



United States Department of the Interior



FISH AND WILDLIFE SERVICE South Dakota Ecological Services

IN REPLY REFER TO:
Crowned Ridge Wind I and II

420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

August 11, 2017

Ms. Kely Mertz
Senior Project Manager
SWCA Environmental Consultants
200 West 22nd Street, Suite 200
Lombard, Illinois 60148

Dear Ms. Mertz:

This letter is in response to your request dated July 12, 2017, for environmental comments regarding the Crowned Ridge I and II Wind Energy Projects in Codington, Deuel, and Grant counties, South Dakota. These two projects are proposed to be constructed adjacent to each other in late 2018, becoming operational in 2019. Each is 300 MW in size (total 600 MW), with a point of interconnection at the Big Stone South 230 kV substation near Bigstone, South Dakota. Per our agency/developer/consultant conference call on April 19, 2017, Crowned Ridge I is the northern project to be developed and owned by NextEra with Xcel Energy to purchase the power, while Crowned Ridge II is the southern project to be constructed by NextEra, eventually to be owned by Xcel Energy.

As noted in your letter, there has been coordination with our office on Crowned Ridge for some time, although the project size and boundary has changed, and now the single project has been divided into two.

Federal nexus and USFWS easements

In past correspondences, Western Area Power Administration was involved as a federal nexus, but during our April 19, 2017, call, we discussed the potential for the U. S. Fish and Wildlife Service (Service) to be the federal nexus if the projects will impact Service grassland or wetland easement properties. It is our current understanding that these areas will be avoided at the Crowned Ridge projects; please inform our office if that changes. For any questions regarding easement locations or regulations in Codington and Grant Counties please continue your coordination with Connie Mueller at our Waubay Wetland Management District and in Deuel County contact Natoma Hansen at our Madison Wetland Management District who administer the easement program in their respective districts.

Land-based Wind Energy Guidelines

In addition to easement discussions on our April call, you indicated your awareness of our Land Based Wind Energy Guidelines, noting past wildlife surveys. We recommend you continue to apply these guidelines to these two projects. Wildlife surveys have been done at the Crowned Ridge site but may need updating, particularly since the project size and boundary has changed. We request copies of all wildlife and habitat surveys conducted at the Crowned Ridge I and II sites.

Eagle Conservation Plan Guidance

Our Eagle Conservation Plan Guidance was also mentioned on our April, 2017, call. Golden eagles (*Aquila chrysaetos*) may be found throughout the state in winter or during migration. Bald eagles (*Haliaeetus leucocephalus*) occur throughout South Dakota in all seasons. Both species are protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. These laws protect eagles from a variety of harmful actions and impacts. We recommend close adherence to our Eagle Conservation Plan Guidance to determine risk of take to eagles at the Crowned Ridge Project sites. Eagle take at wind farms may be authorized via permitting; should your survey data reveal a risk to eagles and you wish to obtain a permit please contact our office for further assistance. Please provide this office with results of eagle surveys and any modeling efforts per the Guidance.

Threatened/Endangered Species

In accordance with section 7(c) of the Endangered Species Act (ESA), as amended, 16 U.S.C. 1531 et seq., we have determined that the following federally listed species may occur in the project area (this list is considered valid for 90 days):

| <u>Species</u> | <u>Status</u> | <u>Expected Occurrence</u> |
|--|---------------|---|
| Dakota Skipper (<i>Hesperia dacotae</i>) | Threatened | Resident in native prairie, northeastern SD |
| Poweshiek Skipperling (<i>Oarisma poweshiek</i>) | Endangered | Possible resident in native prairie, northeastern SD |
| Northern Long-eared Bat (<i>Myotis septentrionalis</i>) | Threatened | Summer resident, seasonal migrant, known winter resident in Black Hills |
| Rufa Red Knot (<i>Calidris canutus rufa</i>) | Threatened | Rare seasonal migrant |
| Topeka Shiner (<i>Notropis topeka</i>) | Endangered | Resident |

Whooping Crane
(*Grus americana*)

Endangered

Migrant

Dakota skipper

The Dakota skipper is a small prairie butterfly listed as a threatened species under the ESA. Dakota skippers are obligate residents of high quality prairie ranging from wet-mesic tallgrass prairie to dry-mesic mixed grass prairie. In northeastern South Dakota, Dakota skippers inhabit dry-mesic hill prairies with abundant purple coneflower (*Echinacea angustifolia*), but also use mesic to wet-mesic tallgrass prairie habitats characterized by wood lily (*Lilium philadelphicum*) and mountain death camas (smooth camas; *Zigadenus elegans*). Their dispersal ability is very limited due in part to their short adult life span and single annual flight.

Extirpation from a site may be permanent unless it occurs within about 0.6 miles of an inhabited site that generates a sufficient number of emigrants. Avoidance of impacts to native prairie habitat is recommended to reduce the risk of adverse effects to this species. If such areas are unavoidable, surveys for Dakota skippers are advisable. Critical habitat has been designated for this species in South Dakota; for details and locations see the following website:
<https://www.fws.gov/Midwest/endangered/insects/dask/index.html>.

Poweshiek skipperling

The Poweshiek skipperling is a small prairie butterfly listed as endangered under the ESA. The habitat of Poweshiek skipperlings is similar to that of Dakota skipper and includes prairie fens, grassy lake and stream margins, moist meadows, and wet-mesic to dry tallgrass prairie. Preferred nectar plants for adult Poweshieks include smooth ox-eye (*Heliopsis helianthoides*) and purple coneflower (*Echinacea angustifolia*), but they also use stiff tickseed (*Coreopsis palmate*), black-eyed susan (*Rudbeckia hirta*), and palespike lobelia (*Lobelia spicata*). Larval food plants are assumed to include spike-rush, sedges, prairie dropseed (*Sporobolus heterolepis*) and little bluestem (*Schizachyrium scoparium*). Like Dakota skippers, Poweshiek skipperlings have one flight per year from about the middle of June through the end of July (depending upon weather). They have a low dispersal capability, and may not cross areas that are not structurally similar to native prairies. Extirpation from fragmented and isolated prairie remnants may be permanent unless it occurs within about 0.6 miles of an inhabited site that generates a sufficient number of emigrants. They are vulnerable to extreme weather conditions, dormant season fire, and other disturbances (e.g., intense cattle grazing). Avoidance of impacts to native prairie habitat is recommended to reduce the risk of adverse effects to this species. If such areas are unavoidable, surveys for the skipperlings are advisable. Critical habitat has been designated for this species in South Dakota; for details and locations see the following website:
<https://www.fws.gov/midwest/endangered/insects/dask/finalch.html>.

Northern long-eared bat

The northern long-eared bat is a medium-sized bat listed as threatened under the ESA. Northern long-eared bats are known to be present in South Dakota during the summer months, primarily roosting singly or in colonies underneath bark, in cavities or in crevices of both live and dead trees. Some hibernacula have been documented in caves/mines in the Black Hills, and the species has been documented in other forested areas in the state during the summer months, as well as along the Missouri River during migration. White nose syndrome, a fungus affecting hibernating bats, is considered a significant threat to this species, but individuals may be harmed

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by other activities such as modifications to hibernacula, timber harvest, human disturbance, and collisions with wind turbines. Currently, feathering turbine blades and increasing cut-in speeds are recommended measures to reduce the risk of bat mortality at wind generation facilities. A 4(d) rule has been published that exempts take of Northern long-eared bats in certain circumstances. For more information, see:

<https://www.fws.gov/Midwest/Endangered/mammals/nleb/index.html>.

Rufa red knot

The rufa red knot is a robin-sized shorebird listed as threatened under the ESA. The red knot migrates annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the Southeast United States, the Northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. Although it is primarily a coastal species, small numbers of rufa red knots are reported annually across the interior United States (*i.e.*, greater than 25 miles from the Gulf or Atlantic Coasts) during spring and fall migration. These reported sightings are concentrated along the Great Lakes, but multiple reports have been made from nearly every interior State, including South Dakota. The red knot likely uses South Dakota habitats similar to those of the least tern and piping plover. The species does not breed in this state.

Topeka shiner

The Topeka shiner is a small endangered minnow known to occupy numerous small streams within eastern South Dakota. The species occurs within the Big Sioux, Vermillion, and James River watersheds and is a resident of several prairie streams in Codington and Deuel counties. Should project activities (*e.g.*, stream crossings, streamside vegetation removal) impact occupied streams or wetlands/streams that are connected to occupied streams, the species may be present and potential impacts may occur. We recommend avoidance of these habitats, and/or by actions such as spanning entire streams/riparian areas where crossings are necessary or directionally boring beneath streams and riparian areas to install connector lines. If impacts to known or potentially occupied streams are unavoidable, please contact this office for further guidance.

Whooping Crane

Endangered whooping cranes occurring in South Dakota are usually from the Aransas/Wood-Buffalo population that migrates through South Dakota twice annually on the way to northern breeding grounds and southern wintering areas; however, individuals from eastern populations are occasionally located in the State. The cranes occupy numerous habitats such as cropland and pastures; wet meadows; shallow marshes; shallow portions of rivers, lakes, reservoirs, and stock ponds; and both freshwater and alkaline basins for feeding and loafing. Overnight roosting sites frequently require shallow water in which to stand and rest. Whooping cranes are large birds with low maneuverability. Line strike mortality is the greatest known threat to fledged whooping cranes; more information on this topic is provided herein (see enclosure dated February 4, 2010, and Power Lines section below). Whooping crane mortality via turbine strikes may also pose a risk if the birds utilize habitat at/near wind farm sites. Loss of stopover habitat in the migration corridor is a concern that may be realized if whooping cranes tend to avoid wind farms in this area. Additionally, should construction occur during spring or fall migration, the potential for disturbances to whooping cranes exists. Disturbance (flushing the birds) stresses them at critical times of the year and should be avoided. These issues should be addressed prior to wind farm

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development. Sightings of whooping cranes at any time should be reported to this office. Please note that use of the proposed project area by sandhill cranes may be indicative of the potential presence of whooping cranes since the two species are often observed utilizing the same habitats and migrating together.

Wetlands

According to National Wetlands Inventory maps (available online at <http://wetlands.fws.gov/>), numerous wetlands exist within the proposed project area. If a project may impact wetlands or other important fish and wildlife habitats, the Service, in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible; then minimization of any adverse impacts; and finally, replacement of any lost acres; in that order. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted and the methods of replacement should be prepared and submitted to the resource agencies for review.

Migratory Birds

Birds of Conservation Concern: avian avoidance issues

In accordance with Executive Order 13186 regarding migratory bird protection, we recommend avoidance, minimization, and finally compensation to reduce the impacts to species protected by the MBTA. Our Birds of Conservation Concern 2008 publication, online at <https://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern2008.pdf> provides lists of species for which we recommend proactive measures be taken to ensure populations do not require future additional protections. During the April, 2017, call, we relayed concern for grassland impacts and associated avoidance of turbines by grassland nesting migratory birds, some of which may be listed in that 2008 publication. Some grassland nesting species avoid turbines out to 300 m (approximately a 70-acre circle around each turbine), and the degree of avoidance increases over time (Shaffer and Buhl 2015). A similar avoidance of wetlands has been exhibited by waterfowl (Loesch et al. 2013). We recommend avoidance of grassland and wetland habitats and placement of turbines and infrastructure in cropland or other disturbed sites whenever possible. Prairie habitat restoration or establishment of easements to protect grasslands and/or wetlands offsite is recommended to compensate for avian impacts. If such impacts are anticipated, please inform our office of the location and acreage of impacts and we will provide further assistance and guidance on this issue.

Meteorological Towers

Meteorological towers constructed in association with wind turbines are often similar in design to typical communication towers: tall, lighted, lattice structured, and guyed. Of primary concern are the collision mortality risks posed to migratory birds as towers are currently estimated to kill 6.8 million birds per year in the United States and Canada (Longcore et al. 2012). We have enclosed Service guidance on this issue, our *2013 U.S. Fish and Wildlife Service (USFWS) Revised Voluntary Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning*. Among the primary concerns addressed within

our guidelines are the establishment of new towers on the landscape, the heights of these towers, their lighting scheme, and means of structural support. Collocation of communications tower facilities on an existing structure is strongly recommended to avoid any additional impacts to migratory birds. If a new tower is necessary, placement of the new tower near other existing structures is recommended to concentrate the risk posed by the towers to relatively small areas. Minimization of tower height (below 200 feet to preclude the need for Federal Aviation Administration lighting requirements), use of only strobe or flashing lights (no steady-burning lights), and avoidance of guy wires (a great deal of avian mortality is a result of collisions with supporting guy wires) are important components intended to minimize potential impacts to migratory birds.

Power Lines

The construction of additional overhead power lines associated with wind farms creates the threat of avian electrocution, particularly for raptors. Thousands of these birds, including endangered species, are killed annually as they attempt to utilize overhead power lines as nesting, hunting, resting, feeding, and sunning sites. The Service recommends the installation of underground, rather than overhead, power lines whenever possible/appropriate to minimize environmental disturbances. For all new overhead lines or modernization of old overhead lines, we recommend incorporating measures to prevent avian electrocutions. The publication entitled *Suggested Practices for Avian Protection on Power Lines - The State of the Art in 2006* has many good suggestions including pole extensions, modified positioning of live phase conductors and ground wires, placement of perch guards and elevated perches, elimination of cross arms, use of wood (not metal) braces, and installation of various insulating covers. You may obtain this publication by contacting the Edison Electric Institute via their website at: <http://www.eei.org/resourcesandmedia/products/Pages/products.aspx>, or by calling 202-508-5000.

Please note that utilizing just one of the "Suggested Practices . . ." methods may not entirely remove the threat of electrocution to raptors. In fact, improper use of some methods may increase electrocution mortality. Perch guards, for example, may be only partially effective as some birds may still attempt to perch on structures with misplaced or small-sized guards and suffer electrocution as they approach too close to conducting materials. Among the most dangerous structures to raptors are poles that are located at a crossing of two or more lines, exposed above-ground transformers, or dead end poles. Numerous hot and neutral lines at these sites, combined with inadequate spacing between conductors, increase the threat of raptor electrocutions. Perch guards placed on other poles has, in some cases, served to actually shift birds to these more dangerous sites, increasing the number of mortalities. Thus, it may be necessary to utilize other methods or combine methods to achieve the best results. The same principles may be applied to substation structures.

Also note that the spacing recommendation within the "Suggested Practices . . ." publication of at least 60 inches between conductors or features that cause grounding may not be protective of larger raptors such as eagles. This measure was based on the fact that the skin-to-skin contact distance on these birds (i.e., talon to beak, wrist to wrist, etc.) is less than 60 inches. However, an adult eagle's wingspan (distance between feather tips) may vary from 66 to 96 inches depending on the species (golden or bald) and gender of the bird, and unfortunately, wet feathers

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in contact with conductors and/or grounding connections can result in a lethal electrical surge. Thus, the focus of the above precautionary measures should be to a) provide more than 96 inches of spacing between conductors or grounding features, b) insulate exposed conducting features so that contact will not cause raptor electrocution, and/or c) prevent raptors from perching on the poles in the first place.

Additional information regarding simple, effective ways to prevent raptor electrocutions on power lines is available in video form. *Raptors at Risk* may be obtained by contacting EDM International, Inc. at 4001 Automation Way, Fort Collins, Colorado 80525-3479, Telephone No. (970) 204-4001, or by visiting their website at: <https://www.edmlink.com/component/zoo/item/video-raptors-at-risk>.

In addition to electrocution, overhead power lines also present the threat of avian line strike mortality. Particularly in situations where these lines are adjacent to wetlands or where waters exist on opposite sides of the lines, we recommend marking them in order to make them more visible to birds. For more information on bird strikes, please see *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* which, again, may be obtained by contacting the Edison Electric Institute via their website at: <http://www.eei.org/resourcesandmedia/products/Pages/products.aspx>, or by calling 202-508-5000.

Please note that, while marking of power lines reduces line strike mortality, it does not preclude it entirely. Thus, marking of additional, existing, overhead lines is recommended to further offset the potential for avian line strike mortality. As noted above, the whooping crane is particularly susceptible to this type of mortality, and your project occurs within the whooping crane migratory corridor. This region of the Service (Region 6) has developed *Guidance for Minimizing Effects From Power Line Projects Within the Whooping Crane Migration Corridor* (copy enclosed). Marking of existing lines elsewhere in the species' corridor is recommended. As indicated previously, a copy of the migration corridor of the Aransas-Wood Buffalo Population of whooping cranes is also enclosed for your information.

Bird and Bat Conservation Strategy

As with Eagle Conservation Plans for wind projects in this region, we have developed a document to further assist companies in following our established national guidance on BBCSs. We have enclosed our Region 6 *Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects*. As stated in the introduction of that document: a BBCS "...is a life-of-a-project framework for identifying and implementing actions to conserve birds and bats during wind energy project planning, construction, operation, maintenance, and decommissioning. It is the responsibility of wind energy project developers and operators to effectively assess project-related impacts to birds, bats and their habitats, and to work to avoid and minimize those impacts." A BBCS explains the actions taken by developers as they progress through the tiers of our Land-Based Wind Energy Guidelines, describing the analyses, studies, and reasoning implemented with the purpose of mitigating for potential avian and bat impacts. It also addresses postconstruction monitoring and habitat impacts. We recommend you develop a BBCS if these projects progress.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing unauthorized take, the Service realizes that some birds may be killed as a result of wind farm operations, even if all known reasonable and effective measures to protect birds are used. The Service's Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of migratory birds and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Companies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during construction, operation, or similar activities.

Summary

Below we reiterate the items discussed above that are pertinent to the proposed project, any associated recommended guidance, or related information and suggested actions.

- Service easement properties
 - Avoid easements if possible
 - Continue coordination with Waubay and Madison WMDs
 - Inform this office if easements will be impacted
- Wind farm guidance:
 - Adhere to Land-Based Wind Energy Guidelines
 - Update wildlife surveys
 - Provide results of surveys to this office
- Eagle Guidance:
 - Adhere to Eagle Conservation Plan Guidance
 - Provide results of eagle surveys and modeling to this office
- Threatened/Endangered Species
 - Avoid habitat impacts
 - Surveys may be needed to determine presence
- Wetlands
 - Avoid, minimize, compensate for any wetland impacts (in that order)
- Migratory Birds
 - Avoid impacts to grasslands and wetlands
 - Avoid impacts to Birds of Conservation Concern

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- Compensate for unavoidable impacts
- Develop a Bird and Bat Conservation Strategy
- Address meteorological tower impacts
- Address power line impacts

If changes are made in the project plans or operating criteria, or if additional information becomes available, the Service should be informed so that the above determinations can be reconsidered.

The Service appreciates the opportunity to provide comments. If you have any questions on these comments, please contact Natalie Gates of this office at (605) 224-8693, Extension 227.

Sincerely,



Field Supervisor
South Dakota Field Office

LITERATURE CITED

- Shaffer, J. A. and D. A. Buhl. 2015. Effects of wind-energy facilities on breeding grassland bird distributions. *Conservation Biology* 30(1):59-71.
- Longcore, T., C. Rich, P. Mineau, B. MacDonald, D. G. Bert, L. M. Sullivan, E. Mutrie, S. A. Gauthreaux, Jr., M. L. Avery, R. L. Crawford, A. M. Manville, E. R. Travis, and D. Drake. 2012. An Estimate of Avian Mortality at Communication Towers in the United States and Canada. *PLoS ONE* 7(4): e34025. doi:10.1371/journal.pone.0034025.
- Loesch, C. R., J. A. Walker, R. E. Reynolds, J. S. Gleason, N. D. Niemuth, S. E. Stephens, and M. A. Erickson. 2013. Effect of wind energy development on breeding duck densities in the Prairie Pothole Region. *Journal of Wildlife Management* 77(3):587-598.

Enclosures

cc: FWS/Waubay WMD, Connie Mueller
FWS/Madison WMD, Natoma Hansen
Silka Kempema, Biologist, South Dakota Game, Fish and Parks