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From the office of Miles F. Schumacher
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February 28, 2020

VIA ELECTRONIC SERVICE

Ms. Patricia Van Gerpen
Executive Director
South Dakota Public Utilities Commission
500 East Capitol Avenue
Pierre, SD 57501

Re: Application to the SD PUC for a Facility Permit to Construct
a 300.6 Megawatt Wind Facility; EL19-027

Dear Ms. Van Gerpen:

In response to Staff Data Request No. 3-11, Crowned Ridge Wind II committed to filing the second round of Bat Acoustic survey results and report ("Report"). Attached is that Report.

If you have any questions, please contact me.

Yours very truly,

LYNN, JACKSON, SHULTZ & LEBRUN, P.C.



Miles F. Schumacher
Enclosures
MFS:kab

013863

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

IN THE MATTER OF THE APPLICATION)
BY CROWNED RIDGE WIND II, LLC FOR)
A PERMIT OF A WIND ENERGY)
FACILITY IN DEUEL, GRANT)
AND CODINGTON COUNTIES)

EL19-027

**APPLICANT'S SECOND
SUPPLEMENTAL RESPONSES TO
STAFF'S THIRD SET OF DATA
REQUESTS TO APPLICANT**

3-11) Referring to the response to data request 2-12, what is the intent of the additional bat acoustic surveys being completed and when will the results be available?


Response: CRW II has completed a second round of acoustic surveys in September 10, 2019 – November 12, 2019 to be responsive to a request by the US Fish and Wildlife Service. The objective of the survey was to determine the bat species present within areas of potentially suitable northern long-eared bat habitat during the survey period. Consistent with results of the CRW II initial acoustic survey, no northern long-eared bat calls were recorded during the 2019 effort. These results support the overall conclusion that northern long-eared bats are unlikely to be present in the Project Area as described in the Application, Section 11.3.1.2.2. The survey report is being prepared and will be filed in the CRW II docket in early February 2020.

Supplemental Response: See attached Bat Acoustic Survey Results.

Respondent: Sarah Sappington, Consultant

Dated this 28th day of February, 2020.

/s/ Miles F. Schumacher
Miles F. Schumacher
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Pre-Construction Bat Acoustic Study Report for the Proposed Crowned Ridge II Wind Facility, Codington, Deuel, and Grant Counties, South Dakota

FEBRUARY 2020

PREPARED FOR

Crowned Ridge Wind II, LLC

PREPARED BY

SWCA Environmental Consultants

**PRE-CONSTRUCTION BAT ACOUSTIC STUDY REPORT
FOR THE PROPOSED CROWNED RIDGE II WIND FACILITY,
CODINGTON, DEUEL, AND GRANT COUNTIES, SOUTH
DAKOTA**

Prepared for

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SWCA Project No. 57578
February 2020

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1 INTRODUCTION

1.1 Project Overview

Crowned Ridge Wind II, LLC, a wholly owned indirect subsidiary of NextEra Energy Resources, LLC, plans to develop an approximately 200-megawatt (MW) wind facility known as the Crowned Ridge II Wind Energy Facility (the project) on approximately 60,996 acres of land (project area) in Codington, Deuel, and Grant Counties, South Dakota (Figure 1). The project includes an on-site generation tie line, which was previously permitted under South Dakota Public Utilities Commission (SDPUC) docket EL18-019. This line is located within the project area. Crowned Ridge Wind II, LLC, has entered into a purchase and sale agreement under which it will permit and construct the project (including the on-site generation tie line) and, thereafter, transfer the project, along with its Facility Permits, to Northern States Power at the commercial operations date. Construction is anticipated to commence in spring 2020, and the project is scheduled to achieve commercial operation at or before the end of 2020.

The U.S. Fish and Wildlife Service (USFWS) has developed voluntary guidance that includes measures intended to address potential concerns to bird and bat species as related to wind energy facilities. This voluntary guidance is outlined in the Land-Based Wind Energy Guidelines (WEGs) (USFWS 2012). In 2017, Crowned Ridge Wind II, LLC, requested that SWCA Environmental Consultants (SWCA) conduct acoustic bat surveys in habitat representative of that which was present within areas of potential project disturbance. That survey was completed from April 6, 2017 – December 1, 2017 and is summarized in the report titled *Pre-Construction Bat Acoustic Study Report for the Proposed Crowned Ridge II Wind Facility, Codington, Deuel, and Grant Counties, South Dakota* filed with the SDPUC on July 9, 2019. Crowned Ridge completed a second passive acoustic bat survey in 2019 to be responsive to USFWS comments received in July 2019. The objective of this survey was to determine the bat species present within areas of potentially suitable northern long-eared bat habitat during the survey period. This report describes the 2019 acoustic bat survey methods and results.

2 METHODS

2.1 Detector Deployment

Zero-crossing recording methods, which record the frequency of the single loudest soundwave detected, historically have been the standard in the field of bat acoustic monitoring. However, new technology allows for recording the full spectrum of sound created when a bat echolocates. The Anabat Swift developed by Titley Electronics is a bat detection system that uses a broadband microphone and data storage unit to detect and record ultrasonic sounds in the full spectrum. However, the conventional wisdom within the field, and in SWCA's experience, is that although recording in full spectrum collects the best data, processing and analysis in zero-crossing format yield the most accurate results. Therefore, all full-spectrum call files were converted into zero-crossing files prior to analysis.

In 2018, SWCA completed a desktop assessment to identify northern long-eared bat habitat suitability and relative quality within the project area (SWCA 2018, Figure 1). For the 2019

survey, SWCA selected four detector locations within suitable habitat or within areas connecting suitable habitat within the project area (Figure 1).

The microphones of two Anabat Swift units were affixed to the top of a 3-meter-high extendable pole. The microphone was connected to the detector with a microphone cable. Internal GPS allowed detectors to be set to record bat activity beginning at 30 minutes before sunset and through the night until 30 minutes after sunrise the following day. Detectors were deployed at Locations 1 and 2 between September 10 and October 1, 2019 and were relocated to Locations 3 and 4 where they recorded between October 2 and November 12, 2019.

2.2 Acoustic Analysis

Bat species produce echolocation calls based on their ecological niche requirements, which may demand different frequency bandwidth, call note duration, and other characteristics. These parameters can be assessed in the sonograms to facilitate species identification. However, intraspecific variation based on confounding factors (e.g., habitat and the presence of other bats) can make species identification difficult or impossible (Barclay and Brigham 2004); the *Myotis* bat species is generally recognized as being the most difficult to differentiate. Furthermore, the microphones cannot discriminate between bat calls and other ultrasonic sounds (e.g., rain, insects, and electrical or mechanical [collectively called noise]). Therefore, post-survey data analysis also includes separating files with bat calls from files containing noise.

SWCA used Kaleidoscope to convert full-spectrum files to zero cross and filter out files without bat passes (i.e., noise files); the remaining, converted bat pass files were then analyzed using software approved by the USFWS for automated identification of northern long-eared bats: Bat Call Identification (BCID) version 2.8b. A list of species that may be present within the project area was developed following the results of previous desktop reviews (SWCA 2018), and BCID was restricted to considering only those species during its autotclassification process.

Results from BCID were manually vetted by comparing characteristics of classified calls with known calls for species that may be present in the project area. All bat passes were manually identified by a trained biologist with experience in manual vetting and who has received training from recognized experts. Many species have similar, overlapping echolocation signatures, and bat calls can vary depending on habitat or activity; therefore, species differentiation is not always possible (Barclay 1999), particularly when only portions of the calls are recorded. As a result, SWCA categorized unidentifiable calls according to high and low frequency groups (≥ 35 kHz and < 35 kHz, respectively) (Table 1).

After each call file had been manually vetted, SWCA tabulated the total number of bat passes and relative bat activity by species and detector location. A bat pass is defined as a sequence of echolocation calls that are separated by greater than 1 second (O'Farrell et al. 1999; White and Gehrt 2001). A bat pass is a commonly used metric for interpreting relative bat activity at a site; however, the number of bat passes cannot be translated into the abundance of bats, because a single bat foraging near a bat detector can record multiple passes.

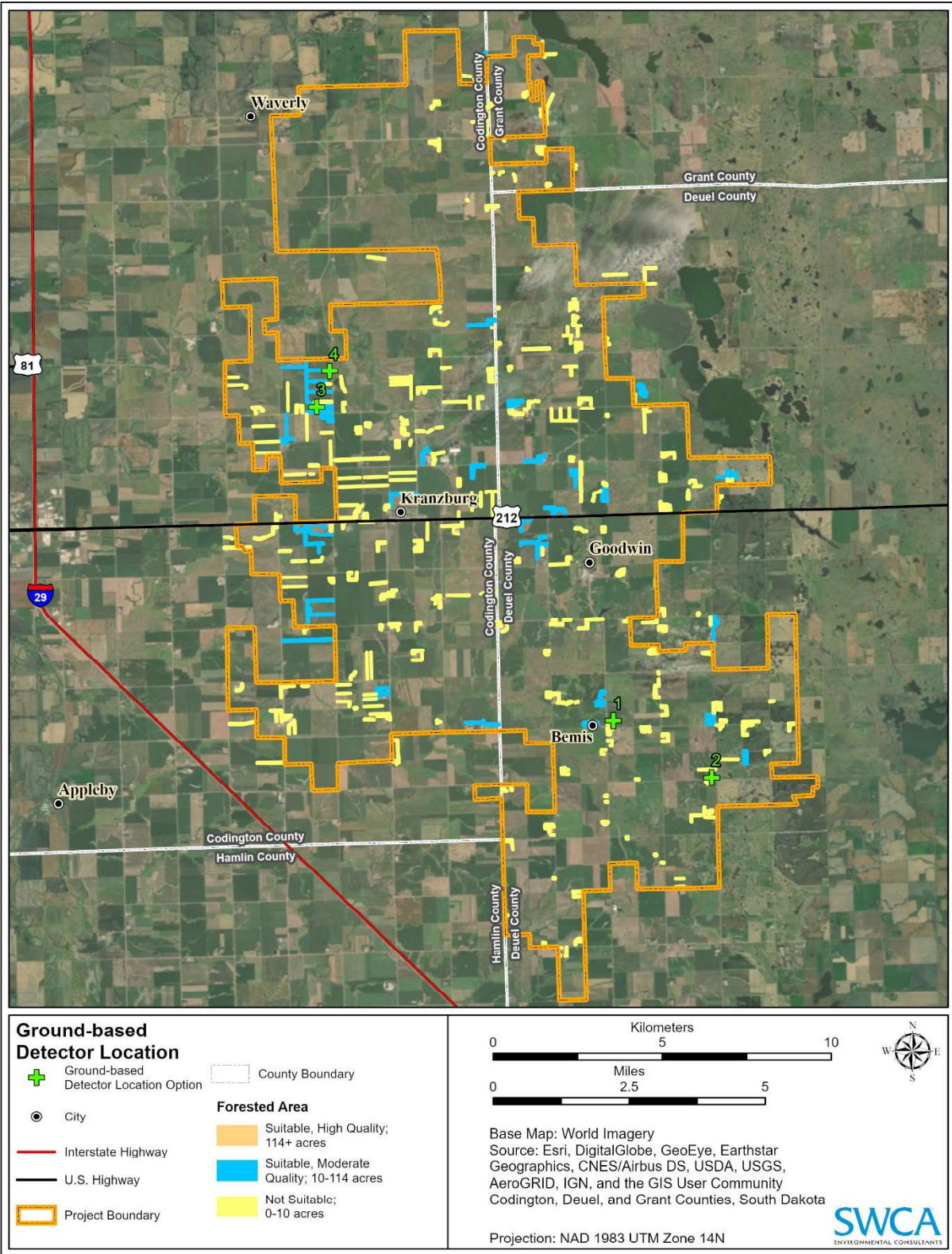


Figure 1. Location of the proposed Crowned Ridge II project area showing acoustic detector unit placement and northern long-eared bat habitat suitability in Codington, Deuel, and Grant Counties, South Dakota.

Table 1. Bat Species Comprising Probable Frequency Groups in the Proposed Crowned Ridge II Project Area

Low Frequency Group (< 35 kHz)	High Frequency Group (≥ 35 kHz)	<i>Myotis</i> Species
Hoary bat (<i>Lasiurus cinereus</i>)	Red bat (<i>Lasiurus borealis</i>)	Northern long-eared bat (<i>Myotis septentrionalis</i>)
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	–	Little brown bat (<i>Myotis lucifugus</i>)
Big brown bat (<i>Eptesicus fuscus</i>)	–	–

3 RESULTS

From September 10 through November 12, 2019, 61 bat passes were recorded by the detectors (Table 2). Cumulatively, units recorded for 76 nights.

Table 2. Bat Passes Recorded within the Proposed Crowned Ridge II Project Area, September 10 through November 12, 2019

Detector Location	Hoary Bat	Low Frequency Group	Silver-Haired Bat	Unknown	Big Brown Bat	<i>Myotis</i> Species	Total
Ground-Based 1	3	1	12	0	11	0	27
Ground Based 2	6	1	7	1	12	0	27
Ground Based 3	0	0	0	0	0	0	0
Ground Based 4	2	0	3	0	2	0	7
Total	11	2	22	1	25	0	61

Cumulatively, all units recorded 61 bat passes during 76 nights of surveying, resulting in a relative bat activity index of 0.80 passes per detector-night.

Table 3. Relative Bat Activity Recorded within the Proposed Crowned Ridge II Project Area, September 10 through November 12, 2019

Detector Location	Hoary Bat	Low Frequency Group	Silver-haired bat	Unknown	Big brown bat	<i>Myotis</i> species	Total
Ground-Based 1	0.11	0.04	0.44	0	0.41	0	1.00
Ground-Based 2	0.22	0.04	0.26	0.04	0.44	0	1.00
Ground-Based 3	0	0	0	0	0	0	0
Ground-Based 4	0.29	0	0.43	0	0.29	0	1.01
Total	0.62	0.08	1.13	0.04	1.14	0	3.01

4 DISCUSSION

The northern long-eared bat was listed as a threatened species with a 4(d) rule on April 2, 2016 (USFWS 2016) and is the only currently federally listed species with potential to occur within the project area. However, the USFWS confirmed that there are no known northern long-eared bat hibernacula or maternity roost trees in Codington, Deuel, and Grant Counties. Additionally, based on their records, the USFWS stated that while the species could occur in these counties, it is likely to only be a migrant, rather than a resident species (USFWS pers. comm 2019). Surveys were conducted within the limited suitable northern long-eared bat habitat within the project area. No northern long-eared bats were recorded.

Given the time of year, the heavily agricultural landscape, and lack of roosting or foraging habitat within the project area, this low level of activity is unsurprising and likely suggests that the area is not a heavily used migration corridor for bats. Because of the lack of tree cover, it is also likely that the project area has a very small resident bat population, which is supported by the relatively low levels of overall bat activity.

Numerous studies have been conducted across the United States to allow for better prediction of the risk of bat mortality associated with wind energy facilities. Multiple variables could affect bat species' risk at wind energy facilities, including vegetation type(s) and habitat suitability, overall landscape and geographic characteristics, bat population densities, migration paths, or a species' use of an area (Johnson et al. 2011, Thompson et al. 2017, Roemer et al. 2019). Specific objectives of these bat studies were to gain an understanding of occurrence and use of the project area by bats and a relative activity index in support of monitoring recommendations provided in the WEGs.

Overall, the level of bat activity may suggest that bat use of the project area is relatively low. For comparison, Jain (2005) documented a mean activity level in 2003 and 2004 of 34.88 and 36.57 per detector-night, respectively, in Iowa. Because of the lack of suitable roosting and foraging habitat in the project area, the number of bats is likely much lower than what might be observed in other, more ecologically diverse parts of the country.

5 LITERATURE CITED

- Barclay, R.M.R. 1999. Bats are not birds: a cautionary note on using echolocation calls to identify bats: a comment. *Journal of Mammalogy* 80:290–296.
- Barclay, R.M.R., and R.M. Brigham. 2004. Geographic variation in the echolocation calls of bats: a complication for identifying species by their calls. In *Bat Echolocation Research: Tools, Techniques, and Analysis*, pp 144–149. Edited by R.M. Brigham, E.K.V. Kalko, G. Jones, S. Parsons, and H.J.G.A. Limpens, Austin, Texas: Bat Conservation International.
- Jain, A.A. 2005. Bird and bat behavior and mortality at a northern Iowa windfarm. M.S. thesis, Iowa State University, Ames, Iowa.
- Johnson, J.B., J.E. Gates, and N.P. Zegre. 2011. Monitoring seasonal bat activity on a coastal barrier island in Maryland, USA: *Environmental Monitoring and Assessment* 173, p. 685–699.
- O’Farrell, M.J., B.W. Miller, and W.L. Gannon. 1999. Qualitative identification of free-flying bats using the Anabat detector. *Journal of Mammalogy* 80:11–23.
- Roemer, C., Y. Bas, T. Disca, and A. Coulon. 2019. Influence of landscape and time of year on bat-wind turbines collision risks. *Landscape Ecology*, 34: 2869-2881. SWCA Environmental Consultants (SWCA). 2018. Bat Habitat Assessment Proposed Crowned Ridge II Wind Facility Codington, Grant, and Deuel Counties, South Dakota. Bismarck, ND.
- SWCA Environmental Consultants. 2019. Pre-Construction Bat Acoustic Study Report for the Proposed Crowned Ridge II Wind Facility, Codington, Deuel, and Grant Counties, South Dakota. Bismarck, ND.
- Thompson, M.B, J. A., Etterson, M., Diffendorfer, J. E., and Loss, S. R. 2017. Factors associated with bat mortality at wind energy facilities in the United States. *Biological conservation*, 215: 241-245.
- U.S. Fish and Wildlife Service (USFWS). 2012. *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines*. Available at: http://www.fws.gov/ecological-services/es-library/pdfs/WEG_final.pdf. Access November 2019.
- . 2016. Endangered and threatened wildlife and plants; threatened species status for the northern long-eared bat with 4(d) rule. *Federal Register* 80:17974–18033.
- White, E.P., and S.D. Gehrt. 2001. Effects of recording media on echolocation data from broadband bat detectors. *Wildlife Society Bulletin* 29:974–978.

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

IN THE MATTER OF THE APPLICATION)	
BY CROWNED RIDGE WIND II, LLC FOR)	EL19-027
A PERMIT OF A WIND ENERGY)	
FACILITY IN DEUEL, GRANT)	CERTIFICATE OF SERVICE
AND CODINGTON COUNTIES)	

I hereby certify that true and correct copies of Applicant's Second Supplemental Responses to Staff's Third Set of Data Requests to Applicant along with attached CRII Bat Acoustic 2020 Final were served electronically on the parties listed below on the 28th day of February, 2020, addressed to:

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