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Witness: Ajay K. Arora
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Sponsoring Party: Union Electric Company
File No.: EA-2018-0202
Date Testimony Prepared: September 28, 2018

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. EA-2018-0202

SURREBUTTAL TESTIMONY

OF

AJAY K. ARORA

ON

BEHALF OF

UNION ELECTRIC COMPANY

d/b/a Ameren Missouri

St. Louis, Missouri
September, 2018

*****Denotes Highly Confidential Information*****

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SURREBUTTAL TESTIMONY

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I. INTRODUCTION

1

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

3 A. Ajay K. Arora, Union Electric Company d/b/a Ameren Missouri ("Ameren
4 Missouri" or "Company"), One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri
5 63103.

6 **Q. Are you the same Ajay K. Arora that filed direct testimony in this**
7 **proceeding?**

8 A. Yes, I am.

9

II. PURPOSE OF TESTIMONY

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

11 A. My surrebuttal testimony provides an overview of the surrebuttal
12 testimonies filed by other Ameren Missouri witnesses, and addresses a few points raised
13 by the Missouri Department of Conservation and the Office of the Public Counsel.

14 **Q. What other witnesses are filing surrebuttal testimony on Ameren**
15 **Missouri's behalf?**

16 A. The following witnesses are filing surrebuttal testimony in addition to my
17 testimony:

18 • Tom Byrne, Sr. Director of Regulatory Affairs for Ameren Missouri,
19 addresses several policy issues raised by Missouri Industrial Energy

1 Consumers ("MIEC") witness Maurice Brubaker (which have now been
2 resolved), witnesses from the Missouri Department of Conservation
3 ("MDC"), and a legal argument advanced by Office of the Public Counsel
4 ("OPC") witness Dr. Geoff Marke.

- 5 • Terry VanDeWalle, a biologist and principal at Stantec Consulting Services
6 Inc. who has significant knowledge and experience relating to conservation
7 issues associated with wind projects, addresses issues raised by MDC
8 relating to bat and bird operating permits for the project; and
- 9 • Steven Wills, who filed direct testimony supporting the Renewable Energy
10 Standard Rate Adjustment Mechanism ("RESRAM") filing that is a part of
11 this docket, addresses in part the legal issue raised by Dr. Marke that is also
12 addressed by Mr. Byrne.

13 **Q. The Company has now reached an agreement with several of the**
14 **parties to this case. Do you care to comment on those agreements?**

15 A. Yes. After reaching agreement with the Missouri Public Service
16 Commission Staff ("Staff") on approval of a Certificate of Public Convenience and
17 Necessity ("CCN") and a RESRAM, we have since reached agreement with Renew
18 Missouri and MIEC ("Signatories") (with the Natural Resources Defense Council
19 ("NRDC") also indicating that it does not oppose) on terms that as between the Signatories
20 totally resolve all issues in this case. The Signatories agree that proceeding with the project
21 is prudent and that the CCN should be issued with some basic conditions (submission of
22 plans, obtaining the required FERC permit, working out in-service criteria) as well as a
23 condition related to a limited guarantee of the production tax credits ("PTCs") that have a

1 positive impact on the project's cost. The Signatories have also agreed to appropriate
2 conservation-related conditions, that there should not be other guarantees, and that a
3 RESRAM rate design issue that had been raised by MIEC will not be taken up in this case
4 but should be deferred to a future case, if MIEC desires to raise it later.

5 I am pleased that not a single remaining party to this case opposes the issuance of
6 the requested CCN nor do they outright oppose the RESRAM; instead, they are asking for
7 additional conditions for the CCN or changes to the RESRAM. This indicates to me that
8 all parties agree to the need for the project and that it is an appropriate project to pursue
9 largely as proposed. We are hopeful we can work out remaining issues (which are almost
10 entirely conservation-related matters primarily raised by MDC that, as Mr. Byrne indicates,
11 are not matters that we believe the Commission should wade into). This project will result
12 in the largest wind farm in the state of Missouri and the first of multiple projects being
13 pursued by Ameren Missouri in compliance with the Renewable Energy Standard. Ameren
14 Missouri believes this is an important project for the state of Missouri and especially for
15 Ameren Missouri customers.

16 **Q. Can you please provide your overall perspective on the impact of**
17 **conservation issues on the project?**

18 A. The conservation issues associated with the project are not unlike a myriad
19 of environmental compliance issues that are often faced with any large-scale construction
20 project. This includes other power plants (whether coal- or gas-fired), transmission lines,
21 waste handling facilities, etc. Such projects, including wind generation facilities, have to
22 evaluate and study any potential impact they may have on the environment, including
23 wildlife. From Ameren Missouri's perspective, the important question is how do such

1 projects prudently identify and mitigate those impacts while balancing the need for and
2 benefits of the project for our customers. While wind generation facilities can impact
3 wildlife, it should be kept in mind that wind generation facilities bring with them significant
4 environmental benefits compared to more traditional generation sources. Terra-Gen, the
5 project developer, has taken and will continue to take seriously the need to properly address
6 conservation issues – *** _____
7 _____***. And I can assure the Commission
8 that Ameren Missouri will also properly address these issues as it works with Terra-Gen
9 from now until project completion and after closing of the transaction. As Mr. VanDeWalle
10 testifies in his surrebuttal, Terra-Gen has been substantially engaged with the United States
11 Fish and Wildlife Service ("USFWS") since 2016 and is following USFWS Land-Based
12 Wind Energy Guidelines. I should note that these guidelines not only provide
13 recommendations for site selection and project development, but also provide
14 recommendations for facility operation as well. Ameren Missouri will also follow these
15 guidelines for the operation of the project after Ameren Missouri owns the project.

16 As Mr. VanDeWalle's testimony discusses, Terra-Gen and Stantec have diligently
17 worked to implement these guidelines in a manner that we fully expect will result in the
18 appropriate operating permits being issued allowing the incidental take of a small number
19 of endangered or protected bat and bird species (and will include measures to protect some
20 species that are not endangered or protected) once the facility is operational.

21 **Q. Are these permits required to construct the facility?**

22 A. No, these are operating permits. As I discuss further below, the facility
23 could be operated in a manner that would not result in a take of endangered or protected

1 species at all, but doing so would reduce its economic value for customers. Under the
2 USFWS permitting process and based on my understanding of the risks (which Mr.
3 VanDeWalle addresses in more detail), it should not be necessary to reduce the take level
4 to zero. Instead, a permit can be issued that balances the project's economics against these
5 conservation issues. As I noted, I am not an expert on the process, but Mr. VanDeWalle
6 addresses the permitting process in greater detail.

7 **Q. What is Ameren Missouri's role in these processes today?**

8 A. As explained in my direct testimony, Ameren Missouri is not the project
9 developer and, as of today, does not own or control the project. However, now that the
10 BTA has been signed, we are working closely with Terra-Gen *** _____

11 _____
12 _____
13 _____
14 _____
15 _____
16 _____

17 ***. Ameren
18 Missouri is working closely with Terra-Gen on these efforts, and participates in (but does
19 not lead) meetings and conference calls with USFWS relating to the HCP and ITP. Terra-
20 Gen is also required to use diligent efforts to obtain an eagle take permit ("ETP") in form
21 and substance and with conditions reasonably satisfactory to Ameren Missouri by closing.
22 Ameren Missouri is working closely with Terra-Gen and participating in USFWS meetings
and calls relating to that effort as well.

1 **Q. What is the rationale *** _____ ***?**

2 A. As Mr. VanDeWalle testifies, while there could be an incidental take of an
3 eagle, available survey data and due diligence indicates that the risks to eagles are minor
4 and we don't see much, if any, risk of operational impacts from eagles. We still believe
5 operating with an ETP permit is the prudent way to operate and thus have obligated Terra-
6 Gen to work diligently to get a permit in place by closing, but do not see a material financial
7 risk relating to eagles. We agree there is a greater risk due to the presence of endangered
8 or protected bat species in the project area. The principal risk is that we might have to
9 operate the turbines during certain times of the year and certain times of day at a higher
10 "cut-in" speed than assumed in the base project economics because this would reduce the
11 capacity factor of the facility and thus its output, which would in turn reduce market
12 revenues and the number of renewable energy credits ("RECs") we would receive. Based
13 on detailed studies we have determined that the worst-case scenario is a reduction in
14 capacity factor of 1.8% and a resulting reduction in value from the project, over its 30-year
15 life, of just over \$20 million (approximately \$22 million). *** _____
16 _____ ***.

17 **Q. Why is this the worst-case scenario?**

18 A. Because as Mr. VanDeWalle explains, we could operate the facility at a cut-
19 in speed of 6.9 meters/second. At that cut-in speed, endangered and protected species of
20 bats will not be taken (as Mr. VanDeWalle also explains, they may not be taken at a speed
21 of significantly less than 6.9 meters/second, but we believe it appropriate to obtain an ITP
22 because there is some risk of a take at lower cut-in speeds). If we operate at 6.9

1 meters/second – which I believe is unlikely – but if we do, we experience the approximately
2 1.8% loss in capacity factor and the resulting approximately \$22 million reduction in value.

3 **Q. How do you respond to Dr. Womack's point that the ITP will not be**
4 **issued until after the CCN has to be issued so its terms are not known at this time,**
5 **and her point that there might not be an ITP?**

6 A. Mr. VanDeWalle addresses these issues, but let me say that from Ameren
7 Missouri's perspective, we fully believe that *** _____
8 _____*** will result in the issuance of an ITP by the USFWS. It could be that for some
9 wind projects the USFWS process would be at a more advanced stage when a CCN is
10 needed, but as I explained in my direct testimony, the CCN is needed by January so that
11 we can meet the timelines in the BTA and so that Terra-Gen, in turn, can get the project
12 constructed on time to take full advantage of the PTCs. Ameren Missouri was mindful of
13 the timing issues and, as I just explained, of protecting customers *** _____
14 _____***.
15 We believe this approach is prudent and reasonable.

16 **Q. OPC witness Dr. Marke makes the point that even with an HCP (I**
17 **believe he is referring to having an ITP and an associated HCP) that the Company**
18 **might exceed the take limits and then have to mitigate more or even shut down the**
19 **plant. Is this a realistic scenario?**

20 A. No, it is not. Mr. VanDeWalle aptly explains that a prudent operator – and
21 I can assure the Commission the Company will operate prudently – will use adaptive
22 management or simply increase cut-in speeds to a level where there is no take of
23 endangered or protected bat species before it exceeds a take limit. As Mr. VanDeWalle

1 also explains, the USFWS isn't going to take adverse action against the Company in the
2 unlikely event a take limit were exceeded so long as the Company is taking steps to address
3 the issue. I do not expect this to be an issue at all, but would submit that Dr. Marke is
4 positing a doomsday scenario to support his extreme hold harmless request, which Mr.
5 Byrne addresses in his surrebuttal testimony.

6 **Q. What about Dr. Marke's reference to the Beech Ridge wind facility in**
7 **West Virginia and the court-mandated limits placed on its operation?**

8 A. As Mr. VanDeWalle explains, the manner in which the wind developer went
9 about addressing (or failing to address) conservation issues on that project is a textbook
10 case of how not to deal with conservation issues on a wind project. Numerous USFWS
11 recommendations were completely ignored, and mitigation measures were simply not
12 pursued.

13 **Q. I know you do not expect to have to take operational measures to fully**
14 **eliminate the risk of taking an endangered or protected bat species, and that you**
15 **expect to obtain an ITP and ETP on terms that balance operations and conservation**
16 **issues, but just to be clear, will Ameren Missouri operate in a manner that is**
17 **protective of endangered and protected species if it does not get those permits?**

18 A. Yes, it will. Ameren Missouri would use a cut-in speed of 6.9 meters/second
19 from dusk to dawn during particular times of the year from spring to fall at night at specific
20 temperatures to avoid takes. We are not going to operate in a way that leads to the extreme
21 situations pointed to by individuals like Dr. Marke and, to some extent, MDC. That said,
22 we do not anticipate having to do this as we firmly believe that Terra Gen will obtain an
23 ITP for this project.

1 **Q. MDC witness Dr. Womack states that risks to bats should be mitigated**
2 **through operational measures and post-construction monitoring. Will operational**
3 **measures be taken and will post-construction monitoring be conducted?**

4 A. Yes, as I have mentioned above and as Mr. VanDeWalle explains in detail,
5 this is all part of the USFWS process when obtaining an HCP.

6 **Q. As you noted above, no party opposes granting Ameren Missouri's**
7 **request for a CCN and RESRAM (as noted, MDC and OPC are asking for certain**
8 **conditions). Why is that important?**

9 A. This project is the first in a series of wind generation projects for Ameren
10 Missouri which allow the Company to comply with the Renewable Energy Standard, to
11 provide our customers with renewable energy and to do so in a manner that is cost-
12 effective. The Company negotiated a BTA which provides a multitude of customer
13 protections, with the aim of ensuring as much of the benefit for customers as possible. This
14 arrangement is the best structure for capturing the entire value of this project and bringing
15 it to the Company's customers. It is in the best interests for our customers for the
16 Commission to grant our request for a CCN and allow Ameren Missouri to institute a
17 RESRAM.

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

19 A. Yes, it does.

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

In the Matter of the Application of Union)
Electric Company d/b/a Ameren Missouri for)
Permission and Approval and a Certificate of) File No. EA-2018-0202
Public Convenience and Necessity Authorizing)
it to Construct a Wind Generation Facility.)

AFFIDAVIT OF AJAY K. ARORA

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

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

1. My name is Ajay K. Arora. I work in the City of St. Louis, Missouri, and I am employed by Union Electric Company d/b/a Ameren Missouri as Vice President of Power Operations and Energy Management.

2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 9 pages and Schedule(s) N/A , all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.



AJAY K. ARORA

Subscribed and sworn to before me this 26th day of September, 2018.



Notary Public

My commission expires: March 7, 2021