

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

**IN THE MATTER OF THE
APPLICATION BY OTTER TAIL
POWER COMPANY AND WESTERN
MINNESOTA MUNICIPAL POWER
AGENCY FOR A FACILITY PERMIT
FOR A TRANSMISSION FACILITY
AND ASSOCIATED FACILITIES IN
GRANT COUNTY, SOUTH DAKOTA**

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* **APPLICANTS' RESPONSES TO
STAFF'S FIRST SET OF DATA
REQUESTS TO OTTER TAIL POWER
COMPANY AND WESTERN
MINNESOTA MUNICIPAL POWER
AGENCY**
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* **EL24-015**
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Below, please find Otter Tail Power Company's (Otter Tail) and Western Minnesota Municipal Power Agency's (Western Minnesota), through its agent, Missouri River Energy Services (MRES) (collectively, Applicants) responses to Staff's First Set of Data Requests.

- 1-1) Refer to section 2.1 of the Application. What reactive power equipment will be added to the substation?

Jason Weiers (Otter Tail): The reactive power equipment at the Big Stone South Substation that is mentioned in section 2.1 of the Application is in reference to a new 70 MVAR, shunt-connected 345 kilovolt (kV) reactor that will be installed as part of the Big Stone South to Alexandria 345 kV Transmission Line Project (BSSA Project).

This 345 kV reactor is needed in order to maintain system voltages within acceptable voltage criteria during a wide range of operating conditions and system configurations with the BSSA Project and the Alexandria to Riverview to Big Oaks Transmission Line Project in-service.

- 1-2) Refer to section 9.1 of the Application.

- a) Please explain what type of modification to the Project could occur as a result of final engineering, permitting, and/or land rights.

Jason Weiers: Potential modifications to the Project as a result of final engineering, permitting, and/or land rights include minor adjustments in the route alignment or structure locations due to:

- Landowner preferences and coordination;
 - Agencies with jurisdictional requirements or preferences; or
- Final geotechnical borings used in the design of the Project.

- b) When will it be known that no additional modifications will be needed to the Project?

Jason Weiers: No additional modifications will be needed to the Project after all required federal, state and local permits are obtained, land rights are secured, and final engineering is complete. To the extent that the Route changes during the development of the Project, the Applicants commit to informing the Commission through supplemental filings.

- 1-3) Refer to the siting flexibility area identified on Figures 4a, 4b, and 4c.

- a) Please explain why the flexibility area needs to run on both the north and south side of 145th Street.

Jason Weiers: Encompassing both sides of 145th Street in the flexibility area allowed the Applicants the ability to negotiate with seven landowners rather than four landowners to identify a Route for the Project. Since the time of filing the application, the Applicants have secured easements on the north side of 145th Street for the first, approximately 0.5-mile stretch out of the Big Stone South Substation. Negotiations are still underway with landowners on both sides of 145th Street just before the Route turns south.

- b) For segments of the route that is requesting flexibility to place the transmission line on one of two parcels with different ownership, please explain why that flexibility is needed.

Jason Weiers: As mentioned above, the flexibility area encompassing more parcels with different ownership provides more opportunity for the Applicants to successfully negotiate acquisition of the land rights needed for the Project.

- c) Can the Project limit the requested flexibility areas to one parcel of land so that the affected landowner(s) know their parcel is (or is not) impacted by the project prior to the Commission making its decision on the Project? Please explain.

Jason Weiers: The Applicants could limit the requested flexibility area to one parcel of land where voluntary land rights have been acquired for the Project. At this time, this would only eliminate one landowner from the thirteen landowners identified as part of the flexibility area. On-going conversations with landowners have indicated that voluntary land rights may not be acquired until the Commission makes a ruling on the Application, thus making it difficult to limit the requested flexibility area to one parcel of land at this time.

- 1-4) Refer to section 9.2 of the Application.

- a) When will Applicant know where specialty structures will be installed?

Jason Weiers/Theron Rein (Otter Tail): The Applicants will know where specialty structures will be installed after all required federal, state and local permits are obtained, land rights are secured, and final engineering is complete.

- b) Would those structures take up a larger footprint in the right-of-way than the proposed monopole structures? Please explain.

Jason Weiers/Theron Rein: In the rare event that specialty structures are required, the Applicants expect that they would be comprised of either two pole H-frame structures or 3-pole monopole structures. These types of specialty structures would require a larger footprint than the proposed monopole structures. Specialty structures may involve pole spacing that utilizes up to a total of 25 – 30 feet of land as opposed to the anticipated steel monopole foundation design of 7 – 14 feet.

- c) How will Applicant communicate with the affected landowner regarding the need for a specialty structure on their land and work with that landowner to incorporate any landowner preferences if feasible?

Jason Weiers: The need for specialty structures would be communicated with landowners as soon as the Applicants become aware of the need for such a structure. Through the course of landowner discussions, the Applicants will work with the affected landowner to incorporate landowner preferences into the design or location of the structure to the extent possible.

- 1-5) Refer to section 10.1 of the Application and ARSD 20:10:22:12(1). Please provide how the criteria used to select the site (as discussed in section 10.1) were measured and weighed. Further, please provide the reasons for selecting those criteria.

Jason Weiers: As discussed in Section 10.1 of the Application, criteria used to select the two-mile-wide corridor included capturing the area around Otter Tail's existing Big Stone South Substation (the western endpoint of the Project) and extending east to the South Dakota-Minnesota border. With those endpoints in mind, Applicants identified routing constraints in that area – i.e., areas that would be difficult to route through. As discussed in the Application, constraints identified included the Ortonville Municipal Airport, population centers (Big Stone City and Ortonville), Big Stone National Wildlife Refuge, the Minnesota River, and the U.S. Fish and Wildlife Service (USFWS) Wildlife Management Areas (WMAs). Crossing a large body of water such as the Big Stone Lake and a National Wildlife Refuge were not measured and weighed but instead eliminated as unpractical because other crossing opportunities existed.

When developing a routing corridor within the Study Area, Applicants prioritized areas that would allow routing to follow public roadways, section or quarter section field lines, and existing transmission line corridors to minimize impacts to landowners and existing land uses while allowing for easier construction and long-term maintenance access. Based on additional information collected at public open house meetings and through landowner, stakeholder, and agency feedback, the potential routing corridors were narrowed down to one approximately two-mile-wide corridor.

To identify the Route within that two-mile-wide corridor, the Applicants applied multiple factors, including:

- (1) avoiding engineering constraints, such as a concentration of infrastructure in and around Big Stone City, and minimizing engineering concerns to ensure construction feasibility;
- (2) utilizing engineering opportunities, including paralleling existing property lines and infrastructure corridors (utility and road rights-of-way);
- (3) avoiding or minimizing impacts to environmental resources, including cultural resources, waterbodies/wetlands, trees, potentially undisturbed grassland, and public lands; and
- (4) minimizing impacts to landowners and existing land use in order to maximize the potential to secure voluntary easements, including minimizing impacts to agricultural practices, homes, and federal, state and/or local easements.

These factors were equally important in selecting the Route, although balancing all of these factors was required in order to develop the proposed Route.

- 1-6) Refer to section 10.1 of the Application. Please provide a detailed explanation why the Project did not select a route for the transmission line that travels straight east from the Big Stone South Substation to the Minnesota border.

Jason Weiers: A route that would traverse straight east from the Big Stone South Substation to the Minnesota border was reviewed and rejected from consideration for multiple reasons. As shown on the land use culture map in Attachment 2 to DR SD-PUC-01.23, such a route would run through the more densely populated urban and suburban communities of Big Stone City and Ortonville. For example, such a route would pass immediately adjacent to several homes off US Highway 12. Additionally, such a route would also not allow Otter Tail to make use of utility-owned property. Finally, such a route would require removal of several acres of trees.

- 1-7) Section 12.1.1.3 of the Application states: “[M]ining is present in the vicinity of the Project [...].”

- a) Please identify the types of mining in the vicinity of the Project.

Jason Weiers: The only type of mining present in the vicinity of the Project is sand/gravel pits.

- b) Referring to ARSD 20:10:22:14(4), please confirm that only sand/gravel pits are in the area and that there are no other economic deposits (e.g. lignite, scoria, and industrial and ceramic quality clay) within the Project site.

Jason Weiers: The only type of mining present in the vicinity of the Project is sand/gravel pits. There are no other economic deposits such as lignite, scoria, or industrial and ceramic quality clay within the Project site.

- 1-8) Section 12.1.2 of the Application states: “[a]dditionally, prior to construction, geotechnical soil borings would be conducted at transmission line structure locations to determine the soil suitability to support the transmission line structure foundations” and “[t]his information would help dictate the final design parameters of the structure foundations.” Is there the possibility that the Project impacts discussed in the Application could change based on the design parameters of the foundations? Please explain.

Jason Weiers/Theron Rein: There is a slight risk that the Project impacts included in the Application could increase or decrease based on the final design parameters of the foundations. The preliminary foundation design assumptions for soil strength were based on a desktop study of prior soil borings conducted previously near the Big Stone South Substation. There is a slight risk that the final geotechnical investigation could determine that soil parameters along the Route are different than expected. For example, the final foundation design may increase in size if extraordinarily weak soil or organic material are observed for significant depths. On the other hand, the foundation design could be smaller than anticipated if bedrock is identified at a shallow depth. However, impacts in the Application assumed a worst-case scenario when calculating permanent aboveground impacts.

- 1-9) Section 13.2.2 states: “[i]t is anticipated that crossing of streams and drainage ways will be avoided by the temporary access roads; if impacts occur, they will be temporary and restored in accordance with applicable requirements.” What are the applicable requirements referred to in this sentence?

Kevin Scheidecker (Otter Tail): Applicable requirements is referring to any requirements that the Applicants are subject to as a result of the permits that are obtained for the Project. For example, the Applicants will obtain coverage under the South Dakota Department of Agriculture and Natural Resources (SDDANR) General Permit for Storm Water Discharges Associated with Construction Activities, which includes the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that would prescribe Best Management Practices (BMPs) to control erosion and avoid and/or minimize the potential for sediment to reach surface waters due to the crossing of streams and drainage ways by temporary access roads. The SWPPP would be implemented from the initiation of construction and used through site restoration efforts.

- 1-10) Please confirm that ARSD 20:10:22:15(3), (4), (5), and (6) are not applicable to the proposed project.

Kevin Scheidecker: As required by ARSD 20:10:22:15(3), the Applicants included with the Application a map drawn to scale showing any known surface water supplies near the Project (see Appendix A, Figure 14). No groundwater resources will be used for construction or operational activities associated with the Project.

No aquifers will be used as a source of potable water supply or process water for the Project. Accordingly, ARSD 20:10:22:15(4) is not applicable to the Project.

The Project will not involve storage, reprocessing, and cooling prior to discharge of heated

water entering natural drainage systems. Accordingly, ARSD 20:10:22:15(5) is not applicable to the Project.

The Project will not involve deep well injection. Accordingly, ARSD 20:10:22:15(6) is not applicable to the Project.

- 1-11) Referring to section 14.1.1.1 of the Application, please explain why American spikenard was noted to occur in the project area and why it was important to highlight that species.

Kevin Scheidecker: The American spikenard was identified in the South Dakota Game, Fish, and Parks' (SDGFP) Natural Heritage Program (NHP) Database search as having the potential to occur in proximity to the Project. All species identified in the NHP database search as having the potential to occur in proximity to the Project are discussed in the Application. The American spikenard was the only botanical species listed and is therefore the only NHP identified species discussed in Section 14.1.

- 1-12) Referring to section 14.1.2.1 of the Application, what data did the Project base its conclusion on that “[n]o American spikenard is known to occur, and suitable habitat is not believed to be present within the Flexibility Area”?

Kevin Scheidecker: The Applicants based their conclusions about the American spikenard on information gathered from consultation with the SDGFP, the NHP Database and by performing a desktop review of the Route with aerial photography. According to the SDGFP NHP Database search, the American spikenard is typically found in dense forests in eastern South Dakota (SDGFP, 2018). Based on a desktop review of aerial photography, the Applicants determined that the proposed Route would span one stream/drainage area that is dominated by emergent and herbaceous vegetation, with scattered small individual trees (see Section 14.1.14 of the Application). This is not the type of environment in which American spikenard grows and therefore it is not believed to be present within the Flexibility Area. Additionally, based on information provided by the SDGFP, the last reported observation of American spikenard within the Flexibility Area was in 1916.

Citation: South Dakota Game, Fish, and Parks (SDGFP). 2018. Online [URL]: <https://gfp.sd.gov/rare-plants/>. Accessed: April 4, 2024.

- 1-13) Section 15.2 of the Application states “[i]t is anticipated that the Project will span the unnamed tributary to the Whetstone River, depending on geologic or engineering constraints determined in final design, and no transmission structures will be placed in the unnamed tributary.”

- a) What are the geologic or engineering constraints to be factored into the final design that could cause structures to be placed into the unnamed tributary to the Whetstone River? Please explain.

Jason Weiers/Theron Rein: Currently, the Applicants are not aware of any geologic or engineering constraints that would cause a structure to be placed in the unnamed tributary to the Whetstone River or into any nominal flow area of any river, stream, or tributary along the Route.

- b) When will the Project know with certainty that no structures will need to be installed in the unnamed tributary?

Jason Weiers/Theron Rein: The Applicants will know with certainty that no structures will need to be installed in the unnamed tributary after all required federal, state and local permits are obtained, land rights are secured and final engineering is complete.

- 1-14) Refer to Section 16.3.2 of the Application on noise level impacts and avoidance, minimization, and mitigation measures.

- a) Within that section it is stated: “[t]he way conductors are arranged on the support poles also affects corona noise production.” Is the project planning to use a conductor arrangement that minimizes the production of corona noise? Please explain.

Jason Weiers/Theron Rein: Yes. The vertically arranged conductors for the Project will have a lower corona noise impact than other possible configurations (horizontal or delta type).

- b) Will the closest residence be impacted by corona noise? Please explain why or why not.

Jason Weiers/Theron Rein: No, the Applicants do not expect the closest residence will be impacted by corona noise. In foggy, damp or rainy weather, power lines can create sound due to the small amount of electricity ionizing the moist air near the conductors. In heavy rain, the background noise level of the rain is usually greater than the noise from the transmission line. As a result, people do not normally hear noise from a transmission line during heavy rain. During light rain, dense fog, snow, and other times when there is moisture in the air, transmission lines will produce audible noise equal to approximately household background levels. During dry weather, noise from transmission lines is barely perceptible to humans. Additionally, the line is being designed to minimize the potential for corona noise (see response to DR SD-PUC-01.15(a)).

- c) Will the substation expansion add any equipment that produces noise? If yes, has the Project done an analysis on the impact that equipment will have on the substation’s overall sound levels?

Jason Weiers/Theron Rein: The reactor addition at the Big Stone South Substation will be a noise source. An evaluation of the noise with the reactor addition at the Big Stone South Substation has not been completed because the reactor is expected to be consistent with and indistinguishable from sound already being produced by existing facilities at this substation (e.g. transformers). To date, there have not been complaints of noise from the Big Stone South Substation since it was energized in 2017.

- d) If helicopters will be used during construction, what measures will the Project take to minimize noise impacts to residences and livestock in the Project area?

Jason Weiers/Theron Rein: Helicopter use would only be for conductor installation. The helicopters used would be smaller types that are quieter than larger types. The Applicants would coordinate with nearby landowners based on the schedule of the construction contractors to address potential concerns regarding impacts to residences or livestock related to helicopter noise.

- 1-15) Refer to section 16.5 of the Application.

- a) Please explain how the Project hardware is designed to minimize gap and corona discharges that could cause interference with radio waves.

Jason Weiers/Theron Rein: All of the hardware to be used on the Project is designed for extra high voltage (EHV) applications. Hardware manufacturers design the assemblies specifically to minimize corona effects such as (using rounded parts and removing sharp edges). In addition, all hardware assemblies will have been electrically tested to check performance to minimize corona discharge.

- b) Can the co-location of transmission lines cause adverse cumulative impacts on radio waves? Please explain.

Jason Weiers/Theron Rein: While there is the potential for amplitude modulated (AM) radio interference to occur directly below the transmission lines, the effect will dissipate rapidly beyond the transmission line rights-of-way. Frequency modulated (FM) radio receivers usually do not pick up interference from transmission lines, as the interference rejection properties inherent in FM radio systems make them virtually immune to amplitude-type disturbances.

Co-locating the Project with other existing transmission lines in adjacent rights-of-way is not expected to result in notable adverse cumulative impacts on radio waves because each transmission line is spaced far enough apart where the potential AM radio interference from one transmission line will not interact with the potential AM radio interference from another transmission line.

- 1-16) Section 17.0 of the Application states: “[t]he Applicants have been coordinating with the County regarding the CUP process and plan to submit a CUP application in April 2024.” Please provide a status update on the CUP.

Jason Weiers: The Applicants submitted a CUP application to Grant County on April 26, 2024. The Grant County Board of Adjustment held a public hearing on June 24, 2024, to discuss the application. Following a brief presentation by the Applicants, the Grant County Board of Adjustments unanimously approved the Conditional Use Permit. The Applicants are currently awaiting the signed copy of the permit and will file it with the Commission when it is issued.

1-17) Refer to Section 20.0 of the Application.

- a) Applicant identifies that the estimated end date for right-of-way acquisition in South Dakota is Q2 2024. Please provide a status update on the Project's acquisition of right-of-way.

Jason Weiers: The Applicants have presented easement agreements to all landowners along the Route and have obtained easements with 4 of the 12 landowners at this time. Conversations are continuing with landowners to secure the right-of-way along the Route.

- b) The estimated start date of construction is Q3 2028, and the in-service date is Q4 2031. Why is construction expected to take 3 years? Further, will South Dakota landowners experience construction activities over that entire three-year period? Please explain.

Jason Weiers: The three-year construction schedule reflects that the Project is part of a larger, 100-plus-mile 345 kV line to be constructed in both South Dakota and Minnesota. Construction will not start until permits in both states have been secured to enable efficient construction sequencing. The current construction schedule is mindful of the significant facilities being installed including consideration of the time associated with land acquisition, obtaining the necessary federal, state and local permit approvals, material lead times, contractor availability and weather conditions. The Project (the South Dakota portion of the BSSA Project) will be constructed according to contractor plans, but the duration for the various construction phases will be much shorter for the Project than for the BSSA Project as a whole. As a result, South Dakota landowners will not experience construction activities over the entire three-year period.

- 1-18) In Table 21-1 it is identified that the rental vacancy rate for Grant County is <1.0%. Section 21.1.2 of the Application identifies that project requires trained professionals to be temporarily relocated to the vicinity of the Project. Given the rental vacancy rate of the Project area is low, please provide an analysis on the availability of the project area to absorb the short-term housing needs for individuals working on the Project.

Jason Weiers: A portion of the workers will likely be local construction contractors and personnel and therefore will not require any short-term housing. It is anticipated that the non-local individuals working on the Project will find temporary housing within a daily commuting distance (i.e., 50-mile radius) of the Project. The majority of non-local workers will be housed in nearby hotels and campgrounds. As of 2020, there were 323 vacant housing units in Grant County, South Dakota (USCB, 2020a). Additionally, there were 758 vacant housing units in Big Stone County, Minnesota, which is within a daily commuting distance to the Project (USCB, 2020b). As described in Section 23.0 of the Application, it is anticipated that construction of the BSSA Project, which includes the proposed Project, will employ approximately 100 to 150 construction workers. Therefore, the available short-term housing, not including hotels and campgrounds, in Grant County is more than sufficient to accommodate the individuals working on the Project.

Citations:

U.S. Census Bureau (USCB). 2020(a). American Community Survey, Table H1 – Occupancy Status, Grant County, SD. Online [URL]: <https://data.census.gov/table/DECENNIALPL2020.H1?q=Grant%20County,%20South%20Dakota%20Housing>. Accessed: August 2024.

U.S. Census Bureau (USCB). 2020(b). American Community Survey, Table H1 – Occupancy Status, Big Stone County, MN. Online [URL]: <https://data.census.gov/table/DECENNIALPL2020.H1?q=Big%20Stone%20County,%20Minnesota%20Housing>. Accessed: August 2024.

1-19) Refer to section 21.3.2 of the Application and ARSD 20:10:22:23.

- a) What data/information was used to conclude that “it is anticipated that the existing facilities would have sufficient capacity to meet this demand [i.e. demand on community services/facilities]”? More specifically, is the conclusion mainly based on the number of workers needed to construct the Project? Please explain.

Jason Weiers: The conclusion that the existing facilities would have sufficient capacity to meet demand is not based on the number of workers, but rather the limited use of existing community services/facilities needed to construct the Project. Construction of the Project will use standard construction practices for high-voltage transmission lines, such as the use of portable toilets and generators.

- b) Please explain why the Project is not anticipated to impact existing water systems or electrical systems.

Jason Weiers: Water use for the Project will be restricted to dust control and foundation construction and will be pumped from local surface waters in compliance with a temporary water use permit that the Applicants will obtain from the South Dakota Department of Agriculture and Natural Resources. Additionally, there will be no potable water use during construction. All sewage will be contained in portable toilets.

There will be two laydown yards that will use temporary, single-phase 120/240 volt power. This power will be used to power the trailers and associated equipment (e.g., computers, lights). All other power will be provided by generators. Given the limited power use for the Project, the Applicants do not anticipate any impact to the existing electrical systems.

- c) Does “water systems” in the previous question include both sewage water systems and potable water systems? Please specify the anticipated impact to each water system type.

Jason Weiers: The reference to “water systems” in section 21.3.2 of the Application refers to both sewage and potable water systems. As described in the response to DR 1-19(b) above, the Project is not anticipated to impact either existing water system.

- d) What are the anticipated impacts the project will have on solid waste management facilities? Please provide an analysis on the regional capacity of solid waste management facilities to absorb any waste streams generated by the Project during construction or operation.

Jason Weiers: There will be minimal solid waste generated during the construction or operation of the Project. Most of the solid waste produced during construction of the Project will be disposed of in dumpsters that are maintained by a contractor. Bulky waste, such as tires, wood, and metal scraps, will be hauled off-site to be sold or disposed of at proper facilities.

1-20) Refer to section 21.5.2 of the Application.

- a) Beyond the tribal surveys that are yet to be completed, are there any additional cultural resource surveys needed?

Kevin Scheidecker: The Applicants are not aware of the need for any additional cultural resource surveys at this time. Since the last filing, the Applicants have expanded the Flexibility Area due to a minor re-route near the substation, which the Applicants will describe further in supplemental testimony. The Applicants are currently coordinating with the South Dakota State Historic Preservation Office (SHPO) to confirm that the existing survey information that the Applicants have gathered is sufficient and will provide an update to the Commission once SHPO concurrence has been received.

Additionally, all tribal survey work has been completed and is accounted for in the proposed Project design (see response to DR SD-PUC-1.25 below).

- b) If all survey work is completed, has SHPO provided a concurrence letter that the project will not affect historic properties and cultural resources? If yes, please provide a copy of the letter.

Kevin Scheidecker: The South Dakota SHPO provided an acceptance letter dated April 2, 2024 for the Level III cultural resource survey conducted in November 2023 and February 2024 (see Attachment 1 to DR SD-PUC-01.20). The South Dakota SHPO also provided an acceptance letter dated June 12, 2024 for the Level III cultural resource survey conducted in April 2024 (see Attachment 2 to DR SD-PUC-01.20). Per the acceptance letters received, the South Dakota SHPO has “determined that the proposal will not encroach upon, damage, or destroy a historic property which is included in the National or State Registers of Historic Places, pursuant to SDCL 1-19A-11.1.”

1-21) Refer to section 25.2.2 of the Application.

- a) Section 25.2.2.1 notes that there are no federal standards for transmission line electric fields. Are there any standards set by the State of South Dakota or local governments?

Jason Weiers/Theron Rein: The Applicants are not aware of any state or local standards for electrical fields in South Dakota.

- b) Section 25.2.2.2 notes that there are no South Dakota regulations pertaining to magnetic field exposure. Are there any federal or local government regulations pertaining to magnetic field exposure?

Jason Weiers/Theron Rein: The Applicants are not aware of any federal or local regulations for magnetic fields.

- c) Does the co-location of transmission facilities result in any cumulative effects for EMFs? Please explain.

Jason Weiers/Theron Rein: Co-locating the Project with other existing transmission facilities in adjacent rights-of-way is not expected to result in notable cumulative effects for EMFs. Each transmission line is spaced far enough apart where the anticipated cumulative effects for the EMFs at the edge of the right-of-way will be less than the EMF at the transmission centerline of the Project. The 150' right of way width will ensure that the cumulative effects for EMF exposure will not be as great at the edge of the right-of-way as the exposure that humans experience each day from common household appliances.

- 1-22) Refer to section 25.2.3 of the Application. It is stated that: “[i]f the proposed transmission lines run parallel to or cross distribution lines, appropriate mitigation measures can be taken to address any induced voltages.” Will the Project cross or run parallel to any distribution lines? If yes, what measures will the Project take to address induced voltages?

Jason Weiers/Theron Rein: The Project does not cross or run parallel to any distribution lines in South Dakota at this time.

- 1-23) Pursuant to ARSD 20:10:22:35(3), please provide the proposed transmission site and major alternatives as depicted on overhead photographs and land use culture maps.

Jason Weiers: The proposed transmission site and major alternatives are depicted on overhead photographs in Attachment 1 to DR SD-PUC-01.23. The proposed transmission site and major alternatives are depicted on land use culture maps in Attachment 2 to DR SD-PUC-01.23.

- 1-24) Referring to lines 25-33 on page 18 of Mr. Weiers’ testimony, what amount does the Project propose the road bond be set at? Further, how did the Project determine the proposed amount is reasonable?

Jason Weiers: Applicants propose the road bond for the Project be set at \$400,000. This is based on reviewing road bond amounts for prior transmission line dockets and comparing the length of the lines to the Project, including EL19-005 (\$250,000 for ~0.7 miles), EL19-012 (\$500,000 for ~7 miles), EL18-019 (\$500,000 for 5 miles), and EL18-046 (\$1,000,000 for ~8 miles). Based on this information, at ~3.5 miles, a bond for the Project between \$250,000 and \$500,000 seems appropriate, and the length of the Project indicates an amount on the higher end of the range, resulting in the proposed \$400,000 bond.

- 1-25) Refer to lines 1-7 on page 10 of Mr. Scheidecker's testimony. Were any Tribal resources found within the flexibility area during the April 2024 survey? Further, please explain how the project was sited to avoid potential impacts to Tribal resources.

Kevin Scheidecker: One Tribal resource was found within the Flexibility Area during the April 2024 Level III cultural resource survey. Through ongoing engagement with the Tribes who participated in the survey, the Applicants and the Tribes agreed upon an appropriate buffer around the Tribal resource, and the Applicants will construct a temporary construction fence around this buffer area. The buffer and fence are measures to avoid direct physical disturbance to the Tribal resource during construction. Furthermore, the structures are sited to avoid potential impacts to Tribal resources.

- 1-26) During the May 29, 2024, public input meeting, Mr. Daniel Jurgens requested that the Project be co-located and consolidated on the same structures with the existing transmission lines that run just north of his property. Please provide an analysis on the feasibility of accommodating this request.

Jason Weiers: Following the May 29, 2024, public input meeting, the Applicants had two separate meetings with Mr. Dan Jurgens and Commission Staff to discuss the Project being co-located and consolidated on the same structures with the existing transmission lines that run just north of his property. During the second meeting on August 1, 2024, the Applicants explained that it is not feasible to accommodate Mr. Jurgens' request because:

- The Applicants do not own the existing transmission lines that run just north of his property;
- There are unnecessary cost impacts and reliability issues when co-locating and consolidating these existing transmission lines on the same structures; and
- Great River Energy (GRE) and NorthWestern Energy (NWE) are not willing to modify their existing 115 kV and 230 kV transmission lines, respectively.

Co-locating and consolidating the Project on the same structures as the existing transmission lines result in unnecessary costs to customers due to: (1) modifying these existing transmission lines without a corresponding reliability benefit; and (2) removing existing transmission lines that are not fully depreciated. In addition, co-locating or consolidating the Project on the same structures as the existing transmission lines also results in reliability impacts due to: (1) longer 230 kV and 115 kV line outages during construction of the Project; (2) simultaneous 230 kV and 115 kV outages during planned outages (i.e. maintenance activities); and (3) simultaneous 230 kV and 115 kV outages during unplanned outages (i.e. structure failures).

In addition to these cost impacts and reliability issues, the Applicants have also identified that co-locating or consolidating the Project on the same structures as the existing transmission lines also results in complexity between GRE and NWE regarding ownership, safe maintenance procedures and design standards, plus coordination challenges between the two utilities (GRE/NWE) and two regional transmission organizations (Midcontinent Independent System Operator/Southwest Power Pool).

In conclusion, the Applicants have determined that it is not feasible to accommodate the request from Mr. Daniel Jurgens. However, the Applicants have, and can further, adjust the structure locations along the Project's route to minimize impacts to farming activities on the

Jurgens' property. In addition, the Applicants will also encourage GRE and NWE to consider aligning their structures if either utility rebuilds their existing transmission line in the future.

Dated this 3rd day of September 2024.

By: /s/ Mollie M. Smith
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Englewood, CO 80112

SDCL 1-19A-11.1 Consultation

Project: 240109007S – Otter Tail Power Company - Big Stone South to Alexandria (BSSA) Transmission Line Project

Location: Grant

PUC - South Dakota Public Utilities Commission

Dear Mr. Gilmore,

Thank you for the opportunity to comment on the above referenced project pursuant to South Dakota Codified Law (SDCL) 1-19A-11.1. SDCL 1-19A-11.1 outlines a specific process that must be followed prior to any governmental action that may harm any historic property that is included in the National or State Registers of Historic Places. The South Dakota Office of the State Historic Preservation Officer (SHPO) would like to provide the following comments concerning effect of the proposed project on the non-renewable cultural resources of South Dakota.

On March 7, 2024, SHPO received your letter, the report titled "A Level III Cultural Resource Survey for the Big Stone South to Alexandria 345-kV Transmission Line Project" by Lars Boyd of HDR, updated site forms, and shapefiles. Previously, Otter Tail Power Company had notified SHPO of the proposed Big Stone South to Alexandria (BSSA) Transmission Line Project, and SHPO responded in an email dated November 13, 2023, and a letter dated January 19, 2024. SHPO's January 19, 2024, letter included recommendations for meeting the requirements outlined in the Administrative Rules of South Dakota (ARSD) at 20:10:22:23 for the South Dakota Public Utilities Commission (PUC) Facility Permit Application.

Your current letter confirms that there is no federal involvement in the proposed transmission line project and requests comments from SHPO under SDCL 1-19A-11.1. Your letter and the HDR report also indicate that only a portion of the study area in South Dakota has been subject to intensive field survey at this time. As access to additional parcels of land is granted and/or if the route of the proposed transmission line corridor changes, additional surveys will be conducted. Your letter also indicates that an analysis of the proposed project's visual effects has not been completed and that additional information on the effects of the proposed project on any Traditional Cultural Properties associated with American Indian Tribes and/or properties of religious and cultural significance to American Indian Tribes will be forthcoming along with future survey reports.

The HDR report indicates that qualified archaeologists have surveyed 156 acres of the project area. During the survey efforts, a previously recorded segment of 39GT2007 was revisited and an additional segment was newly recorded. 39GT2007 remains Eligible for listing in the National Register of Historic Places, and the two segments discussed in the report are integral to the site's overall eligibility. Two





segments of 39GT2042 also were previously recorded within the study area. However, the results of the current survey indicate that these segments of 39GT2042 have been completely obliterated and are not integral to 39GT2042's overall Eligibility to the National Register of Historic Places. During the current survey, the mapped location of 39GT0399 also was revisited, but no evidence of the previously recorded site remains. In letter 150904001S dated February 13, 2019, SHPO had agreed that 39GT0399 did not meet any of the National Register criteria.

Based upon the information provided, there are no properties listed in the National or State Registers of Historic Places within the currently identified study area. The report indicates that the transmission line will span across 39GT2007 but will not cause ground disturbance within the site boundary and will not adversely affect the eligibility of the site to the National Register of Historic Places.

As additional efforts to identify cultural resources and how they will be affected by the proposed project are completed, please provide the results of the efforts so SHPO can provide additional comments on the project under SDCL 1-19A-11.1 and its effects on the non-renewable cultural resources of the state.

Should you require any additional information, please contact Jenna Carlson Dietmeier at Jenna.CarlsonDietmeier@state.sd.us or at (605)773-8370.

Sincerely,

Jenna Carlson Dietmeier, PhD
Interim State Historic Preservation Officer, Review & Compliance Coordinator

CC: Megan Mueller - HDR, Inc.
Jennifer Hanley - HDR, Inc.
Jason Weiers - Otter Tail Power Company
Megan Ostrenga Fabricius - Archaeological Research Center, Rapid City
Lynn Griffin - Archaeological Research Center, Rapid City
Cassie Vogt - Archaeological Research Center, Rapid City
Jon Thurber - PUC
Darren Kearney - PUC





June 12, 2024

Kevin Gilmore
HDR, Inc.
369 Inverness Parkway, Suite 325
Englewood, CO 80112

SDCL 1-19A-11.1 Consultation

Project: 240109007S – Otter Tail Power Company - Big Stone South to Alexandria (BSSA) Transmission Line Project

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PUC - South Dakota Public Utilities Commission

Dear Mr. Gilmore,

Thank you for the opportunity to comment on the above referenced project pursuant to South Dakota Codified Law (SDCL) 1-19A-11.1. SDCL 1-19A-11.1 outlines a specific process that must be followed prior to any governmental action that may harm any historic property that is included in the National or State Registers of Historic Places. The South Dakota Office of the State Historic Preservation Officer (SHPO) would like to provide the following comments concerning effect of the proposed project on the non-renewable cultural resources of South Dakota.

On June 4, 2024, SHPO received your letter, the report titled "A Level III Cultural Resource Survey Addendum for the Big Stone South to Alexandria 345-kV Transmission Line Project" by Thomas Lux and Megan Mueller of HDR, and shapefiles. Previously, in a letter dated April 2, 2024, SHPO provided comments on the report titled "A Level III Cultural Resource Survey for the Big Stone South to Alexandria 345-kV Transmission Line Project" by Lars Boyd of HDR and requested to review the results of any additional efforts to identify cultural resources. According to your June 4, 2024, letter and the addendum report, the addendum report includes the results of survey of the remaining parcels of land within the project's "flex area," the results of Flandreau Santee Sioux Tribe and Sisseton Wahpeton Oyate Tribal Cultural Specialist surveys of the undisturbed portions of the flex area, and an analysis of potential visual effects on historic properties. The addendum report indicates that Tribal Cultural Specialists identified FLA-01 during the survey of the flex area. Based upon the information provided in the report regarding this property, FLA-01 should be considered Eligible for listing in the National Register of Historic Places under Criteria A and D.

Based upon the information provided in the previous report and the addendum report, there are no properties listed in the National or State Registers of Historic Places within the proposed project's flex area. Additionally, there are no properties listed in the National or State Registers of Historic Places which will be visually affected by the proposed project. Therefore, SHPO has determined that the proposal will not encroach upon, damage, or destroy a historic property which is included in the National or State Registers of Historic Places, pursuant to SDCL 1-19A-11.1.

As the proposed project seeks a Facility Permit from the South Dakota Public Utilities Commission (PUC), the proposal will also be subject to the requirements outlined in the Administrative Rules of South





Dakota (ARSD) at 20:10:22:23. SHPO agrees that avoidance fencing should be placed around FLA-01 and that Tribal Cultural Specialists should monitor construction activities in the vicinity of FLA-01 to ensure that the resource is not damaged during project implementation. Additionally, as previously stated in the April 2, 2024, letter, SHPO agrees that spanning the transmission line across 39GT2007 will not cause ground disturbance within the site boundary and will not adversely affect the eligibility of the site to the National Register of Historic Places.

Should you require any additional information, please contact Jenna Carlson Dietmeier at Jenna.CarlsonDietmeier@state.sd.us or at (605)773-8370.

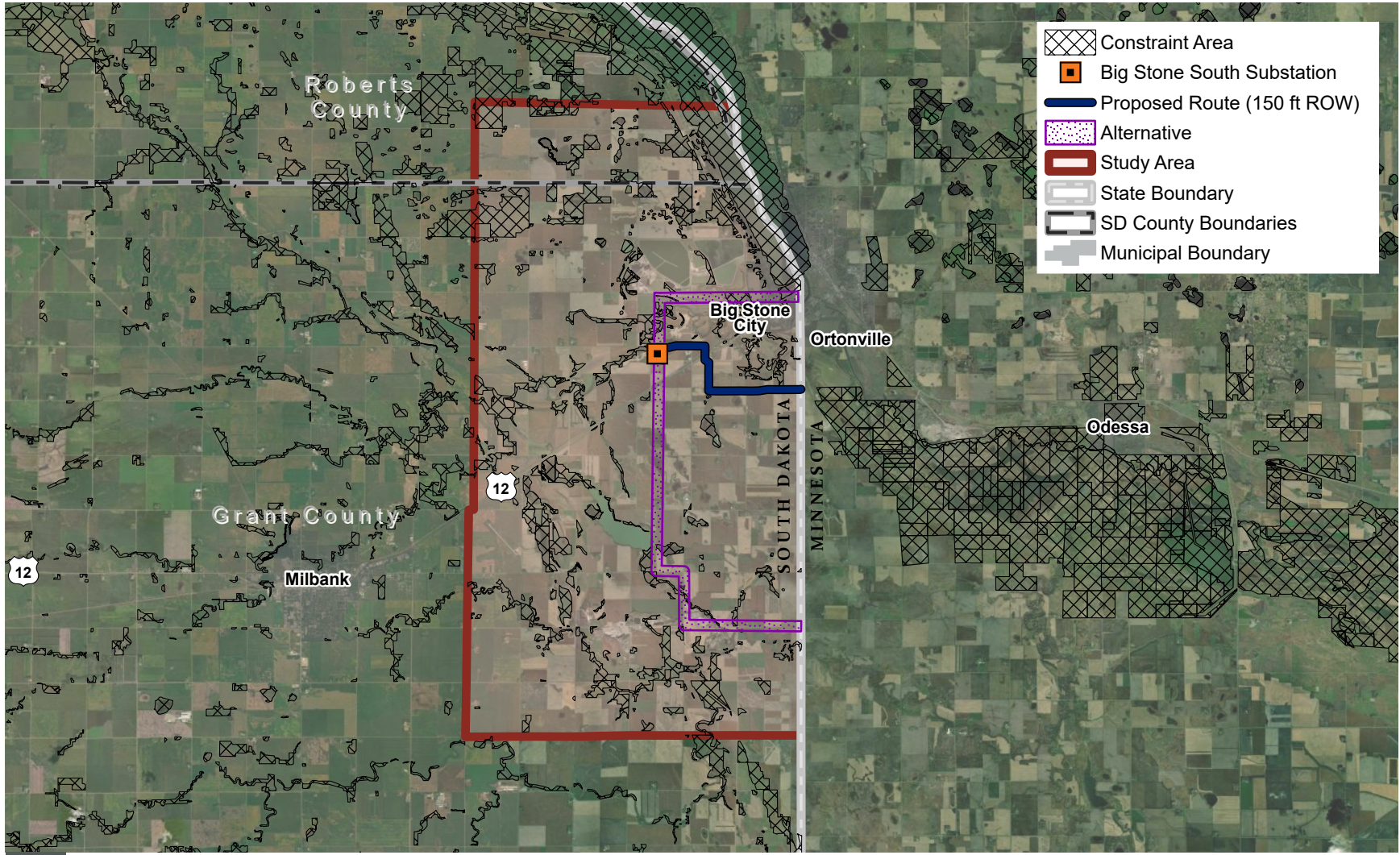
Sincerely,

A handwritten signature in blue ink that reads "Jenna Carlson Dietmeier".

Jenna Carlson Dietmeier, PhD
Interim State Historic Preservation Officer, Review & Compliance Coordinator

CC: Megan Mueller - HDR, Inc.
Jennifer Hanley - HDR, Inc.
Jason Weiers - Otter Tail Power Company
Jon Thurber - PUC
Darren Kearney - PUC
Garrie Kills a Hundred - Flandreau Santee Sioux Tribe Tribal Historic Preservation Officer
Dianne Desrosiers - Sisseton Wahpeton Oyate Tribal Historic Preservation Officer





- Constraint Area
- Big Stone South Substation
- Proposed Route (150 ft ROW)
- Alternative
- Study Area
- State Boundary
- SD County Boundaries
- Municipal Boundary



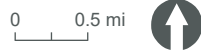
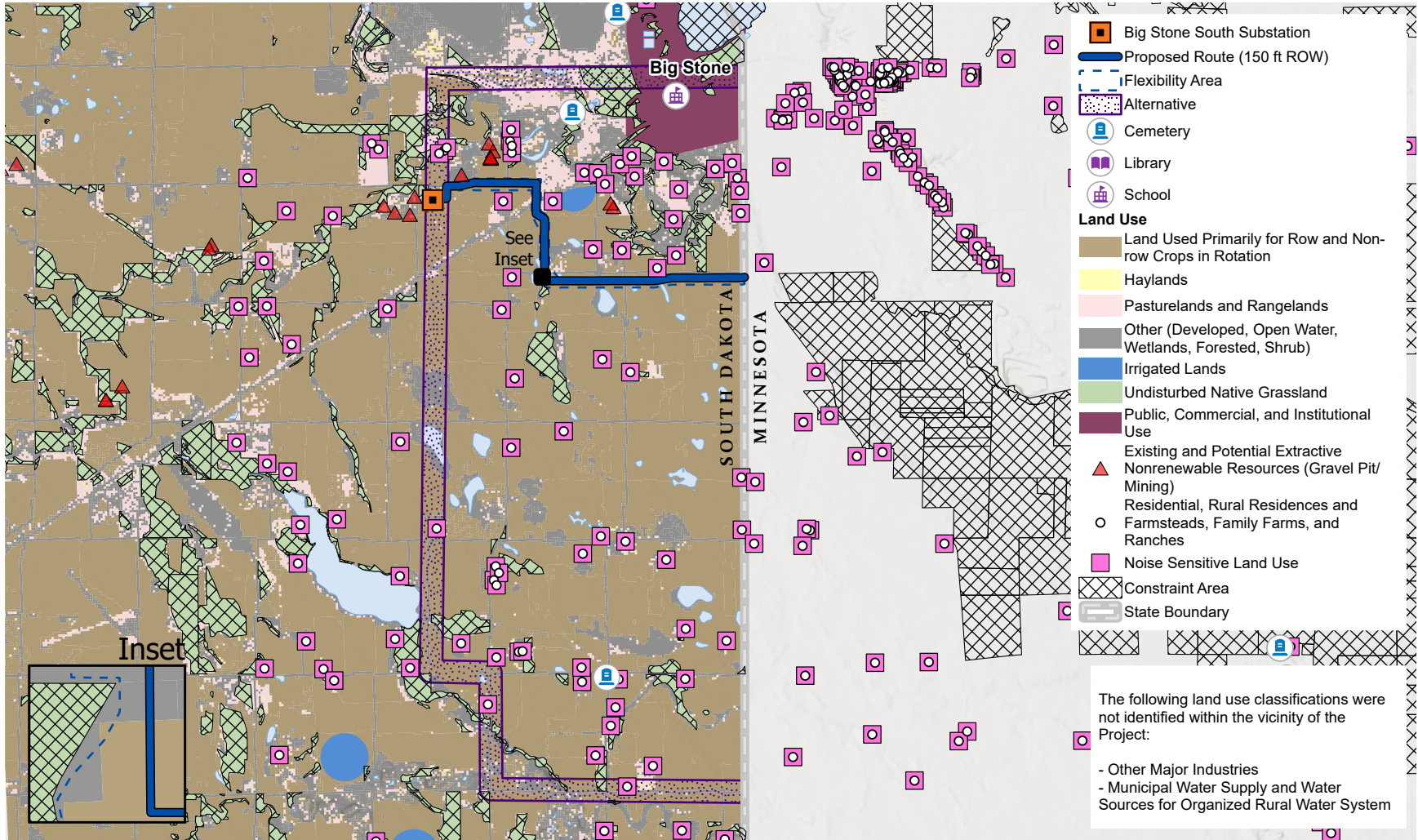
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STUDY AREA CONSTRAINTS

Constraints depicted include WMA, NWRs, FWS grassland easements, SD native grasslands, the airport property, NHD waterbodies.

BIG STONE SOUTH TO ALEXANDRIA 345KV



LAND USE

Constraints depicted include WMA, NWRs, FWS grassland easements, SD native grasslands, the airport property, NHD waterbodies.

BIG STONE SOUTH TO ALEXANDRIA 345KV