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From the office of Miles F. Schumacher

e-mail address: mschumacher@lynnjackson.com

July 2, 2019

Via Electronic Filing

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

Re: Docket #EL19-003
Application to the SD PUC for a Facility Permit to Construct
A 300 megawatt Wind Facility

Dear Ms. Van Gerpen:

Attached for filing is Crowned Ridge Wind, LLC Post-Hearing Brief and Proposed Findings of Fact and Conclusions of Law as well as the corresponding Certificate of Service.

Thank you.

Yours very truly,

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



Miles F. Schumacher

MFS:kab

Enclosure

020445

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

| | | |
|--------------------------------|---|------------------------------------|
| IN THE MATTER OF THE |) | |
| APPLICATION OF CROWNED |) | CROWNED RIDGE WIND, LLC |
| RIDGE WIND, LLC FOR A |) | POST-HEARING BRIEF |
| PERMIT OF A WIND ENERGY |) | AND PROPOSED FINDINGS OF |
| FACILITY IN GRANT |) | FACT AND CONCLUSIONS OF LAW |
| AND CODINGTON COUNTIES |) | |
| | | EL-19-003 |

I. Introduction

Crowned Ridge Wind, LLC (“CRW” or “Applicant”) respectfully requests that the Public Utilities Commission of the State of South Dakota (“Commission”) grant an Energy Facility Permit (“Permit”) for its up to 300 megawatt (“MW”) proposed wind facility to be located in Grant County and Codington County, South Dakota (the “Project”).

On January 30, 2019, CRW submitted an Application for a Permit to construct, operate, and maintain the proposed Project. The Project includes up to 130 wind turbine generators, access roads to turbines, underground 34.5-kilovolt (“kV”) electrical collector lines, underground fiber-optic cable, a 34.5-kV to 345-kV collection substation, one permanent meteorological tower, and an operations and maintenance facility. In support of its Application, CRW submitted pre-filed testimony and exhibits that demonstrate it has satisfied the burden of proof requirements of South Dakota Codified Law (“SDCL”) 49-41B-22. No substantial evidence to the contrary has been submitted in this proceeding. Accordingly, CRW respectfully requests the Commission issue CRW the Permit.

In Appendix A to this Brief, CRW has set forth proposed findings of fact and conclusions of law, including permit conditions (“Conditions”) that have been agreed on by Commission Staff and CRW in support of the Commission issuing the Permit.¹

II. Legal Standard

In order to obtain a Permit for the proposed Project, SDCL 49-41B-22 requires that CRW show that:

- (1) The proposed facility will comply with all applicable laws and rules;
- (2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;
- (3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and
- (4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

Further, pursuant to SDCL 49-41B-25, the Project must meet the applicable requirements of SDCL Ch. 49-41B.²

¹ Ex. A61 and Ex. A63 (Stipulated Conditions).

² The substantive project-related requirements of SDCL Ch. 49-41B are set forth in SDCL 49-41B-11, which require certain information be included in CRW’s Application.

III. Argument

The record demonstrates that CRW has met the burden of proof on each of the four statutory elements of SDCL 49-41B-22 and the other applicable requirements of SDCL Ch. 49-41B.

A. The Project will comply with all applicable laws and rules

The record shows that the Project will comply with all applicable laws and rules, including the county setbacks required in Grant County and Codington County.³ Further, CRW has agreed to Condition No. 1, which requires it to obtain all governmental permits which reasonably may be required by any applicable township, county, state agency, federal agency, or any other governmental unit.⁴ There is no evidence that the Project will not comply with all applicable laws and rules. Accordingly, CRW has met its burden of proof that it will comply with all applicable laws and rules.

B. The Project will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area

The record demonstrates that the proposed Project will not pose a threat of serious injury to the environment,⁵ including geological resources,⁶ soil resources,⁷ hydrological resources,⁸

³ Ex. A1 at 75-78, 118-119 (Application) and Ex. A5 at 8-11 (Wilhelm and Massey Direct Testimony).

⁴ Attachment A to Proposed Findings of Facts and Conclusions of Law, Condition No. 1.

⁵ Ex. A1 at 29-87, 89-93 (Application); Ex. A25 at 3-11 (Sappington Direct Testimony); Ex. A42 at 3-10, 12-21, 23-24 (Sappington Rebuttal Testimony); and Ex. A42-1 (Updated Maps).

⁶ Ex. A1 at 32-35 (Application) and Ex. A42-1, Figures 9a, 9b, and 10 (Updated Maps).

⁷ *Id.*

⁸ Ex. A1 at 40-46 (Application) and Ex. A42-1, Figure 12 (Updated Maps).

terrestrial ecosystems,⁹ wildlife,¹⁰ aquatic systems,¹¹ land use,¹² and air and water quality.¹³ CRW has also committed to implement reasonable avoidance and mitigation measures to minimize the impact on the environment.¹⁴ In addition, CRW has conducted surveys in consultation with applicable tribes¹⁵ and the South Dakota State Historical Preservation Office¹⁶ to identify historical and cultural items of significance in the Project area. In support of protecting the environmental and cultural resources, CRW has agreed to a number of Permit conditions.¹⁷ Further, shifts in infrastructure and the use of alternative turbine locations to

⁹ Ex. A1 at 46-69 (Application); Ex. A1-C (Dakota Skipper and Poweshiek Skipperrling Survey); Ex. A1-D (2017-2018 Raptor Nest Survey Report); Ex. A1-E (Avian Use Survey Report); Ex. A1-F (Bat Habitat Assessment Report); and Ex. A1-G (Bat Acoustic Survey Report).

¹⁰ Ex. A1 at 53-69 (Application).

¹¹ *Id.* at 70-73.

¹² Ex. A1 at 73-88 (Application); Ex. A1-A (Figures); Ex. A5 at 8-11 (Wilhelm and Massey Direct Testimony); Ex. A2 (Haley Direct Testimony); Ex. A1-H (Sound Modelling Report); Ex. A1-J (Shadow-Flicker Report); Ex. A1-L (Decommissioning Plan); Ex. A22 (Haley Supplemental Testimony); Ex. A43 (Haley Rebuttal Testimony); Ex. A43-1 (Shadow Flicker ISO-Lines); Ex. A43-2 (Sound Pressure ISO-Lines); Ex. A56 (Appendix D Sound ISO-Lines Map Book); Ex. A57 (Appendix C3 Sound Results Table Rev 6); Ex. A67 (Appendix C-1 Shadow-Flicker Results) and Ex. A68 Appendix C-2 Shadow-Flicker Results).

¹³ Ex. A1 at 89-91, 92-93 (Application).

¹⁴ Ex. A1 at 24-25, 29-87, 89-93 (Application); Ex. A4 at 4-5 (Thompson Direct Testimony); Ex. A25 at 3-11 (Sappington Direct Testimony); and Ex. A42 at 3-10, 12-21, 23-24 (Sappington Rebuttal Testimony).

¹⁵ Ex. A25 at 15 (Sappington Direct Testimony).

¹⁶ Ex. A25 at 15-16 (Sappington Direct Testimony); Ex. A1-B (Agency Correspondence); and Ex. S4 at 3-7 (Olson Direct Testimony).

¹⁷ See Attachment A to Proposed Findings of Facts and Conclusions of Law, Condition Nos. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 32, 33, 35, and 43. At the hearing, Intervenor questioned whether sufficient environmental and cultural information had been provided on the portion of the Project area associated with the acquired Cattle Ridge Wind project. First, all of the above-cited conditions apply to the entire Project area, including that portion of the former Cattle Ridge Wind project; and, second, the record is replete with information on the environmental and cultural resources impacted by the entire Project area, including the portion of the Project area comprised of the former Cattle Ridge Project. Ex. A1 at 29-87; 89-93 (Application); Ex. A1-A (Figures); Ex. A1-B (Agency Correspondence); Ex. A1-C (Dakota Skipper and Poweshiek Skipperrling Survey); Ex. A1-D (2017-2018 Raptor Nest Survey Report); Ex. A1-E (Avian Use Survey Report); Ex. A1-F (Bat Habitat Assessment Report); Ex. A1-G (Bat Acoustic Survey Report); Ex. A25 at 3-11 (Sappington Direct Testimony); Ex. A42 at 3-10, 12-21, 23-24 (Sappington Rebuttal Testimony); Ex. A42-1 (Updated Maps); and Evid. Hrg. Tr. at 181-182 (June 11, 2019) (Sappington: communications with South Dakota Game, Fish & Parks included GIS shape files on the Cattle

accommodate landowner preferences, including the Hessler proposal to use alternative turbine locations, have no bearing on the Project's overall impact to environmental and cultural resources.¹⁸ Therefore, the Project will not pose a threat of serious injury to environmental and cultural resources.

At the hearing, Staff introduced Exhibit S7 as a proposed Permit condition to require the Applicant to conduct post construction grouse lek monitoring. However, no leks were observed during most recent 2017-2018 studies of the Project Area.¹⁹ Also, the two species of prairie grouse with potential to occur in the Project Area are not federally or state-listed species.²⁰ Further, CRW obtained from the South Dakota Game, Fish and Parks historical lek location data, which was used during the siting of infrastructure to avoid or minimize impacts to grassland communities. CRW Project design collocates linear elements, such as access roads, collection lines, and crane paths with existing disturbed corridors (*e.g.*, roads, fence rows) to the extent practical to avoid and minimize impacts to known historic grouse leks, and potentially suitable grouse habitat.²¹ CRW has committed to avoid or minimize impacts to known grouse leks during construction and in the siting of infrastructure.²² Accordingly, given CRW's Project design and commitments, a Permit condition to require the Applicant to conduct post construction grouse lek monitoring is not needed or warranted.

Ridge portion of the Project area.). Therefore, the evidence identifies the impacts to the entire Project area, as well as demonstrates CRW's commitment to protect environmental and cultural resources consistent with the commitments set forth in its Application and the Permit conditions.

¹⁸ Ex. A42 at 11 (Sappington Direct Testimony); Ex. A42-1 (Updated Maps); Ex. A59 (Final Land Status and Hessler 7 Turbine Moves); and Evid. Hrg. Tr. at 173, 308 (Sappington) (June 11, 2019).

¹⁹ Ex. A1 at 61-62 (Application).

²⁰ *Id.*

²¹ Ex. 42-1 (Updated Maps – Figure 6).

²² Ex. 42 at 12 (Sappington Rebuttal Testimony).

In addition, the record demonstrates that the proposed Project will not pose a threat of serious injury to the social and economic condition of inhabitants or expected inhabitants.²³ Over a 10 year period, the Project has been developed through an iterative process to identify the Project area.²⁴ During this time, CRW worked closely with federal and state agencies, landowners, and tribal and local governments to design and site the infrastructure for the Project.²⁵ To protect the social and economic characteristics of the area, CRW has also agreed to conditions that address impacts on local communication and transportation systems.²⁶ Further, in support of the local economy, the Project will produce benefits to the community, including the payment of property taxes, lease payments, temporary jobs for 250 construction workers, and 12 permanent workers stationed in South Dakota.²⁷ Accordingly, the Project will not pose a threat of serious injury to the social and economic condition of inhabitants or expected inhabitants.

C. The Project will not substantially impair the health, safety, or welfare of the inhabitants

The record demonstrates that the proposed Project will not substantially impair the health, safety, or welfare of inhabitants. Specifically, CRW has committed that the Project will not result in: (1) more than 45 dBA of sound at any non-participant's residence; (2) more than

²³ Ex. A1 at 95-110, 117 (Application); Ex. A1-K (Property Value Effects Studies); and Ex. A1-M (Telecommunication Study).

²⁴ Ex. A1 at 2, 26-28, 88 (Application).

²⁵ Ex. A1 at 2, 26-28, 88 (Application) and Ex. A5 at 6-15 (Wilhelm and Massey Direct Testimony).

²⁶ See Attachment A to Proposed Findings of Facts and Conclusions of Law, Condition Nos. 7, 8, and 24.

²⁷ Ex. A1 at 15, 98, 111 (Application); Ex. A4 at 8 (Thompson Direct Testimony); and Ex. A5 at 12; A28 (Wilhelm and Massey Direct Testimony).

50 dBA sound at any participant's residence;²⁸ and (3) more than 30 hours of shadow- flicker annually at all residences,²⁹ with the exception of one participant who will experience approximately 37 hours of shadow-flicker if the landowner waives the exceedance.³⁰ If the landowner does not waive the exceedance, then CRW will curtail the wind turbine causing the exceedance to ensure that there is no more than 30 hours of shadow-flicker annually experienced at this residence.³¹ To support the accuracy of the sound and shadow-flicker results, CRW used a number of conservative modeling assumptions, such as:

Sound³²

- The wind turbines were assumed to be operating at their maximum sound emission levels;
- A 2 dBA adder was applied to the turbines' sound emission levels;
- The turbines were assumed to be downwind of the receptor; and
- The atmospheric conditions were assumed to be the most favorable for sound to be transmitted.

²⁸ Ex. A56 (Appendix D Sound ISO-Lines Map Book) and Ex. A57 (Appendix C-3 Sound Results Table Rev 6). The results for sound levels also show the Project is in compliance with the applicable Grant and Codington ordinances.

²⁹ Ex. A67 (Appendix C-1 Shadow-Flicker Results Table Rev 5); and Ex. A68 Appendix C-2 Shadow-Flicker Results Table Rev 5).

³⁰ Ex. A44 at 2-3 (Wilhelm and Massey Rebuttal Testimony) and Evid. Hrg. Tr. at 361 (June 21, 2019) (Haley).

³¹ Ex. A44 at 2-3 (Wilhelm and Massey Rebuttal Testimony).

³² Ex. A2 at 3 (Haley Direct Testimony) and Evid. Hrg. Tr. at 357-358 (June 12, 2019) (Haley).

Shadow-Flicker³³

- All residences were modeled as if they were built entirely out of windows;
- No credit was applied for any blockage from trees; and
- It was assumed that the wind turbines were operating 100% of the time.

In addition, the cumulative impacts from Crowned Ridge Wind II and the Dakota Range I and II wind projects were also included in the sound and shadow-flicker models.³⁴ CRW witnesses Drs. Ollson and McCunney testified that, based on the design of the Project, including its modeled sound levels and shadow-flicker, the CRW Project will not substantially impair the health or welfare of non-participants and participants.³⁵ There is no substantial evidence that contradicts the testimony provided by Drs. Ollson and McCunney, and, therefore, the record demonstrates that the CRW Project will not substantially impair the health or welfare of non-participants and participants.

In addition to designing the Project so it does not result in sound above 45 dBA at all non-participant residences, CRW voluntarily agreed to use alternative turbine locations, instead of specifically identified primary turbine locations, to further reduce sound levels for non-participants.³⁶ Based on the final land status and turbine locations, including CRW's use of

³³ Ex. A2 at 7-8 (Haley Direct Testimony) and Evid. Hrg. Tr. at 359-360 (June 12, 2019) (Haley).

³⁴ Ex. A26 at 3-3 (Applicant's Responses to Staff Third Set of Data Requests); Ex. A56 (Appendix D Sound ISO-Lines Map Book) and Ex. A57 (Appendix C-3 Sound Results Table Rev 6); and Evid. Hrg.Tr. at 361 (June 12, 2019) (Haley).

³⁵ Ex. A24 (Ollson Supplemental Testimony); Ex. A38 (Ollson Rebuttal Testimony); Ex. A40 (McCunney Rebuttal Testimony); Evid. Hrg. Tr. at 433-435 (June 12, 2019) (McCunney); and Evid. Hrg. Tr. at 452-458 (June 12, 2019) (Ollson).

alternative turbine locations, the evidence shows Intervenorors will experience the following sound levels and shadow-flicker at their residences:³⁷

| Intervenor | Sound Level (dBA) | Shadow-Flicker (Hours) |
|---------------------------|--------------------------|-------------------------------|
| Allen Robish | 29.3 | 0 |
| Amber Christenson | 38.6 | 6:56 |
| Kristi Morgen | 28.8 | 0 |
| Patrick and Melissa Lynch | 37.3 | 0 |

Also, based on the final land status and turbine locations, including the use of alternative turbine locations, the non-participant receptors identified by Staff witness Hessler will experience the following sound levels at their residences:³⁸

| Non Participant Receptor | Use of Primary Turbines (Sound dBAs) | Use of Alternative Turbine Locations (Sound dBA) |
|---------------------------------|---|---|
| CR1-C52-NP | 44.6 | 40.4 |
| CR1-C31-NP | 43.3 | 39.5 |
| CR1-C61-NP | 44.2 | 41.5 |
| CR1-C34-NP | 44.5 | 42.3 |
| CR1-C28-NP | 41.9 | 40.1 |
| CR1-C60-NP | 42.1 | 40.7 |

Hence, consistent with Commission Staff's request, CRW has voluntarily modified its project design to further reduce sound for certain non-participants, even though such a reduction was not required by a county sound ordinance nor required by the evidence submitted by Drs.

³⁶ See Attachment A to Proposed Findings of Facts and Conclusions of Law, Condition No. 28 and Ex. 61 (Stipulated Conditions).

³⁷ Ex. A56 (Appendix D and ISO-Lines Map Book); Ex. A57 (Appendix C-3 Sound Results Table Rev 6); Ex. A58 (Final Land Status and Hessler 7 on Intervenorors); Ex. A67 (Appendix C-1 Shadow-Flicker Results Table Rev 5); and Ex. A68 Appendix C-2 Shadow-Flicker Results Table Rev 5).

³⁸ Ex. A60 (Hessler 7 on Hessler-Identified Non Participants).

Ollson and McCunney regarding the impact of sound from wind turbines on health and welfare. Accordingly, CRW's voluntary modification of the Project design further demonstrates CRW's commit to mitigating impacts to non-participants.

The record also demonstrates that the proposed Project will not substantially impair the safety of inhabitants. CRW has committed to meet or exceed the required setbacks established for safety reasons.³⁹ CRW will also implement safety practices during the construction, operation, and maintenance of the Project, including grounding the wind turbines in accordance with National Electrical Safety Code standards.⁴⁰ CRW will monitor the operation of the Project twenty-four hours a day, seven days a week through the Supervisory Control and Data Acquisition system.⁴¹ CRW will implement a Storm Water Pollution Prevention Plan and a Spill Prevention, Control, and Countermeasures Plan, both of which will ensure that coordination with state and local disaster services occurs in the event of the accidental release of contaminants.⁴² CRW will illuminate the wind turbines as required by the Federal Aviation Administration.⁴³ Further, CRW has agreed to use two methods to detect icing conditions on turbine blades to shut down turbines when they are accumulating ice.⁴⁴ Accordingly, the Project will not substantially impair the safety of inhabitants.

³⁹ Ex. A1 at 12, 27, 75-78 (Application) and Ex. A5 at 9-11 (Wilhelm and Messy Direct Testimony).

⁴⁰ Ex. A1 at 20, 114-115 (Application) and Ex. A4 at 3, 7 (Thompson Direct Testimony).

⁴¹ Ex. A1 at 23 (Application) and Ex. A4 at 5, 7-8 (Thompson Direct Testimony).

⁴² Ex. A1 at 41, 90-91, 100, 102 (Application).

⁴³ *Id.* at 12.

⁴⁴ See Attachment A to Proposed Findings of Facts and Conclusions of Law, Condition No. 40.

D. The Project will not unduly interfere with the orderly development of the region

The record demonstrates that the proposed Project will not unduly interfere with the orderly development of the region, which is demonstrated by the granting of conditional use permits for the Project by Grant County and Codrington County.⁴⁵

CRW has also committed to decommissioning the Project at the end of its 25-year useful life, provided the life of the Project is not extended by retrofitting the turbines and power systems.⁴⁶ In support of decommissioning, CRW will establish an escrow agreement consistent with the Commission's past rulings;⁴⁷ however, CRW requests that the Commission allow for the escrow agreement to be filed 30 days (instead of the 60 days in past cases) prior to the commencement of commercial operations. CRW will use the additional time to work with Grant County and Codrington County on recognizing the Commission's escrow requirements rather than the counties imposing duplicative escrow agreement requirements on the Project.⁴⁸ In this regard, CRW requests that the Commission set forth in its final Order that the escrow agreement required in this proceeding will be sufficient financial protection for decommissioning the entire Project, so that the counties need not require duplicative escrow or security.

E. CRW's Application provided the information required by SDCL 49-41B-11

The record shows that CRW's Application included the following information required by SDCL 49-41B-11:

⁴⁵ Ex. A1 at 88 (Application); Ex. A1-J (County Conditional Use Permits); Ex. A5 at 8-11 (Wilhelm and Massey Direct Testimony); and Ex. A44 at 3-4 (Wilhelm and Massey Rebuttal Testimony).

⁴⁶ Ex. A1 at 113 (Application) and Ex. A1-L (Decommission Plan).

⁴⁷ *In the Matter of the Application of Deuel Harvest Wind Energy, LLC*, Docket No. EL18-053, Final Decision and Order (Condition No. 36) (May 30, 2019).

⁴⁸ Ex. A44 at 4-5 (Wilhelm and Massey Rebuttal Testimony).

(1) *The name and address of the applicant:*

The name and address of the applicant, CRW, is set forth in Section 4 of the Application.

(2) *Description of the nature and location of the facility:*

The description of the facility and its location is set forth in Sections 1.1 and 2.0 of the Application.

(3) *Estimated date of commencement of construction and duration of construction:*

The estimated date of the start of construction and duration of construction is set forth in Sections 4.3, 6.11, and 17.0 of the Application.

(4) *Estimated number of employees employed at the site of the facility during the construction phase and during the operating life of the facility. Estimates shall include the number of employees who are to be utilized but who do not currently reside within the area to be affected by the facility:*

Estimated number of temporary construction employees and permanent operation and maintenance employees are set forth in Section 19.0 of the Application.

(5) *Future additions and modifications to the facility which the applicant may wish to be approved in the permit:*

Future additions and modifications are set forth in Section 20.0 of the Application.

(6) *A statement of the reasons for the selection of the proposed location:*

A statement on the selection of the Project's location is set forth in Section 7.0 of the Application.

(7) *Person owning the proposed facility and person managing the proposed facility:*

The owner and manager of the Project are set forth in Section 3.0, including the May 15, 2019 amendment to the Application.

(8) *The purpose of the facility:*

The purpose of the Project is set forth in Section 4.0 of the Application.

(9) *Estimated consumer demand and estimated future energy needs of those consumers to be directly served by the facility:*

The estimated consumer demand and future needs for the Project are set forth in Sections 1.1 and 4.0 of the Application.

- (10) *The potential short and long range demands on any estimated tax revenues generated by the facility for the extension or expansion of public services within the affected areas:*

The potential short and long range demands on the estimated tax revenues are set forth in Section 18.1.2 of the Application.

- (11) *Environmental studies prepared relative to the facility:*

The environmental studies were attached to the Application as Appendices A, B, C, D, E, F, and H, along with Sections 9-16 of the Application.

- (12) *Estimated construction cost of the facility:*

The estimated construction cost of the Project is set forth in Section 5.0 of the Application.

F. Intervenor's proposed conditions

Staff witness Kearney attached to his testimony 37 proposed conditions that Intervenor's indicated they desired to advance in this proceeding.⁴⁹ While Staff witness Kearney's provided Staff's initial reaction to the 37 conditions, witness Kearney also testified that Staff had not seen supporting information from Intervenor's on any of their proposed conditions.⁵⁰ During the proceeding, the Intervenor's submitted no evidence in support of the 37 conditions. In contrast, CRW provided substantial evidence demonstrating that the conditions proposed by the Intervenor's should not be adopted.⁵¹ Therefore, the 37 conditions proposed by Intervenor's should not be adopted.

⁴⁹ Ex. S2 at 12 (Exhibit DK-9) (Kearney Direct Testimony).

⁵⁰ *Id.*

⁵¹ Ex. A1-K (Property Value Effects Study); Ex. A37 at 4-11 (Thompson Rebuttal Testimony); Ex. A38 at 8-12 (Ollson Rebuttal testimony); Ex. A39 at 2-6 (Baker Rebuttal Testimony); Ex. A40 at 3-11 (McCunney Rebuttal Testimony); Ex. A42 at 12-24 (Sappington Rebuttal Testimony); Ex. A43 at 6-7 (Haley Rebuttal Testimony); and Ex. A44 at 9-19 (Wilhelm and Massey Direct Testimony).

IV. Conclusion

For the reasons set forth herein, the Commission should grant CRW an Energy Facility Permit.

Sincerely,

July 2, 2019

/s/ Miles Schumacher

Miles Schumacher
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APPENDIEX A

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF SOUTH DAKOTA

| | | |
|--------------------------------|---|--------------------------------------|
| IN THE MATTER OF THE |) | |
| APPLICATION OF CROWNED |) | |
| RIDGE WIND, LLC FOR A |) | PROPOSED FINDINGS OF FACT AND |
| PERMIT OF A WIND ENERGY |) | CONCLUSIONS OF LAW |
| FACILITY IN GRANT |) | |
| AND CODINGTON COUNTIES |) | |
| | | EL-19-003 |

APPEARANCES

Commissioners Gary Hanson, Chris Nelson, and Kristie Fiegen.

Miles Schumacher of Lynn, Jackson, Shultz & Lebrun, P.C. 110 N. Minnesota Ave., Suite 400 Sioux Falls, SD 57104 and Brian J. Murphy, NextEra Energy Resources, LLC, 700 Universe Blvd, Juno Beach, FL 33408, appeared on behalf of Crowned Ridge Wind, LLC.

Kristen Edwards, Amanda Reiss, and Mikal Hanson, 500 E. Capitol Ave., Pierre, South Dakota 57501, appeared on behalf of the South Dakota Public Utilities Commission Staff (“Staff”).

David L. Ganje, Ganje Law Offices, 17220 N. Boswell Blvd, Suite 130L, Sun City, AZ 85373, appeared on behalf of Intervenors Melissa Lynch, Patrick Lynch, Amber Christenson, Allen Robish, and Kristi Morgan.

PROCEDURAL HISTORY

On January 30, 2019, the Public Utilities Commission of the State of South Dakota (Commission) received an Application for an Energy Facility Permit (Application) from Crowned Ridge Wind, LLC (Crowned Ridge or Applicant), a wholly-owned, indirect subsidiary of NextEra Energy Resources, LLC. Crowned Ridge proposes to construct a wind energy conversion facility to be located in Grant County and Codington County, South Dakota (Project). The Project would be situated on approximately 53,186 acres in the townships of Waverly, Rauville, Leola, Germantown, Troy, Stockholm, Twin Brooks, and Mazeppa, South Dakota (Project Area). The total installed capacity of the Project would not exceed 300 megawatts (MW) of nameplate capacity. The proposed Project includes up to 130 wind turbine generators, access roads to turbines and associated facilities, underground 34.5-kilovolt (kV) electrical collector lines, underground fiber-optic cable, a 34.5-kV to 345-kV collection substation, one permanent meteorological tower, and an operations and maintenance facility. The Project will utilize the Crowned Ridge 34-mile 230-kV generation tie line and a new reactive power compensation

substation to transmit the generation from the Project's collector substation to the Project's point of interconnection located at the Big Stone South 230-kV Substation, which is owned by Otter Tail Power Company. The Applicant has executed a power purchase agreement (PPA) with Northern States Power Company (NSP) to sell NSP the full output of the Project. The Project is expected to be completed in or before the first quarter of 2020. Applicant estimates the construction cost of the Project to be \$400 million.

On January 30, 2019, the Applicant filed the pre-filed testimony of Kimberly Wells, Mark Thompson, Jay Haley, Tyler Wilhelm, and Sam Massey.

On February 7, 2019, The Applicant filed Supplemental Figure 3a.

On February 6, 2019, the Commission issued the Notice of Application; Order for and Notice of Public Input Hearing; Notice for Opportunity to Apply for Party Status. Pursuant to SDCL 49-41B-15 and 49-41B-16, the Commission in that order scheduled a public input hearing on the Application on Wednesday, March 20, 2019, at 5:30 p.m., CDT, at Waverly-South Shore School Gymnasium, 319 Mary Place, Waverly, S.D. The order also set a deadline for party status applications to be filed on or before 5:00 p.m., CDT, April 1, 2019.

On February 22, 2019, the Commission issued an order assessing the Applicant a filing fee not to exceed \$400,000 with an initial deposit of \$8,000. This order also granted party status to Amber Christenson, Allen Robish, and Kristi Magen.

The Commission had the notice of the public input hearing published in the following publications: Milbank/Grant County Review, February 20, 2019, and March 13, 2019 editions; Watertown Public Opinion, February 20, 2019, and March 13, 2019 editions; and South Shore Gazette, February 21, 2019, and March 14, 2019 editions.

On February 27 and 28, 2019, the Applicant updated Appendix H and I based on participant status.

On March 20, 2019 the public input hearing was held.

On March 21, 2019, the Commission issued an order granting party status to Melissa Lynch.

On April 2, 2019, the Applicant filed affidavits of landowner notices and newspaper publications.

On April 4, 2019, the Commission issued a procedural schedule and granted party status to Patrick Lynch.

On April 9, 2019, the Applicant filed supplemental testimony of Chris Ollson, Jay Haley, Mark Thomson, Tyler Wilhelm, and Sam Massey. On April 10, 2019, Sarah Sappington adopted the Applicant's direct testimony of Kimberly Wells. On May 10, 2019, the Intervenor filed the

testimony of John Thompson and Allen Robish,¹ while Staff filed testimony of Paige Olson, David Hessler, Tom Kirschenmann, and Darren Kearney.

On April 24, 2019, the Intervenor filed a motion to deny and dismiss the Application. On April 30, 2019, the Applicant and Staff filed responses to the motion. On May 9, 2019, the Commission held oral arguments on the motion. On May 10, 2019, the Commission issued an order denying the motion.

On May 10, 2019, the Commission issued an Order For and Notice of Evidentiary Hearing, scheduling an evidentiary hearing for June 11-14 to be conducted in Room 413, State Capitol Building, 500 E. Capitol Ave., Pierre, South Dakota.

On May 17, 2019, Intervenor filed a Second Motion to Dismiss. On May 23, 2019, Staff filed for an Exception to the Procedural Schedule to have Staff witness Hessler take the stand prior to June 11, 2019. On the same day, the Applicant filed a response to the Second Motion to Dismiss and a Motion to Strike. On May 28, 2019, the Intervenor filed a Reply Brief and Motion to Take Judicial Notice. On June 6, 2019, the Commission held an *ad hoc* meeting to consider these matters and voted to postpone the Second Motion to Dismiss until June 11, 2019 and directed the Applicant to file a final land status map by June 7, 2019. At the same meeting, the Commission voted to grant the Exception to the Procedural schedule and initiated the evidentiary hearing to take Staff witness Hessler on June 6, 2019. On June 11, 2019, the Commission considered the Second Motion to Dismiss and voted to deny it. On June 12, 2019, the Commission issued an order denying the Second Motion to Strike, denying the Motion to Strike, and granting the Motion to Take Judicial Notice and for an Exception to the Procedural Schedule.

On May 24, 2019, the Applicant filed rebuttal testimony of Sarah Sappington, Andrew Baker, Dr. Robert McCunney, Chris Ollson, Jay Haley, Richard Lampeter, Mark Thomson, Tyler Wilhelm, and Sam Massey.

On June May 30, 2019, Staff filed its witness and exhibit lists. On June 3, 2019, the Applicant filed its witness and exhibit lists. On June 5, 2019, Intervenor filed its witness and exhibit lists.

On June 7, 2019, the Applicant filed a final land status map, which was updated on June 10, 2019. On June 6, 11, and 12, the Commission held evidentiary hearings.

On June 13, 2019, Timothy and Linda Lindgren filed out-of-time request for party status.

On June 18, 2019, the Commission issued an order, directing that post hearing briefs be filed on or before July 2, 2019.

¹ During the evidentiary hearing, the Intervenor did not move for its testimony to be made part of the evidentiary record, and, therefore, it is not part of the evidentiary record.

On June 25, 2019, the Commission held a meeting and voted 2-1 to deny the late intervention of Timothy and Linda Lindgren. On June 26, 2019, the Commission issued a written order denying the late intervention of Timothy and Linda Lindgren.

On July 2, 2019, post hearing briefs were filed by Crowned Ridge, Staff, and Intervenors.

Having considered the evidence of record, applicable law, and the briefs and arguments of the parties, the Commission makes the following Findings of Fact, Conclusions of Law, and Order:

FINDINGS OF FACT

I. PROCEDURAL FINDINGS.

1. The Procedural History set forth above is hereby incorporated by reference in its entirety in these Procedural Findings. The procedural findings set forth in the Procedural History are a substantially complete and accurate description of the material documents filed in this docket and the proceedings conducted and decisions rendered by the Commission in this matter.

II. PARTIES.

2. Crowned Ridge Wind, LLC (Applicant or Crowned Ridge) is a wholly-owned, indirect subsidiary of NextEra Energy Resources, LLC (NextEra).² NextEra, through its affiliates, is the world's largest generator of renewable energy from the wind and sun, generating over 19,000 MWs in 29 states and Canada.³

3. Amber Christenson, Allen Robish, Kristi Magen, Melissa Lynch, and Patrick Lynch were granted party status.

4. Staff fully participated as a party in this matter, in accordance with SDCL 49-41B-17(1).

III. APPLICABLE STATUTES AND REGULATIONS FOR A WIND ENERGY FACILITY PERMIT.

5. The following South Dakota statutes are applicable: SDCL 49-41B-1 through 49-41B-2.1, 49-41B-4, 49-41B-5.2, 49-41B-11 through 49-41B-19, 49-41B-22, 49-41B-25, 49-41B-26 through 49-41B-37 and applicable provisions of SDCL Chapters 1-26 and 15-6.

6. The following South Dakota administrative rules are applicable: ARSD Chapters 20:10:01 and 20:10:22.

² Ex. A1 at 1 (Application).

³ Ex. A5 at 1 (Wilhelm and Massey Direct Testimony).

7. Under SDCL 49-41B-22, the Commission must find that:

- (1) The proposed facility will comply with all applicable laws and rules;
- (2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;
- (3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and
- (4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

8. SDCL 49-41 B-25 provides that the Commission must make a finding that the construction of the facility meets all applicable requirements of Chapter 49-41B.

9. There is sufficient evidence on the record for the Commission to assess the proposed Project using the criteria set forth above.

IV. PROJECT DESCRIPTION

10. The proposed Project is an up to 300 MW wind facility to be located in Codington County and Grant County, South Dakota.⁴ It will be owned and operated by the Applicant.⁵ The Project is situated within an approximately 53,186 acre Project Area and will include the following: (i) up to 130 GE 2.3 MW wind turbine generators; (ii) access roads to turbines and associated facilities; (iii) underground 34.5-kilovolt (kV) electrical collector lines connecting the turbines to the collection substation; (iv) underground fiber-optic cable for turbine communications co-located with the collector lines; (v) the low-side of a 34.5 to 345-kV collection substation; (vi) one permanent meteorological (met) tower; (vii) an operations and maintenance (O&M) facility; and (viii) temporary construction areas, including laydown and batch plant areas.⁶ The estimated construction cost associated with the wind facility is approximately \$400 million.⁷ Fluctuations in Project costs could be as much as 20% percent, dependent on final micrositing and MISO interconnection costs.⁸ The Project will utilize the Crowned Ridge 34-mile 230 kV generation tie line and a new reactive power compensation substation⁹ to transmit the generation from the Project's collector substation to the Project's point of interconnection located at the Big Stone South 230 kV Substation, which is owned by Otter Tail Power Company.¹⁰ The Applicant has no plans for future expansion of the Project.¹¹

⁴ Ex. A1 at 1 (Application); Ex A1-A (Figures); Ex. A42-1 (Sappington Rebuttal Testimony); and Ex. A54 (Final Land Status Map).

⁵ Ex. A1 at 14 (Application) and Ex. A29 (Amendment to Application on Ownership).

⁶ Ex. A1 at 1, 17-25 (Application); Ex. A1-A (Figures 4a, 4b, and 5); Ex. A54 (Final Land Status Map); and Ex. A59 (Final Land Status and Hessler 7 Turbine Moves).

⁷ Ex. A1 at 17 (Application).

⁸ *Id.*

⁹ The transmission gen-tie and reactive compensation substation were approved in Docket No. EL17-050.

¹⁰ Ex. A1 at 1 (Application).

11. Under Condition No. 28, the Applicant has agreed to use alternative turbine locations instead of the following primary turbine locations CR-16, CR-19, CR-49, CR-23, CR-60, CR-67, and CR-68. The Applicant further indicated that based on the final land status map, there would be a shift in turbines CR-50 and CR-Alt-22.¹² Crowned Ridge also indicated that final land status required the dropping of CR-40 and CR-17, to be replaced with CR-Alt42 and CR-Alt45.¹³

12. As a result of demand for the facility, the Applicant has executed a PPA with NSP to sell NSP the full output of the Project.¹⁴ On July 6, 2017, the Minnesota Public Utilities Commission approved NSP's Petition for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan, including the PPA with the Applicant. On December 6, 2018, North Dakota Public Service Commission issued an order granting an advance determination of prudence for the PPA between NSP and the Applicant.¹⁵ The commercial operation date for the Project is projected to be in or before the first quarter of 2020.¹⁶

13. The Applicant has entered into lease and easement agreements with private landowners within the Project Area for the placement of Project infrastructure.¹⁷ The Applicant anticipates that the life of the Project will be approximately 25 years, which is consistent with the Project's contracted term.¹⁸ At the end of the Project's contracted life there may be opportunities to extend the life of the Project by repowering the Project by retrofitting the turbines and power system with upgrades based on new technology, which may allow the wind farm to produce efficiently and successfully for many more years.¹⁹ In the event the Project's contracted life is not extended, the record demonstrates that the Applicant has appropriate and reasonable plans for decommissioning.²⁰ The Project will be decommissioned in accordance with applicable state and county regulations.²¹ The Applicant has agreed to establish an escrow account for purposes of decommissioning the Project.²²

14. The record demonstrates that Crowned Ridge submitted substantial evidence on the potential cumulative impacts of the Project, and that the Project will not have a significant impact.²³

¹¹ *Id.* at 112.

¹² Ex. A59 (Final Land Status and Hessler 7 Turbine Moves).

¹³ *Id.*

¹⁴ A1 at 1, 15 (Application).

¹⁵ *Id.* at 1.

¹⁶ *Id.* at 1, 94.

¹⁷ Ex. A1 at 113 (Application) and Ex. A54 (Final Land Status Map).

¹⁸ Ex. A1 at 113 (Application).

¹⁹ *Id.*

²⁰ *Id.* at Appendix L and Ex. A4 at 9-11 (Thompson Direct Testimony).

²¹ Ex. A1 at 113 (Application).

²² Ex. A44 at 5 (Wilhelm and Massey Rebuttal Testimony).

²³ Ex. A7 at 5-7 (Applicant's Responses to Staff First Set of Data Requests); Ex. A26 at 2-3 (Applicant's Responses to Staff's Third Set of Data Requests); Ex. A43 at 2 (Haley Rebuttal); Ex. A56 (Appendix D and ISO-Lines Map Book); Ex. A57 (Appendix C-3 Sound Results Table Rev 6); Ex. A67 (Appendix C-1 Shadow Flicker Results Table Rev 5); and Ex. A68 Appendix C-2 Shadow Flicker Results Table Rev 5).

VI. SATISFACTION OF REQUIREMENTS FOR ISSUANCE OF AN ENERGY FACILITY PERMIT.

A. The proposed facility will comply with all applicable laws and rules.

15. The evidence submitted by Crowned Ridge demonstrates that the Project will comply with applicable laws and rules.²⁴ Pursuant to Condition No. 1, the Applicant also commits to obtain all governmental permits which reasonably may be required by any applicable township, county, state agency, federal agency, or any other governmental unit for the construction and operation of the Project prior to engaging in the particular activity covered by the permit.

16. Subject to the Permit conditions, the Project meets all applicable requirements of SDCL Chapter 49-41B and ARSD Chapter 20:10:22.²⁵

B. The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area.

1. Environment.

17. The evidence demonstrates that the Project does not pose a threat of serious injury to the environment.²⁶ The evidence also shows that Crowned Ridge will implement reasonable avoidance and mitigation measures to limit potential environmental impacts.²⁷

18. With respect to geological resources, the evidence shows that the project will not pose a threat of serious injury to these resources.²⁸ The evidence further shows that the impact to geological resources from the Project will be minimal.²⁹

19. The evidence demonstrates that the Project does not pose a threat of serious injury to soil resources, including prime farmland.³⁰ The Project during construction will only impact 2,134.4 acres of the 53,186.2 acre Project Area, and only 86.0 acres on a permanent basis.³¹ Table 11.1.2 of the Application sets forth additional detail on the temporary and permanent impacts from the Project, broken down by land cover type.³² During and after construction a number of mitigation measures, including best management practices (BMP), a Storm Water Pollution Prevention Plan (SWPPP), and a Spill Prevention, Control, and Countermeasures Plan (SPCCP), will be implemented to minimize the impacts to soil resources.³³ For example, the

²⁴ Ex. A1 at 75-78, 118-119 (Application) and Ex. A5 at 8-11 (Wilhelm and Massey Direct Testimony).

²⁵ Ex. A1 through Ex. A61.

²⁶ Ex. A1 at 29-87, 89-93 (Application); Ex. A25 at 3-11 (Sappington Direct Testimony); Ex. A42 at 3-10, 12-2, 23-24 (Sappington Rebuttal Testimony); and Ex. A42-1 (Updated Maps).

²⁷ Ex. A1 at 24-25, 29-87, 89-93 (Application); Ex. A4 at 4-5 (Thompson Direct Testimony); Ex. A25 at 3-11 (Sappington Direct Testimony); and Ex. A42 at 3-10, 12-21, 23-24 (Sappington Rebuttal Testimony).

²⁸ Ex. A1 at 32-35 (Application) and Ex. A42-1, Figures 9a, 9b, and 10 (Updated Maps).

²⁹ Ex. A1 at 34-35 (Application).

³⁰ Ex. A1 at 28-29, 35-39 (Application) and Ex. A42-1, Figure 11 (Updated Maps).

³¹ Ex. A1 at 37 and 50 (Application) and Ex. A42 at 5, 13-14, 23-24 (Sappington Rebuttal Testimony).

³² Ex. A1 at 50 (Application); A25 at 5-7 (Sappington Direct Testimony); A42 at 6-7 (Sappington Rebuttal Testimony).

³³ Ex. A1 at 24, 38-39 (Application).

Applicant has committed that “. . . during construction to protect topsoil and minimize soil erosion. Soil areas disturbed during construction will be decompacted and returned to preconstruction contours to the extent practicable and in accordance with landowner agreements.”³⁴

20. The evidence also demonstrates that the Project does not pose a threat of serious injury to hydrological resources.³⁵ The evidence shows there will only be limited and temporary impacts to: (i) groundwater resources; (ii) existing surface water resources; and (iii) current and planned water uses.³⁶ To minimize impacts, the Applicant has committed to implement BMPs, a SWPPP, and SPCCP to mitigate impacts to hydrology resources.³⁷ The evidence also shows there will be no impact to impaired waters and flood storage areas.³⁸ The Applicant has indicated the amount of water it will likely use during construction, and has committed to obtain any necessary permits for water sources used during construction and operations.³⁹

21. The evidence demonstrates that the Project does not pose a threat of serious injury to terrestrial ecosystems.⁴⁰ Specifically, there are no anticipated impacts to federally or state-listed plants.⁴¹ The Project will not involve any major tree-clearing.⁴² Also, Crowned Ridge has designed the Project so that turbines will not be sited in wetlands.⁴³ To minimize temporary impacts to vegetation due to construction, the Applicant has also committed to implement BMP, a SWPPP, and SPCCP. The Applicant will avoid impacts to United States Fish and Wildlife Service grasslands and grassland-wetland combination easements, as well as avoid impacts to native grassland to the extent practicable.⁴⁴ The BMPs will include re-vegetation practices and erosion control devices.⁴⁵ The Applicant has also agreed to compensate landowners for crop damage.⁴⁶ Pursuant to Condition No. 16, the Applicant will develop and implement a plan to control noxious weeds. Further, the Applicant indicated that the minor shifts in the siting of collector lines, access roads, two turbines, and the use of alternative turbine sites does not change the overall impact of the Project on the terrestrial environment.⁴⁷

22. The evidence demonstrates that Crowned Ridge does not pose a threat of serious injury to wildlife.⁴⁸ The Applicant has conducted extensive studies and consulted relevant

³⁴ *Id.* at 38.

³⁵ *Id.* at 40-46; A42-1, Figure 12.

³⁶ Ex. A1 at 40-46 (Application).

³⁷ *Id.*

³⁸ *Id.* at 45.

³⁹ Ex. A1 at 23, 41, 42 (Application) and Ex. A45 at 5-10 and 5-11 (Applicant's Responses to Intervenor's Fifth Set of Data Requests).

⁴⁰ Ex. A1 at 46-69 (Application); Ex. A1-C (Dakota Skipper and Poweshiek Skipperling Survey); Ex. A1-D (2017-2018 Raptor Nest Survey Report); Ex. A1-E (Avian Use Survey Report); Ex. A1-F (Bat Habitat Assessment Report); and Ex. A1-G (Bat Acoustic Survey Report).

⁴¹ Ex. A1 at 50 (Application).

⁴² *Id.* at 51.

⁴³ Ex. A1 at 52 (Application) and Ex. A42 at 8 (Sappington Rebuttal Testimony).

⁴⁴ Ex. A1 at 12, 43 (Application).

⁴⁵ *Id.* at 51.

⁴⁶ Ex. A1 at 50 (Application) and Ex. A23 at 3-7 (Wilhelm and Massey Supplemental Testimony).

⁴⁷ Ex. A42 at 11 (Sappington Rebuttal Testimony); Ex. A42-1 (Updated Maps); Ex. A59 (Final Land Status and Hessler 7 Turbine Moves); Evid. Hrg. Tr. at 173, 308 (Sappington) (June 11, 2019).

⁴⁸ Ex. A1 at 53-69 (Application).

studies to understand the potential impact to wildlife.⁴⁹ The Applicant will implement an avoidance, minimization, and mitigation approach to lessen the impact the Project has on wildlife, including mammals and avian.⁵⁰ Crowned Ridge will also mitigate temporary impacts to habitat consistent with Staff witness Kirschenmann's recommendations.⁵¹ There will be no turbines on game production areas, with the closest two turbines .24 mile and .35 mile away from a game production area.⁵² Further, the Applicant is required under Condition No. 32 to conduct two years of independently-conducted post-construction avian and bat mortality monitoring for the Project. The Applicant committed to file a Wildlife Conservation Strategy, which includes both direct and indirect effects as well as the wildlife mitigations measures set forth in the Application, prior to the start of construction.⁵³ Pursuant to Condition No. 33, the Applicant will file a Bird and Bat Conservation Strategy prior to the start of construction. Also, Staff witness Kirschenmann testified that the Applicant had appropriately coordinated with the South Dakota Department of Game, Fish, and Parks on the impact of the Project on wildlife.⁵⁴

23. The evidence demonstrates that the Project does not pose a threat of serious injury to aquatic ecosystems.⁵⁵ Similarly, the evidence demonstrates that the Project does not pose a threat of serious injury to land use and will comply with local controls.⁵⁶ The Applicant has coordinated with landowners to locate infrastructure in a manner that minimizes the impact to their land uses.⁵⁷ The evidence further demonstrates that there are no anticipated material impacts to existing air and water quality, and the Project will comply with applicable air and water quality standards and regulations.⁵⁸ The Applicant also committed to implement a number of BMPs to mitigate the impact of the Project on air and water quality.⁵⁹

24. The Applicant will use lighting required by the Federal Aviation Administration (FAA).⁶⁰ The Applicant has also committed to use a FAA-approved Aircraft Detection Lighting System to minimize visual impact of the Project.⁶¹

25. The Applicant has undertaken extensive study, surveys, and consultation with applicable tribes to identify and avoid sites of cultural, archaeological, and historical

⁴⁹ Ex. A1 at 53-66 (Application); Ex. A1-C (Dakota Skipper and Poweshiek Skipperling Survey); Ex. A1-D (2017-2018 Raptor Nest Survey Report); Ex. A1-E (Avian Use Survey Report); Ex. A1-F (Bat Habitat Assessment Report); and Ex. A1-G (Bat Acoustic Survey Report); A42 at 9-10 (Sappington Rebuttal Testimony).

⁵⁰ Ex. A1 at 53, 66-69 (Application).

⁵¹ Ex. A42 at 4 (Sappington Rebuttal Testimony).

⁵² *Id.* at 10.

⁵³ Ex. A42 at 6 (Sappington Rebuttal Testimony) and Evid. Hrg. Tr. at 212-213 (June 11, 2019).

⁵⁴ Ex. S3 at 3-5 (Kirschenmann Direct Testimony).

⁵⁵ Ex. A1 at 70-73 (Application).

⁵⁶ Ex. A1 at 73-88 (Application); Ex. A1-A (Figures); Ex. A5 at 8-11 (Wilhelm and Massey Direct Testimony); Ex. A2 (Haley Direct Testimony); A1-H (Sound Modelling Report), Ex. A1-J (Shadow Flicker Report); Ex. A1-L (Decommissioning Plan); Ex. A22 (Haley Supplemental Testimony); Ex. A43 (Haley Rebuttal Testimony); Ex. A43-1 (Shadow Flicker ISO-Lines); Ex. A43-2 (Sound Pressure ISO-Lines); Ex. A56 (Appendix D Sound ISO-Lines Map Book); Ex. A57 (Appendix C3 Sound Results Table Rev 6); Ex. A67 (Appendix C-1 Shadow Flicker Results) and Ex. A68 Appendix C-2 Shadow Flicker Results).

⁵⁷ Ex. A5 at 11-12 (Wilhelm and Massey Direct Testimony).

⁵⁸ Ex. A1 at 89-91, 92-93 (Application).

⁵⁹ Ex. A1 at 90-93 (Application) and Ex. A42 at 12-13, 18-20 (Sappington Rebuttal Testimony).

⁶⁰ *Id.* at 87.

⁶¹ *Id.*

importance.⁶² For example, the Applicant's Records Search per the South Dakota State Historic Preservation Office (SD SHPO) guidance identified 133 previously documented archaeological sites, 6 previously documented historic bridges, 83 previously documented standing historic structures, and 5 previously documented cemeteries have been recorded inside and within 1 mile of the Project Area.⁶³ As a mitigation measure, the Applicant will avoid direct physical impacts to National Register of Historic Places listed sites.⁶⁴

26. The Applicant also consulted with the tribal members from the Sisseton Wahpeton Oyate, Yankton Sioux, and Spirit Lake Nation tribes (who were selected to represent those all applicable tribes) to identify significant tribal resources, and the Applicant included them as part of the survey field team.⁶⁵ The Applicant further consulted with the SD SPHO on the type and content of surveys.⁶⁶ Under Condition No. 11, the Applicant agrees to avoid direct impacts to cultural resources not previously identified and evaluated or notify the Commission and the SD SHPO if avoidance cannot be achieved so to coordinate minimization and/or treatment measures. Under Condition No. 12, the Applicant will also develop a plan to address any anticipated discovery of cultural resources, consistent with SDCL 34-27-25, 34-27-26, and 34-27-28. Pursuant to Condition No. 13, the Applicant will file with the Commission a Level III Archaeological survey for, among other facilities, access roads, crane paths, and collection lines prior to commercial operation. Further, pursuant to Condition No. 43, the Applicant will implement specific avoidance, minimization, and mitigation measures for Traditional Cultural Properties. Based on the record in this proceeding and the above Conditions, the Applicant has demonstrated that it will minimize or avoid impacts to cultural resources.

2. Social and Economic.

27. The Applicant has been developing the Project for 10 years through an iterative process to identify the Project Area.⁶⁷ During this time, the Applicant worked closely with federal and state agencies, landowners, and tribal and local governments to properly design and site the infrastructure for the Project.⁶⁸ The Applicant has all land rights needed to construct and operate the Project.⁶⁹

28. The Applicant has demonstrated that the Project does not pose a threat of serious injury to the community.⁷⁰ The Project will only permanently impact approximately 86 acres of farmland.⁷¹ The Project is expected to have a negligible effect, if any, on the assessed values of

⁶² Ex. A1 at 104-110 (Application); Ex. A25 13-16 (Sappington Direct Testimony); and Ex. A42 at 2-3 (Sappington Rebuttal Testimony).

⁶³ Ex. A1 at 105 (Application); Ex. A16 at 2-30 and Attachment 1 to 2-30 Confidential (Applicant's Responses to Staff Second Set of Data Requests).

⁶⁴ Ex. A1 at 108 (Application).

⁶⁵ Ex. A25 at 15 (Sappington Direct Testimony).

⁶⁶ Ex. A25 at 15-16 (Sappington Direct Testimony); Ex. A1-B (Agency Coordination); Ex. S4 at 3-7 (Olson Direct Testimony).

⁶⁷ Ex. A1 at 2, 26-28, 88 (Application).

⁶⁸ Ex. A1 at 2, 26-28, 88; A5 at 6-15.

⁶⁹ Ex. A52, A53, A54, A64, and A65.

⁷⁰ Ex. A1 at 95-110, 117 (Application); Ex. A1-K (Property Value Effects Studies); and Ex. A1-M (Telecommunication Study).

⁷¹ Ex. A1 at 102 (Application).

private property and, therefore, on property taxes.⁷² The Applicant has committed to coordinate with first responders and provide them with the Applicant's safety plan.⁷³ Further, the Applicant has demonstrated that the construction and operation of the Project will result in benefits to South Dakota and local economies through payment of property taxes and lease payments.⁷⁴ Also, there will be approximately 250 temporary workers used during the construction of the Project, and 12 permanent workers in South Dakota to conduct operation and maintenance activities, including 10 wind technicians, 1 lead wind technician, and 1 site manager.⁷⁵

29. The record also demonstrates that the Project is not expected to adversely impact communication systems, such as microwave, AM, FM, cellular, TV, and aviation towers.⁷⁶ Also, pursuant to Condition No. 24, the Applicant has agreed to take action to minimize interference the Project causes to radio, television, and other licensed communication transmitting or receiving equipment.

30. The record demonstrates that the Applicant will avoid and/or minimize impacts to transportation.⁷⁷ The Applicant has committed to coordinate with the South Dakota Department of Transportation (SDDOT), Codington County and Grant County, and Project Area townships to manage construction traffic, and to ensure that equipment and components are delivered safely to the Project. The Applicant will also obtain SDDOT Highway Access and Utility Permits prior to construction, and contractors will be required to obtain applicable over height or overweight haul permits. County road permits required for right-of-way occupancy, utility crossings, road approaches, and overweight loads will be obtained by the Applicant from Codington County and Grant County prior to beginning construction activities for which the permit is required.⁷⁸ Condition Nos. 7 and 8 also require Crowned Ridge to obtain applicable road use agreements and implement specific road protection practices. Accordingly, based on the record, the Project does not pose a threat of serious injury to the community

C. The facility will not substantially impair the health, safety or welfare of the inhabitants.

31. The record demonstrates that the Applicant has appropriately minimized the sound level produced from the Project to the following: (1) no more than 45 dBA at any non-participants' residence and (2) no more than 50 dBA at any participants' residence.⁷⁹ These sound levels were modeled using the following conservative assumptions: (1) the wind turbines were assumed to be operating at maximum sound emission levels; (2) a 2 dBA adder was applied to the wind turbines sound emission levels; (3) the wind turbines were assumed to be downwind of the receptor; and (4) the atmospheric conditions were assumed to be the most favorable for sound to be transmitted.⁸⁰ The Project will also not result in sound above 50 dBA at any non-

⁷² Ex. A1 at 100 (Application) and Ex. A1-K (Property Value Effects Studies);

⁷³ Ex. A1 at 101 (Application).

⁷⁴ *Id.* at 15, 98.

⁷⁵ Ex. A1 at 111 (Application); Ex. A4 at 8 (Thompson Direct Testimony); Ex. A5 at 12 (Wilhelm and Massey Direct Testimony); and Ex. A28 (Allocation of Tax Revenues).

⁷⁶ Ex. A1 at 103-104 (Application) and A1-M (Telecommunication Study).

⁷⁷ Ex. A1 at 103 (Application).

⁷⁸ *Id.*

⁷⁹ Ex. A56 (Appendix D Sound ISO-Lines Map Book) and Ex. A57 (Appendix C-3 Sound Results Table Rev 6).

⁸⁰ Ex. A22 at 3 (Haley Supplemental Testimony) and Evid. Hrg. Tr. at 358 (Haley).

participants property boundaries for those residences in Codington County.⁸¹ The Applicant modelled sound levels with consideration the communicative sound impacts from Dakota Range I and II and Crowned Ridge Wind, II, LLC wind projects.⁸² Further, the Applicant agreed to Condition No. 28 in order to further reduce certain non-participant sound levels, consistent with the proposal advocated by Staff witness Hessler.⁸³ Pursuant to Condition No. 26, the Applicant agreed to a post construction sound protocol to be used in the event the Commission orders post construction sound monitoring.

32. Similarly, the record also demonstrates that the Applicant has appropriately minimized the shadow and flicker for the Project to no more than 30 hours for all participants and non-participants, with the understanding that there is one participant who is at 36:57 hours of shadow and flicker.⁸⁴ The Applicant will work with the one participant that will experience 36 hours to either waive the 6:57 hour overage or implement mitigation, such as curtailing the turbine for the 6:57 hours of shadow and flicker.⁸⁵ Further, the Applicant modelled the cumulative impacts of shadow and flicker from Dakota Range I and II and Crowned Ridge Wind, II, LLC wind projects when calculating its total shadow and flicker hours.⁸⁶ The Applicant also used conservative assumptions, such as the greenhouse-mode, to model shadow and flicker, which, in turn, produces conservative results.⁸⁷

33. There is no record evidence that the Project will substantially impair human health or welfare. To the contrary, Crowned Ridge witnesses McCunney and Ollson submitted evidence that demonstrates that there is no human health or welfare concern associated with the Project as designed and proposed by the Applicant.⁸⁸ Both Crowned Ridge witnesses analyzed the scientific peer-reviewed literature in the context of the proposed Project, and witness McCunney testified based on his experience and training as a medical doctor specializing in occupational health and the impact of sound on humans.⁸⁹

34. There is no record evidence that the Project will substantially impair safety. The Applicant will meet or exceed required setbacks established for safety,⁹⁰ and, also, implement safety practices during construction, operation, and maintenance, including grounding wind turbines in accordance with National Electrical Safety Code standards.⁹¹ The Applicant will monitor the operation of Project twenty-four hours a day, seven days a week through the

⁸¹ Evid. Hrg. Tr. at 358 (June 12, 2019) (Haley).

⁸² Ex. A26 at 3-3 (Applicant's Responses to Staff Third Set of Data Requests); Ex. A56 (Appendix D Sound ISO-Lines Map Book) and Ex. A57 (Appendix C-3 Sound Results Table Rev 6); and Evid. Hrg.Tr. at 361 (June 12, 2019) (Haley).

⁸³ Ex. A58 (Final Land Status and Hessler 7 on Intervenors) and Ex. A60 (Hessler 7 on Hessler Identified Non Participants).

⁸⁴ Ex. A67 (Appendix C-1 Shadow Flicker Results) and Ex. A68 Appendix C-2 Shadow Flicker Results).

⁸⁵ Ex. A44 at 2-3 (Wilhelm and Massey Rebuttal Testimony) and Evid. Hrg. Tr. at 361 (June 21, 2019) (Haley).

⁸⁶ Ex. A26 at 3-3 (Applicant's Responses to Staff Third Set of Data Requests) and Ex. A43 at 2 (Haley Rebuttal Testimony).

⁸⁷ Ex. A2 at 7 (Haley Direct Testimony) and Evid. Hrg. Tr. at 359-360 (June 12, 2019) (Haley).

⁸⁸ Ex. A24 (Ollson Supplemental Testimony); Ex. A24-1 and through Ex. A24-17; Ex. A38 (Ollson Rebuttal Testimony); Ex. A38-1 through Ex. A38-7; Ex. A40 (McCunney Rebuttal Testimony); Ex. A 40-2 through Ex. A40-9; Evid. Hrg. Tr. at 433-435 (June 12, 2019) (McCunney); and Evid. Hrg. Tr. at 452-458 (June 12, 2019) (Ollson).

⁸⁹ *Id.*

⁹⁰ Ex. A1 at 12, 27, 75-78 (Application) and A5 at 9-11 (Wilhelm and Massey Direct Testimony).

⁹¹ Ex. A1 at 20, 114-115 (Application) and Ex. A4 at 3, 7 (Thompson Direct Testimony).

Supervisory Control and Data Acquisition system.⁹² Also, the Applicant will implement a SWPPP and SPCCP, part of which will ensure that state and local disaster services are coordinated with in the event of the accidental release of contaminants.⁹³ The Applicant will illuminate the wind turbines as required by the FAA.⁹⁴ Condition No. 40 also requires the Applicant to use two methods to detect icing conditions on turbine blades to shut down turbines when they are accumulating ice. Condition No. 31 additionally requires the Applicant, prior to construction, to notify public safety agencies on the location of construction work, and Condition No. 4 requires the Applicant to mail to participant and non-participating landowners detailed safety information, including safety precautions, 14 days prior to the commencement of construction. Therefore, based on the record, the Project will not substantially impair safety.

D. The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

35. The evidence submitted by the Applicant shows that the Project will not unduly interfere with the orderly development of the region, as demonstrated by the granting of conditional use permits for the Project by Grant County and Codrington County.⁹⁵ CRW has also committed to decommissioning the Project at the end of its 25 year useful life, provided the life of the Project is not extended by retrofitting the turbines and power systems.⁹⁶ In support of decommissioning, CRW will establish an escrow agreement consistent with the Commission's past rulings.⁹⁷ The escrow agreement covers decommissioning of the entire project, and, therefore, the Commission finds the escrow agreement required in this proceeding will provide sufficient financial protection for decommissioning of the Project, and, accordingly, there is no need for Grant County and Codrington County to require duplicative escrow or security related to decommissioning.

36. Staff witness Kearney attached to his testimony 37 proposed conditions that the Intervenor indicated they desired to advance in this proceeding.⁹⁸ While Staff witness Kearney's provided Staff's initial reaction to the 37 conditions, he, also, testified that Staff had not seen supporting information from the Intervenor on the 37 conditions.⁹⁹ During the proceeding, the Intervenor submitted no evidence in support of the 37 conditions. In contrast,

⁹² Ex. A1 at 23 (Application) and A4 at 5, 7-8 (Thompson Direct Testimony).

⁹³ Ex. A1 at 41, 90-91, 100, 102 (Application).

⁹⁴ *Id.* at 12.

⁹⁵ Ex. A1 at 88 (Application); Ex. A1-J (County Conditional Use Permits); Ex. A5 at 8-11 (Wilhelm and Massey Direct Testimony); and Ex. A44 at 3-4 (Wilhelm and Massey Rebuttal Testimony).

⁹⁶ Ex. A1 at 113 (Application) and A1-L (Decommission Plan).

⁹⁷ *In the Matter of the Application of Deuel Harvest Wind Energy, LLC*, Docket No. EL18-053, Final Decision and Order (Condition No. 36) (May 30, 2019). The Commission, however, will allow the Crowned Ridge escrow agreement to be filed 30 days (instead of the 60 days in past cases) prior to the commencement of commercial operations in order to allow Crowned Ridge with additional time to work with Grant County and Codrington County so that they do not require duplicative escrow agreement(s).

⁹⁸ Ex. S2 at 12 (Exhibit DK-9) (Kearney Direct Testimony).

⁹⁹ *Id.*

the Applicant provided evidence that the conditions should not be adopted.¹⁰⁰ Therefore, the 37 conditions proposed by the Intervenor will not be adopted.

IV. GENERAL

37. An application may be denied, returned, or amended, at the discretion of the Commission, for failure to file an application generally in the form and content required by SDCL Chapter 49-41B and ARSD Chapter 20:10:22. SDCL 49-41B-13(2). The Commission finds that Applicant filed its application generally in the form and content required by SDCL Chapter 49-41B and ARSD Chapter 20:10:22.¹⁰¹ The Commission notes that the supplementation of an application with additional information is common in Commission practice.

38. An application may be denied, returned, or amended, at the discretion of the Commission, if there are any deliberate misstatements of material facts in the application or in accompanying statements or studies. SDCL 49-41B-13(1). The Commission finds that the application and its accompanying statements and studies did not contain any deliberate misstatements of material facts.

39. The Commission finds that the Permit Conditions attached hereto as Attachment A and incorporated herein by reference are supported by the record, are reasonable and will help ensure that the Project will meet the standards established for approval of a construction permit for the Project set forth in SDCL 49-41B-22 and should be adopted.

40. The Commission finds that the Project, if constructed in accordance with the terms and conditions of this decision, will comply with all applicable laws and rules, including all requirements of SDCL Chapter 49-41B and ARSD Chapter 20:10:22.

41. The Commission finds that the Project, if constructed in accordance with the terms and conditions of this decision, will not pose an unacceptable threat of serious injury to the environment nor to the social and economic conditions of inhabitants or expected inhabitants in the siting area.

42. The Commission finds that the Project, if constructed in accordance with the terms and conditions of this decision, will not substantially impair the health, safety or welfare of the inhabitants in the siting area.

43. The Commission finds that the Project, if constructed in accordance with the terms and conditions of this decision, will not unduly interfere with the orderly development of

¹⁰⁰ Ex. A1-K (Property Value Effects Study); Ex. A37 at 4-11 (Thompson Rebuttal Testimony); Ex. A38 at 8-12 (Ollson Rebuttal testimony); Ex. A39 at 2-6 (Baker Rebuttal Testimony); Ex. A40 at 3-11 (McCunney Rebuttal Testimony); Ex. A42 at 12-24 (Sappington Rebuttal Testimony); Ex. A43 at 6-7 (Haley Rebuttal Testimony); and Ex. A44 at 9-19 (Wilhelm and Massey Direct Testimony).

¹⁰¹ See, e.g., Applicant Brief at Section III E.

the region with due consideration having been given the views of governing bodies of affected local units of government.

44. The Commission finds that a permit to construct the Project should be granted subject to the Permit Conditions set forth in Attachment A.

45. To the extent that any Conclusion of Law set forth below is more appropriately a finding of fact, that Conclusion of Law is incorporated herein by reference as a Finding of Fact as if set forth in full herein.

Based on the foregoing Findings of Fact and the record in this proceeding, the Commission hereby makes the following:

CONCLUSIONS OF LAW

1. The Commission has jurisdiction to consider the Application under SDCL Chapter 49-41B.

2. The Crowned Ridge Wind Project proposed by Applicant is a wind energy facility as defined in SDCL 49-41B-2(13).

3. Applicant's permit Application, as amended and supplemented through the proceedings in this matter, complies with the applicable requirements of SDCL Chapter 49-41 B and ARSD Chapter 20:10:22.

4. The Commission concludes that it possesses the authority under SDCL 49-41B-25 to impose conditions on the construction, operation and maintenance of the Project, that the Conditions set forth in the attached Permit Conditions are supported by the record, are reasonable, and will help ensure that the Project will meet the standards established for approval of a construction permit for the Project set forth in SDCL 49-41B-22 and that the Permit Conditions are hereby adopted.

5. The Commission needs no other information to assess the impact of the proposed facility or to determine if Crowned Ridge has met its burden of proof.

6. The Commission satisfied the hearing and notice requirement in SDCL 49-41B.

7. Applicant satisfied the applicable notice requirements in SDCL 49-41B.

8. All other applicable procedural requirements in South Dakota Codified Law Chapter 49-41B have been satisfied.

9. Applicant has demonstrated that the proposed facility will comply with all applicable laws and rules.

10. When considered with all Permit Conditions, Applicant has demonstrated that the facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area.

11. When considered with all Permit Conditions, Applicant has demonstrated that the facility will not substantially impair the health, safety or welfare of the inhabitants.

12. When considered with all Permit Conditions, Applicant has demonstrated that the facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

13. Applicant must comply with the applicable Grant County and Codington County ordinances.

14. No party has provided sufficient evidence to impose any of the 37 proposed Intervenor conditions.

15. The standard of proof is by the preponderance of evidence. Applicant has met its burden of proof imposed by SDCL 49-41B-22 for issuance of the permit to construct by the preponderance of the evidence and is entitled to a permit to construct as provided in SDCL 49-41B-25.

16. Based on the preponderance of the evidence presented to the Commission, the Commission concludes that all of the requirements of SDCL 49-41B-22 have been satisfied.

17. The Commission thus concludes that the Application should be granted and a facility permit should be issued for the Project for the reasons stated in these Findings of Fact and Conclusions of Law. The Commission grants the permit to construct requested in the Application, as amended, subject to the Permit Conditions, and the Stipulation.

It is therefore

ORDERED, that a permit to construct the Crowned Ridge Wind Project is granted to Crowned Ridge Wind, LLC for the construction and operation of the Project. It is further

ORDERED, that Applicant shall comply with all of the attached Permit Conditions, which are incorporated by reference into this Order the same as if they had been set forth in their entirety herein.

ATTACHMENT A

PERMIT CONDITIONS

1. Applicant will obtain all governmental permits which reasonably may be required by any township, county, state agency, or federal agency, or any other governmental unit for construction and operation activity of the Project prior to engaging in the particular activity covered by that permit. Copies of any permits obtained by Applicant shall be filed with the Commission.
2. Applicant shall construct, operate, and maintain the Project in a manner consistent with (1) descriptions in the Application, (2) Application supplements and corrections, (3) commitments made by the Applicant in responses to data requests, (4) the Final Decision and Order Granting Permit to Construct Facilities, and attached Permit Conditions, (5) applicable industry standards, (6) applicable permits issued by a federal, state, or local agency with jurisdiction over the Project, and (7) evidence presented by Applicant at the evidentiary hearing.
3. Applicant agrees that the Commission's complaint process as set forth in ARSD Chapter 20:10:01 shall be available to landowners and other persons sustaining or threatened with damage as the result of Applicant's failure to abide by the conditions of the Permit or otherwise having standing to seek enforcement of the conditions of the Permit. Participating landowners are free to use the complaint process free from retribution or consequence regardless of any private easement term to the contrary.
4. At least 14 days prior to commencement of construction, Applicant shall provide each participating and non-participating landowner in the Project Area, using the addresses designated to receive the property tax bill sent by the county treasurer, with the following information:
 - a) A copy of the Final Decision and Order Granting Permit to Construct Facilities with attached Permit Conditions;
 - b) Detailed safety information describing:
 - 1) Reasonable safety precautions for existing activities on or near the Project;
 - 2) Known activities or uses that are presently prohibited near the Project; and
 - 3) Other known potential dangers or limitations near the Project;

- c) Construction/maintenance damage compensation plans and procedures (only to participating landowners);
 - d) The Commission's address, website, and phone number;
 - e) Contact person for Applicant, including name, e-mail address, and phone number.
5. In order to ensure compliance with the terms and conditions of this Permit pursuant to SDCL 49-41B-33, it is necessary for the enforcement of this Order that all employees, contractors, and agents of Applicant involved in this Project be made aware of the terms and conditions of this Permit.
6. Except as otherwise provided in the Permit Conditions, Applicant shall comply with all mitigation measures set forth in the Application and Applicant's commitments in its responses to data requests, and Applicant exhibits and testimony at the evidentiary hearing. Material modifications to the mitigation measures shall be subject to prior approval of the Commission.
7. Applicant will negotiate road use agreements with Codington and Grant Counties and all affected townships, if required. Applicant will comply with such road use agreements.

When using haul roads specified in applicable road use agreements, Applicant shall take appropriate action to mitigate wind-blown particles created throughout the construction process, including implementation of dust control measures such as road watering, covering of open haul trucks when transporting material subject to being windblown, and the removal of any soils or mud deposits by construction equipment when necessary.

8. In accordance with applicable road use agreements or applicable law, Applicant shall comply with the following conditions regarding road protection:
- a) Applicant shall acquire all necessary permits authorizing the crossing of federal, state, county, and township roads.
 - b) Applicant shall coordinate road closures with federal, state, and local governments and emergency responders.
 - c) Applicant shall implement a regular program of road maintenance and repair through the active construction period to keep paved and gravel roads in an acceptable condition for residents and the public.
 - d) After construction, Applicant shall repair and restore deteriorated roads resulting from construction traffic or compensate governmental entities for

their repair and restoration of deteriorated roads, such that the roads are returned to their preconstruction condition.

- e) Within 180 days of completing construction and reclamation of the Project, Applicant shall submit documentation to the Commission identifying that the roads were repaired in accordance with this Condition 8 and to the satisfaction of affected townships and county. If the townships or county will not provide such documentation, then Applicant shall provide a report to the Commission on the outstanding road repair issues and how those issues have been or will be resolved.
 - f) Privately owned areas used as temporary roads or crane paths during construction will be restored to their preconstruction condition, except as otherwise requested or agreed to by the landowner.
 - g) Should Applicant need to widen any existing roadways during construction of the Project, Applicant shall return the roadways back to original width after completion of the Project, unless otherwise agreed upon with the federal, state, county, or township entities, or the landowner.
- 9. Applicant shall provide signage that identifies road closures and disturbances resulting from the Project in accordance with the most recent editions of the Manual on Uniform Traffic Control Devices as published by the Federal Highway Administration.
 - 10. Applicant shall promptly report to the Commission the presence of any critical habitat of threatened or endangered species in the Project Area that Applicant becomes aware of and that was not previously reported to the Commission.
 - 11. Applicant agrees to avoid direct impacts to cultural resources that are unevaluated, eligible for, or listed in the National Register of Historic Places (NRHP). When a NRHP unevaluated, eligible, or listed resource cannot be avoided, Applicant shall notify the South Dakota State Historic Preservation Office (SHPO) and the Commission of the reasons that complete avoidance cannot be achieved in order to coordinate minimization and/or treatment measures.
 - 12. Applicant agrees to develop an unanticipated discovery plan for cultural resources and comply with SDCL 34-27-25, 34-27-26, and 34-27-28 for the discovery of human remains.
 - 13. Applicant shall file a Level III Archaeological survey of the remaining facilities (i.e., access roads, crane paths, collection lines, O&M facilities, concrete batch

plant, and laydown areas) with the Commission and provide a copy of the survey to SHPO prior to commercial operation. The survey report may contain confidential information and all confidential portions of the survey report shall be filed as confidential and not for not for public disclosure. If any potential adverse impacts to NRHP unevaluated, listed, or eligible cultural resources are identified in the survey, Applicant shall file with the Commission a report describing the SHPO-approved planned measures to ameliorate those impacts.

14. Applicant shall provide the Stormwater Pollution Prevention Plan (SWPPP) to the Commission when Applicant has a final design for the Project. The SWPPP will outline the water and soil conservation practices that will be used during construction to prevent or minimize erosion and sedimentation and be in a form consistent with the South Dakota Department of Environment and Natural Resources guidelines. The SWPPP will be completed before submittal of an application for a National Pollutant Discharge Elimination System (NPDES) general permit for construction activities. All contractors to be engaged in ground disturbing activities will be given a copy of the SWPPP and the requirements will be reviewed with them prior to the start of construction.
15. Applicant shall repair and restore areas disturbed by the construction or maintenance of the Project. Except as otherwise agreed to by the landowner, restoration shall include the replacement of the original pre-construction topsoil or equivalent quality topsoil to its original elevation, contour, and compaction and re-establishment of original vegetation as close thereto as reasonably practical. In order to facilitate compliance with this Permit Condition, Applicant shall:
 - a) Strip the topsoil to the actual depth of the topsoil, or as otherwise agreed to by the landowner in writing (e-mail is sufficient), in all areas disturbed by the Project; however, with respect to access roads, Applicant may remove less than the actual depth of the topsoil to ensure roads remain low-profile and the contours align with the surrounding area;
 - b) Store the topsoil separate from the subsoil in order to prevent mixing of the soil types;
 - c) All excess soils generated during the excavation of the turbine foundations shall remain on the same landowner's land, unless the landowner requests, and the landowner agrees otherwise; and
 - d) When revegetating non-cultivated grasslands, Applicant shall use a seed mix that is recommended by the Natural Resource Conservation Service (NRCS), or other land management agency, unless otherwise agreed upon with the landowner in writing.

16. Applicant shall work closely with landowners or land management agencies, such as the NRCS, to determine a plan to control noxious weeds and the Applicant shall implement the plan.
17. Applicant shall stage construction materials in a manner that minimizes the adverse impact to landowners and land users as agreed upon between Applicant and landowner or Applicant and the appropriate federal, state, and/or local government agency. All excess (non-permanent) construction materials and debris shall be removed upon completion of the Project, unless the landowner agrees otherwise.
18. In order to mitigate interference with agricultural operations during and after construction, Applicant shall locate all structures, to the extent feasible and prudent, to minimize adverse impacts and interferences with agricultural operations, shelterbelts, and other land uses or activities. Applicant shall take appropriate precautions to protect livestock and crops during construction. Applicant shall repair all fences and gates removed or damaged during construction or maintenance unless otherwise agreed upon with the landowner or designee. Applicant shall be responsible for the repair of private roads damaged when moving equipment or when obtaining access to the right-of-way.
19. Applicant shall bury the underground collector system at a minimum depth of 48 inches, or deeper if necessary, to ensure the current land use is not impacted.
20. Applicant shall repair or replace all property removed or damaged during all phases of construction, including but not limited to, all fences, gates, and utility, water supply, irrigation, or drainage systems. Applicant shall compensate the owners for damages or losses that cannot be fully remedied by repair or replacement, such as lost productivity and crop and livestock losses. All repair, replacement and/or compensation described above shall be in accordance with the terms and conditions of written agreements between Applicant and affected landowners where such agreements exist.
21. Applicant shall, in the manner described in its written agreement with a landowner, indemnify and hold the landowner harmless for loss, damage, claim, or actions resulting from Applicant's use of the easement, including any damage resulting from any release, except to the extent such loss, damage claim, or action results from the negligence or willful misconduct of the landowner or his employees, agents, contractors, invitees, or other representatives.
22. Applicant may make turbine adjustments of 250 feet or less from the turbine locations identified at the time a Facility Permit is issued without prior Commission approval, so long as the specified noise and shadow flicker

thresholds are not exceeded, cultural resource impacts and documented habitats for listed species are avoided, and wetland impacts are avoided or are in compliance with applicable U.S. Army Corps of Engineers (USACE) regulations. Prior to implementing the turbine adjustment, Applicant will file in the docket an affidavit demonstrating compliance with the limitations set forth above. Any turbine adjustment that does not comply with the aforesaid limitations, or turbine model change, would be considered a “material change,” and Applicant shall file a request for approval of the “material change” prior to making the adjustment pursuant to the following approval process:

Applicant will file with the Commission and serve on the official Service List a request for approval of the adjustment that includes:

- An affidavit describing the proposed turbine adjustment, the reason for the adjustment, the reason the adjustment does not comply with one or more turbine flexibility limitations set forth above, and information regarding compliance with all other applicable requirements; and
- A map showing both the approved location and the proposed adjustment (in different colors).
- Once received, the information would be reviewed by Commission staff, and Commission staff will have 10 calendar days within which to request further Commission review.
- If no further review is requested, Applicant may proceed with the adjustment.
- If further review is requested, the Commission will issue a decision regarding Applicant’s request at its next available regularly scheduled Commission meeting, subject to notice requirements, after the request for further review is made by Commission staff.

23. Applicant may adjust access roads, the collector and communications systems, meteorological towers, Aircraft Detection Lighting System (ADLS) facilities, the operations and maintenance facility, the Project Substation, and temporary facilities, so long as they are located on land leased for the Project, cultural resources are avoided or mitigated in consultation with the SHPO; documented habitats for listed species are avoided; wetland impacts are avoided or are in compliance with applicable USACE regulations; and all other applicable regulations and requirements are met.
24. If the Project causes interference with radio, television, or any other licensed communication transmitting or receiving equipment, Applicant shall take all appropriate action to minimize any such interference and shall make a good faith effort to restore or provide reception levels equivalent to reception levels in the

immediate areas just prior to construction of the Project. This mitigation requirement shall not apply to any dwellings or other structures built after completion of the Project.

25. Applicant will provide Global Positioning System (GPS) coordinates of structure locations to affected landowners at any time during the life of the Project. Coordinates will be provided in writing to landowners within 30 days of a request.
26. The Project, exclusive of all unrelated background noise, shall not generate a sound pressure level (10-minute equivalent continuous sound level, Leq) of more than 45 dBA as measured within 25 feet of any non-participating residence unless the owner of the residence has signed a waiver, or more than 50 dBA (10-minute equivalent continuous sound level, Leq) within 25 feet of any participating residence unless the owner of the residence has signed a waiver. The Project Owner shall, upon Commission formal request, conduct field surveys and provide monitoring data verifying compliance with specified noise level limits. If the measured wind turbine noise level exceeds a limit set forth above, then the Project Owner shall take whatever steps are necessary in accordance with prudent operating standards to rectify the situation.

If a field survey and monitoring data is requested by the Commission, the Project Owner shall submit the test protocol to the Commission prior to conducting the survey and sound monitoring for approval. The test protocol shall include and be implemented as follows:

- a) The post-construction monitoring survey shall be conducted following applicable American National Standard Institute (ANSI) methods.
- b) Sound levels shall be measured continuously for 14 days in an effort to capture a sufficient quantity of valid readings meeting the wind conditions delineated below in subpart (e). A sufficient quantity shall be defined as 0.5% of the total number of samples, or a minimum of 10 for a 14 day measurement period. As a precaution against the possibility that a sufficient number of valid readings are not automatically recorded during the chosen 14 day sampling period, 10 on/off tests shall be carried out during the survey period when the project is operating at full power production irrespective of the ground level wind speed. For the on/off tests, all units in the project shall be shut down for a 10 minute period synchronized with the monitors clocks (starting, for example, at the top of the hour or 10 minutes after, 20 minutes after, etc.). The background level measured during the shut down interval can then be subtracted from the average of the levels measured immediately before and after it to

determine the project-only sound level. The results from these tests may be used to make up for any shortfall in collecting 10 samples measured when the ground level wind speed is low.

- c) Measurements shall be conducted at a select number of non-participating and participating residences with the highest expected noise levels and/or at specific residences identified in the Commission's formal request. Typically, 4 to 6 measurement locations total should be selected.\
- d) Measurements shall be conducted using sound level meters meeting ANSI Type 1 specifications. An anemometer shall be placed within 20 feet of each microphone, and at a height of approximately 2 meters above the ground.
- e) The measurement data shall be analyzed as follows:
 - i. At a minimum, the closest five wind turbines will be operating for evaluation periods and when at least the closest wind turbine is operating at a condition at full (within one decibel of maximum sound power levels) acoustic emissions.
 - ii. Discard those samples measured when the 10-minute average ground wind speed is greater than 5 m/s.
 - iii. Discard those samples measured during periods with precipitation.
 - iv. If measured (total) sound levels exceed the sound level limits, determine project only sound levels by removing transient background noise (i.e. occasional traffic, activities of residents, farming activities, and wind gusts) based upon audio recordings, excessive wind gusts, personal observations, and/or comparison of sound level metrics.
 - v. If measured (total) sound levels exceed the sound level limits, determine project only sound levels by removing, continuous background noise. This approach requires wind turbine shut-downs, where the background noise is measured directly. Background noise levels will be subtracted from total noise levels measured during these wind conditions to calculate turbine-only noise levels.
 - vii. As necessary, review of the frequency spectra of potential turbine-only samples to identify and remove outliers (spectral shape clearly differing from those samples measured under very low (less

than 2 m/s) ground wind conditions, which are the samples most representative of turbine only noise).

- f) Compare the resulting turbine-only noise levels to the 45 and 50 dBA limits. Compliance shall be demonstrated if all samples are less than the limits.
27. Not less than 30 days prior to commencement of construction work in the field for the Project, Applicant will provide to Commission staff the following information:
- a) the most current preconstruction design, layout, and plans, including the turbine model selected;
 - b) a sound level analysis showing compliance with the applicable sound level requirements;
 - c) a shadow flicker analysis showing the anticipated shadow flicker levels will not exceed applicable requirements per year at any residence, absent a waiver agreement executed by the residence owner(s);
 - d) should Applicant decide at a later point to use a different turbine model, it shall provide the information required in parts a-c above. Applicant shall also demonstrate that in selecting locations for the other turbines, it considered how to reduce impacts on non-participating landowners; and
 - e) additional Project preconstruction information as Commission staff requests.
28. The Applicant agrees to use alternative turbine locations instead of the following primary turbine locations CR-16, CR-19, CR-23, CR-60, CR-49, CR-67, and CR-68. If during construction at an alternative turbine, Applicant determines that the location is not suitable for a turbine due to geotechnical, cultural, environmental issues or other constructability issues, the Applicant shall file an affidavit with the Commission setting forth why the alternative turbine cannot be used and identifying which primary turbine will be used. If there is a dispute over the use of a primary turbine, the Applicant and PUC Staff shall meet and attempt to resolve the dispute within 10 business days of the filing of the affidavit. If the dispute cannot be resolved within 10 business days, the Applicant shall file a request for a material deviation with the Commission.
29. Within 90 days after the Project's commercial operation date, Applicant shall submit a report to the Commission that provides the following information:

- a) as-built location of structures and facilities, including drawings clearly showing compliance with the setbacks required by state and local governments set forth in Table 13.1.2 of the Application;
 - b) ArcGIS shapefiles of the final turbine and facility layout;
 - c) the status of remedial activities for road damage, landowner property damage, crop damage, environmental damage, or any other damage resulting from Project construction activities; and
 - d) a summary of known landowner complaints and Applicant's plan for resolving those complaints.
30. Applicant shall seek input from local emergency response personnel to properly and effectively coordinate an emergency response plan consistent with local resources and response abilities. Upon completion of construction, a Project operation emergency response plan shall be provided to Commission staff to make available to the general public on the Commission's website.
 31. Prior to the construction of the Project, Applicant will notify public safety agencies by providing a schedule and the location of work to be performed within their jurisdiction. The agencies contacted will include the South Dakota Department of Public Safety, the sheriffs of Codington County and Grant County, and the Codington County and Grant County Offices of Emergency Management.
 32. Applicant agrees to undertake a minimum of two years of independently-conducted post-construction avian and bat mortality monitoring for the Project, and to provide a copy of the report and all further reports to the USFWS, SDGFP, and the Commission.
 33. Applicant shall file a Bird and Bat Conservation Strategy (BBCS) prior to beginning construction of the Project. The BBCS shall be implemented during construction and operation of the Project.
 34. At least 30 days prior to commencement of construction, Applicant shall submit the identity and qualifications of a public liaison officer to the Commission for approval to facilitate the exchange of information between Applicant, including its contractors, landowners, local communities, and residents, and to facilitate prompt resolution of complaints and problems that may develop for landowners, local communities, and residents as a result of the Project. Applicant shall file with the Commission its proposed public liaison officer's credentials for approval by the Commission prior to the commencement of construction. After the public liaison officer has been approved by the Commission, the public liaison officer

may not be removed by Applicant without the approval of the Commission. The public liaison officer shall be afforded immediate access to Applicant's on-site project manager, its executive project manager, and to the contractors' on-site managers and shall be available at all times to Commission staff via mobile phone to respond to complaints and concerns communicated to the Commission staff by concerned landowners and others. Within 10 working days of when Applicant's public liaison officer has been appointed and approved, Applicant shall provide contact information for him/her to all landowners in the Project Area and to law enforcement agencies and local governments in the vicinity of the Project. The public liaison officer's contact information shall be provided to landowners in each subsequent written communication with them. If the Commission determines that the public liaison officer has not been adequately performing the duties set forth for the position in this Order, the Commission may, upon notice to Applicant and the public liaison officer, take action to remove the public liaison officer. The public liaison's services shall terminate 90 days after the Project commences commercial operations, unless the appointment is extended by order of the Commission.

35. If the Project is decommissioned, Applicant will follow Section 21 of the Application and the decommissioning plan laid out in Appendix L of the Application. The Commission shall be notified prior to any decommissioning action.
36. Applicant shall utilize an Aircraft Detection Lighting System approved by the Federal Aviation Administration.
37. The terms and conditions of the Permit shall be made a uniform condition of construction and operation, subject only to an affirmative written request for an exemption addressed to the Commission. A request for an exemption shall clearly state which particular condition should not be applied to the property in question and the reason for the requested exemption. The Commission shall evaluate such requests on a case-by-case basis, which evaluation shall be completed within 60 days unless exigent circumstances require action sooner.
38. Applicant shall provide a copy of the Commission's Final Decision and Order Granting Permit to Construct Facilities; Notice of Entry and attached Permit Conditions in this docket to the affected county, townships, and municipalities in the Project Area.
39. Shadow flicker at residences shall not exceed 30 hours per year unless the owner of the residence has signed a waiver.

40. Applicant will use two methods to detect icing conditions on turbine blades: (1) sensors that will detect when blades become imbalanced or create vibration due to ice accumulation; and (2) meteorological data from on-site permanent meteorological towers, on-site anemometers, and other relevant meteorological sources that will be used to determine if ice accumulation is occurring. These control systems will either automatically shut down the turbine(s) in icing conditions (per the sensors) or Applicant will manually shut down turbine(s) if icing conditions are identified (using meteorological data). Turbines will not return to normal operation until the control systems no longer detect an imbalance or when weather conditions either remove icing on the blades or indicate icing is no longer a concern. Applicant will pay for any documented damage caused by ice thrown from a turbine.
41. For purposes of this Project and the commitments herein, “residences,” “business(es),” “structures,” “schools,” “churches,” “cemeteries,” and “public buildings” shall include only those that are in existence and in use as of the date of the Commission’s order issuing a permit.
42. Turbines shall be set back at least 1.1 times the tip height, with a minimum set back distance of 500 feet, from any surrounding property line. However, if the owner of the wind turbine tower has a written agreement with an adjacent land owner allowing the placement of the tower closer to the property line, the tower may be placed closer to the property line shared with that adjacent land owner.
43. The Applicant shall implement the avoidance, minimization and mitigation measures identified as follows for Traditional Cultural Properties (TCPs):
- i) Implement standard avoidance or resource protection practices (e.g., barrier fencing, contractor training) for TCPs, where feasible, in collaboration with the Sisseton-Wahpeton Oyate, Yankton Sioux, Rosebud Sioux and Spirit Lake Tribal Historic Preservation Officers (THPOs) and the Applicant;
 - ii) Make reasonable efforts to identify participating landowners who may be willing to work with the tribes on site preservation, accessibility and protection of TCPs on their property;
 - iii) Conduct site revisits prior to construction;
 - iv) Help facilitate post-construction site revisits for tribes with the landowners; and

- v) Identify and implement education/interpretation opportunities regarding tribal resource preservation and/or Native American perspectives which may include sensitivity training when needed.

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

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

EL19-003

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of Crowned Ridge Wind, LLC Post-Hearing Brief and Proposed Findings of Fact and Conclusions of Law in this matter were served electronically to the parties listed below on the 2nd day of July, 2019, addressed to:

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