BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

In the Matter of the Transmission Permit for the Big Stone South to Ellendale Project

EL13-028

MONTANA-DAKOTA UTILITIES CO. AND OTTER TAIL POWER COMPANY'S RESPONSES TO STAFF'S SECOND DATA REQUESTS DATED MARCH 10, 2014

Montana-Dakota Utilities Co. and Otter Tail Power Company, for its responses to Staff's Second Data Requests dated March 10, 2014, states as follows:

2-1) Referring to page 103 of the Aberdeen Public Hearing transcript, what criteria eliminated a route from Ellendale, ND to Havana, ND, then cutting diagonally across the Coteau Hills to Sisseton, and then following the slope rail line from Sisseton to Milbank?

RESPONSE: Page 103 of the transcript contains a general potential route as suggested by Mr. Lyle Podoll. Based on the general route description of Mr. Podoll, the following explanation is provided as to why the final preferred route did not follow Mr. Podoll's proposed route corridor:

- **A study corridor and preliminary routes were considered from Ellendale, ND to the general Havana, ND area, but eliminated as the preferred route due to constraints as described in the third paragraph of the Applicant's response to Question 14 of the first set of SDPUC data requests. As stated from the response to data request 1-14 of the Staff's first data requests: "The alternative routes through Dickey and Sargent counties require a crossing of the U.S. Fish and Wildlife Services' (USFWS) Dakota Lake National Wildlife Refuge and U.S. Bureau of Reclamation Oakes Research Area in North Dakota. In addition, one of the alternative routes would be located close to or potentially cross the Hecla Sand Prairie area in northwestern Marshall County, which is an area of conservation interest to the USFWS and they hold many grassland easements on the land. The South Dakota Game, Fish, and Parks Department also had concerns with the alternative routes in Marshall County being located**

close to waterbird colonies. Lastly, the alternative routes would cross more prairie or grassland areas through western Marshall County and Sargent and Dickey counties in North Dakota compared to the preferred route."

- **The Coteau Hills area was eliminated from consideration during the study corridor development phase, because of concerns expressed by several state and federal agencies and Native American tribes due to the relatively high density of protected species, high quality prairie habitat, federally and state owned and managed lands, and potential cultural resources. In addition, there were engineering concerns with the steep, rolling topography and numerous bodies of water and drainage ways.**
- **The slope rail line from Sisseton to Milbank was not considered for several reasons, including the fact that it crosses through several towns and a relatively high density of federally owned and managed lands. Additional information on why active railroads were not carried forward for the final preferred route is included below in the response to the Staff's Data Request 2-31.**

2-2) Referring to pages 69-75 of the Aberdeen Public Hearing transcript, Mr. Jones proposed an alternate route with the Applicant. Did the Applicant review Mr. Jones' alternate route? If so, what was the outcome of the route review?

RESPONSE: Yes, the Project has reviewed Mr. Jones's requested changes to the proposed route. The Project has been working to try to develop a change to the proposed route through the Jones Family properties and is in discussions with him. Three potential routes options have been discussed, including route proposals by Mr. Jones and his son. The Project continues to evaluate these proposed routes with Mr. Jones.

2-3) Please explain what factors eliminated the options of overbuilding or reconductoring existing transmission lines that are located in the siting area.

RESPONSE: Using existing transmission corridors to double circuit high voltage transmission lines were excluded from the routing criteria due to concerns relating to degradation of the system reliability, operational challenges, and a higher cost, as discussed more fully below. Furthermore, most existing transmission lines are not owned by either of the Owners and thus Owners do not have the right to use many of these existing lines.

Reliability Concerns

Double-circuiting ("overbuilding") the Big Stone South to Ellendale 345 kV line with portions of other existing transmission lines may be feasible, but benefits of the Project are diminished. Generally, double circuiting high voltage transmission is not preferred due to the possible degradation of system reliability. For example, if a structure with two transmission lines is compromised (or both lines are out of service because of a lightning strike or other event), the reliability of the transmission system is compromised. Building the Project on separate structures and within a separate route is important for making sure the existing and the new circuits are both available, don't interfere with each other, and provide back-up transmission paths for outages of other area transmission circuits.

Furthermore, an interim challenge with overbuilding an existing transmission line is the extended outage time of existing transmission lines associated with the construction period of the Project. This extended outage time of existing transmission circuits can last several months thus jeopardizing the reliability of the system. The transmission system is generally planned and operated to provide reliable service without an interruption of service for single (N-1) contingencies. Having an existing transmission line de-energized for an extended period of time puts the transmission system in a vulnerable state due to the increased likelihood of another outage concurrent with the existing circuit being overbuilt (N-2) with the new Project. Outages of 2 or more circuits simultaneously raises significant reliability concerns that could lead to an interruption of service to customers due to depressed voltages or overloaded facilities. Therefore, extended outages of existing transmission lines causes interim operating concerns when overbuilding existing lines with the Project.

<u>Operational Challenges</u>
Maintenance activities would be challenging when overbuilding existing transmission lines. Maintenance related activities on a line that is adjacent to an energized circuit is dangerous. It requires special equipment, specially trained personnel, and extraordinarily rigorous safety measures. These special requirements also increase the cost of maintaining the system.

<u>Higher Cost</u>
Double circuit construction or reconductoring existing circuits is also more costly than single circuit construction. Having two separate circuits on a common structure requires more robust structures to safely handle increased mechanical loadings due to wind and ice. These robust structures typically require stronger foundations. Reconductoring existing lines is also problematic given the design voltage of the Project (345 kV) and operating voltage of existing lines in the area (highest voltage of 230 kV). Reconductoring existing lines to a higher voltage would require converting several existing substations to a higher voltage (from 230 kV to 345 kV), which would require installing new equipment at these existing substations.

The factors discussed above lead to diminished reliability benefits, more operational challenges, and a higher cost when considering the options of overbuilding or reconductoring existing lines than by building the Project along an entirely new corridor. As a result, the Owners have adopted design and routing criteria that, except in extraordinary circumstances, exclude these options from consideration.

2-4) Please explain the MISO MTEP planning process and summarize the findings of the MTEP 11 report, clearly stating in language that the public can understand the need for the transmission line. In addition, please clearly identify what transmission grid constraints will be resolved, what NERC contingencies will be mitigated, what public policy objectives will be achieved, and what wholesale electric market benefits are expected as a result of constructing the line.

RESPONSE:

MISO MTEP Planning Process

MISO's planning process is based on an annual cycle that is referred to as the MISO Transmission Expansion Planning (MTEP) process. The MTEP process adheres to the nine planning principles outlined in FERC Order No. 890.[1] These planning principles result in an open and transparent regional planning process with interaction from a broad stakeholder group, which results in recommendations for transmission expansion that are reported in the MTEP report and submitted for approval to the MISO board of directors. The annual planning process typically concludes with MISO board of director approval occurring in December of each year.

Findings of MTEP11 Report

The MVP portfolio analyses evaluated the expected future conditions on the MISO regional transmission grid. The analysis found that the Project will be needed in order to ensure the continued reliable operation of the Otter Tail Power Company and Montana-Dakota Utilities Co. transmission systems into the future. Furthermore, the MVP portfolio allows for a more efficient dispatch of generating resources, spreading the benefits of low cost generation to South Dakota and throughout the MISO footprint. These benefits were outlined through a series of studies that quantified the economic benefits of the low cost generation resources that can be reliably delivered with the addition of the MVP transmission.

[1] *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228 (2009), *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

Transmission Constraints Resolved

The construction of the Project will enable Otter Tail Power Company and Montana-Dakota Utilities Co. to reliably deliver the energy this area needs today and into the future. The Project improves the reliability of the bulk electric system in the area. Reliability studies performed by MISO for the Project have identified the following transmission issues are mitigated as a result of the Project during contingencies prescribed in the NERC transmission planning standards (referred to as single contingency (N-1) and double contingency events (N-2)):

- **Oakes – Ellendale 230 kV Line**
- **Aberdeen – Ellendale 115 kV Line**
- **Oakes – Forman 230 kV Line**
- **Forman 230/115 kV Transformer**
- **Aberdeen Jct. – Aberdeen 115 kV Line**
- **Forman 230 kV Bus Tie**
- **Ellendale 230/115 kV Transformer**
- **Heskett 230/115 kV Transformer**

The construction of the Project will address these loading issues by providing an alternative transmission path for energy to flow during contingencies.

Public Policy Objectives

Throughout the course of the MVP studies, public policy objectives were considered as state Renewable Portfolio Standards (RPS) that are in place across the MISO footprint. The MVP portfolio is a group of seventeen transmission projects distributed across the MISO footprint that enables the reliable delivery of the aggregate of current state RPS within MISO. The study results indicate that the MVP portfolio will enable transmission of 41 Million Megawatt hours (MWh) of wind energy per year across MISO. As determined through the MVP studies, this amount of wind energy is anticipated to meet state renewable energy mandates across the MISO region beyond 2026.

Furthermore, construction of the Project will contribute to a robust transmission system across MISO that will be available to provide needed transmission capacity to maintain reliable service in the event that legislation or environmental regulation leads to the retirement of some coal-fired generating plants and the addition of gas-fired generating plants. This Project, along with the rest of the MVP portfolio offers a versatile transmission plan that will be effective regardless of future generation fuel-types.

Wholesale Electric Market Benefits

The wholesale electric market benefits that are expected as a result of constructing the Project in conjunction with the rest of the MVP portfolio are primarily associated with savings realized by reduced transmission congestion and increased fuel savings. As mentioned previously, the MVP portfolio allows for a more efficient dispatch of generation resources, opening markets to competition, and spreading the benefits of low cost generation throughout the MISO footprint.

In addition to congestion and fuel savings of an estimated $12.4 - $40.9 Billion in present value benefits, the MISO studies have also shown quantifiable benefits as a result of the MVPs for the following generation and transmission aspects as well.

1. **Operating Reserves**
   a. **The MVP portfolio decreases congestion on the system, increasing the transfer capability into several key areas that would otherwise have to maintain additional operating reserves under certain system conditions.**
      i. **A reduction in operating reserves results in estimated present value benefits of $28M - $87M.**
2. **System Planning Reserve Margin**
   a. **The MVP portfolio reduces congestion across MISO thereby reducing the amount of generation required to meet the planning reserve margin for a one day in 10 years loss of load expectation.**
      i. **A reduction in the system planning reserve margin results in estimated present value benefits of $1.0B - $5.1B.**
3. **Transmission Line Losses**
   a. **The MVP portfolio reduces the overall system losses, which also reduces the generation needed to serve the load and losses on the system.**
      i. **A reduction in transmission line losses results in estimated present value benefits of $111M - $396M.**
4. **Wind Turbine Investment**
   a. **The MVP portfolio allows a balance of wind turbine investment between remote generation placement relying on transmission for delivery to load and local generation closer to load. Placing wind regionally to leverage the best available wind resources requires a robust transmission system.**
      i. **Leveraging wind turbine installations in optimal locations across MISO results in estimated present value benefits of $1.4B - $2.5B.**
5. **Transmission Investment**
   a. **The MVP portfolio will eliminate some future reliability upgrades.**
      i. **Eliminating future transmission upgrades results in estimated present value benefits of $226M - $794M.**

The analysis performed by MISO has found that the MVP portfolio overall will produce an estimated $15.5 to $49.2 Billion in present value benefits to the aggregate MISO footprint under existing energy policies (See Figure 1). This range of savings is derived based on the period over which benefits are calculated, discount rates applied, and assumptions about growth rates of energy and demand.[2]

[2] See MVP Report.

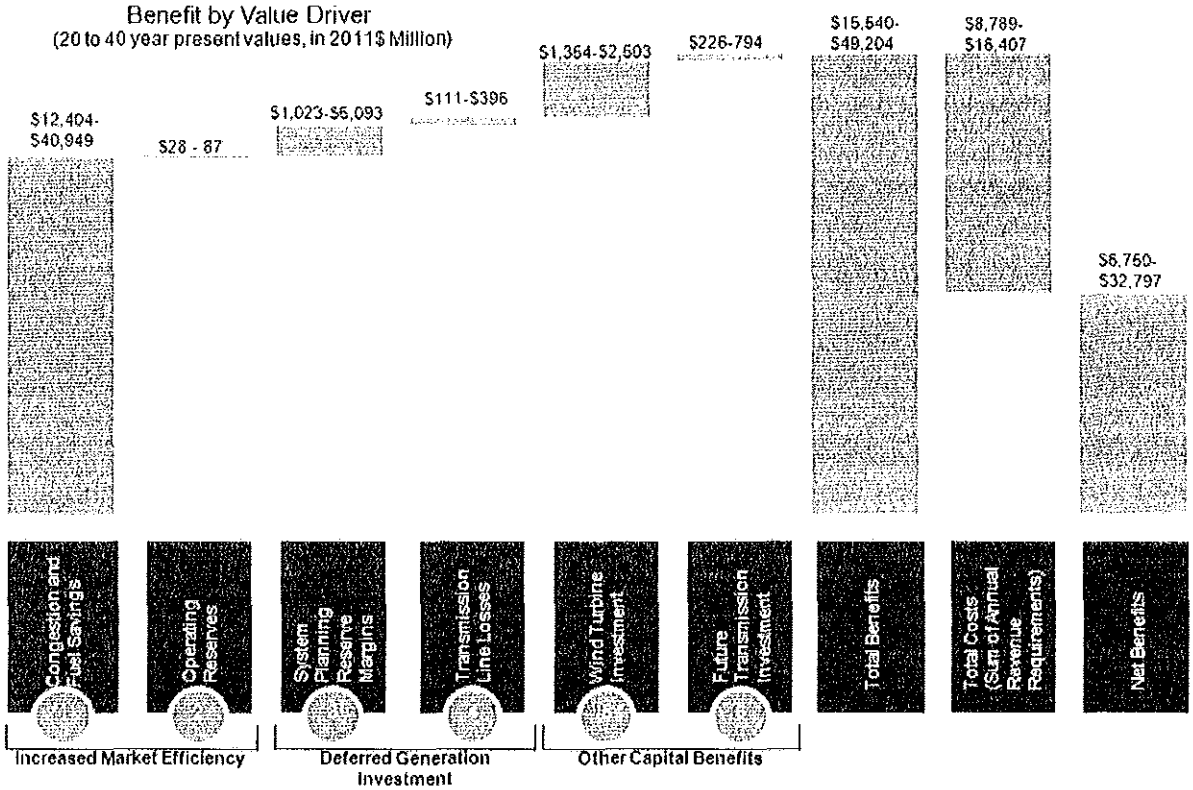

Figure 1 – Estimated Present Value Benefits of MVP Portfolio

When compared to the present value of the revenue requirements for the MVP portfolio, the portfolio produces total benefits of between 1.8 to 3.0 times the costs on a present value basis, under existing policies. When these system-wide benefits were evaluated for their distribution within the MISO footprint, benefits to Local Resource Zone 1 were between 1.6 and 2.9 times the portfolio costs to Local Resource Zone 1. Zone 1 is comprised of MISO member companies within Minnesota, South Dakota, North Dakota, and parts of Wisconsin and Montana.[3] (see Figure 2)

[3] See MVP report – Benefit-Cost ratios are shown on page 6 of the publicly available document.

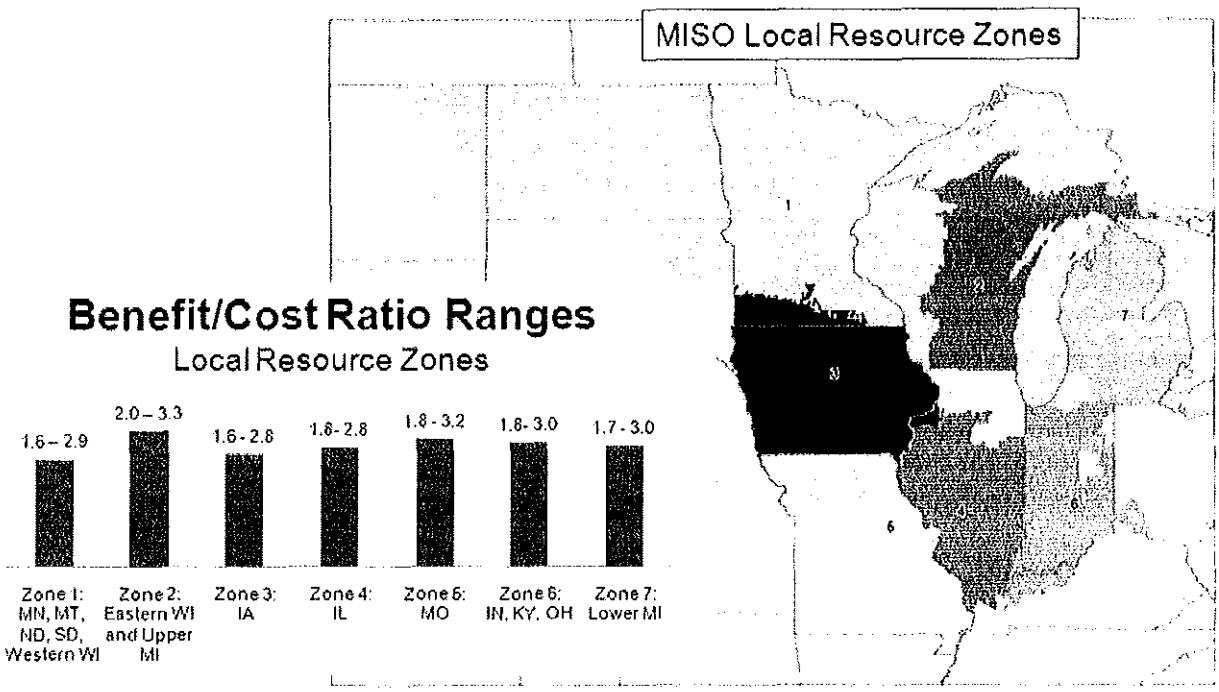

Figure 2 – Benefit-Cost Ratios to Local Resource Zones Across MISO

2-5) The application provides L50 audible noise, which means that 50% of the expected data points are greater than the stated value. Please provide the worst-case (i.e. maximum) noise level landowners can expect to be exposed to during the life of the facility, as well as the L10 (if available), for both fair and foul weather conditions.

RESPONSE: Only L50 audible noise values were calculated for the transmission line. The noise exposure of an individual depends on their position with respect to the transmission line and weather conditions. The transmission line noise levels at the edge of the right-of-way are shown on Table 17 contained in Section 14.3.2 of the Application, as amended.

2-6) Footnote 1 of amended Table 17 (pg. 59 of the Application) identifies that the Noise levels are representative of a current of 500 amps. Footnote 3 of amended Table 22 (pg. 94 of the Application) identifies the Maximum Operating Condition is based on ~2,000 amps. What is the maximum amount of current that will flow on the line during the life of the facility? Further, please explain how any expected additional current flow (beyond 500 amps) will affect noise levels if not already answered in response to data request 2-5.

RESPONSE: Current flow is not expected to exceed 2,000 amps during the life of the facility. Audible noise of transmission lines is not a function of the current

flowing in the conductors. Therefore, higher current will not cause higher audible noise levels nor will lower currents reduce the audible noise levels.

2-7) Please provide a list of requested route changes that includes: 1) location of the requested route change, 2) a brief description of the request, 3) current status of the request, 4) how the Applicant responded to the request, and 5) a justification for either approving or denying the request. Further, ensure the list includes the following requested route changes that PUC Staff is aware of:

i. Three miles east of Garland Township, 9-125-63, (120th Street and 390th Ave), and
ii. ¾ of a mile east out of Westport.

RESPONSE: **See BSSE 329 to 331, which describes the proposed route "changes," the location of the route change, a brief description of the route change request, current status of the request, how the Owners responded to the request, and a justification for either approving or denying the request. The Owners request confidential treatment of this document pursuant to ARSD 21:10:01:41. Owners are separately filing a request for confidential treatment.**

2-8) If not already provided in response to data request 2-7, please provide any known route changes that deviate from the route set forth in the initially filed application.

RESPONSE: **None, other than the route changes identified in response to data request 2-7.**

2-9) Please provide any known landowner concerns, how the Applicant is addressing the concerns, and when the Applicant believes the concerns will be resolved.

RESPONSE: **It is unclear what is meant as landowner "concerns." Concerns could include requests for route changes, questions about the Project, and comments relating to the Project. The Owners have in the past and will continue in the future to work to address landowner concerns and comments through continued public meetings, posting frequently asked questions on the Project website, sending newsletters, communicating with landowners through the website and hotline, having personal meetings with the landowners, and written and telephonic communications with landowners. Due to the size of the Project, Owners believes that landowner concerns will continue to be raised prior to permitting, after permitting, before, during and after construction, and post-**

construction. Some landowner concerns can and have been resolved. Some landowner concerns may not be able to be resolved. Once construction commences, the Project anticipates developing a process for the landowners affected by the construction to submit comments or concerns.

As to some of the specific concerns or comments raised by landowners, some of these concerns or comments were made at the public input hearings in Aberdeen and Milbank on October 17, 2013. Some of the comments are indicated in the discussion of the route change requests discussed in the response to Staff's Data Request 2-7. Regarding Gerald Pesall, his concerns are addressed in his answers to the Owners' interrogatories. The Project met with Mr. Pesall and his counsel on April 10, 2014, in an effort to address his concerns. The discussions with Mr. Pesall during this meeting are confidential settlement discussions. Finally, additional comments and concerns are discussed in response to Staff's Data Request 2-29 addressing why landowners have not yet signed options.

2-10) Please explain the Applicant's average response time for inquiries that were submitted by the general public through the BSSE's toll-free information line and website written inquiry processes.

RESPONSE: The Project has a variety of channels through which the general public can submit comments, including a toll-free information line, a comment form on the project website, an email address, comment forms at open houses, and a mailing address. Response time data through all channels shows that the overall average time from when the Project received a comment to the first response to the commenter was approximately 10 days.

2-11) Referring to page 93, line 9, of the Aberdeen Public Hearing transcript, please provide the study referenced by Mr. Fasteen that determined the easement prices being offered.

RESPONSE: Mr. Fasteen was referring to countywide appraisal documents, which are produced at BSSE 64 to 267 . The Owners request confidential treatment of these documents pursuant to ARSD 20:10:01:41. The Owners are separately filing a request for confidential treatment. Mr. Fasteen also was referring to USDA/NASS, South Dakota Field Office, South Dakota 2012 County Level Land Rents and Values ("USDA Survey"). Mr. Fasteen viewed the USDA

survey previously, but no longer has it in his possession, and he can no longer access the version of USDA study viewed on line.

2-12) Referring to page 95, line 9, of the Aberdeen Public Hearing transcript, please provide a summary of any follow-up discussions that occurred between the Applicant and Mr. Sperry regarding irrigation center pivot plans and plans for installing a corner system.

RESPONSE: The Project had multiple communications with Mr. Sperry regarding this matter in December of 2013. The Project evaluated placing structures to adjust the span length such that the transmission line structures could be installed without impacting the anticipated center pivot unit of the corner system. Currently, a potential route change is being evaluated by the Project that would eliminate the need to cross the applicable property.

2-13) Please explain how residences that are located within 500 feet of the transmission line, yet not required to sign an easement as the line does not cross their property, are compensated for any potential future losses to property values.

RESPONSE: Only landowners from whom an easement is needed to encumber their property to construct the Project receive compensation. As stated in response to data request 1-6 from the Staff's first set of data requests, the Owners do not expect that the Project will have significant short or long term effects on property values.

2-14) Please provide a description of setback requirements for each township road, county road, or state road the preliminary route parallels. If no set back requirements will be of factor, please identify such.

RESPONSE: The preferred route parallels various roads, including township roads, county roads, and state roads in each of three counties: Brown, Day, and Grant. Pursuant to SDCL Ch. 11-2, the regulations of the set back from the right-of-way of all highway, roadways, roads, and streets, including state and township roads, are established by the respective county's commission and/or planning commission. Each of the counties through which the preliminary route is located employs county ordinances relating to zoning and certain use regulations. The setback requirements vary by county and also, to a lesser degree, by zoning districts within each county. Roads the preferred route is anticipated to parallel in Brown County are located in Ag Preservation and Mini-Ag Zoning Districts, which have a one hundred foot (100') setback

requirement as required in Sections 4.0606 and 4.0706 of the Brown County Zoning Ordinances. In Day County, pursuant to Section 2601 of the Day County Ordinances, the preferred route is required to be setback fifty feet (50') from all roads designated by Day County to be part of the Day County Highway System. This fifty foot (50') requirement does not apply to other roads located in Day County. In Grant County, pursuant to Section 1101.04(2) of the Zoning Ordinances for Grant County, there is a requirement for a one hundred foot (100') front yard in property zoned "A' Agricultural District.

2-15) Please explain the factors that resulted in the need to parallel an existing transmission line located along the south side of 148th St, beginning at the Hwy 12 and 148th St split, as shown on Exhibits 2.33 through 2.35 of the Application. Does paralleling an existing transmission line create any additional risk to public safety?

RESPONSE:

The reason to be on the south side of 148th Street (Exhibit 2.33 and 2.34) was to maximize the distances from the largest number of homes possible. Furthermore, there is also a cemetery located on the north side of 148th Street east of 472 Ave. that was also avoided. In this location, the line being paralleled is not a transmission line but a distribution line. The paralleling of the Project with a distribution line does not create a safety issue. In some instances, paralleling a transmission line can create reliability concerns for the transmission system as discussed in the response to the Staff's second set of data requests number 2-3. The paralleling of this distribution line does not, however, create such reliability concerns or other safety concerns.

2-16) Please provide a list of all units of local government that have formally expressed concern regarding the project. Please include any related record of correspondence.

RESPONSE: **See BSSE 268 to 320 which includes correspondence from Farmington Township, Highland Township, and Valley Township, and the Project's correspondence with the board of supervisors or board chairman for those townships and the board chairman.**

Prior to filing the Facility Permit Application, the concerns raised by Farmington, Highland and Valley Townships were incorporated into the application. Agricultural concerns raised by Farmington, Highland, and Valley Townships were addressed in sections 14.4 and 19.2. The application also addressed the concerns of Highland and Valley Townships regarding safety and property valuation in sections 23.4 and 19.1.2 respectively. The website also

includes answers in our FAQs related to agriculture and health and safety. One time payments were addressed in the October 2013 Power Delivered newsletter, which is contained at BSSE 321 to 322.

2-17) Has the Applicant, or its agents, trespassed on private property?

RESPONSE: To the best of the Owners' knowledge at this time, no trespassing has occurred.

2-18) How will the Applicant ensure soil and plant-born pests are not transmitted from field to field?

RESPONSE: As stated in the answer to interrogatory number 9 in Gerald Pesall's Second Set of Discovery to Applicants: "The Owners contend that the construction of the Project will have no impact on the field-to-field transmission of soil and plant borne pests. Based on the Applicants' experience in constructing, operating, and maintaining 5,700 miles of transmission lines in North Dakota, South Dakota, Minnesota, Montana, and Wyoming, the construction and maintenance of these lines has not materially contributed to the field-to-field transmission of soil or plant-born pests. Any field-to-field transmission of soil or plant-born pests would be no greater than would be expected as a result of standard farming practices, such as moving farming equipment between fields."

2-19) Has the Applicant, in its experience in building and operating high voltage transmission lines ever experienced complaints of radio, TV, communications (e.g. CBs, two way radios, cell phones, etc.), dairy electronics, or GPS (including GPS, differential GPS and RTK) surveying or navigation interference? Please specify to what extent and how the Applicant handled such interference.

RESPONSE: The Owners operate approximately 5,700 miles of transmission lines and are not aware of any complaints in regards to interference with to TV, communication, dairy electronic, or GPS systems. The Owners have had occasions where AM radio reception is impacted, but after passing under the line reception is immediately restored. The general public will notice this momentary interference in their vehicle radio in some instances when traveling under or near transmission facilities.

2-20) Referring to page 115 of the Aberdeen Public Hearing transcript, did the Applicant follow up with Ms. Seurer regarding her question about dairy electronics? How was this resolved?

RESPONSE: The Project communicated with Ms. Seurer at the Aberdeen Public Hearing. The Project also is continuing to work to schedule a meeting with Ms. Seurer to review and better understand her technology. In owning and maintaining over 5,700 miles of transmission lines, the Owners have not experienced any negative affects of the transmission line on diary electronics.

2-21) Will the proposed facility increase the potential for liability of the affected landowners? Why or why not?

RESPONSE: The proposed facility will not increase the potential for liability for the affected landowners. The Owners maintain property, casualty, and liability insurance coverage customary for the utility industry. Operational risk management procedures are in place to help protect life and property throughout construction and operation of the proposed transmission line.

2-22) How will the Applicant mitigate lost agriculture production associated with the project's operation, specifically as a result of farming around poles placed within fields?

RESPONSE: The anticipated lost agricultural production associated with farming around poles is being included as part of the easement payment provided by the Project.

2-23) Please provide a description of how the Applicant intends to monitor and mitigate construction impacts on roadways.

RESPONSE: As stated in answer to interrogatory number 8 to Gerald Pesall's Second Set of Discovery Requests to Applicant: "As part of the construction of the Project and the use of best management practices during the construction, it is expected that road damage, if any, will be minimal. Nevertheless, a person or party (i.e, engineer, project manager, construction manager, construction contractor) will be assigned responsibility to monitor any road damage. At this time, the identity of the person or party responsible for monitoring any road damage has not been determined. The Project will work with the entity that has authority over the road in making a damage assessment. The Project plans to repair road damage either through either the use of a contractor or by compensating the government entity to restore the road. In addition, the bond

required by the Commission in connection with the issuance of the permit will be available to provide security of payment for any road damage."

2-24) Please provide an explanation of how pole placement is discussed with affected landowners, including who contacts the landowner, when the contact is made (specifically in relation to the timing of the landowner signing an easement), and how the landowner's feedback is taken into account in the final placement.

RESPONSE: The discussion of pole placement varies from landowner to landowner. Initially, when land agents for the Project first started contacting landowners, the preliminary pole locations had not been determined. As a result, the Project did not discuss the placement of pole locations with the landowners. The land agents instead showed a map indicating the proposed route, without any indication of pole placement. The land agents communicated to landowners that they could reasonably expect approximately 5 pole structures per mile. Some landowners signed options based on these initial communications, and thus, the Project may not have discussed pole placement with the landowners.

Later, when the Project determined the preliminary placement of the pole structures, land agents were provided a map detailing the proposed route and the preliminary structure location. The scale on the map prevents determining the exact pole location on a parcel of property. During face to face meetings with landowners, land agents would show them the preliminary pole placements if requested. Land agents also provided copies of maps showing preliminary pole placements to requesting landowners. The final pole locations are not reflected on these preliminary maps. Additional landowners have signed the options after seeing the preliminary pole locations.

If requested by a landowner, the Project also has offered and will provide staking of preliminary pole locations on landowner property once the Project is able to survey the property.

The final pole structure location will not been determined, however, until the final design stage. If the landowner has expressed concerns about the pole placement during the option discussions, their input would be considered in the final location. The timing of the final design stage vis-à-vis signing of easements has not been determined but the Project has and will continue to discuss pole placement with landowners.

2-25) If landowners prefer to have poles placed along a fence line rather than out in a field, how does the Applicant accommodate such a request? Has the company made any route changes as a result of such requests to date?

RESPONSE: Each proposed route change is analyzed to see what, if any, impacts could result from the landowner's request. A design goal is to run the centerline as straight as possible between the dead-end structures, which are approximately five (5) miles apart. Therefore every route change request goes through a standard review process. This review process involves a committee consisting of a company representative from each Owner, design engineer, environmental, right-of-way, and legal teams. This committee considers the following review criteria when evaluating route changes:

- **Safety, proximity to state, county township roadways**
- **Zoning restrictions**
- **Effect of other existing easements or encumbrances, if any**
- **Other option agreements that have been obtained with the adjoining landowners**
- **Whether the affected landowners within 1-2 miles along the route on either side of the property agree with the proposed route change**
- **Whether there are any environmental impacts caused by the proposed route change**
- **Whether any cultural resource impacts are caused by the proposed route change**
- **Whether the line be constructed and maintained at the requested location**
- **Economic considerations**

If it appears there are no identifiable impacts with the request after this review is completed, the right-of-way land agents will visit the neighboring landowners to obtain their opinion of a route change on their property as well. If practical to honor the request to move the route change, the Project will attempt to do so. If the impacts are too great, or if the route change is not mutually agreed upon by adjacent landowners, the requested relocation might not be possible. The Project has made some route and pole changes to honor requests placing the structures near fence lines rather than in the field. See also the response to Data Request 2-7.

2-26) At the public hearing in Aberdeen, the Applicant was asked to consider easement terms that were not perpetual, similar to the 99-year term in North Dakota. Has the

Applicant made any changes to the easement term lengths it is offering to landowners along the route?

RESPONSE: No, because the Project expects that the useful life of the transmission line may exceed 99 years.

2-27) On page 60 of the Aberdeen Public Hearing transcript, Mr. Ford stated "if maybe this parcel of land is becoming unfarmable because of these reasons, we need to look at something different" in response to Ron Ringgenberg's concern of not being able to utilize aerial spraying as a result of the facility. Since the hearing, has the Applicant worked with Mr. Ringgenberg or other similarly situated landowners to solve these types of problems? If so, please explain how the Applicant plans to mitigate the impact of these problems.

RESPONSE: There have been personal conversations with all landowners who are willing to meet and discuss their specific concerns.

The installation of a transmission line does not prevent aerial applications. A transmission line has a similar, but perhaps lesser impact to aerial applications as a tree row if installed in the direction of the farming application. The applicators are able to fly parallel to the transmission line and let the chemical spray drift under the line to effectively treat their crops.

At this time, the Project has not identified any locations, including but not limited to Mr. Ringgenberg's property, where the transmission line will prevent aerial spray applications.

2-28) Please provide an update on progress the applicant has made on easement acquisition.

RESPONSE: Currently the Project is only obtaining options rather than easements. Landowners who have signed options have committed themselves to signing of easements. Approximately 55% of line miles worth of parcels have signed options through April 10, 2014.

2-29) For easements (or easement options) not yet acquired, please provide an explanation as to why the landowners have not yet signed and, further, if any landowners are refusing to work with the Applicant.

RESPONSE: As indicated in response to Staff's Data Request 2-28, approximately 55% of the line miles have been signed as of April 10, 2014.

There are several reasons for landowners not signing the easement option. Some landowners are waiting to see if the Facility Permit from the State is issued. Other landowners are waiting on a person or event unrelated to the Project, such as, but not limited to whether other landowners are going to sign options and review of the easement options by the landowner's attorney, family member or renter. Other landowners are waiting on changes to the option and easement documents to reflect their individualized concerns. Other landowners are waiting for evaluation of a proposed route change.

Regarding the small percentage of landowners who have stated opposition to the Project, there are a multitude of reasons they have not signed the options. While some landowners have expressed general objection to the project, others have expressed more specific objections. Some of these objections were communicated at the public input hearings occurring on October 17, 2013, at Aberdeen and Milbank. The more specific objections fall into several general categories:

- **Objections to the location of the line**
- **Economic concerns, including but not limited to complaints that the amount of the easement payment is not sufficient, devaluation of property, and request for annual payments, effect on whether the landowner will obtain wind farms or subdivide their property**
- **Concerns that the project will negatively affect farming practices, such as but not limited to effect on efficiency of farming equipment, affect on GPS guidance, loss of yield, impacts on aerial spraying, effect on center pivot units, and impact on livestock**
- **Concerns about the effect of the transmission line on human health**
- **Concerns about the impact of the transmission line on wildlife**
- **Effects of the construction process on both their farm property and the roads**
- **Peer pressure from other landowners, neighbors, family, and landowners not to sign the options**

The Project has and will continue to work with landowners to address these concerns.

2-30) Did the Applicant consider following abandoned railroad right-of-way in determining the route? If so, for what reasons did the Applicant choose not to utilize it?

RESPONSE: The Applicant did consider following abandoned railroad right-of-ways as part of the routing process for the Project. Overall the preferred route selected reflects the best balance of the project routing criteria. Preliminary routes along abandoned railroad tracks were not carried forward for the preferred route for a variety of reasons, including the fact that railroads tend to run through towns that the Project would have to be routed around. Additionally, the terrain near abandoned railroads may have steep side slopes away from the railroad bed that may not accommodate preferred construction or maintenance methods. In other areas the abandoned railroad right-of-way have been completely plowed under by the landowner in some parcels, and a transmission line would therefore cut through the middle of a cultivated fields. A comment from many landowners was to follow field lines and section lines to avoid diagonally traversing a cultivated field.

2-31) Did the Applicant consider following railroad rights-of-way that are currently in use? If so, for what reasons did the Applicant choose not to utilize them?

RESPONSE: The Applicant did consider following active railroad rights-of-way in the routing process for the Project. As stated in the response to Staff's Data Request 2-30 and 2-32, long stretches of routes along railroad tracks were removed from consideration for a variety of reasons, including the fact that railroads tend to run through towns that the Project would have to be routed around. It was also determined that construction of the transmission line would not be feasible along the railroad in the Waubay area due to the increasing water levels in the surrounding lakes. Field surveys confirmed that certain route segments along the railroad were also removed from consideration because of the presence of homes, businesses, and water challenges. The Project also considered the induction effects and the safety concerns presented by the Project being located parallel to an existing railroad.

Additional engineering challenges and safety concerns that were considered as well. As stated above in the answer to Staff's Data Request 2-30, the terrain near railroads may have steep side slopes away from the railroad that may not accommodate preferred construction or maintenance methods. In addition, railroad right-of-way widths vary along a railroad and it would be very difficult

to share right-of-way with a railroad. Therefore the transmission line would likely have many bends and inflections to follow the railroad right-of-way, and/or be further out into a cropped field in areas where the right-of-way is wider. And finally, trains that derail where a transmission line runs parallel to it could potentially cause a disruption in electrical service and a safety hazard if derailed cars were to collide with a nearby transmission line structure.

2-32) If induction of rails is a reason listed in the previous two questions, what steps could the Applicant take to mitigate issues with induction and, further, what impact would those steps have on project costs?

RESPONSE: **The best method for reducing the effects of induced voltage in parallel facilities such as railroads is to route the transmission line so that it is a safe distance away from the railroad or applicable parallel facility. If a transmission line remains close to the railroad then a study must be performed to evaluate induced voltage issues. Mitigation techniques and costs can vary significantly depending on the results of the study and particulars of the situation. Options for mitigation include: installation of a grounding conductor, replacement or upgrade of railroad signaling equipment, installation of AC drain filters, and reconfiguring the size of the signal track blocks. Costs can be into the millions of dollars depending on the level of mitigation required.**

2-33) Per the suggestion by Mr. Welk on pages 109 and 110 of the Aberdeen Public Hearing transcript, was a letter provided to Mr. Feickert regarding disbursement of property taxes? If so, please provide the letter. If not, please provide the information requested.

RESPONSE: **A letter has been sent to Mr. Feickert, which is attached at BSSE 323 to 328 and which contains the requested information as to the disbursement of property taxes.**

2-34) Are corner structures going to have guy-wires? If so, what additional impacts would guy-wires have on landowners and/or farming operations? Further, will the Applicant construct a corner structure without guy-wires should a landowner request such?

RESPONSE: **Corner structures located on cultivated land will not have guy-wires. Corner structures located on non-cultivated land could have guy wires depending upon the terrain and location of the structure. If a landowner with**

STATE OF NORTH DAKOTA)
:SS.
COUNTY OF Burleigh)

Henry Ford, being duly sworn is the authorized agent of Montana-Dakota Utilities Co., for purposes of the response.

He states that he does not have personal knowledge of all the facts recited in the foregoing Responses of Montana-Dakota Utilities Co. and Otter Tail Power Company to Staff's Second Data Requests, but the information has been gathered by and from employees, contractors of the owners of Big Stone South to Ellendale Project; and that the information in the is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 15th day of April, 2013.

MONTANA-DAKOTA UTILITIES CO.

By _____
Henry Ford
Its Director - Electric Transmission Engineering

Subscribed and sworn to before me this 15th day of April, 2013.

_____
Notary Public
(SEAL)

My Commission Expires: _____

SHELLEY R. VETTER
Notary Public
State of North Dakota
My Commission Expires May 10, 2019

STATE OF MINNESOTA)
:SS.
COUNTY OF Otter Tail)

Jason Weiers, being duly sworn is the authorized agent of Otter Tail Power Company, for purposes of the response.

He states that he does not have personal knowledge of all the facts recited in the foregoing Responses of Montana-Dakota Utilities Co. and Otter Tail Power Company to Staff's Second Data Requests, but the information has been gathered by and from employees, contractors of the owners of Big Stone South to Ellendale Project; and that the information in the is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 15th day of April, 2013.

OTTER TAIL POWER COMPANY

By Jason J Weiers
Jason Weiers
Its Manager, Delivery Planning

Subscribed and sworn to before me this 15th day of April, 2013.

VICKI LYNN SEVERSON
NOTARY PUBLIC--MINNESOTA
My Commission Expires JAN. 31, 2015

Vicki Lynn Severson
Notary Public
(SEAL)

My Commission Expires: Jan. 31, 2015