BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY XCEL ENERGY AND OTTER TAIL POWER COMPANY FOR A PERMIT UNDER THE SOUTH DAKOTA ENERGY CONVERSION AND TRANSMISSION FACILITY ACT TO CONSTRUCT THE BIG STONE SOUTH TO BROOKINGS 345 KV ELECTRIC TRANSMISSION LINE	**)**	**EL 13-020**
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	)	**RESPONSES TO DATA REQUESTS**
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1-1: Per ARSD 20:10:22:05, please "list each notification that is required to be made to any other governmental entity."

See Attached Table.

1-2: Per ARSD 20:10:22:10 and SDCL 49-41B-11(9), please provide (a) "a description of the present and estimated consumer demand and estimated future energy needs of those customers to be directly served by the proposed facility." Please provide (b) "all data, data sources, assumptions, forecast methods or models, or other reasoning upon which the description is based." Also, please provide (c) "a statement on the consequences of delay or termination of the construction of the facility."

The Brookings County – Big Stone South 345 kV line project is part of MISO Multi Value Project (MVP) portfolio which consists of 17 transmission projects planned to provide the entire MISO footprint the infrastructure needed to support the renewable energy mandates for all the states in the MISO footprint. The Brookings County – Big Stone South 345 kV line project is an integral part of this portfolio.

Description of Demand and Energy Needs

The need for the proposed Brookings County – Big Stone South 345 kV line is not driven by the load demand in the immediate areas but rather demand across the MISO footprint. In addition, the Brookings County – Big Stone South 345 kV line will assist future generators the ability to interconnect to the transmission system. The planning study included about 1400 MW of future generation in South Dakota, for the year 2026 that could be delivered anywhere within MISO footprint through the proposed MVP projects, which includes the Brookings County – Big Stone South 345 kV line. Finally, the MISO MVP portfolio ensures the entirety of the MISO footprint can meet its renewable energy mandates.

Assumptions and Forecast Methods

The details of the capacity and energy forecast used for the MVP portfolio analysis can be found in the MVP study report Section 4.3, Tables 4.1 and 4.2. A copy of the study is available at:

https://www.midwestiso.org/Library/Repository/Study/Candidate%20MVP%20Analysis/MVP%20Portfolio%20Analysis%20Full%20Report.pdf

As stated above the analysis included a portfolio of projects covering all the states in the MISO footprint. The study forecast included 890 MW of installed generation capacity in SD for the year 2021 and 1400 MW of installed capacity for the year 2026.

1-3: Per ARSD 20:10:22:11, please provide a map showing cemeteries and other known places of historical significance. If such locations do not exist in the project area, please provide a statement as such.

See attached map. Please note that the map contains confidential information pursuant to state law. SDCL 1-20-21.2

1-4: Per ARSD 20:10:22:12(2,3), please provide additional detail on the "evaluation of alternative sites considered by the applicant for the facility" and the "evaluation of the proposed plant, wind energy, or transmission site and its advantages over the other alternative sites considered by the applicant, including a discussion of the extent to which reliance upon eminent domain powers could be reduced by use of an alternative site, alternative generation method, or alternative waste handling method."

Applicants developed the proposed route through a systematic criteria-based process that emphasized public participation and agency coordination. This process began in (date) with an identification of a study area and an opportunities and constraints study. Numerous route segments were identified and compared using routing criteria. Route segments with greater impact were eliminated through an iterative process that included eight public meetings held in the project area during June and October of 2012. This process culminated with identification of the least impactful route as the proposed project. Use of an alternative site would not reduce reliance on eminent domain.

1-5: Per ARSD 20:10:22:13, please provide "a list of other major industrial facilities under regulation which may have an adverse effect on the environment as a result of their construction or operation in the transmission site."

No major industrial facilities are currently located or known to be planned to be located near the proposed transmission facility. The prevailing land use surrounding the proposed transmission line Facility is cultivated agricultural land used for planted row crops and pasturelands. There is considerable wind turbine development along the southern portion of the project. Any future placement of turbines will utilize appropriate set-back distances from the transmission line. There is a power plant owned by Basin Electric and another substation owned by Western Area Power Association near the southern end point of the project. No other commercial facilities have been identified along the proposed transmission line route.

1-6: Per ARSD 20:10:22:14(3), please provide a map showing the "bedrock geology and surficial geology with sufficient cross-sections to depict the major subsurface variations in the sitting area."

See attached map.

1-7: Per ARSD 20:10:22:14(7), please provide "[i]nformation on areas of subsidence potential and slope instability" for the transmission site.

See attached map.

1-8: Per ARSD 20:10:22:14(8), please provide an "analysis of any constraints that may be imposed by geological characteristics on the design, construction, or operation of the proposed facility and a description of plans to offset such constraints.

Geological characteristics that may affect design and construction of the proposed facility include areas with shallow bedrock, areas with deep soft soils, or areas with expansive (swelling) soils. If shallow bedrock is encountered on the project, then the proposed concrete drilled pier foundations would change to a shallow foundation solution such as rock anchors into solid bedrock connected to a concrete foundation, or a spread footing foundation placed above the bedrock. If deep soft soils are encountered on the project, then the proposed concrete drilled pier foundations would change to a deep foundation solution such as driven steel piles and a concrete pile cap, helical piers, or vibratory steel caissons. The proposed drilled pier depth will be set below the potential for expansive soils to have an effect on the structure foundations.

1-9: Per ARSD 20:10:22:15(1), please submit a map that shows surface water drainage patterns before and anticipated patterns after construction of the facility.

Applicant expects that there will be no impact to existing drainage patterns. Ground disturbance will be limited to areas of pole installation. Excess soil will be disposed of in an appropriate location where it does not change any surface flow patterns. No changes to any ground surface contours are proposed.

1-10: Per ARSD 20:10:22:15(5,6), please provide a "description of designs for storage, reprocessing, and cooling prior to discharge of heated water entering natural drainage systems; and…[i]f deep well injection is to be used for effluent disposal, a description of the reservoir storage capacity, rate of injection, and confinement characteristics and potential negative effects on any aquifers and groundwater users which may be affected." If these subsections do not apply to the transmission site, please provide a statement as such.

The project does not propose any cooling water discharge or deep well injection. These sections do not apply.

1-11: Per ARSD 20:10:22:18(1)(a,b,c,d,e,f,g,k), please provide a land use map showing irrigated lands, pasturelands and rangelands, haylands, undisturbed native grasslands, existing and potential extractive nonrenewable resources, other major industries, and municipal water supply and water sources for organized rural water systems along the route. If any such land uses do not exist along the route, please provide a statement as such.

See attached map.

1-12: Per ARSD 20:10:22:20, please provide any additional water quality standards and regulations the Applicant is aware of and any variances permitted. If none, please provide a statement as such.

Applicant will apply for coverage under South Dakota's General Permit for Storm Water Discharges Associated with Construction Activities and will prepare a Storm Water Pollution Prevention Plan. Applicants are not aware of any other applicable water quality standards.

1-13: Per ARSD 20:10:22:23(1,2,4,7) and SDCL 49-41B-11(10), please provide (a) a "forecast of the impact on commercial and industrial sectors, housing, land values, labor market, health facilities, energy, sewage and water, solid waste management facilities, fire protection, law enforcement, recreational facilities, schools, transportation facilities, and other community and government facilities and services;" (b) a "forecast of the immediate and long-range impact of property and other taxes of the affected taxing jurisdictions;" (c) a "forecast of the impact on population, income, occupational distribution, and integration and cohesion of communities;" and (d) an "indication of means of ameliorating negative social impact of the facility development."

A. The only expected impact on any of these sectors is increased reliability of the grid and a substantially improved outlet for generators located in South Dakota.

B. The acquisition of easements for the new transmission line will not have a significant impact on property taxes. Landowners will continue to own the land and will pay property taxes on parcels that are crossed by the transmission line. Xcel Energy/Otter Tail Power/CAPX2020 as an easement holder will not pay property taxes on the easements. Although the new transmission easements may have some impact on the taxable market value of a given property, no substantial changes are anticipated to property taxes assessed. Where improvements are being made to properties owned in fee by Xcel Energy, such as the Brookings County Substation, taxable market values are anticipated to increase and property taxes will increase as well.

C. The applicant expects that there will be no substantial impacts on population, income, occupational distribution, and integration and cohesion of communities as a result of the project.

D. There are no negative social impacts anticipated with the construction or operation of the proposed transmission Facility. The proposed Facility would not require the acquisition or removal of any home, farm structure, or business facility, does not locate any poles or wires in public parks or waterways, and does not have an adverse, disproportionate or disparate impact on populations living adjacent to the proposed line. The proposed transmission Facility would not create a barrier between communities, avoiding disruption to social cohesion. The project would not impact air or water quality, and transmission line noise levels are not predicted to exceed ambient noise levels surrounding the proposed Facility.

1-14: Per ARSD 20:10:22:24 and SDCL 49-41B-11(4), please provide more detailed information regarding "the estimated number of jobs and a description of job classifications, together with the estimated annual employment expenditures of the applicants, the contractors, and the subcontractors during the construction phase of the

proposed facility." Please also provide the same data "with respect to the operating life of the proposed facility, to be made for the first ten years of commercial operation in one-year intervals." In addition, please provide the Applicant's plans "for the utilization and training of the available labor force in South Dakota by categories of special skills required" and "an assessment of the adequacy of local manpower to meet temporary and permanent labor requirements during construction and operation of the facility and the estimated percentage that will remain within the county and the township in which the facility is located after construction is completed."

Short-term positive economic gains will result from activities associated with construction of this facility. Local businesses will likely see an increase in revenues from construction activities. The number of workers hired from within and outside the Facility area may result in positive economic gains in the form of increased spending, lodging, meals, and other consumer goods and services. It is not anticipated that the Facility will create new permanent jobs, but it will create temporary construction jobs that will provide a one-time influx of income to the area. Manpower anticipated for the construction phase of the project is estimated at approximately 40-laborers during construction of substation and transmission line and is estimated at approx $5.5M. Table 16 – Annual Employment Expenditures by Job Classification of facility permit outlines classification and anticipated labor expenditure.

Operation and Maintenance (O&M) of the facility is anticipated to require only moderate maintenance. Principal operating and maintenance for the transmission facility is maintaining vegetation within the easement. O&M costs and frequency of inspections are dependent on terrain and vegetation along the approved route. Operation and Maintenance of the line will be managed by applicants. Local labor resources may be utilized where experienced labor resources are available.

Estimated O&M costs are outlined below:
$2200/mile – Annual helicopter inspection, fixed wing patrol, ground patrol (estimated yearly expenditure starting in year 2018)

$15,000/mile – Vegetation management/clearing completed on 4 year cycle (estimated expenditure on 4-year cycle starting, 2021, 2025, 2029)

1-15: In Section 10.1.2 on page 17 of the application, the Applicant mentions "[g]overnmental database listings of sites were not available at the time of the preparation of this application." Is the Applicant aware of when such a listing will be made available?

The listing is available and the resulting maps are attached.

1-16: Are the USFWS, SD GF&P, SD DENR and SD SHPO comfortable with the Applicant's approaches to mitigating impacts as identified in the application?
Based on discussions between Applicant and the named agencies, Applicant has not received any negative feedback with regard to the project, nor have the agencies identified any opposition to the project. Rather, the agencies have identified a desire to continue consultation and approval of

implementation of methodologies for the southern portion of the project (subject to this docket) that were already agreed to for the northern portion of the project (previously certified).

1-17: Please provide all available correspondences with USFWS, SD GF&P, SD DENR and SD SHPO pertaining to this project.

See attached agency correspondence.

1-18: Per ARSD 20:10:22:34, please provide "a description of plans for continued right-of-way maintenance, including stabilization and weed control."

Post construction soil stabilization and re-vegetation will be achieved and monitored as required by the General Permit for Storm Water Discharges Associated with Construction Activities until final soil stabilization has been achieved. Long term maintenance will be limited to periodic clearing of tall growing trees to maintain North American Energy Reliability Council ("NERC") reliability standards.

1-19: In Section 22.2 on page 41 of the application, the Applicant references an "agricultural impact mitigation plan." Please provide a copy of the referenced plan.

See attached agricultural impact mitigation plan.

1-20: In Section 22.3 on page 44 of the application, the Applicant references "erosion control and vegetation establishment practices" in the "construction permit plans." Please provide a copy of the construction permit plans.

Erosion control and vegetation establishment practices will be presented in the Storm Water Pollution Prevention Plan (SWPPP). This document has not yet been prepared and will be prepared as part of final design.

1-21: If not covered in the plans listed under questions 1-19 and 1-20 above, please provide the Applicant's plans for the removal of construction debris and foreseeable site restoration activities once the work is completed.

All construction debris will be removed from the project site after construction is finished. Foreseeable site restoration activities include grading/raking soil to pre-construction contours, and disking/deep plowing agricultural fields where needed to remove ruts and compaction.

1-22: In Section 23.4.3 on page 48, the Applicant refers to studies on MF. Please provide the referenced studies.

Referenced EMF studies include:
MN Dept of Health White Paper - http://www.capx2020.com/Images/EMFWhitePaper2002.pdf
WHO – EMF page - http://www.who.int/peh-emf/publications/en/
NIEHS Working Group Report - http://www.niehs.nih.gov/health/assets/docs_a_e/emf1.pdf

1-23: Please provide a list of known landowner concerns.

Landowner concerns regarding the project can be summarized into the following general categories:

1: Minimizing impacts to land, buildings, trees, potential wind development and farming operations including pole types, placement and footprint of poles, etc.

2: Fair compensation for the easement rights granted – landowners want to know that they are being made whole for the acquisition of the easement.

3: Restoration/compensation for damages caused by construction including crops, field accesses and roads, drain tile systems, fences, etc.

1-24: On Map 3 of Appendix A, please provide reasoning for the angled corners rather than 90-degree turns in the Norden West Township.

Diagonal corners were used to maintain the average target span. If 90 degree corners are required, the sections of alignment will either require an additional structure or the easement width may need to be increased.

1-25: On Map 6 of Appendix A, the line is shown crossing over (or near) an existing communications tower just north of 202nd Street. Have the owners of the communications equipment and tower been contacted regarding the project? If yes, please provide all correspondence. Please confirm that the proposed transmission line will not adversely affect tower operations.

Applicants not aware of any communications tower as described. The yellow symbols on the map are permitted Wind Generation Turbines. The properties north of 202nd Street are both cultivated with one being owned for hunting purposes. LiDAR survey information shows no MISC aerial points.

1-26: Please provide a discussion of the reasoning for not working with the owner of the existing 115 kV line entering Brookings County Substation from the Iberdrola Wind Farm to accommodate both lines along CR 36.

Applicants worked extensively with the owner of the existing line. There were a number of considerations which led to the proposed solution instead of collocating the lines :

1) Currently a single 115 kV circuit is installed on the existing structures. The structures are designed to accommodate no more than an additional 115 kV circuit and two 34.5 kV circuits.

2) The existing structures have an approximate spacing of 300 feet. Target spans for this 345kV project are at least three times that.

3) There would be an additional cost for curtailment during the construction process as existing 115kV line would be taken out of service to construct the 345kV line.

4) Regarding the homestead at 205th, we found it impracticable to jump over the road and the existing line if we were on the opposite side of the road.

5) Concerns exist regarding the existing Basin Electric gas line adjacent to their generation plant.

6) Current design avoids grassland easement north of location where the road turns to the east and the permitted WTG sites.