

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
OF A WIND ENERGY FACILITY AND A 345 KV TRANSMISSION LINE IN CLARK
COUNTY, SOUTH DAKOTA, FOR CROCKER WIND FARM

EL17-055

PREFILED TESTIMONY OF SHELDON (SHAD) STEVENS

ON BEHALF OF INTERVENORS

1 **Q: Please state your name and address.**

2 A: My name is Sheldon (Shad) Stevens, and my address is 41898 162nd Street, Clark, South
3 Dakota.

4

5 **Q: Please describe your education and business experience.**

6 A: I have a Bachelor of Science degree in Electrical Engineering from South Dakota School of
7 Mines & Technology. I am currently retired, having spent my entire career in the computer
8 industry. I was employed by Control Data Corporation (CDC) for 25 years in various engineering
9 and management positions. My last position with CDC was Deputy Program Manager,
10 Subcontracts, International Space Station. Subsequently I was employed by Supercomputer
11 Systems Incorporated (SSI) as Director, Strategic Programs, and by Chen Systems as Vice
12 President, Operations. During my working career I reviewed and approved hundreds of
13 proposals, contacts, and applications. I am a holder of record on patents for computer server
14 architecture.

15

16 **Q: How long have you lived in the area?**

17 A: I was born in Clark and resided in Clark prior to attending college in Rapid City, SD. Upon
18 completing my education I was employed in the Twin Cities, MN and Eau Claire, WI. In 2005 my
19 wife, Jean, was diagnosed with Follicular Lymphoma, an incurable blood cancer. We promptly

20 ended our careers and returned to our family farm in the Crocker Hills and built a low
21 maintenance, energy efficient home where we currently reside.

22

23 **Q: Have you previously submitted testimony in this proceeding in South Dakota?**

24 A: No

25

26 **Q: Are you a non-participating landowner impacted by this project?**

27 A: Yes

28

29 **Q: From your perspective as a pilot and owner of a private airport, what concerns do you
30 have regarding the Project?**

31 A: I have two chief concerns regarding aviation and the Project. I met with Jay Hesse from
32 Geronimo Energy several times regarding potential safety issues with turbines sited near my
33 airport. These meetings were in conjunction with Geronimo's monthly coffee meetings in Clark
34 and at my residence. I expressed concern about turbines potentially being sited west of the
35 airport runway such that they would be an obstruction hazard during takeoff and landing. I also
36 expressed concern about wake turbulence created by multiple turbines that would potentially
37 be sited northwest of the airport. Once it became obvious that Geronimo put their profit ahead
38 of the safety of any pilot using my airport, I contacted the South Dakota Department of
39 Aeronautics and the FAA for any assistance they might provide on my behalf. When Geronimo

40 presented a map showing two turbines approximately one mile from the west end of the
41 airport runway, I also requested help from the County during Commissioner's meetings. One of
42 the County Commissioners subsequently met with the State Department of Aeronautics. I also
43 initiated the formal registration process with the FAA to get the airport shown on FAA
44 navigational charts. Eventually Geronimo eliminated one of the offending turbine sites and
45 moved another, as noted in the County's Conditional Use Permit Findings. Neither of those
46 turbines are sited in the most recent maps. However, a string of six turbines sited northwest of
47 the airport remains.

48

49 Another concern relates to aerial spraying within the Project footprint and adjacent to it. The
50 hilly, rocky terrain in the area dictates aerial spraying for weed control. Aerial spraying within a
51 wind farm is inefficient and impractical. It also presents a hazard, as shown in National
52 Transportation Safety Board (NTSB) data for fatal accidents resulting from aircraft colliding with
53 MET towers and wind turbines. Additionally, two fatal accidents have been recorded involving
54 wind farms, but not directly involving a collision with a turbine or MET tower; one involved an
55 airframe structural failure flying within a wind farm and another was reported as the pilot's loss
56 of control while trying to avoid a wind farm in reduced visibility.

57

58 **Q: From your experience having lived in the area for decades, what is your perspective on**
59 **Crocker's environmental studies?**

60 A: I believe the environmental studies are superficial and do not accurately reflect the impact
61 an industrial wind farm would have on the area. For example, I spoke with the local GFP
62 Conservation Officer last fall and was surprised to hear him say that he was never contacted for
63 information on area wildlife, waterfowl migration, eagle nest sites, etc. For the most part,
64 surveys ignored the Reid Lake Waterfowl Refuge where tens if not hundreds of thousands of
65 migrating ducks, geese, and swans congregate to rest and feed during their annual spring and
66 fall migration. The waterfowl migration is accompanied by a significant number of eagles
67 preying on sick and injured waterfowl. The environmental studies grossly under-report the
68 number of eagles in the area during the waterfowl migration.

69

70 The Grouse Lek studies have been conducted with an aircraft flying a low altitude grid pattern
71 over the area of interest. During mating when the males survival instincts are reduced it may be
72 possible to observe Leks from the air, but in ten plus years of flying over the same area at low
73 altitude, I don't recall ever seeing a single grouse from the air. The Application contains Lek
74 studies showing no Leks in the footprint. However, I have seen as many as fifty Sharptail Grouse
75 on our farm in a single outing late on a fall day. There are numerous Sharptail Grouse on our
76 farm that we have observed flying between our farm and land within the footprint. These birds
77 are difficult to see on the ground, and only flush when you approach them. Using an aircraft for
78 Sharptail Grouse Lek studies would likely yield erroneous results, yet this is how the studies
79 were performed.

80

81 The Final Draft Environmental Assessment Report, Page 13 of Appendix A, states: "No occupied
82 or potential Bald Eagle nests were located within five miles of the Project." This is not true. One
83 active eagle nest is 4.2 miles southwest of the nearest turbine. This nest is listed on the BAEA
84 nest list as EOID 7326 Nest Num 230. Another active nest, not on the BAEA list is 2.2 miles
85 south of the Project footprint located in a clump of trees just south of 164th Street.

86

87 **Q: What evidence have you experienced regarding the impact the Project is having on the**
88 **social condition of the community?**

89 A: This industrial wind farm project and actions of Crocker and its surrogates have reached a
90 point where neighbors that formerly went out of their way to assist each other, no longer
91 speak; friends that hunted and fished together for years no longer do; families are divided;
92 tension is elevated at churches, businesses and school.

93

94 County Commissioners have been maligned at Commissioner meetings and at the public Board
95 of Adjustment hearing. They have been accused on social media and the editorial section of the
96 local newspaper of being biased, and they have been falsely accused of changing the county
97 ordinance regarding setback of turbines from non-participating landowners.

98

99 Early in the Project permitting phase, Crocker directly, and through its surrogates, orchestrated
100 intimidation and harassment of individual Intervenors and non-participants. This was done via
101 social media, by telephone, in public, at residences of opponents to the project, and at the
102 workplace of Intervenors in the presence of their employer. The county sheriff's log contains a
103 response to investigate and halt the harassment of an Intervenor by a Crocker surrogate. The
104 sheriff was also notified of an act of vandalism against an Intervenor with potentially serious
105 consequences.

106

107 To date, I am aware of fifteen specific instances of harassment/intimidation. Intervenors have
108 refrained from addressing this outrageous and divisive behavior in a public setting. Crocker's
109 practice of harassment and intimidation continues.

110

111 **Q: Are you aware of any misrepresentations in the Application?**

112 A: Yes. I live in Woodland Township and am certain there is an irrigation system located in
113 Section 22 of Woodland Township. Further, I am certain that Clark Rural Water serves homes
114 and farms within the project footprint. However, the Application does not acknowledge an
115 irrigation system in Woodland Township, nor does it clearly indicate Clark Rural Water within
116 Project footprint (Box Insert, Figure 13).

117

118 **Q: Are you aware of any cultural resources on your land?**

119 A: This area has a rich Native American history. Located on our property are what we believe to
120 be several Teepee Rings. My wife's grandfather homesteaded this land, and over the years, he
121 and my father-in-law have found hundreds of arrowheads, scrapers, and stone hammer relics. I
122 would expect that the neighboring land within the footprint would also contain such items.

123

124 **Q: Do you have personal knowledge regarding the Comsearch Studies and their ability to**
125 **satisfy the conditions of Clark County's Conditional Use Permit (CUP)?**

126 A: Yes. The county's CUP requires a 3rd party telecommunications study concluding that any
127 electromagnetic interference would be unlikely. Contrary to the Applicant's assertion that
128 interference would be unlikely, both studies are inconclusive: The Comsearch
129 Telecommunications Study, Appendix G, page 4, states: "Our study identified three tower
130 structures and seven communication antennas within or near the project area. They are used
131 for microwave, TV and land mobile services in the area. Detailed impact assessments should be
132 performed for each service type." Page 5 of the Microwave Study states: "For this project,
133 turbine locations were not provided; Thus we could not determine if any potential obstructions
134 exist between the planned wind turbines and the incumbent microwave paths. If latitude and
135 longitude values for turbine locations are provided, Comsearch can identify where a potential
136 conflict might exist".

137

138 Further, the Comsearch studies were completed in April 2016, months prior to a major
139 expansion of the wind farm footprint. The Application for a PUC permit contains no additional
140 telecommunications study results for the expanded area which lies north of State Highway 20
141 to the Day County line, an area of roughly seven thousand acres which would potentially host
142 one third of the project's turbines.

143

144 The Comsearch studies did not address the known Aberdeen weather radar interference issue
145 as described in Appendix H, Agency Communications. Also, Comsearch studies failed to include
146 a 240 foot communications tower located in Woodland Township, Section 5 within the Project
147 footprint. This tower is located one mile directly north of our farm and is not shown in the
148 Comsearch "area of interest" map or Tables of Communications Antennas or Tower Structures.

149

150 **Q: Do you have concerns regarding other RF interference issues?**

151 A: Yes. In April 2016, NOAA expressed concern regarding the Aberdeen weather radar and
152 requested project updates on the proposed wind farm (Application, Appendix H, Agency
153 Correspondence, NOAA Figures 1 and 2). NOAA's concern included mitigation strategies to
154 reduce the impacts to the Aberdeen weather radar: "We would like the developer to consider
155 the following mitigation strategies as they site the turbines: Align turbines so that rows of
156 turbines point towards/away from the radar (along radar azimuths), and, Avoid siting turbines
157 in the most Northwest corner of the development area (black-shaded area in Fig. 2 where

158 impacts would be greatest". Following is text copied from page 110 of the Application,
159 revealing Crocker's blatant deception: "Crocker will implement the suggested mitigation
160 strategies to reduce impact to radar listed in the response from the DOC, which includes
161 aligning turbines so that rows of turbines point towards/away from the radar." See the most
162 recent map of the proposed turbine (Application, Figure 5). While claiming otherwise, the
163 Applicant defied NOAA's mitigation strategy and expanded the project to the north. One-third
164 of the Project's turbines are now sited in the expanded area of greatest impact and the rows of
165 turbines are sited perpendicular to the radar, not towards/away from the radar.

166

167 When confronted with this issue (PUC Staff's Second Data Request), Crocker dismissed it as
168 merely an "incorrect" statement. However, on March 15th, 2018, Crocker and USFWS jointly
169 released the long-awaited Environmental Assessment Report in draft form. Interestingly, the
170 report (page 88) contains the same language: "Crocker will implement the suggested mitigation
171 strategies to reduce impacts to radar listed in the response from the DOC, which includes
172 aligning turbines so that rows of turbines point towards/away from the radar."

173

174 Prior to the project's expansion, NOAA stated: "Turbine clutter contamination is likely to impact
175 the radar's precipitation estimates over the Northern portion of the wind farm area. However,
176 we do not anticipate impacts to critical mesocyclone/tornado detection algorithms". Prior to
177 the Project's expansion, Crocker would have known that the direction of the prevailing wind

178 would prohibit following NOAA's mitigation strategy. Crocker would also have known that the
179 existing 66-turbine Day County wind farm causes turbine clutter contamination of the radar's
180 precipitation estimates, and that the Crocker Project expansion further into the area of greatest
181 impact with larger, taller turbines would exacerbate the radar interference.

182

183 In January 2018, the Applicant provided letters from NTIA and WAPA indicating that they do not
184 have a problem with the Project going forward. This correspondence, however, does not
185 address the known Aberdeen weather radar interference issue. This issue is not in compliance
186 with the County's CUP condition #17, and further, the Applicant defied NOAA's recommended
187 mitigation measures.

188

189 **Q: Based on your knowledge of the area, what are the attributes that make the Crocker area**
190 **a poor choice for a wind farm?**

191 A: The area is predominantly hilly grassland in close proximity to a State Waterfowl Refuge and
192 multiple State Game Production Areas. Much of the grassland is native prairie. There are
193 several large water bodies nearby and numerous prairie potholes within the project boundary.
194 USFWS and SDGF&P recommend siting wind turbines on cultivated agriculture land as opposed
195 to grassland, particularly native prairie. Both agencies have consistently cautioned Geronimo
196 about siting turbines on grassland. Only 18% of the Project's footprint is classified as cultivated
197 agriculture land.

198

199 Much of the land is constrained by grassland and wetland easements. Wind turbines eliminate
200 habitat for many species of ground nesting birds. Estimates by USFWS are 70 acres of habitat
201 per turbine on grassland.

202

203 Some of the land within the proposed wind farm footprint is only accessible by low-
204 maintenance and no-maintenance dirt roads. Construction and maintenance of the wind farm
205 would be extremely difficult in these areas.

206

207 **Q: Does this conclude your testimony?**

208 A: Yes it does. I thank you for the opportunity to present testimony.

The foregoing written testimony is to be presented to the South Dakota PUC for SD PUC
Docket EL-17-055.

Dated this 27th day of March, 2018

S.D. Stevens

Shad Stevens