Exhibit No. 13

Ameren Missouri – Exhibit 13
Ajay K. Arora
Rebuttal Testimony
File Nos. ER-2021-0240 & GR-2021-0241

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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2021-0240

REBUTTAL TESTIMONY

OF

AJAY K. ARORA

ON

BEHALF OF

UNION ELECTRIC COMPANY

D/B/A AMEREN MISSOURI

St. Louis, Missouri
October, 2021

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TABLE OF CONTENTS

I. INTRODUCTION AND SUMMARY 1

II. THE PERTINENT FACTS 6

III. FUTURE OPERATIONS 15

REBUTTAL TESTIMONY

OF

AJAY K. ARORA

FILE NO. ER-2021-0240

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 Vice President and Chief Renewable 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 Vice President of Power Operations and Energy Management.

I assumed my current position as Vice President and Chief Renewable Development Officer in December 2020.

Q. What are your responsibilities in your current position?

A. In my current role, my focus is on implementing Ameren Missouri's transformational generation plan incorporating cleaner energy sources. This includes providing leadership, oversight and coordination of generation resource planning including

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

renewable energy resource and energy storage development, as well as thought leadership on renewable energy policy at the federal, state and local levels; and strategic planning for all renewable energy 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 testimony filed by Office of the Public Counsel's ("OPC") witness Dr. Geoffrey Marke and Missouri Industrial Energy Consumers' ("MIEC") witness Greg Meyer regarding their proposals on the ratemaking treatment of a portion of the Company's investment in the High Prairie Energy Center ("High Prairie") wind generation facility. Specifically, I will outline why the Missouri Public Service Commission ("Commission") should reject their proposals, both because they are substantively flawed and because they are in direct conflict with the commitments OPC and MIEC made (and were ordered by the Commission to comply with) when they became a signatory to the stipulation and agreement that was approved by the Commission when it issued a Certificate of Convenience and Necessity ("CCN") for High Prairie.[2]

Q. Please summarize your testimony.

A. Neither Dr. Marke nor Mr. Meyer have provided any substantive evidence that supports a conclusion that the Company has acted imprudently, either in contracting to acquire High Prairie from the project developer (as it was authorized to do by the Commission in the CCN docket), or in operating the facility since it acquired it just before the end of last year. For

[2] *Third Stipulation and Agreement* (EFIS Item No. 92) (the "CCN Stipulation"), File No. EA-2018-0202, dated October 12, 2018, approved by the Commission in its *Order Approving Third Stipulation and Agreement,* issued October 24, 2018 (EFIS Item No. 101).

that reason alone, their proposals are inappropriate and the Commission should reject them. The Company has made a prudent investment that is being used to serve its customers and support compliance with the Missouri Renewable Energy Standard ("RES") and is entitled to have its costs associated with that investment reflected in in the revenue requirement used to set its rates.

In my opinion, Dr. Marke's and Mr. Meyer's positions are also in direct conflict with OPC's and MIEC's contractual commitments reflected in the CCN Stipulation. By taking their positions, both OPC and MIEC have reneged on their commitments and are in violation of the Commission's order approving the CCN Stipulation, which in no uncertain terms requires OPC and MIEC to comply with its terms. The Company's attorneys will address these issues in more detail in the Company's position statement and briefs.

The question should be, and is, whether the Company was prudent in agreeing to construct the project via the Build Transfer Agreement ("BTA") in evidence in the CCN case. That question can and should only be judged by what the Company knew or reasonably should have known at the time it signed the BTA. It is true that with hindsight it appears that endangered Indiana bats could not be fully avoided, as was expected at the time using a minimum cut-in speed of 6.9 meters per second ("m/s"), and that this has required mitigation measures which reduced production at night during the past few warmer months of this year. However, it is also true that these after-the-fact circumstances are not relevant to the ratemaking treatment of the Company's investment in High Prairie.

All the evidence known and available to the Company at the time it signed the BTA indicated that there would be some level of production curtailment at night during the warmer months due to the presence of endangered Indiana bats at or near the facility.[3] Such evidence

[3] From April 1 to October 31, at night when temperatures exceeded 50 degrees.

was provided to and known by the parties (OPC and MIEC included) and the Commission in the CCN docket. Specifically, that evidence indicated that at night during those months the facility would have to operate at a cut-in speed above the design capability of the turbines (3.0 m/s or more). The evidence also indicated that the facility might have to operate at night at a cut-in speed of 6.9 m/s during those months to allow it to achieve full avoidance of Indiana bats when operating the facility at night during warmer months. It was on these bases that the Company made the decision to acquire the facility. Indeed, the Company's modeling submitted to the Commission and the parties reflected production levels that were lower than the facility would be capable of producing absent the need for curtailment to protect the Indiana bats, including curtailment using the then-understood worst-case scenario of operations with a cut-in speed of 6.9 m/s at night during warmer months. While the primary justification for the project was its need for RES compliance, as compared to pursuing the project to produce net economic benefits for customers, the unrefuted evidence in the CCN docket was even if full mitigation (operation at night April to October using a 6.9 m/s cut-in speed) was required and even if power prices were low, the facility was expected to generate positive economic benefits for customers over its life on a net present value basis.

There are a variety of other reasons entering into the BTA was prudent, including the unavailability of other Missouri projects eligible to capture 100% of the available Production Tax Credits ("PTCs"), to take advantage of the 1.25 multiplier under the RES for Missouri projects, and the economic benefits to the state of Missouri from utilizing a Missouri project for RES compliance.

The entire facility is fully in-service and producing power 365 days per year, seven days per week. That production is providing Renewable Energy Credits ("RECs") that are being used

for RES compliance, generating PTCs that are being passed back to customers, and generating energy and capacity revenues also being credited to customers in rates via the RESRAM,[4] also approved by the Commission in the CCN docket.

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 CCN case demonstrated that it was well understood when the project was being developed, and when the Company executed the BTA committing it to buy the facility (subject to Commission approval of a CCN), and when the parties signed the CCN Stipulation, and when the Commission approved the CCN, that Indiana bats nested in trees near the site of the facility. It was also well understood that migration of the bats from a large hibernaculum (here, an abandoned kiln-lime 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 Incidental Take Permit ("ITP") from the United States Fish and Wildlife Service ("USFWS").[5] That permit would allow the facility to take, incidental to its otherwise lawful operation of the wind facility, Indiana bats without experiencing adverse enforcement actions under the federal Endangered Species Act ("ESA").

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[4] Renewable Energy Standard Rate Adjustment Mechanism.
[5] As discussed below, the ITP works in concert with a Habitat Conservation Plan ("HCP") agreed upon with USFWS.

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

A. The **_____

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

A. Yes, as noted above, the Company modeled the case where the cut-in speed at night during the entire life of the facility would need to be 6.9 m/s during those hours using three different power price cases; low, probability-weighted average, and high (all from its 2017 Integrated Resource Plan ("IRP")). In each case, 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 $20 million 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.

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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 the BTA was signed. 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 of this year. A central topic of those discussions centered on the exact terms that would be appropriate for the facility under the companion 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 conservation-related 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 cut-in speed of 5.0 m/s at night during the warmer months and, at worst, with a cut-in speed of 6.9 m/s during those periods if adaptive management measures had to be implemented, should the take at 5.0 m/s be greater than expected. 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 exceed a cut-in speed of 6.9 m/s. This is why we examined what that would mean for facility operations by modeling this worst-case and presented those results in the CCN case.

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. Because that was the information being made available to us by USFWS, by the developer's 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 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 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 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."

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. Therefore, we had to operate at 6.9 m/s to fully avoid taking Indiana bats.

Q. Based on Dr. Marke's and Mr. Meyer's statements, did that consensus prove to be incorrect?

A. Yes, unfortunately it did.

[6] USFWS Northern Long-eared Bat Interim Conference and Planning Guidance, USFWS Regions 2, 3, 4, 5 and 6v (Jan. 2016), discussed in the Surrebuttal Testimony of Company witness Terry VanDeWalle at pp. 32-33, File No. EA-2018-0202 (EFIS Item No. 81).

Q. Please explain.

A. While Dr. Marke and Mr. Meyer do not have all of the facts they include in their testimonies correct, due to a take of one Indiana bat in September 2020 (while the facility was still owned by the developer) and the take of eight additional Indiana bats this past spring/early summer, it is now understood that operating at a cut-in speed of 6.9 m/s will not provide full avoidance. For that reason, we have conservatively changed operations at the facility at night so that since June 22 of this year, we have not operated any of the turbines from 45 minutes prior to sunset through 45 minutes after sunrise. We intend to continue this approach this year through the end of active bat season (October 31). As discussed below, we are exploring technological applications that are designed to mitigate the impact of wildlife (here, Indiana and other bats) on wind facility operations, which could lead to increased operations in the future.

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-RI 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 then desired what in effect was 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 F.

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

A. The May 14, 2021 ITP requires 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 have to be used depending on Indiana bat takes at the facility. 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. As such, we have taken the very conservative step of not operating at night until mitigation measures can be designed, tested, and implemented.

Q. You noted above that Dr. Marke and Mr. Meyer did not accurately state certain facts. What were they?

A. While I am not saying that any inaccuracies would likely matter to their viewpoints given the proposals they have made, I do want to be sure the Commission knows exactly what the facts are. Starting in the spring of this year, at night and whenever the temperature was above 50 degrees F (starting sometime in March), we operated the facility consistent with the TAL (using a 6.9 m/s cut-in speed). Starting April 14, 2021 (when the first Indiana bat taken during Ameren Missouri's ownership of the facility occurred), we ceased nighttime operations if the temperature was above 50 degrees F even though the TAL contemplated we could have continued to operate with a 6.9 m/s cut-in speed. We received the ITP on May 14, and we began operating in accordance with it (using a 5.0 m/s cut-in speed at night if the temperature was above 40 degrees F). Within just under three weeks, we had taken three more Indiana bats (two bats June 2 and one bat June 3). This triggered adaptive management measures under the HCP that called for raising the applicable cut-in speed to 6.0 m/s. Another Indiana bat was taken on June 8, and under the HCP, we then raised the applicable cut-in speed to 7.0 m/s. After taking two more Indiana bats on June 14 and another on June 21, we ultimately decided to take on no additional risk of taking another Indiana bat and ceased night time operations entirely. As noted, we do not intend to operate at night through October 31 of this year.

III. FUTURE OPERATIONS

Q. Dr. Marke comments about future operations and raises the specter of "further mitigation efforts [being] . . . enforced."[7] Please address future operations and wildlife issues at the facility.

A. It is certainly unfortunate that eight Indiana bats were taken during their use of habitat in the area during this year's warm season (i.e., at night when temperatures are above 40 degrees F) and that this has reduced production this year. However, there is no reason to believe that the "parade of horribles" Dr. Marke hints at will occur.

First, there is no evidence whatsoever that when temperatures drop to 40 degrees F or below and the bats are inactive that there will be the need to curtail operations to guard against taking Indiana bats at all. In addition, four of the five highest producing months at the facility (November, December, January, and March) are during periods when there will be no operational mitigation for wildlife at all. Third, there is no indication whatsoever that the facility is impacted by these issues during the day on each of the 365 days in the year. All 175 turbines are in service,[8] operating, and producing electricity each and every day of the year (subject to normal outages); at worst, all 175 turbines might not produce power or may produce less power than we had expected in 2018, at night, for part of the year. Customers will still receive PTCs, RECs will still be retired to comply with the RES, and energy and capacity revenues will still be received.

Second, the Company is diligently evaluating solutions to "recover" some or all of the hours that we were unable to operate the facility at night this year. We will be installing a bat

[7] File No. ER-2021-0240, Geoff Marke PhD, Direct Testimony on behalf of OPC, p. 7.
[8] The Company has submitted detailed documentation establishing that the agreed-upon in-service criteria have been met for the entire facility and has consulted with the Staff, which has indicated to the Company that it agrees that the facility is fully operational and used for service.

deterrent system later this month, will test a separate activity-based smart curtailment system in the near term, and are also evaluating weather-based curtailment and other systems. We likely will not know the efficacy of these systems until sometime in 2022. Regardless, we will be taking all prudent measures at our disposal to improve the facility's capacity factor by allowing us to operate during more hours from April to October than we were able to operate this year while still protecting the bats.

Third, let me be clear: we are not going to operate in a manner inconsistent with the requirements of the ITP, as evidenced by our conservative decision to cease operating at night starting on June 21, even though it is likely that there is a cut-in speed at which we can operate without taking any Indiana bats.

Q. Dr. Marke presents various maps and charts, generally suggests that the site is a bad one for a wind facility, and more or less says that he told you so. How do you respond?

A. It is well documented that Dr. Marke initially objected to the issuance of a CCN for the facility. His fallback position was twofold: require that an ITP be obtained and/or use a cut-in speed of 6.9 m/s at night during the warmer months. As discussed earlier, we in fact have done both in that we have an ITP and we have operated at 6.9 m/s (or not at all) at night for most of this year's bat activity season, save a few weeks when we followed the terms of the ITP and operated at lower cut-in speeds at night. As for his 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."[9] While the signatories could challenge "the

[9] CCN Stipulation, ¶12.

design, construction costs, interconnection costs, and all other project related costs," Dr. Marke's now-renewed opposition to Ameren Missouri owning and operating this facility – which was to be under the BTA that specified the site – has nothing 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 Dr. Marke, has challenged that the High Prairie facility is in fact in service. I believe it is noteworthy that in his testimony in this case, Dr. Marke couches his position as his own, pointing to his personal recommendation ("What is your recommendation"; "I would recommend"),[10] while in the CCN case his testimony was always very careful to discuss the question of whether Ameren Missouri should acquire High Prairie in terms of what "OPC" would or would not support. Indeed, in the CCN case, his testimony presented "OPC's specific recommendations."[11] Perhaps these are distinctions without a difference, but Dr. Marke is an experienced witness and he typically has a purpose for the things that he says and how he says them. One possible reason for these distinctions is that he is attempting in some way to avoid the agreement his office – the party to both this case and the CCN case – made when it agreed to the CCN Stipulation. Perhaps this is Dr. Marke's attempt to run around the fact that OPC agreed that Ameren Missouri should acquire and operate this facility under the terms of the BTA, at the very location everyone understood it would be located in, notwithstanding the fact that there would have to be mitigation measures to protect Indiana bats.

[10] File No. ER-2021-0240, Geoff Marke PhD, Direct Testimony on behalf of OPC, p. 10.
[11] File No. EA-2018-0202, Geoff Marke PhD, Direct Testimony on behalf of OPC, pp. 24-25.

Q. Dr. Marke seems to suggest that there is some kind of siting guidance that demonstrates the facility should not have been built where it is. How do you respond?

A. Dr. Marke points to documentation from a non-governmental organization ("NGO")[12] published in 2019 (well after we had committed to the project under the BTA) that describe 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).[13]

[12] The Nature Conservancy. Dr. Marke stated the publication was from 2021 but it was issued in 2019.
[13] 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.

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

A. Yes, there is. In effect, Dr. Marke's position is that customers should be "held harmless" from any impact of knowledge that neither the Company, nor USFWS, nor others had when the Company signed the BTA and legally committed to acquire the facility. Greater curtailment than we thought was the worst case scenario (operating at 6.9 m/s at night in warmer months) and has reduced the economic benefits of the facility this year and it may reduce the benefits to some extent in the future. This use of hindsight flies in the face of well-settled principles that the Commission has adhered to as long as I have been in the utility industry –

and I believe much longer. Those principles hold that utility decisions are evaluated based on the state of affairs at the time they were made and hindsight is simply *not used* to punish utilities later for decisions that do not always turn out as favorable as it was believed they would be at the time. Ameren Missouri witness John Reed addresses the longstanding and sound policy considerations that underlie why hindsight should not be used, and why hold harmless approaches are antithetical to the regulatory compact.

Q. Dr. Marke notes his "concern" that the Company may not meet its RES obligations based on the lower production from High Prairie. How do you respond?

A. It was always the case, once we had to cancel pursuit of the Brickyard Hills wind facility (for which the Commission granted us a CCN[14]) due to the extremely high interconnection costs that would have been required, that the combination of the Atchison and High Prairie wind facilities and our other renewable energy facilities might not themselves allow us to comply with the RES. Our plan all along had been to acquire High Prairie, Brickyard Hills, and Atchison (formerly called Outlaw) in order to meet our RES compliance obligations, as both Matt Michels and I explained in testimony in each of those dockets, including in the CCN docket for High Prairie. We thus expected to need additional resources for RES compliance even if High Prairie were able to operate at 5.0 m/s at night during the warmer months in the expected operation case presented in the CCN docket for High Prairie. It is true that to the extent Atchison and High Prairie together, along with our other renewable generation, do not provide enough RECs to comply with the RES, we will have to obtain RECs through other means including (longer term) via adding more renewable generation to our portfolio. Somewhat lower production from High Prairie than we had hoped will require more RECs from

[14] File No. EA-2019-0021.

elsewhere, but again that is not a relevant question for this case. The only relevant question is did we act prudently when we signed the BTA? We did.

Q. Dr. Marke also raises concerns about facility operations and possible takes of eagles. Is this a concern?

A. Detailed conservation assessments regarding the risk to eagles were completed prior to the facility's construction. This too was fully of record in the CCN case. We have taken no avian species that are protected by the ESA while operating the facility, taking one (not endangered) bald eagle in May of this year. We have no reason to believe that there is a material risk of taking protected eagles or that eagle-related issues threaten the facility's operation.

Q. Please summarize your key points.

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 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 – OPC and MIEC 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 investigating measures

to mitigate the impact of that new reality. There is no basis whatsoever for the adverse ratemaking proposals offered by OPC and MIEC in this case based on hindsight, and they are in clear contradiction of their agreements in the CCN Stipulation. Their positions should be summarily rejected.

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)

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 Increase Its Revenues for Electric Service.	**)** **)** **)**	Case No. ER-2021-0240

AFFIDAVIT OF AJAY K. ARORA

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

Ajay K. Arora, being first duly sworn on his oath, states:

My name is Ajay K. Arora, and on his oath declare that he is of sound mind and lawful age; that he has 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 October, 2021.