APPENDIX H

PRELIMINARY TRANSMISSION STRUCTURE TYPICAL DRAWINGS

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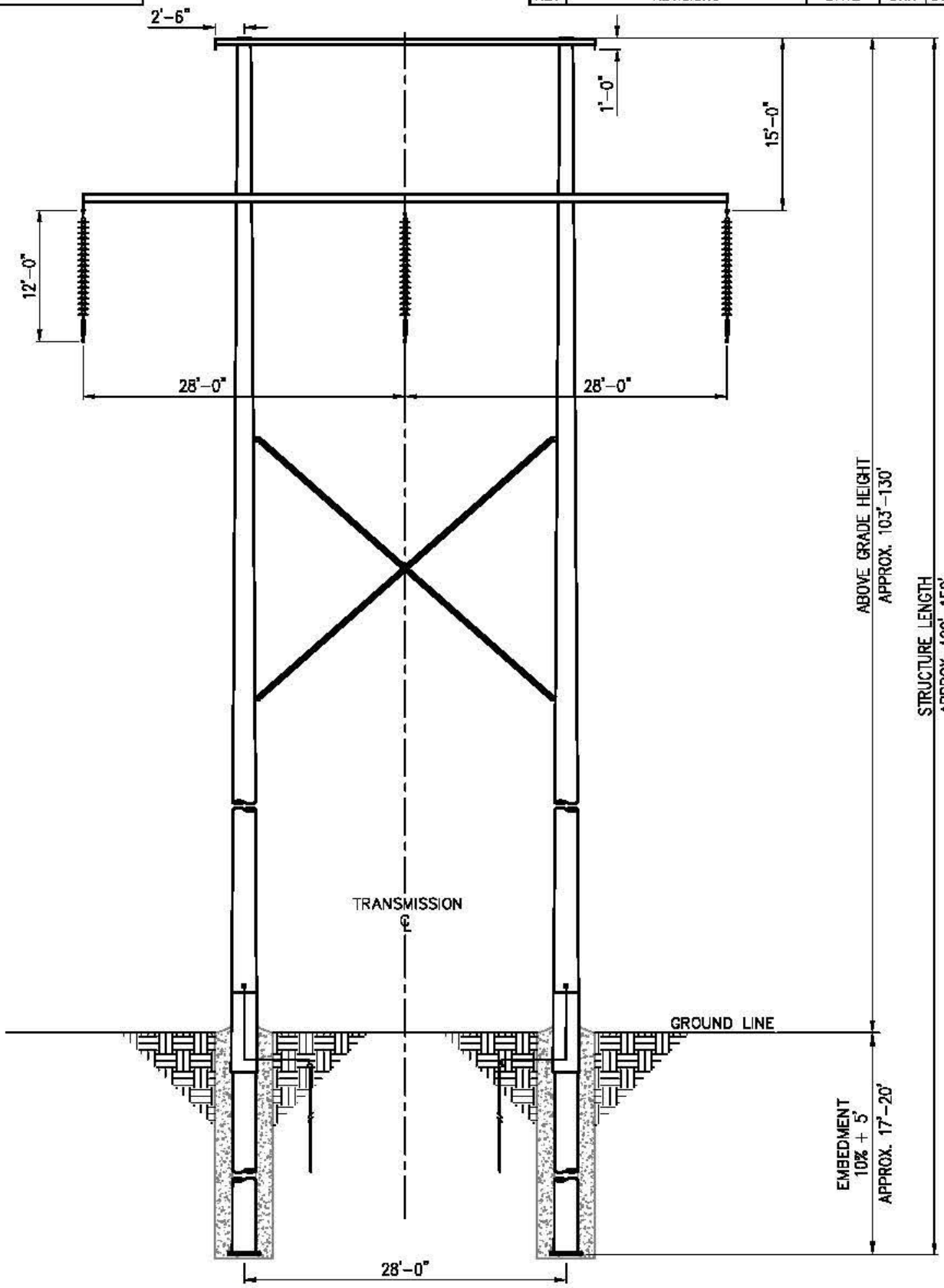
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
C	PRELIMINARY DIMS: ADDITIONAL DIMS	08/05/13	JFH	KMW	DJF	
B	PRELIMINARY DIMS: MINOR REVISIONS	08/02/13	JFH	KMW	DJF	
A	PRELIMINARY APPOXIMATE DIMENSIONS	07/29/13	JFH	SMH	DJF	



DSGN	PEI	07/29/13
DRN	PEI	07/29/13
CKD	PEI	07/29/13

SCALE: N.T.S.

FOR 8.5x11 DWG ONLY

Big Stone South to Ellendale

OTTER TAIL POWER CO. & MONTANA-DAKOTA UTIL. CO.

PRELIMINARY H-FRAME TANGENT
345kV TRANSMISSION LINE

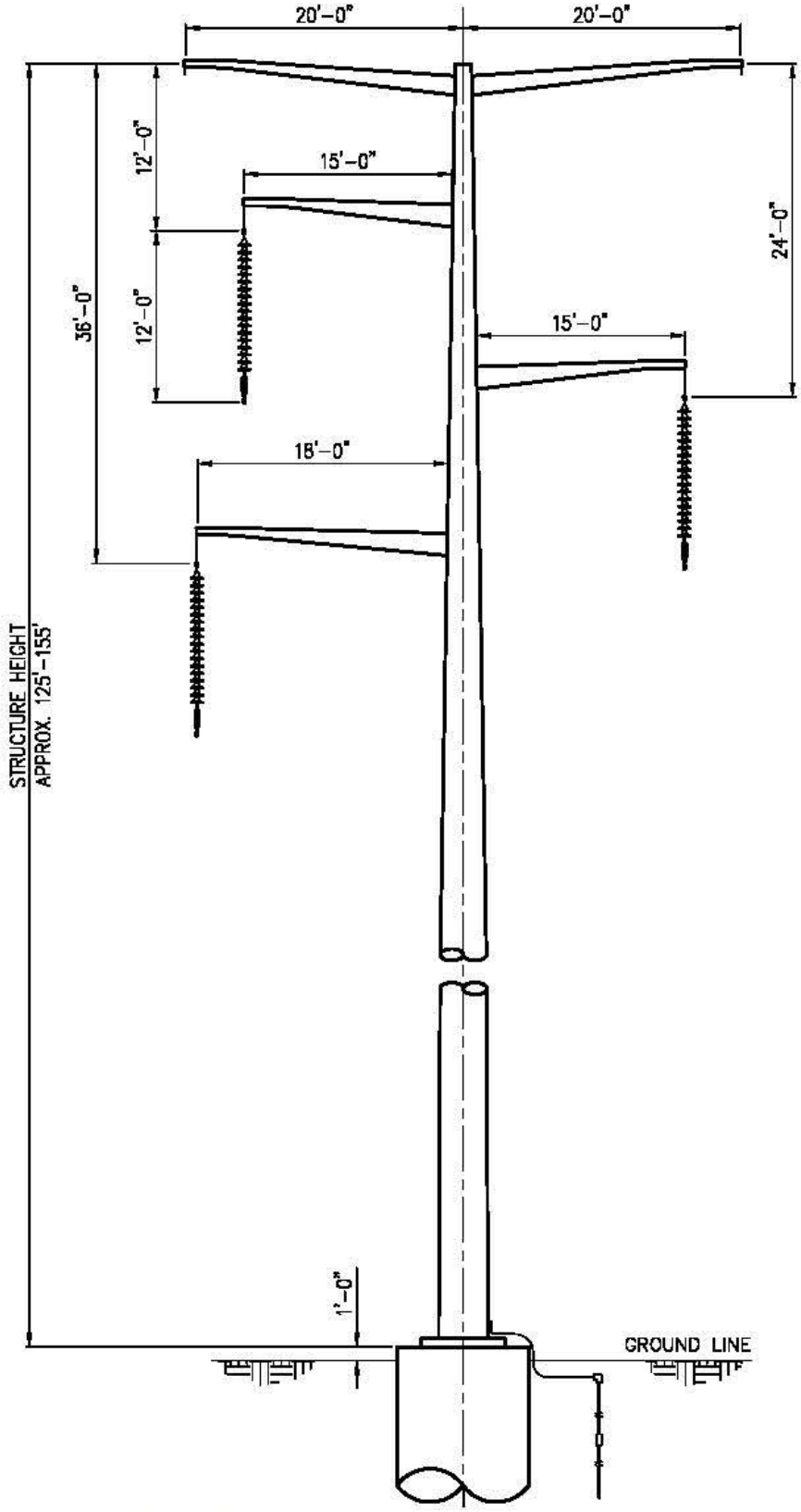
BIG STONE SOUTH TO ELLENDALE

JOB NUMBER 127156

REV C

DRAWING NUMBER APP-STR01

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
B	PRELIMINARY DIMS: MINOR REVISIONS	06/02/13	JFH	SMH	DJF	
A	PRELIMINARY APPOXIMATE DIMENSIONS	07/29/13	JFH	SMH	DJF	



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DRN	PEI	07/29/13	
CKD	PEI	07/29/13	
SCALE: N.T.S.			
FOR 8.5x11 DWG ONLY			

FILE

Big Stone South to Ellendale

OTTER TAIL POWER CO. & MONTANA-DAKOTA UTIL. CO.

PRELIMINARY DELTA TANGENT
345kV TRANSMISSION LINE

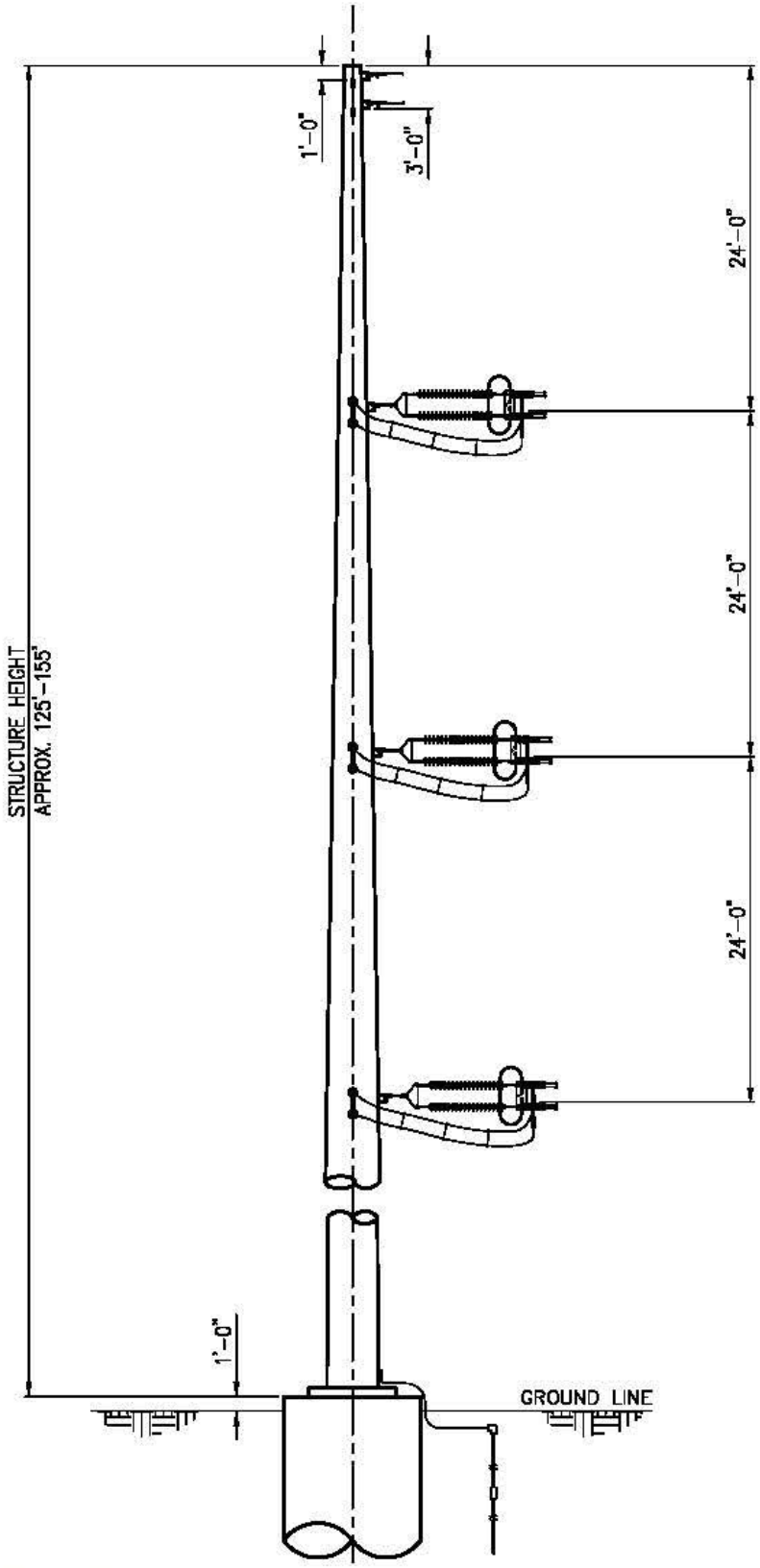
BIG STONE SOUTH TO ELLENDALE

JOB NUMBER 127156

REV B

DRAWING NUMBER APP-STR02

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
B	PRELIMINARY DIMS: MINOR REVISIONS	06/02/13	JFH	SMH	DJF	
A	PRELIMINARY APPOXIMATE DIMENSIONS	07/29/13	JFH	SMH	DJF	



DSGN	PEI	07/29/13	
DRN	PEI	07/29/13	
CKD	PEI	07/29/13	
SCALE: N.T.S.			
FOR 8.5x11 DWG ONLY			

Big Stone South to Ellendale

OTTER TAIL POWER CO. & MONTANA-DAKOTA UTIL. CO.

PRELIMINARY MONOPOLE DEADEND
345kV TRANSMISSION LINE

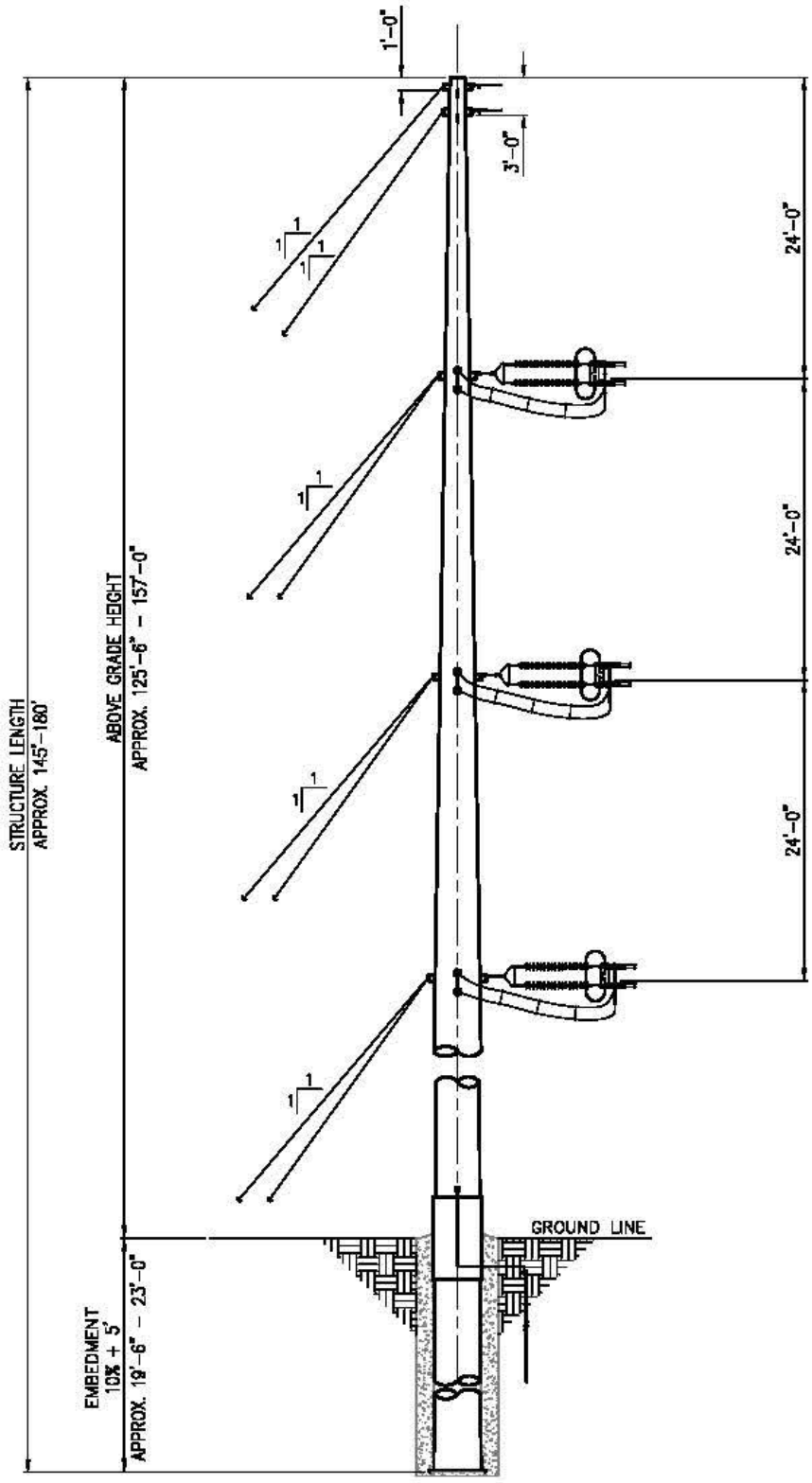
BIG STONE SOUTH TO ELLENDALE

JOB NUMBER 127156

REV B

DRAWING NUMBER APP-STR03

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
C	PRELIMINARY DIMS: ADDITIONAL DIMS	08/05/13	JFH	KMW	DJF	
B	PRELIMINARY DIMS: MINOR REVISIONS	08/02/13	JFH	KMW	DJF	
A	PRELIMINARY APPOXIMATE DIMENSIONS	07/29/13	JFH	SMH	DJF	



DSGN	PEI	07/29/13
DRN	PEI	07/29/13
CKD	PEI	07/29/13

SCALE: N.T.S.

FOR 8.5x11 DWG ONLY

FILE

Big Stone South to Ellendale

OTTER TAIL POWER CO. & MONTANA-DAKOTA UTIL. CO.

PRELIMINARY GUYED MONOPOLE DEADEND
345kV TRANSMISSION LINE

BIG STONE SOUTH TO ELLENDALE

JOB NUMBER 127156

REV C

DRAWING NUMBER APP-STR04

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

In the Matter of the Application of Montana-Dakota Utilities Co. and Otter Tail Power Company for a Permit to Construct the Big Stone South to Ellendale 345 KV Transmission Line	EL13-028 **AMENDMENT TO APPLICATION DATED JANUARY 27, 2014**

EXHIBIT 1A

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

In the Matter of the Application of Montana-Dakota Utilities Co. and Otter Tail Power Company for a Permit to Construct the Big Stone South to Ellendale 345 KV Transmission Line	EL13-028 **FIRST AMENDMENT TO APPLICATION**

Montana-Dakota Utilities Company, a division of MDU Resources Group, Inc., a Delaware corporation, and Otter Tail Power Company, a Minnesota corporation (jointly "The Applicants"), filed on August 23, 2013 with the South Dakota Public Utilities Commission ("Commission") an Application for a Facility Permit for the Big Stone South to Ellendale 346 kV Transmission Line Project ("Application"). The Applicants amend the Application to withdraw pages 56-58, inclusive, and pages 89-96, inclusive, of the Application and insert the replacement pages appended to this Amendment. Also attached with this Amendment are the original pages of the Application that are sought to be amended displaying the changes, revisions, and corrections. The Amendment is requested of the pages to update the information previously submitted with the Application and to correct certain information contained in the original Application on these pages.

This Amendment is being made pursuant to ARSD 20:10:22:04(7).

VERIFIED APPLICANT'S SIGNATURE

STATE OF NORTH DAKOTA)
)SS.
COUNTY OF BURLEIGH)

Garrett Senger, being duly sworn, deposes and says that he is the authorized agent of Montana-Dakota Utilities Co.

He states that he does not have personal knowledge of all the facts recited in the foregoing Amendment to Application, but the information in the Amendment to Application has been gathered by and from employees, contractors of the owners of Big Stone South to Ellendale Project; and that the information in the Amendment to Application is verified by him as being true and correct on behalf o Big Stone South to Ellendale Project.

Dated this 10th day of January, 2014.

Garret Senger

Garret Senger
Vice President – Regulation Affairs and
Chief Accounting Officer
Montana-Dakota Utilities Co.

Subscribed and sworn to before me this
10th day of January, 2014.

Denys Schwartz

Notary Public
My Commission Expires:

DENYS SCHWARTZ
Notary Public
State of North Dakota
My Commission Expires December 31, 2018

VERIFIED APPLICANT'S SIGNATURE

STATE OF MINNESOTA)
)SS.
COUNTY OF OTTER TAIL)

Tim Rogelstad, being duly sworn, deposes and says that he is the authorized agent of Otter Tail Power.

He states that he does not have personal knowledge of all the facts recited in the foregoing Amendment to Application dated January 22, 2014, but the information in the Amendment to Application has been gathered by and from employees, contractors of the owners of Big Stone South to Ellendale Project; and that the information in the Amendment to Application dated January 22, 2014, is verified by him as being true and correct on behalf of Big Stone South to Ellendale Project.

Dated this 22 day of January, 2014.

GARY L. EGGEN
NOTARY PUBLIC–MINNESOTA
My Commission Expires JAN. 31, 2015

Tim Rogelstad
Vice president – Asset Management
Otter Tail Power Company

Subscribed and sworn to before me this
22 day of January, 2014.

Notary Public
My Commission Expires:

CERTIFICATE OF SERVICE

I, Jason R. Sutton, do hereby certify that I am a member of the law firm of Boyce, Greenfield, Pashby & Welk, LLP, attorneys for Montana-Dakota Utilities Co. and Otter Tail Power Company and that on the 27th day of January, 2014, a true and correct copy of Montana-Dakota Utilities Co. and Otter Tail Power Company's Amendment to Application Dated January 27, 2014, was served via email to the following addresses listed:

Ms. Patricia Van Gerpen
Executive Director
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
patty.vangerpen@state.sd.us

Ms. Karen Cremer
Staff Attorney
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
karen.cremer@state.sd.us

Mr. Brian Rounds
Staff Analyst
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
brian.rounds@state.sd.us

Mr. Darren Kearney
Staff Analyst
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
Darren.kearney@state.sd.us

Ms. Jennifer Smestad
General Counsel
Otter Tail Power Company
215 S Cascade St.
Fergus Falls, MN 56538-0496
jsmestad@ottertail.com

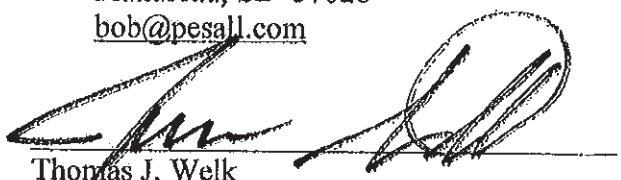
Mr. Daniel S. Kuntz
Associate General Counsel
MDU Resources Group, Inc.
P.O. Box 5650
1200 West Century Avenue
Bismarck, ND 58506-5650
dan.kuntz@mduresources.com

Ms. Maxine Fischer
Brown County Auditor
25 Market St., Ste 1
Aberdeen, SD 57401
maxine.fischer@browncounty.sd.gov

Ms. Sandra Raap
Day County Auditor
711 W. First St., Ste. 204
Webster, SD 57274
dcaud@itctel.com

Ms. Karen Layher
Grant County Auditor
210 E. Fifth Ave.
Milbank, SD 57252
karen.layher@state.sd.us

Mr. Bob Pesall - Representing: Gerald Pesall
Pesall Law Firm
PO Box 23
Flandreau, SD 57028
bob@pesall.com



Thomas J. Welk
Jason R. Sutton
BOYCE, GREENFIELD, PASHBY & WELK, LLP
P.O. Box 5015
Sioux Falls, SD 57117-5015
(605) 336-2424

Jennifer O. Smestad
General Counsel
Otter Tail Power Company
215 S Cascade St.
Fergus Falls, MN 56538-0496
(218) 739-8892

Daniel S. Kuntz
Associate General Counsel
MDU Resources Group, Inc.
P.O. Box 5650
1200 West Century Avenue
Bismarck, ND 58506-5650
(701) 530-1016

14.1.3 *Mitigation*

Because the South Dakota Facility is generally compatible with the existing land uses in the area, no additional mitigation is required. As described above, the South Dakota Facility has been chosen to minimize impacts to farming operations. The Applicants will coordinate with the USFWS and NRCS in order to obtain necessary permits to cross easement lands, and determine appropriate mitigation measures for these crossings.

14.2 Displacement

14.2.1 *Existing Environment*

Displacement results from ROW acquisitions that require the use of property occupied by a residence or business. A displacement was defined by the Applicants as an impact to an occupied home or business whose structure is located within the South Dakota Facility ROW.

Residences near the South Dakota Facility were identified through field observation, analysis of aerial photography, and comments received at Applicant-sponsored public open house meetings.

14.2.2 *Potential Impacts*

No occupied homes are located within the South Dakota Facility ROW; therefore, no homes are expected to be displaced by the South Dakota Facility. One inactive gravel pit was identified within the South Dakota Facility ROW. The gravel pit is located in Section 2 of Lura Township (T120N R52W). During negotiation of land rights agreements, the Applicants will work with the owners of any businesses located within the South Dakota Facility ROW, such as the inactive gravel pit, to minimize impacts. The South Dakota Facility will not displace any businesses.

14.2.3 *Mitigation*

No mitigation is proposed because no displacement of residences or businesses is occurring.

14.3 Noise

14.3.1 *Existing Environment*

Noise is defined as unwanted sound. Noise may include a variety of sounds of different intensities across the entire frequency spectrum. Noise is measured in units of decibels (dB) on a logarithmic scale. Because human hearing is not equally sensitive to all frequencies of sound, certain frequencies are given more "weight." The A-weighted decibel (dBA) scale corresponds to the frequency sensitivity range for human hearing. Noise levels capable of being heard by humans are measured in dBA. A noise level change of 3 dBA is barely perceptible to average human hearing. A 5 dBA change in noise levels, however, is clearly noticeable. A 10 dBA change in noise levels is perceived as a doubling or halving of noise loudness, while a 20 dBA change is considered a dramatic change in loudness.

Cumulative noise increases occur on a logarithmic scale. If a noise source is doubled, there is a 3 dBA increase in noise, which is barely discernible to the human ear. For cumulative increases resulting from sources of different magnitudes, the rule of thumb is that if there is a difference of greater than 10 dBA between noise sources, there will be no additive effect

(i.e., only the louder source will be heard and the quieter source will not contribute to louder noise levels). Table 16 provides noise levels associated with common, everyday sources and places the magnitude of noise levels discussed here into context.

Table 16. Noise Levels Associated with Common Sources

Sound Pressure Level (dBA)	Noise Source
140	Jet Engine (at 25 meters)
130	Jet Aircraft (at 100 meters)
120	Concert
110	Pneumatic chipper (powered by compressed air or hydraulics)
100	Jointer/planer
90	Chainsaw
80	Heavy truck traffic
70	Busy business office
60	Conversational speech at 3 feet
50	Library
40	Bedroom
30	Secluded woods
20	Whisper

Source: A Guide to Noise Control in Minnesota, MPCA (revised, 1999)

The State of South Dakota does not regulate noise from transmission lines (corona noise) with measurable standards. Also, corona noise does not contain high levels of low frequency noise. Generally, background noise levels in rural areas vary between 40 and 50 dBA, while in suburban areas these levels increase to 50 to 60 dBA. In urban areas, noise levels vary between 60 and 70 dBA (FRA 2006). Most of the South Dakota Facility area has background levels consistent with rural areas. Windy conditions in the South Dakota Facility area tend to increase ambient noise levels compared to other rural areas. Additionally, higher levels exist near roads and other areas of human activity. Exhibit 2 shows noise sensitive land uses in the South Dakota Facility area. These were conservatively estimated to be homes within 1,000 feet of the South Dakota Facility.

14.3.2 *Potential Impacts*

Construction activities will generate short-term and intermittent noise. Construction noise will affect nearby residences on a short-term basis. During operation, transmission lines produce noise under certain conditions, called corona noise. The level of noise depends on conductor conditions, voltage level, and weather conditions. In foggy, damp, or rainy weather, transmission lines can create a crackling sound due to a small amount of electricity ionizing the moist air near the conductors. During 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 approximately equal to household background levels.

The South Dakota Facility was modeled to evaluate audible noise from high voltage transmission lines using the Bonneville Power Administration's Corona and Field Effects Program CORONAII version 3.0 (U.S. Department of Energy – Undated). The model was executed under normal and maximum operating conditions for an H-frame and mono-pole structure at the edge of the South Dakota Facility ROW, to ensure that noise was not under-predicted. Model results are expressed as a mean average sound pressure level (L50), which means that 50 percent of the data points are greater and 50 percent of the data points are less than the stated value for a given time period. Noise from the transmission line is expected to be below average rural background noise levels. Table 17 lists the calculated audible noise.

Table 17. Calculated Audible Noise (L50) at the Edge of the Transmission Line ROW

Structure Type	Fair Weather Condition[1]	Foul Weather Condition[1]
H-Frame Structure	17.0 dBA (L50)	42.0 dBA (L50)
Mono-Pole Structure (Delta)	18.2 dBA (L50)	43.2 dBA (L50)

[1] *Results shown are the maximum at the edge of the Right-of-Way for a current of 500 amps, which is about twice the expected initial loading of the facility.*

Source: Bonneville Power Administration's Corona and Field Effects Program CORONAII version 3.0

14.3.3 *Mitigation*

During construction, noise levels will be minimized by ensuring that construction equipment is equipped with mufflers that are in good working order. Construction activities will generally be limited to the hours of 7 a.m. to 9 p.m. No additional mitigation measures are necessary since there will be minimal noise impacts from the operation of the South Dakota Facility.

14.4 Satellite, Cellular, Radio, TV, and GPS Reception

Corona, which consists of the breakdown or ionization of air within a few centimeters of conductors and hardware, can generate electromagnetic "noise" at the same frequencies that radio waves are transmitted. This noise can cause interference with the reception of these signals depending on the frequency and strength of the radio signal. The effects of corona "noise" can intensify during wet weather (Chen, 2012). Routine maintenance activities such as tightening loose hardware on the transmission line can help minimize corona noise.

If radio interference from transmission line corona does occur, satisfactory reception from amplitude modulated (AM) radio stations can be restored by appropriate modification of (or addition to) the receiving antenna system. Moreover, AM radio frequency interference typically occurs immediately under a transmission line and dissipates rapidly outside of the ROW.

Structure Type	Structure Material	ROW Width (feet)	Approx. Structure Height (feet)	Approx. Structure Base Diameter (feet)	Approx. Foundation Diameter (feet)	Average Span Between Structures (feet)	Pole to Pole Span on Single H-Frame Structure (feet)
Guyed Mono-Pole	Steel	150	125-155	3-4 (tangent structures) 4-6 (angle structures)	3-5	1,000 (range of 700 – 1200)	N/A
H-Frame (if necessary)	Steel	150	100-130	3-4 (tangent structures)	3-5	1,000 (range of 700 – 1200)	30

23.2 Conductor Configuration

It is anticipated that each phase will consist of two conductor bundled (2x), TP (twisted pair) 477 kcmil (thousand circular mils), 26/7, Hawk, aluminum conductor steel reinforced (ACSR) or conductors of comparable capacity.

23.3 Proposed Transmission Site and Major Alternatives

The site of the South Dakota Facility is described in Sections 2.1 and 7.0, Appendix A, and shown on Exhibit 2. Section 8.0 outlines the route identification and selection process.

23.4 Reliability and Safety

23.4.1 *Transmission Line Reliability*

In general, transmission infrastructure is built to withstand weather extremes that can be encountered within this region. With the exception of severe weather conditions such as tornadoes and extreme ice, transmission lines usually only fail when they are subjected to conditions beyond the design parameters.

Transmission lines are automatically taken out of service by the operation of protective relaying equipment when a fault is detected on the system. Such interruptions are usually only momentary. Scheduled maintenance outages are also infrequent on high voltage transmission lines. As a result, the average annual availability of transmission infrastructure is very high, in excess of 99 percent.

23.4.2 *Safety*

The South Dakota Facility will be designed to meet the local, state, NESC and the Applicants' standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, strength of materials, and ROW widths. Construction crews will comply with local, state, NESC and the Applicants' standards regarding installation of facilities and standard construction practices. The Applicants' and industry safety procedures will be followed during and after installation of the transmission line.

The South Dakota Facility will be equipped with protective devices to safeguard the public from the transmission line if an accident occurs and a structure or conductor falls to the ground. The protective devices are breakers and relays located where the transmission line connects to the substation. The protective equipment will de-energize the transmission line should such an event occur. In addition, the substation will be fenced and access limited to authorized personnel. The costs associated with these measures have not been tabulated separately from the overall facility costs since these measures are standard practice for the Applicants.

23.4.3 *Electric and Magnetic Fields*

The term electromagnetic field (EMF) refers to electric and magnetic fields that are coupled together such as in high-frequency radiating fields. For the lower frequencies associated with power lines, EMF should be separated into electric fields (EFs) and magnetic fields (MFs), which arise from the flow of electricity and the voltage of a line and are measured in kilovolts per meter (kV/m) and milliGauss (mG), respectively. The intensity of the electric field is proportional to the voltage of the line, and the intensity of the magnetic field is proportional to the current flow through the conductors. Transmission lines operate at a power frequency of 60 hertz (cycles per second). See Tables 22 through 23B, below, for more information.

23.4.3.1 Electric Fields

The electric field from a transmission line can couple with a conductive object, such as a vehicle or a metal fence, which is in close proximity to the line. This will induce a voltage on the object, and the magnitude of this voltage is dependent on many factors, including the weather condition, object shape, object size, object orientation, object to ground resistance, object capacitance, and location along the ROW. If the object is insulated or semi-insulated from the ground and a person touches it, a small current could pass through the person's body to the ground. This might be accompanied by a spark discharge and mild shock, similar to what can occur when a person walks across a carpet and touches a grounded object or another person.

To ensure that any discharge does not reach unsafe levels, the NESC requires that any discharge be less than 5 milliamperes (mA). Based on the Applicants' transmission line operating experience, the discharge from any large mobile object—such as a bus, truck, or farm machinery—parked under or adjacent to the line would be unlikely to reach levels considered to be an annoyance, and will be less than the 5 mA NESC limit. The Applicants will also ensure that any fixed object, such as a fence or other large permanent conductive object close to or parallel to the line, will be grounded such that any discharge would be less than the 5 mA NESC limit.

Currently, there are no state regulations within South Dakota for maximum electric field limits for transmission line siting. The facilities will comply with the recommended NESC standards.

23.4.3.2 Magnetic Fields

Current passing through any conductor, including a wire, produces a magnetic field in the area around the wire. The magnetic field associated with an HVTL surrounds the conductor and decreases rapidly with increasing distance from the conductor. Considerable research

has been conducted to determine whether exposure to power-frequency (60 hertz) magnetic fields causes biological responses and health effects.

EMF research expert Dr. Peter A. Valberg provided testimony in 2010 (Valberg, 2010) on EMF calculation and potential health effects, and the conclusions of his 2009 literature review (Valberg, 2009) of the status of scientific research on potential health effects. He summarized scientific research on HVTLs and MFs as:

> [T]hese studies do not change the factual conclusion that power-line MF exposure is not an established cause of health effects, as has been detailed throughout this report. As has been noted, the overall weight of evidence, combing the epidemiology with laboratory-animal and mechanistic research, fails to support a role for power-line MF in disease risk... [overall] the scientific research literature to date remains an insufficient basis for assigning any actual health risk to power-line MF exposure levels.

23.4.3.3 Recent Research on EMF Exposure and Human Health

Many organizations have conducted recent research on EMFs from extremely low frequency (ELF) source to study their potential effects on human health and safety as a follow-up to studies conducted primarily in the 1980s and 1990s which correlated EMFs and adverse health risks.

In 2007, the World Health Organization (WHO, 2007) made the following statement regarding effects of EMFs on health:

> Given both the weakness of the evidence for a link between exposure to ELF magnetic fields and childhood leukemia, and the limited impact on public health if there is a link, the benefits of exposure reduction on health are unclear. Thus, the costs of precautionary measure should be very low.

The 2009 President's Cancer Panel heard testimony concerning ELF, radio frequency (RF), and MFs and discussed that prior to 1996, the epidemiologic studies shared weaknesses that once recognized and accounted for, along with the testimony heard, "U.S. environmental organizations... generally conclude that the link between ELF-MF and cancer is controversial or weak." (Reuben, 2010).

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) reviewed scientific studies performed since its last published guidelines in 1998 that established exposure limitations to EMFs and published their recommendations in 2010 (ICNIRP, 2010), concluding:

> [S]cientific data available so far do not indicate that low frequency electric and/or magnetic fields affect the neuroendocrine system in a way that these would have an adverse impact on human health. There is no substantial evidence for an association between ELF exposure and diseases such as Parkinson's disease, multiple sclerosis, and cardiovascular diseases. The evidence for an association between low frequency exposure and Alzheimer's disease and amyotrophic lateral sclerosis is inconclusive. The evidence for an association between low frequency exposure and developmental and reproductive effects is very weak.

In addition, the 2010 ICNIRP recommendations stated "evidence that prolonged exposure to ELF-MF is causally related with an increased risk of childhood leukemia is too weak to form the basis for exposure guidelines."

There is no federal standard for transmission line electric fields, nor state standards in South Dakota. EMF levels for the Project at the edge of the ROW are below the ICNIRP guidelines (830 mG and 4.2 kV/m) for public exposure to EMF. The Project EMF levels are also below IEEE Standard C95.6-2002 both outside and within the ROW (9,040 mG, 5 kV/m outside the ROW, and 10 kV/m within the ROW). Tables 22 through 23B show the calculated EMF levels for the Project. The H-frame structure produced the highest levels of electric and magnetic fields.

Table 22. Maximum Calculated EMF Levels for Each Structure Type on the ROW

Project Load Condition	Electric Field (kV/m)[1]		Magnetic Field (mG)	
	H-Frame Structure	Mono-pole Structure	H-Frame Structure	Mono-pole Structure
Normal Operating Condition[2]	6.72	5.85	55.69	39.29
Maximum Operating Condition[3]	6.72	5.85	445.51	314.31

[1] This value depends on voltage and is expected to be relatively constant (will vary slightly if the operating voltage changes). Results are calculated at the operating voltage of 1.05 per unit.

[2] Normal Operating Condition value is for predicted flow of ~250 Amps

[3] Maximum Operating Condition value is based on ~2,000 Amps

Source: Bonneville Power Administration's Corona and Field Effects Program CORONAII version 3.0

Table 23A. Maximum Calculated EMF Levels for the H-Frame Structure

Project Load Condition	Electric Field (kV/m)[1]		Magnetic Field (mG)	
	On ROW	Edge ROW	On ROW	Edge ROW
Normal Operating Condition[2]	6.72	1.93	55.69	15.34
Maximum Operating Condition[3]	6.72	1.93	445.51	122.74

[1] This value depends on voltage and is expected to be relatively constant (will vary slightly if the operating voltage changes). Results are calculated at the operating voltage of 1.05 per unit

[2] Normal Operating Condition value is for predicted flow of ~250 Amps

[3] Maximum Operating Condition value is based on ~2,000 Amps

Source: Bonneville Power Administration's Corona and Field Effects Program CORONAII version 3.0

Table 23B. Maximum Calculated EMF Levels for the Single-Pole Structure

Project Load Condition	Electric Field (kV/m)[1]		Magnetic Field (mG)	
	On ROW	Edge ROW	On ROW	Edge ROW
Normal Operating Condition[2]	5.85	1.25	39.29	8.47
Maximum Operating Condition[3]	5.85	1.25	314.31	67.72

1 This value depends on voltage and is expected to be relatively constant (will vary slightly if the operating voltage changes). Results are calculated at the operating voltage of 1.05 per unit

2 Normal Operating Condition value is for predicted flow of ~250 Amps

3 Maximum Operating Condition value is based on ~2,000 Amps

Source: Bonneville Power Administration's Corona and Field Effects Program CORONAII version 3.0

To date, the most exhaustive research done on HVTL and cancer was conducted over a 35-year span with one of the largest study groups of persons near HVTLs ever used for EMF research in March of 2013 (Shaddick et al., 2013). Their case-controlled study investigating cancer risks and ELF-MF from high-voltage lines concluded that their "results do not support an epidemiologic association of adult cancers with residential magnetic fields in proximity to high-voltage overhead power lines."

While the general scientific consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields potentially can cause biological responses or even health effects continues to be the subject of research and debate despite current scientific evidence showing no correlation with distance to HVTL and adverse health effects. In addressing this issue, the Applicants provide information on EMF to the public, interested customers and employees to assist them in making an informed decision on EMF. The Applicants will provide measurements for landowners, customers, and employees who request them. In addition, the Applicants have followed the "prudent avoidance" guidance suggested by most public agencies. This includes using structure designs that minimize magnetic field levels and attempting to site facilities in locations with lower residential densities.

EMF will be strongest directly under the transmission line and decrease with increasing distance from the transmission line toward the ROW edge. The Applicants conducted an analysis of calculated EMF levels for the Project (as shown in Tables 22 through 23B). As load changes on the transmission line, the electric current flow changes; therefore, the MFs change.

At the maximum-load operating condition on the ROW edge, the EF is 1.9 kV/m and the MF is 122.7 mG. The results of the Applicants' analysis show that calculated EMF levels for the South Dakota Facility under maximum operating conditions and normal operating conditions on the edge of the ROW are below the published guidelines from ICNIRP and IEEE.

23.4.4 *Stray Voltage*

"Stray voltage" is a condition that can occur on the electric service entrances to structures from distribution lines—not transmission lines. More precisely, stray voltage is a voltage that

exists between the neutral wire of the service entrance and grounded objects in buildings such as barns and milking parlors.

Transmission lines do not, by themselves, create stray voltage because they do not connect to businesses or residences. However, transmission lines can induce stray voltage on a distribution circuit that is parallel to and immediately under the transmission line. Appropriate measures will be taken to address stray voltage concerns on a case-by-case basis.

23.4.5 *Farming Operations, Vehicle Use, and Metal Buildings Near Power Lines*

All current farming operations in the area are compatible with the construction and operation of the South Dakota Facility.

Insulated electric fences used in livestock operations can pick up an induced charge from transmission lines. Shocks can be caused when a charger is disconnected. This can be prevented by either shortening an insulator with a wire or installing an electric filter.

Farm equipment, passenger vehicles, and trucks may be safely used under and near power lines. The power lines will be designed to meet or exceed minimum clearance requirements over roads, driveways, cultivated fields, and grazing lands as specified by the NESC. Recommended clearances within the NESC are designed to accommodate a relative vehicle height of 14 feet.

There is a potential for vehicles under HVTLs to build up an electric charge. If this occurs, the vehicle can be grounded by attaching a grounding strap to the vehicle long enough to touch the earth. The Applicants do not recommend refueling vehicles directly under or within 100 feet of a power line 200 kV or greater.

Buildings are permitted near transmission lines but are generally prohibited within the ROW. Any person with questions about new or existing metal structures near the ROW may contact the Applicants for further information about proper grounding requirements.

23.4.6 *Right-of-Way or Condemnation Requirements*

The schedule for contacting landowners will be developed by the Applicants and formal option easement negotiations began in the summer of 2013. The Project will require the acquisition of easements to cross private property and the coordination with appropriate agencies where the line shares ROW with other public utilities or public roads. The majority of affected landowners are aware of the South Dakota Facility. Land rights agents will continue to work with the landowners to answer questions about the South Dakota Facility and to obtain permission for route surveys, environmental surveys, and soil investigations to occur prior to construction. As the design of the transmission line is further developed, contacts with the owners of affected properties will continue.

In the event soil investigation is required to assist with the design of the foundations, the Applicants will inform the landowners at the initial survey consultation that soil borings or environmental surveys may occur. An independent geotechnical testing company will take and analyze these borings. Survey crews will also work with local utilities to identify underground utilities along the South Dakota Facility. This minimizes conflicts or impacts to existing utilities. Environmental crews will gather specific information such as wetland boundaries and cultural resource site boundaries.

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 FIRST DATA REQUESTS DATED SEPTEMBER 19, 2013

Montana-Dakota Utilities Co. and Otter Tail Power Company, for its responses to Staff's First Data Requests dated September 19, 2013, states as follows:

1) Per ARSD 20:10:22:10, please "provide a description of present and estimated consumer demand and estimated future energy needs of those customers to be directly served by the proposed facility."

RESPONSE: **The Big Stone South – Ellendale 345 kV project involves a high voltage transmission line, developed collaboratively as a MISO Multi-Value Project (MVP) to increase transmission capacity to provide the entire MISO footprint the infrastructure needed to support the renewable energy mandates for all the states in the MISO footprint. The need for the proposed Big Stone South – Ellendale 345 kV line is driven by demand across the MISO footprint.**

The planning study for the MVP portfolio included transmission projects covering all the states in the MISO footprint. The generation assumptions in this study included about 890 MW of future generation in South Dakota by the year 2021, and over 1400 MW by the year 2026 that could be delivered anywhere within MISO through the proposed MVP projects, which includes the Big Stone South – Ellendale 345 kV line. The Big Stone South – Ellendale 345 kV line will allow future generators to interconnect to the transmission system.

Due to the interconnected nature of the transmission system, the project will also support the transmission system outside of MISO in South Dakota and North Dakota by providing a new high voltage source to the existing transmission system.

2) Please provide cross sections of the bedrock geology and surficial geology to depict the major subsurface variations in accordance with ARSD 20:10:22:14(3). An example from docket EL09-015 is attached.

RESPONSE: **In accordance with ARSD 20:10:22:14(3), "A written summary of the geological features of the plant, wind energy, or transmission site using the topographic map as a base showing the bedrock geology and surficial geology with sufficient cross-sections to depict the major subsurface variations in the siting area" is provided as BSSE 1-2. The geologic cross section of the South Dakota Facility was prepared using publically available data for surface elevation, depth to bedrock, surficial geology, and bedrock geology. Since borehole data has not yet been collected for the Project, detailed geologic information was not available to construct the cross section. Therefore, the cross section provides a generalized view of the underlying geology along the South Dakota Facility (BSSE 1-2). Limitations to the cross section that may exist including small, localized variations in bedrock geology are not shown. The overlying unconsolidated material also varies locally along the South Dakota Facility from silts and clays to sand and gravel, but for simplicity, these materials have been shown as one unit, called Unconsolidated Deposits (BSSE 2). In addition, information on thicknesses of the underlying bedrock units along the South Dakota Facility was not available. Because of this and to avoid a large vertical exaggeration, the thicknesses of the units are not accurately shown on the cross section (these unknowns are shown with question marks or a dashed line on BSSE 2). This is not considered a significant limitation since the proposed structure foundations will likely be 50-feet-deep or less.**

Areas of shallow bedrock (less than 50 feet) were identified in two distinct areas along the South Dakota Facility. The first is located in the vicinity of Mile 4, where the underlying Pierre Shale is approximately 30 feet from the surface (BSSE 2). The second occurs near Mile 55 to Mile 65, where the underlying bedrock is also the Pierre Shale and can be less than 20 feet from the surface (BSSE 2).

Sources:

1. **Bedrock Geology and Bedrock Contours. South Dakota Department of Environment and Natural Resources, Geological Survey. Link to the file - http://www.sdgs.usd.edu/pubs/pdf/esdbedrock_20040630.zip**
2. **Quaternary Surficial Geology. United States Geological Survey. Quaternary Map of the Dakotas: http://pubs.usgs.gov/imap/i-1420/nl-14/downloads/dakotasGIS/**
3. **Elevation Contours. USGS National Elevation Dataset**

3) Are drainage patterns in Exhibit 8 representative of both before and after construction drainage patterns?

RESPONSE: **The drainage patterns as shown on Exhibit 8 of the Application represent both before and after construction drainage patterns. The Applicants do not anticipate changes to drainage patterns after construction.**

4) Per ARSD 20:10:22:18(1)(k), please provide a map with the municipal water supply and water sources for organized rural water districts.

RESPONSE: **See attached water supply maps for Day, Grant and Brown Counties numbered BSSE 3-5. The attached maps were developed by KLJ Engineering. The resources that were used to develop these maps are found on attached BSSE 6.**

5) Per ARSD 20:10:22:23(2), please provide forecasts on the immediate and long-range impact of property and other taxes of the affected taxing jurisdictions.

RESPONSE: **Property taxes in South Dakota for a transmission line project such as this are paid to each county where the project will be located. The tax bill as prepared by each county is based on that county and/or township's mill levy. The value basis used by the County is determined by the State of South Dakota through a central assessment process for projects of this type. The assessment that the State applies to the project is based on a number of criteria including the total investment in the project as well as Indicators on how the company stands on a financial basis. Indicators such as Market, Cost, and Income are all used in this determination. The assessed value in each county is then calculated on a per mile basis for the project within each county. The State then provides this assessed value to each affected County who then applies the appropriate mill levy in effect at the time. Based on the current effective composite tax rates for South Dakota, we estimate a yearly property tax bill in the range of $1.75 to $2.25 million. This equals an approximate tax per mile of transmission line in the range of $11,200 to $14,500 in South Dakota based on approximately 155 miles of line. On a county by county basis, this calculates to property taxes of approximately $715,000 to $885,000 for Brown County, $535,000 to $755,000 for Day County, and $490,000 to $605,000 for Grant County.**

The Applicants' preliminary projections of sales/use taxes and contractor excise taxes paid during the project range from $5.5 million to $9 million.

6) Provide further support that transmission lines do not affect land/property values as identified in section 19.1.2.

RESPONSE: **Section 19.1.2 of the Application states, among other things, that "The South Dakota Facility is not expected to have significant short- or long-term effects on ....land values...". The Application does not state that the transmission line will not affect land/property values. Applicant continues to believe that the South Dakota Facility will not have significant short- or long-term effects on land values due to the relatively minimal footprint of the Project. The Project anticipates constructing approximately 5 or 6 monopoles per mile with a span of 700-1,200 feet between poles. The permanent impact is less than 5 acres of the nearly 1,600 acres temporarily and permanently affected by the Project.**

7) Per ARSD 20:10:22:23(6), please provide Applicant's plans to coordinate with local and state office of disaster services in the event of an accidental release or emergency.

RESPONSE: **The risk of accidental release of contaminants related to this transmission project is, as described in further detail in the Application, limited to small-scale environmental exposures arising from construction or significant maintenance work. As referenced in the Application, the Applicants will adopt Best Management Practices to prevent, monitor, contain and report the contaminants. Due to the nature of this project, the Applicants do not anticipate any large-scale releases of contaminants that would give rise to the need for disaster services from any local or state offices.**

8) Per ARSD 20:10:22:24, please provide more detailed employment estimates than what is found in section 20.0 of the application. Specifically, please provide the estimated annual employment expenditures of the Applicant, the contractors, and subcontractors during the construction phase of the proposed facility.

RESPONSE: **It is anticipated that the number of workers who will be involved with the various tasks leading up to and directly involved with the construction of the BSSE Project will range from 75-150. These tasks include surveying, geotechnical studies, material deliveries, Right-of-Way clearing, and line construction. The actual number of workers will fluctuate as various tasks are initiated and completed during the course of the Project. It is anticipated that most of the workers will be from outside the local area; therefore, the impact to the local economies will be through costs such as workers' expenditures for hotel rooms, travel trailer site rentals, meals, gas and miscellaneous supplies. The impact to the local economies, not including property taxes, from the BSSE Project is estimated to range from $3 million to $7 million through the construction period of the Project.**

9) Per ARSD 20:10:22:35(3), please provide a map of the major alternative routes.

RESPONSE: **Please see BSSE 7, "Major Alternative Routes," as an illustration of the preliminary routes, which are the major alternative routes considered for the Project.**

10) How is ongoing maintenance (e.g., vegetation management, annual inspections) of the transmission line going to be split between the Applicants?

RESPONSE: **A decision on how ongoing maintenance will be split has not been decided. It is anticipated that one company will likely perform that type of maintenance on the entire line and the costs would be shared between Otter Tail Power Co. and Montana-Dakota Utilities.**

11) In addition to the EMF concerns addressed in section 23.4, are there any known safety concerns with regard to farming around structures (e.g., collisions)?

RESPONSE: **Yes. Accidental collision with a structure would be a safety concern with regard to farming around structures. The use of single-pole structures minimizes the risk of collisions.**

12) Please describe, in greater detail, the two proposed fiber optic regeneration stations.

RESPONSE: The requirements for the fiber optic regeneration stations will be determined through joint consultation between the communications departments of the Applicants. The purpose of the fiber optic regeneration station is to monitor and amplify the fiber optic signal between the two substation endpoints when the distance between the substations exceeds approximately 75 miles. Typical fiber optic regeneration facilities consist of a small prefabricated building, approximately 8 ft. x 8 ft., or 8 ft. x 12 ft.. A slab foundation will be required to support the building. The building will house electronic equipment and vehicle access will be required as well as a power source. The buildings are typically located on or near the transmission line right-of-way, near a road access, and near an overhead distribution line. The installation may also include a backup generator. It is anticipated that two fiber optic regeneration stations will be required for the BSSE Project, located at the approximate one-third points along the route. See attached sample photograph numbered BSSE 8.

13) Per ARSD 20:10:22:05, notwithstanding those mentioned in Table 24 of the Application, is the Applicant aware of the need to notify any additional governmental entities?

RESPONSE: To the best of Applicants' knowledge at this time, no additional governmental entities need to be notified other than what is contained in the Application.

14) In section 8.1, it is identified that the transmission line route was selected based on several considerations. Please provide an analysis or demonstration that compares the preferred route to the alternative routes for each of the considerations listed, using measures that the Applicant deem appropriate.

RESPONSE: In response to this data request, the "preferred route" would refer to the South Dakota Facility as filed in the Facility Permit Application and shown in Data Response No. 9 numbered BSSE 7. In addition, the "alternative routes" as referenced in this data request would refer to the preliminary routes through Dickey and Sargent counties in North Dakota and which then proceed south through western Marshall and the northwestern portion of Day counties to roughly Bristol, South Dakota where there is a commonality in the routing. See BSSE 7.

A route through western Marshall and the northwestern portion of Day counties was not selected because the preferred route is shorter in length and may have better soils from a constructability perspective for the structure foundations. The Applicants received several comments regarding very wet soils in the western portion of Marshall County. Additionally, from a constructability perspective, the northern portion of Day County contains many large surface waters and wetlands that would be challenging to span and may require more structures to be placed within surface waters or wetlands. No homes are located within the right-of-way, and no homes are expected to be displaced by the South Dakota Facility. The Applicants are committed to working with homeowners and other landowners along the route to address concerns.

The alternative routes through Dickey and Sargent counties would 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 Heela 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 lands. The South Dakota Game, Fish, and Parks Department had also had concerns with the alternative routes in western 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.

In addition, the Applicants have been working with Native American tribes agencies who expressed that the preferred route was more desirable than the alternative route due to the higher percentage of the preferred route that crosses tilled land compared to the alternative routes which crossed larger percentages of pasture/prairie land. The tilled land in general has a lower probability of containing intact, undisturbed areas of importance to the tribes.

Both the preferred and the alternative routes minimize effects to Federal Aviation Administration airports and other land use conflicts.

Route development involves the analysis of many diverse criteria and the preferred route minimizes effects to populated areas and the natural environment, while also taking engineering constraints, overall length, and cost into account. The Applicants have addressed concerns expressed by stakeholders during the routing process and selected a single-pole structure to minimize potential effects with the smallest structure footprint and longer spans to reduce the number of structures.

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 First 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 is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 21 day of October, 2013.

MONTANA-DAKOTA UTILITIES CO.

By _____
Henry Ford
Its Director – Electric Transmission Engineering

Subscribed and sworn to before me this 21st day of October, 2013.

DENYS SCHWARTZ
Notary Public
State of North Dakota
My Commission Expires December 31, 2018

_____
Notary Public – South Dakota
(SEAL)

My Commission Expires: 12/31/18

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 First 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 is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 18th day of October, 2013.

OTTER TAIL POWER COMPANY

By Jason J Weiers
Jason Weiers
Its Manager, Delivery Planning

Subscribed and sworn to before me this 18th day of October, 2013.

Carol J. Kocher
Notary Public – South Dakota
(SEAL)

My Commission Expires: Jan. 31, 2015

CAROL J. KOCHER
Notary Public-Minnesota
My Commission Expires Jan 31, 2015

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.

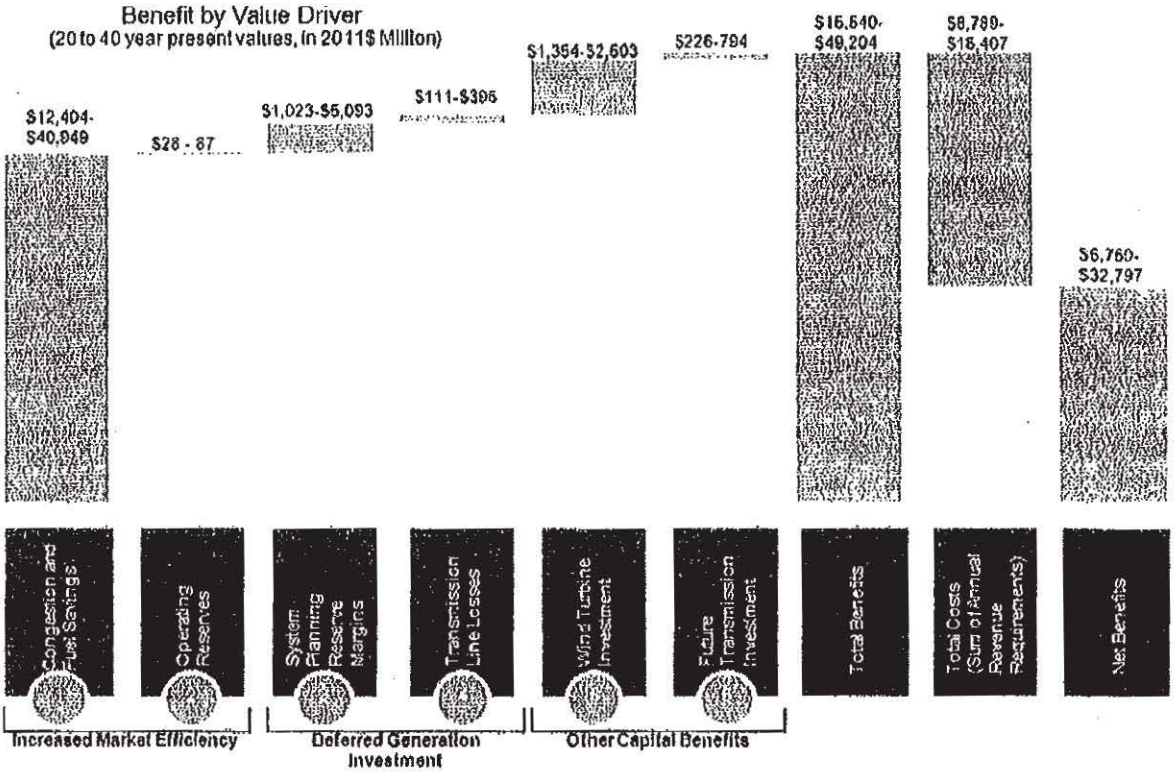


Figure 1 – Estimated Present Value Benefits of MVP Portfolio

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.

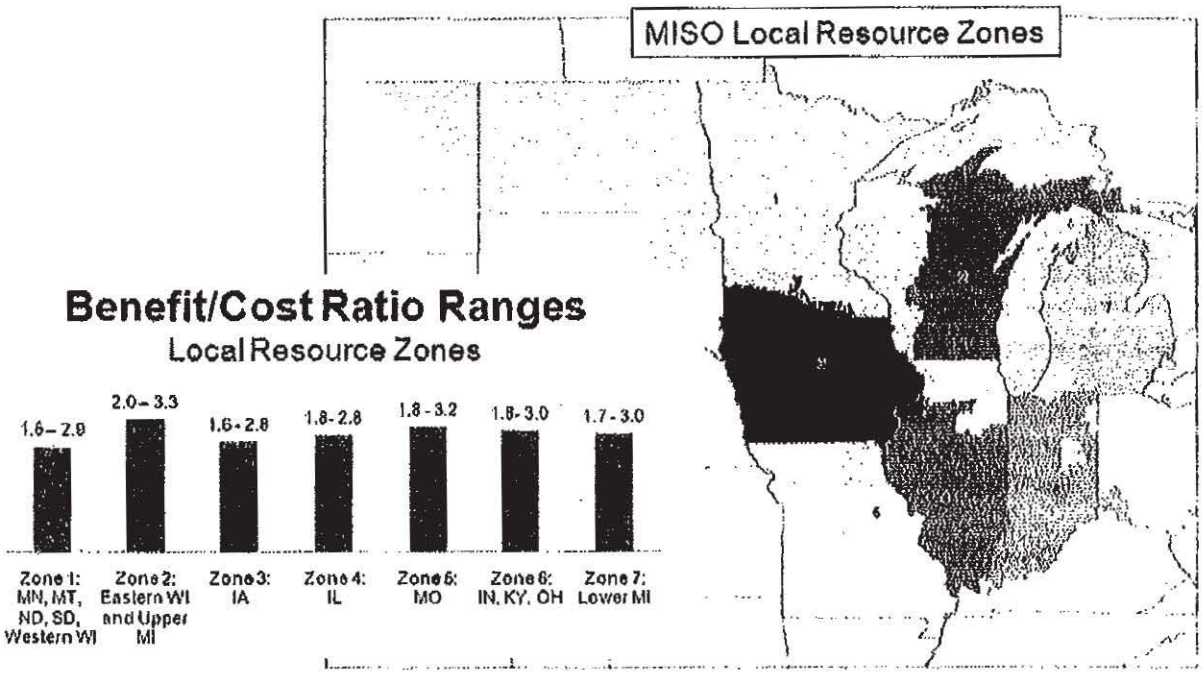


Figure 2 – Benefit-Cost Ratios to Local Resource Zones Across MISO

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 corner structures on non-cultivated land requests a structure without guy-wires, then the Project may consider that request on a case-by-case basis.

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, 2016

Vicki Lynn Severson
Notary Public
(SEAL)

My Commission Expires: Jan. 31, 2015

CERTIFICATE OF SERVICE

I, Thomas J. Welk, do hereby certify that I am a member of the law firm of Boyce, Greenfield, Pashby & Welk, LLP, attorneys for Montana-Dakota Utilities Co. and Otter Tail Power Company and that on this 15th day of April, 2014, a true and correct copy of Montana-Dakota Utilities Co. and Otter Tail Power Company's Responses to Staff's Second Set of Data Requests to Applicants Dated March 10, 2014 was served via e-mail and first-class mail as well as a CD containing BSSE 64 to 267 and BSSE 329 to 331, for which confidential treatment has been requested, and a CD containing BSSE 268 to 328 was transmitted via first-class mail to the following addresses listed:

Ms. Patricia Van Gerpen
Executive Director
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
patty.vangerpen@state.sd.us

Ms. Karen Cremer
Staff Attorney
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
karen.cremer@state.sd.us

Mr. Brian Rounds
Staff Analyst
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
brian.rounds@state.sd.us

Mr. Darren Kearney
Staff Analyst
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
Darren.kearney@state.sd.us

And a true and correct copy of Montana-Dakota Utilities Co. and Otter Tail Power Company's Responses to Staff's Second Set of Data Requests to Applicants Dated March 10, 2014 was served via e-mail and first-class mail as well as a CD containing BSSE 268 to 328 was transmitted via first-class mail to the following addresses listed:

Ms. Jennifer Smestad
General Counsel
Otter Tail Power Company
215 S Cascade St.
Fergus Falls, MN 56538-0496
jsmestad@ottertail.com

Mr. Daniel S. Kuntz
Associate General Counsel
MDU Resources Group, Inc.
P.O. Box 5650
1200 West Century Avenue
Bismarck, ND 58506-5650
dan.kuntz@mduresources.com

Ms. Maxine Fischer
Brown County Auditor
25 Market St., Ste 1
Aberdeen, SD 57401
maxine.fischer@browncounty.sd.gov

Ms. Sandra Raap
Day County Auditor
711 W. First St., Ste. 204
Webster, SD 57274
dcaud@itctel.com

Ms. Karen Layher
Grant County Auditor
210 E. Fifth Ave.
Milbank, SD 57252
karen.layher@state.sd.us

Mr. Bob Pesall - Representing: Gerald Pesall
Pesall Law Firm
PO Box 23
Flandreau, SD 57028
bob@pesall.com

Thomas J. Welk

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 ANSWERS TO GERALD PESALL'S FIRST SET OF DISCOVERY REQUESTS TO APPLICANTS DATED JANUARY 28, 2014

Montana-Dakota Utilities Co. and Otter Tail Power Company (collectively "the Owners"), for its Responses to Gerald Pesall's First Set of Discovery Requests to Applicants dated January 28, 2014, states as follows:

ANSWERS TO INTERROGATORIES

1. State the name, title, contact information and relationship to the applicants of each individual, other than counsel, who assists in preparing answers to these discovery requests.

ANSWER: The answers were prepared based on the knowledge of employees of Otter Tail Power Company, Montana-Dakota Utilities Company, Power Engineers, Inc., Kadrmas, Lee & Jackson and HDR Engineering, Inc. as a whole. The primary persons are as follows, who do not have personal knowledge of all the answers.

Terry Fasteen,
Kadrmas, Lee & Jackson, ROW Services
3203 32nd Ave. South, Suite 201
Fargo, N.D. 58106
Phone: 701-232-5353
terry.fasteen@kljeng.com

EXHIBIT
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Henry Ford, Director
Director Electric Transmission Engineering
Montana-Dakota Utilities Co.
400 N. 4th Street
Bismarck, ND, 58501-4092
Phone: 701-222-7944
henry.ford@mdu.com

Mark Shaw, Project Manager
Power Engineers, Inc.
14220 Ladue Road
Chesterfield, MO 63017
Phone: 405-330-3089
mark.shaw@powereng.com

Dean Pawlowski, Transmission Project Manager
Principal Engineer
Otter Tail Power Company
P.O. Box 496
Fergus Falls, MN 56538-0496
Phone: 218-739-8947
dpawlowski@otpco.com

Angela Piner, Project Manager Environmental Scientist
Associate Vice President
HDR Engineering, Inc.
701 Xenia Avenue South – Suite 600
Minneapolis, MN 55416
Phone: 763-591-5478
angela.piner@hdrinc.com

Jason Weiers, Manager – Delivery Planning
Otter Tail Power Company
P.O. Box 496
Fergus Falls, MN 56538-0496
Phone: 218-739-8311
jweiers@otpco.com

2. Describe the impact, if any, applicants contend the installation of the proposed transmission line will have to property values for real property lying under or within ½ mile of the proposed route, and any facts, studies, or expert opinions upon which that contention is based. Include in your answer both urban and rural property values.

ANSWER: Section 19.1.2 of the South Dakota Facility Permit Application ("the Application") states, among other things, that "The South Dakota Facility is not expected to have significant short- or long-term effects on . . . land values . . . ."

Owners believe that the South Dakota Facility will not have significant short- or long-term effects on land values due to the relatively minimal footprint of the Project. The Project anticipates constructing approximately 5 or 6 monopoles per mile with a span of 700-1,200 feet between poles. The permanent impact is less than 5 acres of the nearly 1,600 acres temporarily and permanently affected by the Project.

3. Describe the impact, if any, applicants contend the installation of the proposed transmission line will have on common species of livestock, including cattle, horses, swine, and poultry which are, or may be, kept under or within ¼ mile of the proposed route, and any facts, studies, or expert opinions upon which that contention is based.

ANSWER: As stated in sections 19.2.2 and 23.4.5 of the Application, no impacts are anticipated to livestock operations due to the Project for the reasons stated in these sections of the Application.

4. Describe the level of soil compaction, if any, applicants contend will result from construction and maintenance of the transmission line, the impact that compaction may have on the productivity of the property, the time, effort, and cost which would be required to restore the soil to its original condition, and the facts, studies, or expert opinions upon which that contention is based.

ANSWER: Soil compaction likely will only occur during construction of the Project. As stated in section 10.3 of the Application, any temporary compaction impact caused by the construction process will be decompacted and restored to preconstruction contours to the extent practicable. No long term impacts from soil compaction are expected because of the decompaction and remediation process described in section 10.3 of the Application.

5. State whether applicants have prepared any estimates, and if so, provide those estimates together with the facts, studies, or expert opinions upon which they are based, as to the total dollar value for:

   a. Annual lost productivity due to proposed transmission line's impact on livestock along the entire lengthy of the proposed line.

   b. Annual lost productivity due to soil compaction and interference with farming operations caused from construction and ongoing maintenance along the entire lengthy of the proposed line.

   c. Total reduction in real property values along the entire length of the proposed line, both for property lying under the proposed route and for adjacent property within ½ mile.

ANSWER: As discussed in sections 14.1.2 and 19.2 of the Application, and as indicated in answers to interrogatories numbers 2, 3, and 4 above, the permanent impact is expected to be minimal. The Owners have not prepared annual estimates of lost productivity, and no such annual estimates are required to be prepared.

6. State the impact on road maintenance requirements and costs, if any, which the applicants contend will be incurred by state and local governments as a result of increased road use during initial construction and as a result of ongoing maintenance, and the facts, studies, or expert opinions upon which that contention is based.

ANSWER: As indicated in Section 19.3 of the Application, there will be no impacts on road maintenance requirements and costs. While the roads in the vicinity of the Project will see increased usage during the construction phase of the Project, the Owners do not anticipate any permanent impacts to the area road maintenance. Any damage to area roads will be monitored and repaired during construction and following completion of construction of the Project.

7. State the number of actual residential or commercial customers in South Dakota which applicants contend will benefit from the construction of the proposed line, the facts, studies, or expert opinions upon which that contention is based, and describe in detail:

   a. The current and projected increase in service reliability those residential and commercial customers will experience, if any,

   b. The current and projected average cost for electrical services those residential and commercial customers will experience, if any.

   c. Any other measurable benefits that those residential and commercial customers may be able to observe.

ANSWER: The Project involves a high voltage transmission line, developed collaboratively as a MISO Multi-Value Project (MVP) to increase transmission capacity to provide the entire MISO footprint ("Midwest Region") the infrastructure needed to support the renewable energy mandates for all the states in the Midwest Region.

The Owners are not able to identify the number of actual residential or commercial customers in South Dakota that will benefit from the construction of the Project because transmission system modeling involved in identifying high voltage transmission facilities is not done to the individual customer level. Rather, benefits from the construction of a transmission project are identified on the basis of geographic areas. Since the need for the Project is driven by demand across the Midwest Region, benefits are quantified regionally rather than on a state-by-state basis.

The numerous benefits offered by this Project and the rest of the Multi-Value Projects ("MVPs") are described more fully in the report issued by MISO called "Multi-Value Project Portfolio – Results and Analyses" included as Appendix B.1 to the Application (specifically, see Section 8 of this report for the quantifiable benefits of the MVPs to the Midwest Region).

a. **Maintaining reliable service to customers is always a high priority of the Owners. As stated in Section 6.1 of the Application (Page 19), the construction of this Project will benefit the Owners' customers by enhancing connections across the transmission system to be better able to withstand system failures. Additionally, the Project will remove overloads on local transmission facilities as more generation facilities are constructed in the region. Furthermore, due to the interconnected nature of the transmission system, the Project will also support the transmission system outside of MISO by providing a new high voltage source to the existing transmission system.**

b. **As stated in sections 4.0 and 6.0 of the Application, the Big Stone South to Ellendale project is one of seventeen MVPs approved by MISO. The purpose of these MVPs is to reduce the wholesale cost of energy delivery for the consumers across the Midwest Region by enabling the delivery of low-cost generation to load, reduce congestion costs, and increase system reliability. Because the benefits of the MVPs are spread throughout MISO, the costs of these MVPs are shared among all customers who are served by utilities that are members of MISO. Therefore, all customers in the state of South Dakota who are served by utilities within MISO will receive quantifiable benefits and a portion of the costs associated with the MVPs. Outside of OTP and MDU, the Owners are not familiar with the portion of MVP costs other South Dakota customers will receive from these other MISO member utilities and therefore are not able to quantify the current and projected average cost for electrical services for all customers in South Dakota resulting from the Project or the rest of the MVPs.**

c. **In addition to the benefits discussed above and found within the MISO report of Appendix B.1 of the Application, other benefits of the Project are discussed in sections 4.0 and 19.1.2 of the Application. These included both short-term and long-term benefits. The presence of this Project in South Dakota will allow for flexibility in serving customer growth and new generation resources in the State by having access to a robust transmission line bolstering the existing transmission system. Interconnections to this line will be open to any interested party on a non-discriminatory basis in accordance with rules established by the Federal Energy Regulatory Commission (FERC) and administered by MISO on behalf of the Owners. Local commercial residents are expected to reap the benefits of local economic development as a result of the Project, namely from lodging, meals, and other consumer goods and services of the approximately 75-150 workers involved in activities leading up to and directly involved with the construction of the Project. The impact to the local economics, not including**

property taxes, from the Project is estimated to range from $3 million to $7 million through the construction period of the Project.

Long-term benefits to residential and commercial customers also will include a variety of taxes (property taxes, contractor tax, excise tax, sales tax, and use tax) which will increase the tax base for counties in which this facility is located. Based on the current effective composite tax rates for South Dakota, the Owners estimate a yearly property tax payment in the range of $1.75 to $2.25 million. This equals an approximate tax per mile of transmission line in the range of $11,200 to $14,500 in South Dakota based on approximately 155 miles of line. On a county by county basis, this calculates to property taxes of approximately $715,000 to $885,000 for Brown County, $535,000 to $755,000 for Day County, and $490,000 to $605,000 for Grant County.

Furthermore, the Owners' preliminary projections of sales/use taxes and contractor excise taxes paid during the project range from $5.5 million to $9 million.

8. State the number of actual residential or commercial customers in Minnesota which applicants contend will benefit from the construction of the proposed line, the facts, studies, or expert opinions upon which that contention is based, and describe in detail:

   a. The current and projected increase in service reliability those residential and commercial customers will experience, if any.

   b. The current and projected average cost for electrical services those residential and commercial customers will experience, if any.

   c. Any other measurable benefits that those residential and commercial customers may be able to observe.

ANSWER: The Project involves a high voltage transmission line, developed collaboratively as a MISO Multi-Value Project (MVP) to increase transmission capacity to provide the entire Midwest Region the infrastructure needed to support the renewable energy mandates for all the states in the Midwest Region.

The Owners are not able to identify the number of actual residential or commercial customers in Minnesota that will benefit from the construction of the Project because transmission system modeling involved in identifying high voltage transmission facilities is not done to the individual customer level. Rather, benefits from the construction of a transmission project are identified on the basis of geographic areas. Since the need for the Project is driven by demand across the Midwest Region, benefits are quantified regionally rather than on a state-by-state basis.

The numerous benefits offered by this Project and the rest of the MVPs are described more fully in the report issued by MISO called "Multi-Value Project Portfolio – Results and Analyses" included as Appendix B.1 to the Application (specifically, see Section 8 of this report for the quantifiable benefits of the MVPs to the Midwest Region).

a. **Maintaining reliable service to customers is always a priority of the Owners. As stated in Section 6.1 of the Application (Page 19), the construction of this Project will benefit the Owners' customers by enhancing connections across the transmission system to be better able to withstand system failures. Additionally, the Project will remove overloads on local transmission facilities as more generation facilities are constructed in the region. Furthermore, due to the interconnected nature of the transmission system, the Project will also support the transmission system outside of MISO by providing a new high voltage source to the existing transmission system.**

b. **As stated in sections 4.0 and 6.0 of the Application, the Big Stone South to Ellendale project is one of seventeen MVPs approved by MISO. The purpose of these MVPs is to reduce the wholesale cost of energy delivery for the consumers across the Midwest Region by enabling the delivery of low-cost generation to load, reduce congestion costs, and increase system reliability. Because the benefits of the MVPs are spread throughout MISO, the costs of these MVPs are shared among all customers who are served by utilities that are members of MISO. Therefore, all customers in the state of Minnesota who are served by utilities within MISO will receive quantifiable benefits and a portion of the costs associated with the MVPs. Outside of OTP, the Owners are not familiar with the portion of MVP costs other Minnesota customers will receive from these other MISO member utilities and therefore are not able to quantify the current and projected average cost for electrical services for customers in Minnesota resulting from the Project or the rest of the MVPs.**

c. **In addition to the benefits discussed above and found within the MISO report of Appendix B.1 of the Application, other benefits of the Project are discussed in sections 4.0 and 19.1.2 of the Application. These included both short-term and long-term benefits. Although these benefits will not be as great as the states in which construction will occur, it is feasible that Minnesota may reap the benefits of some local economic development as a result of the Project, namely from lodging, meals, and other consumer goods and services of some workers involved in activities leading up to and directly involved with the construction of the Project. Furthermore, the Project will improve the ability to serve present and future economic development in the area. Electricity is one of the foundations of the economic development in the country.**

9. State the number of actual residential or commercial customers in North Dakota which applicants contend will benefit from the construction of the proposed line,

the facts, studies, or expert opinions upon which that contention is based, and describe in detail:.

a. The current and projected increase in service reliability those residential and commercial customers will experience, if any.

b. The current and projected average cost for electrical services those residential and commercial customers will experience, if any.

ANSWER: The Project involves a high voltage transmission line, developed collaboratively as a MISO Multi-Value Project (MVP) to increase transmission capacity to provide the entire Midwest Region the infrastructure needed to support the renewable energy mandates for all the states in the Midwest Region.

The Owners are not able to identify the number of actual residential or commercial customers in North Dakota that will benefit from the construction of the Project because transmission system modeling involved in identifying high voltage transmission facilities is not done to the individual customer level. Rather, benefits from the construction of a transmission project are identified on the basis of geographic areas. Since the need for the Project is driven by demand across the Midwest Region, benefits are quantified regionally rather than on a state-by-state basis.

The numerous benefits offered by this Project and the rest of the MVPs are described more fully in the report issued by MISO called "Multi-Value Project Portfolio – Results and Analyses" included as Appendix B.1 to the Application (specifically, see Section 8 of this report for the quantifiable benefits of the MVPs to the MISO region).

a. Maintaining reliable service to customers is always a priority of the Owners. As stated in Section 6.1 of the Application (Page 19), the construction of this Project will benefit the Owners' customers by enhancing connections across the transmission system to be better able to withstand system failures. Additionally, the Project will remove overloads on local transmission facilities as more generation facilities are constructed in the region. Furthermore, due to the interconnected nature of the transmission system, the Project will also support the transmission system outside of MISO by providing a new high voltage source to the existing transmission system.

b. As stated in sections 4.0 and 6.0 of the Application, the Big Stone South to Ellendale project is one of seventeen MVPs approved by the MISO. The purpose of these MVPs is to reduce the wholesale cost of energy delivery for the consumers across the Midwest Region by enabling the delivery of low-cost generation to load, reduce congestion costs, and increase system reliability. Because the benefits of the MVPs are spread throughout MISO, the costs of these MVPs are shared among all customers who are served by utilities that are

members of MISO. Therefore, all customers in the state of North Dakota who are served by utilities within MISO will receive quantifiable benefits and a portion of the costs associated with the MVPs. Outside of OTP and MDU, the Owners are not familiar with the portion of MVP costs other North Dakota customers will receive from these other MISO member utilities and therefore are not able to quantify the current and projected average cost for electrical services for customers in North Dakota resulting from the Project or the rest of the MVPs.

c. In addition to the benefits discussed above and found within the MISO report of Appendix B.1 of the Application, other benefits of the Project are discussed in sections 4.0 and 19.1.2 of the Application. These included both short-term and long-term benefits. The presence of this Project in North Dakota will allow for flexibility in serving customer growth and new generation resources in the State by having access to a robust transmission line bolstering the existing transmission system. Interconnections to this line will be open to any interested parties on a non-discriminatory basis in accordance with rules established by the Federal Energy Regulatory Commission (FERC) and administered by MISO on behalf of the Owners. Local commercial residents are expected to reap the benefits of local economic development as a result of the Project, namely from lodging, meals, and other consumer goods and services of the workers involved in activities leading up to and directly involved with the construction of the Project.

Long-term benefits to residential and commercial customers also will include a variety of taxes which will increase the tax base for Dickey County. Furthermore, the Project will improve the ability to serve present and future economic development in the area. Electricity is one of the foundations of the economic development in the country.

10. Describe in detail nature of the Ellendale substation, to which the proposed transmission line is projected to connect, and any other transmission lines, generating facilities, or other facilities which will be directly connected to that substation.

ANSWER: The Ellendale 345-kV Substation will be constructed and owned by Montana-Dakota. It will be located about 1.5 miles west of Ellendale, North Dakota, along the west side of 87th Avenue SE in Section 9, Ellendale Township (Township 129N, Range 63W), Dickey County, and across the street from the existing Montana-Dakota Ellendale 230-kV Substation, which is located in Section 10 of Ellendale Township. The footprint of the substation will be approximately 11.3 acres. Construction of the new Ellendale 345-kV Substation will involve the installation of two 345-kV circuit breakers, one 345-kV line termination structure, five 345-kV disconnect switches, one 345-kV/230-kV 300/400/500 Mega Volt Ampere (MVA) Auto-Transformer, a 345-kV Shunt Line Reactor, eight 230-kV circuit breakers, twenty-one 230-kV disconnect switches, four 230-kV line termination

structures, associated arresters, Capacitive Voltage Transformers (CVTs), bus work, and protective relaying and controls required to support the circuit breakers. The existing Merricourt, Tatanka, and Hankinson 230-kV lines will be relocated to terminate in this substation, as well as an Ellendale 230-kV tie line back to the original Ellendale 230-kV Substation.

11. Describe in detail nature of the Big Stone substation, to which the proposed transmission line is projected to connect, and any other transmission lines, generating facilities, or other facilities which will be directly connected to that substation.

ANSWER: The Big Stone South substation will be a 345/230kV substation that will be constructed to allow two new 230kV lines and two new 345kV lines. The 230kV lines will extend between the existing Big Stone Power plant and this new substation. One 345kV line will connect this facility to the new Ellendale 345kV substation and the second 345kV line will connect this facility to the Brookings County 345kV substation.

This new substation will be located in the NE1/4 of the NW1/4 of section 24, Township 121N, Range 47W. The new substation includes four 230kV breakers for the incoming 230kV lines from the existing Big Stone Power plant 230kV substation. Two 345/230/13.8 kV, 448MVA transformers, with 25 Mvar reactors, will step-up the voltage to 345kV for two new 345kV lines. The 345kV bus will have four 345kV breakers to provide protection for these transformers and the new 345kV lines. A new control house and a fenced area of approximately 600 x 600 feet and will be located on 39 acres.

12. Describe in detail the impact, if any, applicants contend that the proposed transmission line would have on the usability and productivity of agricultural equipment which is guided by global positioning systems (GPS), or by ground base transmitter systems, when used under or within ¼ mile of the transmission line. Identify any facts, studies, or expert opinions upon which that contention is based.

ANSWER: Section 14.4 of the Application addresses any impact of the Project on the use of global positioning systems (GPS). There are two possible impacts to GPS systems: (1) a line-of-sight obstruction; and (2) electric field corona from high voltage power lines. The Project will have no effect on the usability and productivity of GPS or ground based transmitter systems.

Regarding "line of sight" obstructions, the Project's impact to GPS systems is similar to the impact from trees, buildings or other line-of-sight obstructions. Any limited line of sight impact on the GPS system caused by the Project's structures is expected to be temporary and will be eliminated once the equipment or GPS receiver moves such that the structure no longer impedes the line of sight between the receiver and the GPS satellites at issue.

Some GPS systems also make use of real-time kinematic (RTK) systems to improve the accuracy of the GPS system by making use of the ultra-high frequency radio communication range. RTK systems are ground based GPS systems. RTK signals are transmitted from antennas that are typically only a few meters high, and thus, transmission line towers are not expected to produce much blocking of the line of sight signals from these sources either. Repositioning of the RTK base station antenna should resolve any line of sight interference issues if they occur.

Regarding electric field corona from the Project, there is no expected impact. Electric field corona from high voltage transmission lines can produce radio frequency emissions, but they are primarily below the frequencies used for satellite and ground based GPS systems. Therefore, the radio frequency broadcast produced by high voltage power lines is very unlikely to interfere with or overcome GPS signals.

The Application references an IEEE study by Silva & Olsen, 2002, that studied the impact of overhead conductors on GPS signals. The study found that the overhead conductors did not block or affect the use of GPS satellite signals.

13. Describe in detail the impact, if any, applicants contend the proposed transmission line will have on wild game species common to the area where the line is to be constructed, including but not limited to its impact on whitetail deer, walleye pike, northern pike, ring-neck pheasant and Canadian geese.

ANSWER: Section 11.0 of the Application describes the anticipated effects to water resources, including fishery resources. Because the Project will span all streams and lakes, no impacts to fish species or fishing uses will occur.

Section 12.0 of the Application also describes the anticipated impacts to terrestrial wildlife species, including game species. Once constructed, the transmission line could result in impacts to avian game species through collisions. The Project will work with proper wildlife authorities, both State and Federal, to identify areas where bird diverters may need to be installed to minimize potential collisions. In addition, the transmission line will be designed considering the Avian Power Line Interaction Committee's Suggested Practices for Avian Protection On Power Lines: State of the Art in 2006 to minimize the potential for electrocution.

The Project is not anticipated to affect the population of any game species in the region it crosses.

14. Describe in detail the methodology used to select the proposed route, the specific factors by the applicants in selecting the proposed route, including but not limited to total cost, engineering constraints, and legal concerns.

ANSWER: Section 8.1 of the Application lays out the detailed methodology used to select the proposed route. As listed on page 26 of the Application, the line route in South Dakota was selected based on several factors, including:

- **Minimizing total length and construction costs**
- **Minimizing impacts to humans and human settlements, including (but not limited to) displacement, noise, aesthetics, cultural values, recreation, and public services**
- **Consideration of effects on public health and safety**
- **Offsetting existing ROW (roadway or other utility ROW) or section lines to minimize impacts to land-based economies, including (but not limited to) agricultural fields and mining facilities**
- **Minimizing effects on archaeological, cultural properties, and historic resources**
- **Minimizing impacts to wetlands, surface waters, and rivers**
- **Minimizing impacts to rare or endangered species and unique natural resources**
- **Minimizing effects to airports or other land use conflicts**
- **Constructing the transmission lines near existing roadway ROW or close to the half section lines to minimize impacts to agricultural fields**
- **Placing structures to minimize impacts to agricultural production/allow for the movement of farm equipment**
- **Avoiding a diagonal route across agricultural fields wherever possible**
- **Preference for mono-pole structures rather than H-frame structures**

As described above, engineering constraints and costs were two of many criteria considered. Legal concerns considered in the routing process included confirming potential routes could be constructed consistent with applicable federal, state, and local laws and regulations. The proposed route was selected based upon the evaluation of the foregoing routing criteria.

The Owners continue to evaluate possible changes to the proposed route based upon discussions with landowners. The changes to the route may occur both before the hearing on the Application, and after the hearing. If a material change in the proposed route is adopted by the Owners before the hearing, the Owners will identify that change to the proposed route as part of the prefiled testimony consistent with the deadlines imposed by the Commission or at the hearing. For material route changes after the hearing, the Owners will update the Commission through the appropriate processes.

15. Describe each alternative proposed route considered by the applicants prior to selecting the currently proposed route.

ANSWER: The attached map numbered BSSE 9 shows the preliminary routes that were considered by the Owners prior to selecting the preferred route.

Between the Ellendale Substation and the general vicinity of the town of Bristol, there were two main route alternatives considered; one that follows the ultimately selected route south into South Dakota, and one that heads east from the Ellendale area for approximately 35 to 40 miles before turning south into South Dakota. This second main route alternative had several smaller alternative segments. One location with alternative segments occurs approximately ten miles east of Ellendale, where the alternatives are located 0.5 to 1 mile apart. Another set of alternative segments is located at the North Dakota/South Dakota border crossing area, where the alternatives parallel each other at a distance of approximately 2 to 5 miles apart, for a length of approximately twenty miles.

Between the Bristol area and the Big Stone South Substation, there were several other areas with minor route alternatives. These respective areas usually consist of parallel route alternatives, generally 0.5 to two miles apart.

16. For each alternative route so-identified, describe in detail how the factors set out in your answer to request #14 were considered, and the reason(s) why that alternative route was ultimately rejected.

ANSWER: Section 8.2 of the Application describes the methodology used in selecting the proposed route and rejecting the alternative routes.

The routes through western Marshall and the northwestern portion of Day counties was not selected because the preferred route is shorter in length, and expected to have better soils for construction activities and structure foundations. The Owners received several comments regarding very wet soils in the western portion of Marshall County. Additionally, from a constructability perspective, the northern portion of Day County contains many large surface waters and wetlands that would be challenging to span and may require more structures to be placed within surface waters or wetlands.

The alternative routes through Dickey and Sargent counties would 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 lands. The South Dakota Game, Fish, and Parks Department had also had concerns with the alternative routes in western Marshall County being located close to water bird 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.

Additionally, the proposed route differs from the preliminary route for approximately six miles in T120N R56W (Highland Township) and T120N R57W (York Township) in Day County. The preliminary route was rejected in this area because of engineering and constructability constraints associated with crossing the Horseshoe Lake area.

17. Identify any state or federal renewable energy standards which applications contend the proposed line will enable them to meet.

ANSWER: The proposed line is one of the MVPs which, in total, will enable the most economic development and construction of renewable energy projects in the Midwest Region. This includes a combination of local and regional generation projects detailed in section 4.2 in the MVP report included as Appendix B.1 of the Application. In order to spur renewable energy projects, many states have adopted renewable energy standards, which are laws which mandate that a certain amount of energy produced or purchased by its regulated electric utilities must be generated by qualifying renewable energy projects. The transmission studies performed by MISO used in the identification of the Big Stone South to Ellendale project, along with the balance of the MVPs, were based on existing state renewable energy standards in place during the course of the study (primarily during 2011). The study results indicate that the MVP portfolio will enable transmission of 41 Million Megawatt hours (MWh) of wind energy per year across the Midwest Region. As determined through the MVP studies, this amount of wind energy is anticipated to meet the state renewable energy mandates across the Midwest Region beyond 2026.

Additional information related to the state renewable energy standards facilitated by the Project and the rest of the MVPs can be found in sections 4 and 7 of the MVP report, included as Appendix B.1 of the Application.

18. With respect to the energy to be transmitted on the proposed line, identify the existing or anticipated generating facilities from which that energy will be produced, and the amount of energy anticipated from each.

ANSWER: The Big Stone South to Ellendale 345 kV line will be an integral part of the high voltage transmission system. As such, the line will be available to carry energy from a variety of generating facilities, regardless of fuel type. Due to the interconnected nature of the regional transmission system, the generation that will flow on this line will depend on a number of variables. Too many variables exist to definitively identify the existing or anticipated generating facilities that will have energy transmitted on the Big Stone South to Ellendale 345 kV line. These variables include (among several other factors) generation patterns, load levels, and outages of existing generation or transmission. Therefore, identifying the exact amount of energy from a specific generator flowing across a particular transmission line is not possible. However, if wind-rich areas in eastern South Dakota are developed with future renewable

generation, this future generation will have energy transmitted along this Project given its geographic proximity to these wind-rich areas. BSSE 11 attached is a wind resource map with the route corridor of the Project shown on the same map. As stated in Section 4 of the Application, the Project will increase system capacity which in turn allow for additional opportunities for development of generation, including renewable energy sources, in South Dakota.

19. Describe in detail the percentage of the total energy to be transmitted on the proposed transmission line which will pass to or from the Big Stone South to Brookings County, and/or Brookings County to South East Twin Cities lines once all three projects enter service, and annually thereafter through the year 2024..

ANSWER: Once these three separate Multi-Value Projects (MVPs) are constructed, the total energy transmitted along these three projects will be highly correlated to one another, given their geographic location and electrical connectivity. The Big Stone South to Ellendale 345 kV line will share a common termination point with the Big Stone South to Brookings County 345 kV line at the Big Stone South substation. Likewise, the Big Stone South to Brookings County 345 kV line will share a common termination point with the Brookings County to South East Twin Cities line at the Brookings County substation. Identifying expected or even anticipated energy transmitted on the Big Stone South to Ellendale line in comparison to the other two projects will depend on a number of variables (as described in interrogatory #18).

Based on knowledge of the transmission system in this region, the flow of energy in this area will generally be from northwest to southeast, flowing from Ellendale to Big Stone South to Brookings County and then to the Southeast Twin Cities. However, transmission facilities often experience bi-directional flows and therefore could also flow from southeast to northwest depending on the conditions present on the transmission grid.

20. Describe in detail the insurance policies or other liability protections, if any, applicants will maintain for themselves against claims which relate to the towers, wires, and other components of the proposed transmission line, and the means by which that protection will be maintained through the useful life of the proposed transmission line.

ANSWER: The Owners maintain property and casualty 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.

21. In the event that agricultural production activities near the proposed transmission line damage or interfere with the operation of the line (including, for example, a GPS guided tractor colliding with a monopole), describe in detail any liability

protection which applicants will provide to agricultural producers in the event of third party claims against those producers for interruption of service or other damages..

ANSWER: The Owners maintain property and casualty insurance coverages customary for the utilities industry, including general liability insurance. In the event of a claim that falls within the scope of this coverage, the law of torts would apply.

22. Describe in detail the anticipated maintenance schedule for the towers, lines, substations and other components of the proposed transmission line, and the amount of time each are anticipated to remain in operation.

ANSWER: The Owners anticipate they will inspect the towers, components, and conductors at a minimum of twice a year associated with routine maintenance. A patrol typically would be conducted in the spring and fall of each year to minimize the environmental impact. These patrols/inspections typically take two to three weeks per year and are for the most part confined to the facility right of way. If problems are discovered during these inspections, and are not emergency in nature, typically repairs can be scheduled in fall or winter. If for some reason repairs would have to be scheduled when the crops are still in the field the landowner would be compensated for any damages associated with those repairs.

The right of way would be managed as part of the Owners vegetation management program which consists of removal of trees and other vegetation that could interfere with the reliability of the facility, which usually occurs on a four year cycle. This typically takes around three or four weeks per cycle and is scheduled to be performed in the fall or winter.

The substations maintenance consists of inspections, vegetation management, equipment testing, etc. and is typically confined to the fenced area within the substation with the exception of vegetation management which includes just outside the fence and driveways. These items are completed throughout the year and typically take around eight weeks to complete.

The Owners expect the line to be in service for perpetuity. There are not currently have any plans to remove any of our transmission system. However, as noted above, the facilities will require ongoing maintenance in order to operate safely and reliably.

RESPONSES TO DOCUMENT REQUESTS

1. Tower components, insulators, footings, foundations, guy-wires, and any other attachments for the towers which will be used generally to construct the proposed

transmission line and those which would be specifically used upon property owned by Gerald Pesall.

RESPONSE: See BSSE 10 attached.

2. The exact location where the lines and towers for the proposed transmission line would be located in located Day County, South Dakota for the currently selected route and any alternative routes being considered.

RESPONSE: See BSSE 12 to 63. These documents reflect the preliminary estimates of the location of the lines and towers. The exact location of the lines and towers in Day County has not yet been determined.

3. The Big Stone Substation, including a description of any transmission lines other than the proposed transmission line which will directly connect to it.

OBJECTION: Owners object to production of these documents, which are critical energy infrastructure information which is subject to restricted access by applicable federal regulations, including 18 CFR 388.113.

4. The Brookings County substation, including a description of any transmission lines which will directly connect to it.

OBJECTION: The Owners object to disclosing this information because the Brookings County substation is not part of the Project, and the requested documents exceed the scope of permissible discovery under SDCL 15-6-26(b) and ARSD 20:10:01:01.02. The Owners further object to production of these documents, which are critical energy infrastructure information which is subject to restricted access by applicable federal regulations, including 18 CFR 388.113.

5. The Ellendale Substation, including a description of any transmission lines other than the proposed transmission line which will directly connect to it.

OBJECTION: Owners object to production of these documents, which are critical energy infrastructure information which is subject to restricted access by applicable federal regulations, including 18 CFR 388.113.

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

Jay Skabo, 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 Gerald Pesall's Discovery 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 is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 26 day of February, 2014.

MONTANA-DAKOTA UTILITIES CO.

By _____
Jay Skabo
Its Vice President – Electric Supply

Subscribed and sworn to before me this 26 day of February, 2014.

_____
Notary Public – ~~South Dakota~~
(SEAL)

My Commission Expires: 9-27-17

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 Gerald Pesall's Discovery 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 is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 26 day of February, 2014.

OTTER TAIL POWER COMPANY

By Jason J Weiers
Jason Weiers
Its Manager, Delivery Planning

Subscribed and sworn to before me this 26th day of February, 2014.

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

Vicki Lynn Severson
Notary Public – South Dakota
(SEAL)

My Commission Expires: Jan. 31, 2015

AS TO OBJECTIONS:

Dated February 26, 2014

Thomas J. Welk
Jason R. Sutton
BOYCE, GREENFIELD, PASHBY & WELK, LLP
P.O. Box 5015
Sioux Falls, SD 57117-5015
(605) 336-2424

Jennifer O. Smestad
General Counsel
Otter Tail Power Company
215 S Cascade St.
Fergus Falls, MN 56538-0496
(218) 739-8892

Daniel S. Kuntz
Associate General Counsel
MDU Resources Group, Inc.
P.O. Box 5650
1200 West Century Avenue
Bismarck, ND 58506-5650
(701) 530-1016

CERTIFICATE OF SERVICE

I, Jason R. Sutton, do hereby certify that I am a member of the law firm of Boyce, Greenfield, Pashby & Welk, LLP, attorneys for Montana-Dakota Utilities Co. and Otter Tail Power Company and that on the 26th day of February 2014, a true and correct copy of Montana-Dakota Utilities Co. and Otter Tail Power Company's Answers to Gerald Pesall's First Set of Discovery Requests to Applicants Dated January 28, 2014 was served via first-class mail to the following addresses listed:

Ms. Patricia Van Gerpen
Executive Director
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
patty.vangerpen@state.sd.us

Ms. Karen Cremer
Staff Attorney
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
karen.cremer@state.sd.us

Mr. Brian Rounds
Staff Analyst
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
brian.rounds@state.sd.us

Mr. Darren Kearney
Staff Analyst
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
Darren.kearney@state.sd.us

Ms. Jennifer Smestad
General Counsel
Otter Tail Power Company
215 S Cascade St.
Fergus Falls, MN 56538-0496
jsmestad@ottertail.com

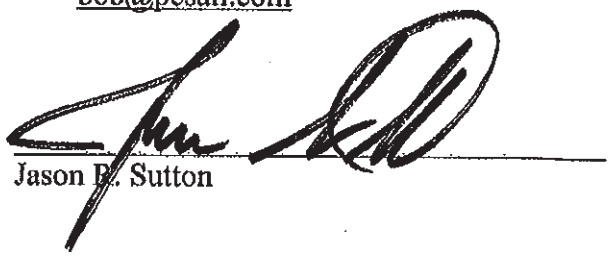
Mr. Daniel S. Kuntz
Associate General Counsel
MDU Resources Group, Inc.
P.O. Box 5650
1200 West Century Avenue
Bismarck, ND 58506-5650
dan.kuntz@mduresources.com

Ms. Maxine Fischer
Brown County Auditor
25 Market St., Ste 1
Aberdeen, SD 57401
maxine.fischer@browncounty.sd.gov

Ms. Sandra Raap
Day County Auditor
711 W. First St., Ste. 204
Webster, SD 57274
dcaud@itctel.com

Ms. Karen Layher
Grant County Auditor
210 E. Fifth Ave.
Milbank, SD 57252
karen.layher@state.sd.us

Mr. Bob Pesall - Representing: Gerald Pesall
Pesall Law Firm
PO Box 23
Flandreau, SD 57028
bob@pesall.com



Jason R. Sutton

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 ANSWERS TO GERALD PESALL'S SECOND SET OF DISCOVERY REQUESTS TO APPLICANTS DATED MARCH 5, 2014

Montana-Dakota Utilities Co. and Otter Tail Power Company (collectively "the Owners"), for its Responses to Gerald Pesall's Second of Discovery Requests to Applicants dated March 5, 2014, states as follows:

ANSWERS TO INTERROGATORIES

1. State the name, title, contact information and relationship to the applicants of each individual, other than counsel, who assists in preparing answers to these discovery requests.

ANSWER: The answers were prepared based on the knowledge of employees of Otter Tail Power Company, Montana-Dakota Utilities Company, Power Engineers, Inc., Kadrmas, Lee & Jackson and HDR Engineering, Inc. as a whole. The primary persons are as follows, who do not have personal knowledge of all the answers.

Terry Fasteen,
Kadrmas, Lee & Jackson, ROW Services
3203 32nd Ave. South, Suite 201
Fargo, N.D. 58106
Phone: 701-232-5353
terry.fasteen@kljeng.com

Henry Ford, Director
Director Electric Transmission Engineering
Montana-Dakota Utilities Co.
400 N. 4th Street
Bismarck, ND, 58501-4092
Phone: 701-222-7944
henry.ford@mdu.com

Mark Shaw, Project Manager
Power Engineers, Inc.
14220 Ladue Road
Chesterfield, MO 63017
Phone: 405-330-3089
mark.shaw@powereng.com

Dean Pawlowski, Transmission Project Manager
Principal Engineer
Otter Tail Power Company
P.O. Box 496
Fergus Falls, MN 56538-0496
Phone: 218-739-8947
dpawlowski@otpco.com

Angela Piner, Project Manager Environmental Scientist
Associate Vice President
HDR Engineering, Inc.
701 Xenia Avenue South – Suite 600
Minneapolis, MN 55416
Phone: 763-591-5478
angela.piner@hdrinc.com

Jason Weiers, Manager – Delivery Planning
Otter Tail Power Company
P.O. Box 496
Fergus Falls, MN 56538-0496
Phone: 218-739-8311
jweiers@otpco.com

2. State the full name, address, telephone number, and occupation of reach witness and/or expert from whom you intend to present testimony in this proceeding, and provide a summary of the facts and opinions which each is expected to provide

ANSWER: At this time, Owners intend to call the following witnesses who are all qualified as experts:

Henry Ford, Director
Director Electric Transmission Engineering
Montana-Dakota Utilities Co.
400 N. 4th Street
Bismarck, ND, 58501-4092
Phone: 701-222-7944
henry.ford@mdu.com

Jason Weiers, Manager – Delivery Planning
Otter Tail Power Company
P.O. Box 496
Fergus Falls, MN 56538-0496
Phone: 218-739-8311
jweiers@otpco.com

Daniel Fredrickson, Project Engineer
Power Engineers, Inc.
14220 Ladue Road
Chesterfield, MO 63017
Phone: 405-330-3089

Jon Leman, Electrical Systems Study Engineer
Power Engineers, Inc.
14220 Ladue Road
Chesterfield, MO 63017
Phone: 405-330-3089

Angela Piner, Project Manager Environmental Scientist
Associate Vice President
HDR Engineering, Inc.
701 Xenia Avenue South – Suite 600
Minneapolis, MN 55416
Phone: 763-591-5478
angela.piner@hdrinc.com

The specific substance of the testimony will be disclosed in the prefiled testimony deadlines imposed by the Public Utilities Commission of South Dakota ("the Commission"), but generally, these witnesses will provide the testimony to establish the Owners' burden of proving that the Commission should issue the requested permit for the Big Stone South to Ellendale Project ("the Project").

3. Describe in detail the projected cost difference between the currently proposed route and the other potential routes examined by the applicants for the construction of the transmission facility.

ANSWER: The Owners have not calculated the projected cost differential between the currently proposed route and the other potential routes identified in BSSE 9, which was produced as part of the Owners' response to Gerald Pesall's First Set of Discovery Requests to Applicant. The best estimate of cost is the length of the proposed route. The rejected preliminary route shown on BSSE 9, which goes through Marshall County and western Day County, is longer than the proposed route. The length of the proposed route and corresponding cost was not the sole basis, however, for selecting the proposed route. Instead, the proposed route was selected based on the route selection process and considerations discussed in section 8.1 of Application to Public Utilities Commission of the State of South Dakota, as amended ("the Application").

4. Describe in detail the impact, if any, which applicants contend the proposed facility may have upon persons using either pacemakers, cochlear implants, or similar devices while under or near the transmission line.

ANSWER: Owners do not anticipate any impact on persons with pacemakers, cochlear implants, or similar devices while under or near the transmission line at ground level.

5. Describe in detail the impact, if any, which applicants contend the proposed facility may have upon electronically controlled planting equipment when operated under or near the transmission line.

ANSWER: Owners do not expect that transmission line electric and magnetic fields will impact electronic controls of planting equipment. Isolated cases of interference related to GPS based systems are possible but unlikely.

As stated in answer to interrogatory number 12 in Gerald Pesall's First Set of Discovery Requests to Applicants dated January 28, 2014, section 14.4 of the Application addresses any impact of the Project on the use of global positioning systems (GPS). There are two possible impacts to GPS systems: (1) a line-of-sight obstruction; and (2) electric field corona from high voltage power lines. The Project will have no effect on the usability and productivity of GPS or ground based transmitter systems.

Regarding "line of sight" obstructions, the Project's impact to GPS systems is similar to the impact from trees, buildings or other line-of-sight obstructions. Any limited line of sight impact on the GPS system caused by the Project's structures is expected to be temporary and will be eliminated once the equipment or GPS receiver moves such that the structure no longer impedes the line of sight between the receiver and the GPS satellites at issue.

Some GPS systems also make use of real-time kinematic (RTK) systems to improve the accuracy of the GPS system by making use of the ultra-high frequency radio communication range. RTK systems are ground based GPS systems. RTK signals are transmitted from antennas that are typically only a few meters high, and thus, transmission line towers are not expected to produce much blocking of the line of sight signals from these sources either. Repositioning of the RTK base station antenna should resolve any line of sight interference issues if they occur.

Regarding electric field corona from the Project, there is no expected impact. Electric field corona from high voltage transmission lines can produce radio frequency emissions, but they are primarily below the frequencies used for satellite and ground based GPS systems. Therefore, the radio frequency broadcast produced by high voltage power lines is very unlikely to interfere with or overcome GPS signals.

6. In the event a landowner's average crop yields are reduced due to construction activities during the construction process, or as a result of ongoing maintenance, describe the compensation, if any, which applicants will provide to landowners to offset reduced crop insurance payments in future years.

ANSWER: If damage occurs to crops during the construction process, the Owners will pay for the crops damaged, including hay land. The damage payment for standing crop shall be determined by the following formula (acres x yield x price per bushel/ton).

The Owners will strive to work with the landowner to jointly establish the acres affected by construction. To determine the yield component, the Owners will consider the yield obtained by the landowner on the remainder of the field affected and historical data. The price per bushel shall be determined by the market rate at the time of the crop damage.

The Owners will pay a lump sum payment equal twice the amount of the crop damage payment calculated pursuant to the formula discussed above. The Owners pay twice the amount of the crop damage calculated to reflect future yield reductions caused by the construction.

Actual crop damages from maintenance operations will be reimbursed by the Project.

7. State the average cost per linear foot to construct the proposed transmission line on the currently proposed route.

ANSWER: The Owners have not calculated the cost per linear foot of constructing the Project. As stated in section 5.0 of the Application, the total estimated cost of the Project is $293 to $370 million in 2013 dollars. Of this amount, according to

section 5.0 of the Application, the cost of transmission line portion of the Project is $265 million to $342 million. As stated in section 2.0 of the Application, the Project includes approximately 160 to 170 miles of transmission line. These estimates can be used to calculate a range of anticipated costs for building each mile of the transmission line.

8. In answer to your Interrogatory No. 6 of Gerald Pesall's First Set of Discovery Requests, you indicate that road damage will be monitored and repaired. Describe in detail who will provide monitoring and repair services, and how they will be provided.

ANSWER: 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.

9. Describe in detail the impact, if any, applicants contend the construction of the proposed facility will have on the field-to-field transmission of soil and plant-born pests, including but not limited to the soybean cyst nematode, and the "sudden death syndrome" fungus, and any preventative measures applicants will take to prevent the transmission of the same during construction and ongoing maintenance of the proposed facility.

ANSWER: 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 Owners 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.

10. Describe in detail any alternative means by which applicants may comply with clean energy mandates imposed by the State of Minnesota in the event that the application is denied.

ANSWER: The Owners assume that the reference to "clean energy mandates imposed by the State of Minnesota" means renewable portfolio standards that apply in Minnesota, which requires that 25% of retail energy sales must come from

renewables by 2025 and 1.5% of retail energy sales coming from solar energy by 2020.

Montana-Dakota Utilities Co. is not subject to Minnesota's clean energy mandates because it does not serve customers within the State of Minnesota. Otter Tail Power Company ("OTP") does serve customers within the State of Minnesota and therefore is subject to the requirements imposed by Minnesota.

Regardless of whether the permit for the Project is granted or denied, OTP would embark on a similar approach to that which it has historically taken when adding generation resources to comply with Minnesota's clean energy mandates.

OTP currently provides about 19% of its total retail sales from wind energy. To date, all of OTP's wind energy has been added cost effectively.

As mentioned in sections 4 and 6 of the Application, the Project, along with the rest of the MVPs, will reduce the wholesale cost of energy delivery for consumers across MISO by increasing transmission capacity. If the Application is denied, the Project may not be built, thereby jeopardizing the benefits the MVP portfolio offers to the MISO region, which includes South Dakota. Without these benefits, energy prices in the MISO region could be higher, therefore increasing costs to consumers system-wide.

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 Gerald Pesall's Second Set of Discovery Requests to Applicants, 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 is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 7th day of April, 2014.

MONTANA-DAKOTA UTILITIES CO.

By _____
Henry Ford
Its Director – Electric Transmission Engineering

Subscribed and sworn to before me this 7th day of April, 2014.

_____
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 Gerald Pesall's Second Set of Discovery Requests to Applicants, 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 is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 4th day of April, 2014.

OTTER TAIL POWER COMPANY

By Jason J Weiers
Jason Weiers

Its Manager, Delivery Planning

Subscribed and sworn to before me this 4th day of April, 2014.

Carol J. Kocher
Notary Public
(SEAL)

My Commission Expires: Jan. 31, 2015

CAROL J. KOCHER
Notary Public-Minnesota
My Commission Expires Jan 31, 2015

CERTIFICATE OF SERVICE

I, Jason R. Sutton, do hereby certify that I am a member of the law firm of Boyce, Greenfield, Pashby & Welk, LLP, attorneys for Montana-Dakota Utilities Co. and Otter Tail Power Company and that on the 7th day of April, 2014, a true and correct copy of Montana-Dakota Utilities Co. and Otter Tail Power Company's Answers to Gerald Pesall's Second Set of Discovery Requests to Applicants Dated March 5, 2014 was served via first-class mail to the following addresses listed:

Ms. Patricia Van Gerpen
Executive Director
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
patty.vangerpen@state.sd.us

Ms. Karen Cremer
Staff Attorney
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
karen.cremer@state.sd.us

Mr. Brian Rounds
Staff Analyst
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
brian.rounds@state.sd.us

Mr. Darren Kearney
Staff Analyst
South Dakota Public Utilities Commission
500 E. Capitol Ave.
Pierre, SD 57501
Darren.kearney@state.sd.us

Ms. Jennifer Smestad
General Counsel
Otter Tail Power Company
215 S Cascade St.
Fergus Falls, MN 56538-0496
jsmestad@ottertail.com

Mr. Daniel S. Kuntz
Associate General Counsel
MDU Resources Group, Inc.
P.O. Box 5650
1200 West Century Avenue
Bismarck, ND 58506-5650
dan.kuntz@mduresources.com

Ms. Maxine Fischer
Brown County Auditor
25 Market St., Ste 1
Aberdeen, SD 57401
maxine.fischer@browncounty.sd.gov

Ms. Sandra Raap
Day County Auditor
711 W. First St., Ste. 204
Webster, SD 57274
dcaud@itctel.com

Ms. Karen Layher
Grant County Auditor
210 E. Fifth Ave.
Milbank, SD 57252
karen.layher@state.sd.us

Mr. Bob Pesall - Representing: Gerald Pesall
Pesall Law Firm
PO Box 23
Flandreau, SD 57028
bob@pesall.com

Jason R. Sutton

Preliminary routes

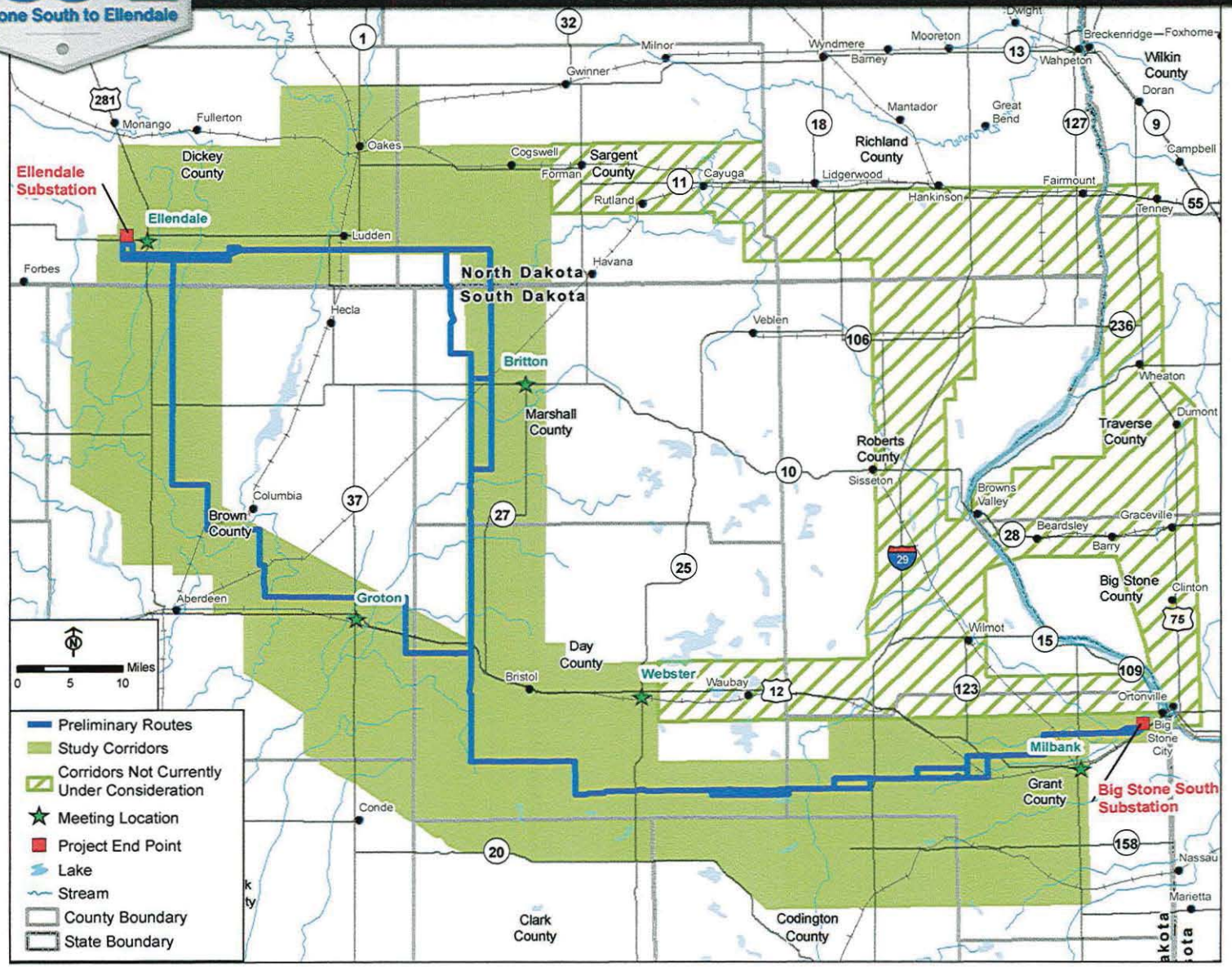


EXHIBIT 6

BSS+E
Big Stone South to Ellendale

Landowner Request

Requested By (Landowner Name)		Date Requested		BSSE ROW Agent	
Phone					
County		Sec-Twp-Rge		Legal Description	
Description of Request					

Landowner Signature Date

ROW Agent Signature Date

PM Notified ☐Yes → Date:

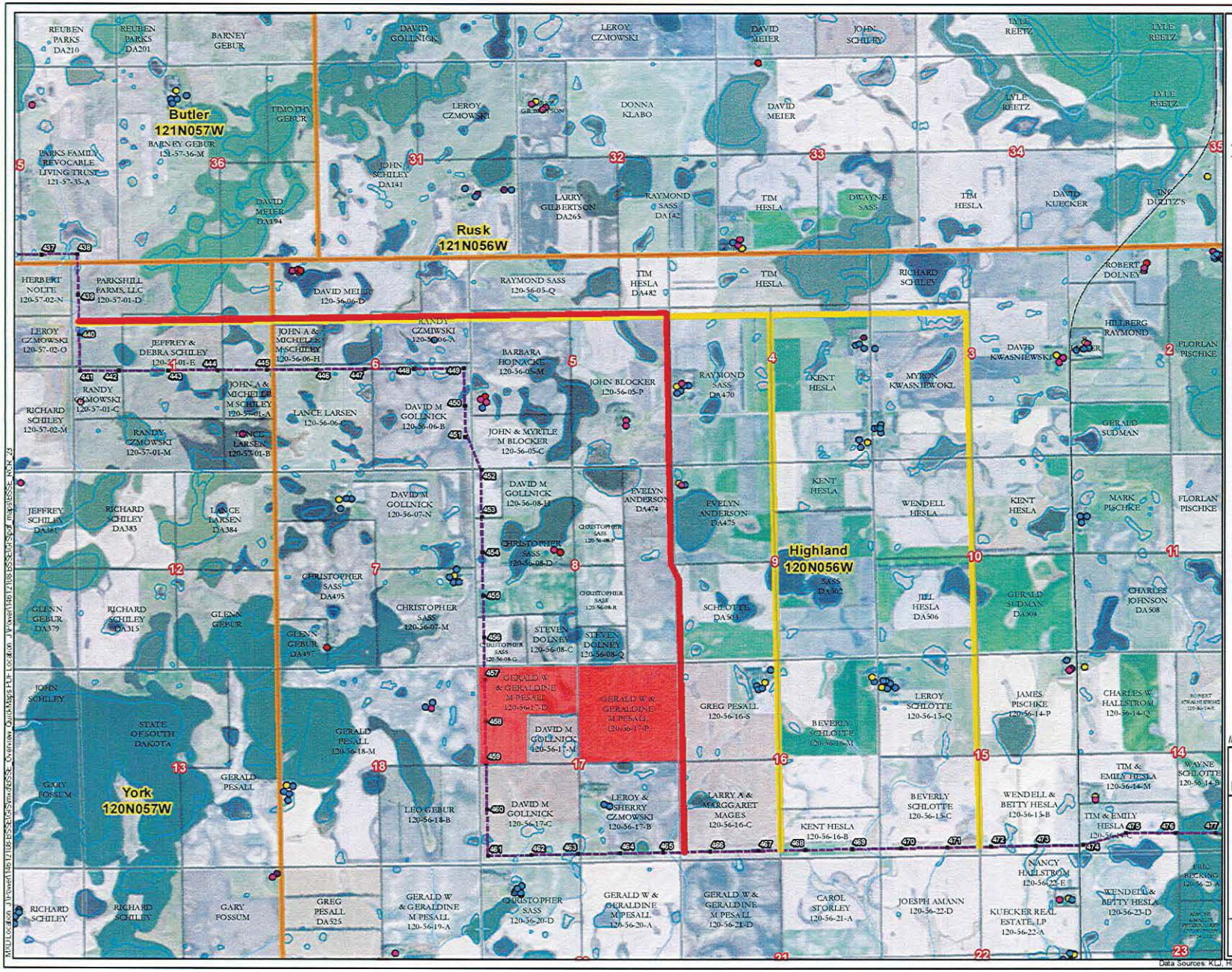
Internal Team Review Date		Owner Team Review Date		Date Presented to Project Team	
Change Can Be Made?	☐Yes ☐No	Change Approved?	☐Yes ☐No		
Reason Change Made/Not Made					

Potential Adjustments Reviewed for Impact	☐Route Centerline ☐Environmental ☐Right-Of-Way ☐Survey ☐Schedule ☐Cost	Impact Comments	

Project Team Notified of Change	☐ HDR	☐POWER	☐ BGPW

tabbies
EXHIBIT
7

EXHIBIT 00



BSSE Overview

BSS+E
Big Stone South to Ellendale

Pesall Re-Route (120-56-17-D&P)

N W E S

0 0.125 0.25 0.5 Miles

Legend

- Land Owner Request
- KLJ Pesall Re-Route

Buildings / Homes
** Occupancy Not Verified **
- Dwelling - Unknown
- Dwelling - Vacant
- Dwelling - Occupied
- Gravel/Mining
- Rec - Park
- Struct - Ag Ops / Farming
- Struct - Business
- Struct - Church
- Struct - Cemetary
- Struct - Other
- Struct - School
- Utility - Other

- Preliminary Structures
- BSSE Route
- Townships
- Counties
- Sections

Railroads
TYPE
- Railroad
- Abandoned Railroad

Utilities
- Electric
- Oil/Gas

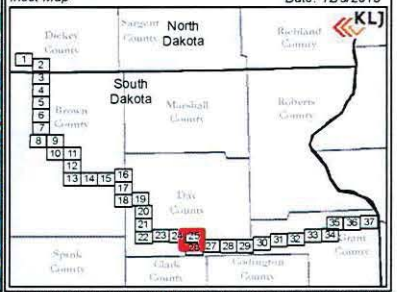
BSSE Parcels
- Parcels

PARCEL_ID
- 120-56-17-D
- 120-56-17-P
- NWI Wetlands

PRELIMINARY DRAFT LOCATIONS

This map was produced by the KLJ GIS Division utilizing ESRI's ArcMap 10.1 on Windows 7 Professional workstation. KLJ, Inc. has compiled this map according to conventional cartographic standards, using what is thought to be the most reliable information available. KLJ does not guarantee freedom from errors or inaccuracies and disclaims any legal responsibility or liability for interpretations made from the map, or decisions based thereon.

Inset Map



Date: 12/9/2013

Data Sources: KLJ, HDR, NDGISHUB, SDGIS Coordinate System: NAD_1983_UTM_Zone_14N, Foot_US

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