

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY CROCKER WIND FARM, LLC FOR A  
PERMIT FOR A WIND ENERGY FACILITY AND A 345 KV TRANSMISSION LINE  
IN CLARK COUNTY, SOUTH DAKOTA, FOR CROCKER WIND FARM

SD PUC DOCKET EL-17-055

PREFILED REBUTTAL TESTIMONY OF MICHAEL MORRIS  
ON BEHALF OF CROCKER WIND FARM, LLC

April 13, 2018



1 **I. INTRODUCTION**

2

3 **Q. Please state your name.**

4 A. My name is Michael Morris.

5

6 **Q. Did you provide Direct Testimony in this Docket on December 15, 2017?**

7 A. Yes.

8

9 **Q. What is the purpose of your Rebuttal Testimony?**

10 A. The purpose of my Rebuttal Testimony is to respond to testimony submitted by Mr.  
11 Sheldon Stevens regarding aviation and wind farms.

12

13 **Q. Are there any exhibits attached to your Rebuttal Testimony?**

14 A. Yes. **Exhibit 1** is a letter from the Federal Aviation Administration's ("FAA")  
15 Minneapolis Airports District Office to Mr. Stevens regarding Mr. Stevens' private  
16 airstrip. Crocker received this letter in response to data requests sent to Mr.  
17 Stevens.

18

19 **II. RESPONSE TO TESTIMONY OF SHELDON STEVENS**

20

21 **Q. Mr. Stevens states that, in prior conversations with the Applicant, he**  
22 **expressed concern about turbines being sited to the west of his airstrip**  
23 **runway. Could you discuss further the interactions between Crocker and Mr.**  
24 **Stevens regarding his airstrip?**

25 A. Yes. Crocker has worked with Mr. Stevens extensively to try to address his stated  
26 concerns. For example, two of my colleagues and I met with Mr. Stevens at his  
27 home in May of 2016 to discuss some of his concerns with the Project, in particular  
28 two turbines that were sited west of Mr. Stevens' airstrip on adjacent participating  
29 landowners' properties. In a good faith effort to work with Mr. Stevens, Crocker  
30 initially shifted, and then removed, these two turbines. Shortly after our

1 conversation, Mr. Stevens filed the airport registration document with the FAA  
2 (Exhibit 1).

3  
4 **Q. Does the fact that Mr. Stevens registered his private airstrip with the FAA**  
5 **provide Mr. Stevens with any rights with respect to the use of neighboring**  
6 **properties?**

7 A. No, Mr. Stevens does not have property rights over his neighbors' properties just by  
8 virtue of having registered a private airstrip on his property. In the letter Mr. Stevens  
9 received from the FAA, the FAA stated: "The FAA cannot prevent the construction of  
10 structures near an airport. The airport environment can only be protected through  
11 such means as local zoning ordinances, acquisitions of property in fee title or  
12 aviation easements, letters of agreements, or other means." Crocker is not aware of  
13 any other easements or other property interests acquired by Mr. Stevens over his  
14 neighbors' properties. Further, the landowners participating in the Project have  
15 already granted their "air rights" to the Project per the terms of the wind lease  
16 agreements.

17  
18 Additionally, we have been coordinating with the FAA regarding the Project for  
19 several years and first filed our layout for evaluation in late 2015. We received  
20 Determination of No Hazard for all filed turbine positions, and subsequently updated  
21 our filings in late 2017 to reflect the modified turbine layout. At this time, all turbines  
22 included in our application have received Determination of No Hazard letters from  
23 the FAA.

24  
25 **Q. Does Mr. Stevens have any rights over neighboring property per the Clark**  
26 **County Zoning Ordinance?**

27 A. No, while the Zoning Ordinance requires a conditional use permit for private  
28 airstrips, it does not establish any airspace protections for private airstrips, nor does  
29 it impose any setbacks from private airstrips on other uses.

1 **Q. Mr. Stevens states in his testimony that he is concerned about wake**  
2 **turbulence. Do you have a response?**

3 A. Yes. When we met with Mr. Stevens, he referenced a study published by the  
4 Kansas Department of Transportation (“KDOT”), which uses computer modeling to  
5 show that wake turbulence (i.e., vortices shed by the rotating blades of a wind  
6 turbine) pose a rollover hazard to light aircraft. I noted some methodology issues in  
7 the paper, and provided Mr. Stevens with some additional peer-reviewed studies  
8 demonstrating that the KDOT study did not accurately represent the behavior of  
9 wakes in the vicinity of large wind farms. For instance, there is a recent study from  
10 the University of Liverpool (England) that used a light-detection and ranging device  
11 to investigate wake turbulence from two wind turbines installed very close to a public  
12 airport, and it was determined that the wake impacts were indistinguishable from  
13 mechanical turbulence caused by obstacles or other aircraft.

14

15 **Q. Mr. Stevens also states that he is concerned about the Project’s impact on**  
16 **aerial spraying. Do you have a response?**

17 A. Yes. Based on my review of National Transportation Safety Board (“NTSB”) data,  
18 there are no reported incidents involving aerial sprayer collisions with wind turbines.  
19 There were several incidents where aerial sprayers collided with poorly-marked  
20 meteorological towers. However, Crocker will meet or exceed FAA and state  
21 marking requirements for the meteorological towers that will be installed on the  
22 Project.

23

24 More generally, design of the Project allows aerial spraying in the area to continue  
25 because the construction of turbines in strings, as well as the typical spacing  
26 between turbines, allows aerial sprayers to access between turbines. In addition,  
27 turbines are set back at least 550 feet from unsigned neighboring property. While  
28 any above ground structure on neighboring property may impact how an aerial  
29 sprayer approaches spraying a field, and individual pilots will determine their comfort  
30 with flying around wind farms, it is typical that areas surrounding wind farms  
31 continue to be serviced by aerial spraying.

1

2 **III. CONCLUSION**

3

4 **Q. Does this conclude your Rebuttal Testimony?**

5 A. Yes.

6

1 Dated this 13th day of April, 2018.

A handwritten signature in blue ink, appearing to read "Michael Morris".

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5 Michael Morris

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