

is Highly Confidential in its Entirety

P

Ameren Missouri's
Response to MPSC Supplemental - MPSC
ER-2024-0319
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0560s1

Please provide data demonstrating that upon observing each of the following facilities for 72 consecutive hours, that each facility will have demonstrated that when sunlight was shining on it during that period it produced power in a standard operating mode. Provide data in excel format with formulas intact for each of the following facilities: (a) Huck Finn, (b) Boomtown, and (c) Cass County. Data Request was submitted by Brodrick Niemeier (Brodrick.Niemeier@psc.mo.gov <mailto:Brodrick.Niemeier@psc.mo.gov>).

RESPONSE

Prepared By: Jordan Blackhurst
Title: Manager, Renewable Energy Commercial Transactions
Date: 12/20/2024

For each project, I am including an outline of the in-service criteria and the corresponding documents that satisfy each criterion. Please see the in-service criteria attached as item #4 in response to the current DR MPSC 0560. Due to the size and number of documents, a CD will be provided for each individual project.

Huck Finn Solar In-Service Criteria

1. **All major construction work is complete.**
    a. In the Completion Certs folder, please find the "BOP T.4 Substantial Completion Certificate", the "HV T.5 Project Substantial Completion Certificate", and the "BTA Substantial Completion Certificate".

2. **All preoperational tests have been successfully completed.**
    a. In the Pre-Operational Testing folder, please find all Hot and Cold Commissioning Checksheets, signed off by feeder.
    b. In the Pre-Operational Testing folder, also please find the "Nextracker Commissioning Completion Report".

3. **Facility successfully meets contract operational guarantees that are necessary for satisfactory completion of all other items in this list.**
    a. In the In-Service Capacity Test folder, please reference the "Blattner in-Service Capacity Calculations.xlsx" spreadsheet as well as the "Blattner In-Service Capacity Test Report.pdf". These documents show the data collected and calculations, demonstrating that the project passed the In-Service Capacity Test as required by the CCN.
    b. Also please refer to the "Ameren In-Service Capacity Verification Datasheet.xlsx", which is data compiled in the form submitted on previous projects. This datasheet shows a slightly higher result (126%) than Blattner's (119%), due to Blattner's use of the total irradiance approach for bifacial modules; however both methods provide a passing test, exceeding the required Wratio of 95%.

4. **Upon observation of the facility for 72 consecutive hours, the facility will have demonstrated that when sunlight was shining on it during that period it produced power in a standard operating mode.**
    a. In the In-Service Capacity Test Folder, please see the "Ameren In-Service Capacity Verification Datasheet.xlsx" Chart1 worksheet. This trend is a simple overlay of irradiance and Generation pulled from our PI historian for the entire 7-day capacity testing period.

5. **Facility shall meet at least 95% of the guaranteed capacity (in MW AC) based on the Capacity Test in Attachment 1. The In-Service Capacity Test shall determine the facility's Corrected Capacity at the Design Point Conditions.**
    a. In the In-Service Capacity Test folder, please refer to the "Blattner In-Service Capacity Test Report.pdf" and the "Ameren In-Service Capacity Verification Datasheet.xlsx" for confirmation.

6. **Sufficient transmission/distribution interconnection facilities shall exist for the total plant design net electrical capacity at the time the facility is declared fully operational and used for service.**

a. In the GIA folder, please refer to the attached "EXECUTED_J956 1st Rev GIA_Public.pdf" which is the interconnection agreement with MISO.

7. **Sufficient transmission/distribution facilities shall exist for the total plant design net electrical capacity into the utility service territory at the time the facility is declared fully operational and used for service.**
    a. In the GIA folder, please refer to the attached "EXECUTED_J956 1st Rev GIA_Public.pdf" which is the interconnection agreement with MISO.
    b. In the Completion Certs folder, please find the "HV T.5 Project Substantial Completion" certificate.

Boomtown Solar In-Service Criteria

1. **All major construction work is complete.**
   In the Completion Certificates folder, please find:
   a. "Boomtown – Substantial Completion Notice" issued by the Developer – Invenergy
   b. "Boomtown_BOS_Substantial Completion Certificate" issued by the EPC Contractor Cupertino
   c. "Boomtown_BOS_Placed In Service Certificate" issued by the EPC Contractor Cupertino

2. **All preoperational tests have been successfully completed.**
   In the Pre-Operational Testing folder, please find:
   a. All Hot and Cold Commissioning Documents for the inverters issued from the OEM – General Electric
   b. Tracker commissioning report issued from the OEM - NexTracker.

3. **Facility successfully meets contract operational guarantees that are necessary for satisfactory completion of all other items in this list.**
   a. In the In-Service Capacity Test folder, please reference the "EPC Contractor Boomtown Placed In Service Capacity ... " spreadsheet as well as the "EPC Contractor Boomtown Placed In Service Capacity Test Report". These documents show the corrected capacity of the facility at 177 MW versus the design of 150 MW, demonstrating that the project passed the In-Service Capacity Test as required by the CCN.
   b. Also please refer to the "Ameren In-Service Capacity Verification Datasheet" spreadsheet, which is data compiled in the form submitted on previous projects. This datasheet shows the result of 117% as compared to the design of 150 MW, which is a passing test, exceeding the required Wratio of 95%.

4. **Upon observation of the facility for 72 consecutive hours, the facility will have demonstrated that when sunlight was shining on it during that period it produced power in a standard operating mode.**
   a. In the In-Service Capacity Test Folder, please see the "Ameren In-Service Capacity Verification Datasheet.xlsx" Chart - PI worksheet. This trend is a simple overlay of irradiance and Generation pulled from our PI historian for the entire capacity testing period.

5. **Facility shall meet at least 95% of the guaranteed capacity (in MW AC) based on the Capacity Test in Attachment 1. The In-Service Capacity Test shall determine the facility's Corrected Capacity at the Design Point Conditions.**
   a. In the In-Service Capacity Test folder, please refer to the file "EPC Contractor Boomtown Placed In Service Capacity Test Report" and the Ameren In-Service Capacity Verification Datasheet.xlsx" for confirmation.

6. **Sufficient transmission/distribution interconnection facilities shall exist for the total plant design net electrical capacity at the time the facility is declared fully operational and used for service.**
    a. In the Generator Interconnection Agreement folder, please refer to file "Boomtown GIA_Public EXECUTED_J800 1st Rev" which is the interconnection agreement with MISO.

7. **Sufficient transmission/distribution facilities shall exist for the total plant design net electrical capacity into the utility service territory at the time the facility is declared fully operational and used for service.**
    a. In the Generator Interconnection Agreement folder, please refer to the attached "Boomtown GIA_Public EXECUTED_J800 1st Rev" which is the interconnection agreement with MISO.
    b. In the Completion Certificates folder, The file "Boomtown_BOS_Substantial Completion Certificate" includes both a Substation Completion Certificate and a Form of Transmission Line Completion Certificate, issued by the EPC Contractor Cupertino.

Cass County Solar In-Service Criteria

1. **All Solar Block Circuit major construction work is complete.**

a) In the "Item 1 – SC Certificate" folder, please find the "Cass County Substantial Completion Certificate Signed" which covers substantial completion for the entire Cass County project.

2. **All Solar Block Circuit preoperational tests have been successfully completed.**
   a) In the "Item 2 – Preoperational Tests" folder, please find the Inverter Commissioning summary signed off by the Original Equipment Manufacturer.
   b) In the "Item 2 – Preoperational Tests" folder, also, please find the Game Change Commissioning report.

3. **Facility or Solar Block Circuit successfully meets contract operational guarantees that are necessary for satisfactory completion of all other items in this list.**
   a) In the "Item 3 – Operational Guarantees" folder, please reference the "EPC In-Service Capacity Test Report" This document shows the data collected and calculations, demonstrating that the project passed the In-Service Capacity Test as required by the CCN.
   b) Also, in the " Item 3 – Operational Guarantees" folder, please refer to the "Ameren Cass County In-Service Capacity Verification Datasheet.xlsx" which is data compiled in the form submitted on previous projects. This data sheet shows a slightly higher result (141%) than Kiewit's (119%), due to Kiewit's use of the total Irradiance approach for soiling reference modules; however, both methods provide a passing test, exceeding the required Wratio of 95%.

4. **Upon observation of the facility or Solar Block Circuit for 72 consecutive hours the facility or Solar Block Circuit will have demonstrated that when sunlight was shining on it during that period it produced power in a standard operating mode.**
   a) In the "Item 4 – 72 Hour Check" folder, please see the "Ameren Cass County In-Service Capacity Verification Datasheet.xlsx" Chart 1 worksheet. This trend is a simple overlay of irradiance and Generation pulled from Ameren's PI historian for the entire 7-day capacity testing period.

5. **Facility or Solar Block Circuit shall meet at least 95% of the guaranteed capacity (in MW AC) based on the Capacity Test in Attachment 1. The Capacity Test shall determine the facility's Corrected Capacity at the Design Point Conditions.**
   a) In the "Item 5 – Capacity Test" folder, please refer to the " EPC In-Service Capacity Test Report.pdf" and the " Ameren Cass County In-Service Capacity Verification Datasheet.xlsx" for confirmation.

6. **Sufficient transmission/distribution interconnection facilities shall exist for the total plant design or Solar Block Circuit net electrical capacity at the time the facility or Solar Block Circuit is declared fully operational and used for service.**
   a) In the "Item 6 – Interconnection Facilities" folder, please refer to the attached "EXECUTED_J859 3rd Rev GIA_Public.pdf" file, which is the interconnection agreement with MISO.

7. **Sufficient transmission/distribution facilities shall exist for the total plant design net electrical capacity into the utility service territory at the time the facility or Solar Block Circuit is declared fully operational and used for service.**
   a) In the "Item 7 – Interconnection Facilities" folder, please refer to the attached " EXECUTED_J859 3rd Rev GIA_Public.pdf" file, which is the interconnection agreement with MISO.
   b) In the "Item 7 – Interconnection Facilities" folder, please find the "HV MC Cert 07_29_2024" which is the mechanical completion certificate for the substation. For Substantial Completion the substation was included in the overall Substantial Completion Certificate included with Item 1.

Ameren Missouri's
Response to MPSC Supplemental - MPSC
ER-2024-0319
In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Electric Service

No.: MPSC 0561s1

Please provide data demonstrating that each facility has met at least 95% of the guaranteed capacity (in MW AC) using the Capacity Test procedures as applicable to each facility. Provide data in excel format with formulas intact for the following facilities: (a) Huck Finn, (b) Boomtown, and (c) Cass County. Data Request was submitted by Brodrick Niemeier (Brodrick.Niemeier@psc.mo.gov <mailto:Brodrick.Niemeier@psc.mo.gov>).

RESPONSE

Prepared By: Jordan Blackhurst
Title: Manager, Renewable Energy Commercial Transactions
Date: 12/20/24

See the response to MPSC 560s1.

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-2024-0319

AFFIDAVIT OF AJAY K. ARORA

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Ajay K. Arora, being first duly sworn states:

My name is Ajay K. Arora, and on my oath declare that I am of sound mind and lawful age; that I have prepared the foregoing *Rebuttal Testimony*; and further, under the penalty of perjury, that the same is true and correct to the best of my knowledge and belief.

/s/ Ajay K. Arora
Ajay K. Arora

Sworn to me this 15th day of January, 2025.