

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE
APPLICATION BY NORTH BEND
WIND PROJECT, LLC FOR A PERMIT
TO CONSTRUCT AND OPERATE THE
NORTH BEND WIND PROJECT IN
HYDE COUNTY AND HUGHES
COUNTY, SOUTH DAKOTA**

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**MR. MICHAEL BOLLWEG'S
RESPONSES TO STAFF'S FOURTH
SET OF DATA REQUESTS TO MR.
MICHAEL BOLLWEG**

EL21-018

Below, please find Mr. Michael Bollweg's Responses to Staff's Fourth Set of Data Requests to Mr. Bollweg, individually, and on behalf of Bollweg Family, LLLP.

- 4-1) For 2018 through 2021, please provide the annual harvest from the Tumbleweed Lodge hunting operation for:
- a) Wild pheasants;
 - b) Released pheasants;
 - c) Sharp-tail grouse;
 - d) Prairie chicken; and
 - e) Hungarian partridge.

Response: The annual harvest numbers are confidential and are being provided under separate cover.

- 4-2) In Docket EL19-027, the Commission ordered the following permit condition for the Crowned Ridge Wind II Project to facilitate aerial spraying in the vicinity of wind turbines:

Project owner must cooperate with agricultural spray applicators in shutting down turbines as needed to facilitate safe and effective spray operation and application.

In Dr. Christensen's report filed in response to staff's first set of discovery, he stated:

The other option would be instead of pulling up to climb over an obstacle to fly around it, below it, or through the blade arc or guy-wire, all of which are not prudent options, especially considering any abnormal operations. Additionally, the turbulence created by the wind turbines would have a direct and immediate impact on the pilot operating downwind of the turbine.

- (a) Does Dr. Christenson maintain that a pilot cannot safely fly around a turbine that is shut down and not moving as ordered for the Crowned Ridge Wind II Project?
- (b) Please explain how flying around a wind turbine that is shut down is different than flying around other stationary obstacles, such as a power line, grain bin, house, trees, or cell tower.

Response: The Crown Ridge II project failed to properly vet the safety concerns that Dr. Christensen, the SDAA, and the NAAA have pointed out.

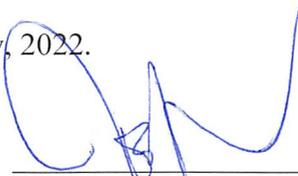
Michael Bollweg is skeptical that Applicant would turn the turbines off when requested. Weather conditions change at the drop of a hat. Insect infestations happen overnight. Soil conditions change with a thunderstorm. Would the Applicant turn off a 2.7 MW generator at a moments' notice so farm work can be done same day? It is likely not practical, and there is no accountability if they do not.

See attached letter from Dr. Christensen.

- 4-3) Refer to the response to staff data request 2-4. Mr. Christensen recommend a setback for a wind turbine no less than 0.8 miles from the end of the field. Is Mr. Christensen aware of any governmental entity that has ordered a similar setback for wind turbines from a property line to facilitate aerial spraying? If so, please provide supporting documentation.

Response: See attached letter from Dr. Christensen.

Dated this 6th day of January, 2022.



JAMES E. MALTERS
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January 4, 2022

James Malters
727 Oxford St.
Worthington, MN 56187

Mr. Malters,

In regards to the STAFF'S FOURTH SET OF DATA REQUESTS TO MR. MICHAEL BOLLWEG EL21-018:

(a) Does Dr. Christenson maintain that a pilot cannot safely fly around a turbine that is shut down and not moving as ordered for the Crowned Ridge Wind II Project?

No.

If the wind towers were not in operation, it would substantial decrease the turbulence created by the wind turbines. As long as the distance from the field to the obstacle can be maintained, pilots could safety operate around a wind turbine.

(b) Please explain how flying around a wind turbine that is shut down is different than flying around other stationary obstacles, such as a power line, grain bin, house, trees, or cell tower.

As a professional pilot and flight instructor, I do not see a major difference between obstacles when height and circumference are adequately considered. I would not try to outmaneuver an obstacle without proper setback clearances for any stationary obstacles such as a wind turbine, powerline, grain bin, house, trees, or cell tower. The height and size of the obstacle must be taken into consideration when operating an aircraft in the vicinity of known obstacles.

I would recommend if a 100 ft grain bin was located within the area of operation, it would be considered much like a 100-foot shut down wind turbine would be except that a wind turbine can rotate so the orientation of the blades in relation to the aircraft turn would have to be taken into consideration. An operator could fly closer to a 100 ft grain bin because the climb required to clear a 100ft bin is less than a taller obstacle.

A 600-foot-tall grain bin with the same circumference as a 600-foot-tall wind turbine would be treated with equal caution. I have yet to encounter a 600-foot-tall grain bin so the best description would be trying to operate in downtown Manhattan with 60-story buildings on multiple sides. It would be possible to operate around them, but the distance between the building (wind turbine/grain bin/obstacle) would need to be sufficiently away to allow for a proper turn. The margin of error decreases and safety margins virtually disappear.

If the PUC request was to evaluate a new tower that was 600ft tall with known guy wires, I would treat it the same as a 600-foot wind turbine using the height and circumference of the obstacle. The tower along with the guywires constitute an obstacle that is not able to be flown through. Yes, it is possible to fly under, over, or through guy wires but the margin of safety decreases with each pass. Flying under or through stopped wind turbine blades is much like guy wires.

As a professional pilot I would not fly under shut down wind turbine blades, nor would I teach that maneuver to any student.

4-3) Refer to the response to staff data request 2-4. Mr. Christensen recommends a setback for a wind turbine no less than 0.8 miles from the end of the field. Is Mr. Christensen aware of any governmental entity that has ordered a similar setback for wind turbines from a property line to facilitate aerial spraying? If so, please provide supporting documentation.

I am not aware of any governmental entity that has ordered a similar setback for wind turbines from property line to facilitate aerial spraying. My job was to evaluate the threats to safety to agricultural spray aircraft posed by the turbines. That analysis had to do with the hard science of physics as it applied to aircraft and pilot performance. No political considerations were evaluated. Governmental agencies sometimes take other factors into consideration.

Respectfully,



Cody Christensen, Ed.D.
Airline Transport Pilot
FAA Gold seal flight instructor

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CERTIFICATE OF SERVICE

EL21-018

I hereby certify that a true and correct copy of Mr. Michael Bollweg's Response to Staff's Fourth Set of Data Requests and the Certificate of Service were served electronically on the Parties listed below, on the 7th day of January, 2022, addressed to:

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/s James E. Malters
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