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SOUTH DAKOTA PUBLIC
UTILITIES COMMISSION

January 16, 2009

Ms. Karen Cremer
Public Utilities Commission
Capitol Building, 1st Floor
500 East Capitol Avenue
Pierre, SD 57501-5070

In the Matter of the Application of Xcel Energy for a Permit to Construct 6.5 Miles Of 115 kV Transmission Line and Associated Modifications to the Brookings Substation

SDPUC DOCKET NO. EL08-001

RE: FINAL STIPULATION

Dear Ms. Cremer:

Please find enclosed one copy of the stipulation that was filed electronically with the SD PUC today.

If there are questions please contact me at 715-839-4661 or pamela.jo.rasmussen@xcelenergy.com.

Sincerely,

Pamela Jo Rasmussen RA

Pamela Jo Rasmussen
Manager, Siting & Land Rights

Enclosure

BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

In the Matter of the Application of Northern States Power Company For a Permit to Construct 6.5 Miles of 115 kV Transmission Line and Associated Modifications to the Brookings County Substation	)	**STIPULATION**
	)	
	)	**EL08-001**

It is hereby stipulated and agreed by and between Northern States Power Company, a Minnesota corporation ("Applicant" or "NSP-Minnesota"), the Staff of the South Dakota Public Utilities Commission ("Staff"), and the Brookings County Commission (the "County"), that the following Findings of Fact and Conclusions of Law, and an appropriate Order consistent with said Findings and Conclusions may be adopted by the South Dakota Public Utilities Commission (the "Commission") in the above-captioned matter. In support of its Application for a Facility Permit for the Brookings County to Yankee Substation 115 kV Transmission Line Project ("Application"), the Applicant does hereby offer this Stipulation, the Application filed January 31, 2008, and all responses submitted by the Applicant to the Staff's data requests. Staff offers no answering testimony or exhibits conditioned upon the Commission accepting the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. INTRODUCTION

The project ("Project") will be comprised of the following components:

- A new 6.5 mile 115 kV transmission line from the Brookings County Substation to the Minnesota/South Dakota Border; and

- Improvements to the Brookings County Substation to accommodate the new 115 kV line.

2. PURPOSE OF PROJECT

The purpose of the Project is to enhance the transmission system in and around the Buffalo Ridge area to provide transmission outlet capacity for existing and additional wind generation. The Project will also provide a redundant transmission pathway that will remove the reliability-based limit on transmission capacity in the area. The majority proposed or potential wind generation resources in the Upper Midwest are also located on or near the Buffalo Ridge where it extends into eastern South Dakota.

This 115 kV line between the Brookings County Substation and the Yankee Substation ("Yankee – Brookings County No. 2") is one of three new 115 kV transmission lines that the Applicant has proposed to construct and operate in the Buffalo Ridge area of southeastern South Dakota and southwestern Minnesota. Collectively, the three transmission projects are known as the Buffalo Ridge Incremental Generation Outlet ("BRIGO") projects. The BRIGO transmission lines are

projected to create approximately 350 megawatts ("MW") of additional transmission capability for wind generation in the Buffalo Ridge area, increasing generation outlet capability from 825 MW to approximately 1,175 MW. The Project is part of an orderly development of the transmission system necessary over the coming years to allow for the expansion of additional wind generation in and around the Buffalo Ridge.

A delay or termination of the Project would constrain the ability of wind-generated electricity from eastern South Dakota and the Buffalo Ridge area to connect to the transmission system, and therefore hinder development of future wind power in eastern South Dakota and the Buffalo Ridge region.

3. DESCRIPTION OF THE PROJECT

The Project will be comprised of two (2) primary components in South Dakota:

a. Yankee – Brookings Transmission Line No. 2. From the Minnesota/South Dakota border, the line follows 209th Street west for approximately one and three-fourths miles to the intersection with 486th Avenue. At 486th Avenue, the line then turns north for two miles to connect with the existing East River Electric Power Cooperative ("East River") White –Ivanhoe 115 kV line, which runs parallel to and south of 207th Street. Along this portion of the route, the existing East River 115 kV structures will be removed and consolidated with the new 115 kV transmission circuit on new single-pole, double circuit structures. This 115 kV/115 kV "double circuit" part of the route then follows 207th Street for two miles until reaching 484th Avenue.

The line will then head north and run parallel to the Yankee—Brookings #1 115 kV transmission line for approximately 0.4 miles and enter the Brookings County Substation. A schematic showing the route of the 115 kV transmission line is set forth in the plan and profile drawings provided in Exhibit 1 to this Stipulation.

The line passes through an agricultural area of rolling hills with a mixture of land cover consisting of cropped fields, pasture, and grassland.

b. Improvements to the Brookings County Substation. The existing Brookings County Substation was built in 2007 and was constructed to accommodate expansion, including this Project. The Brookings County Substation occupies approximately 12 acres of a 40-acre parcel, which is located approximately 0.4 miles northeast of the White Substation in the southeast quarter of Section 25 of Sherman Township (T 111 N, R 48 W), in Brookings County. The substation site is shown on Figure 2 of the Application.

The Brookings County Substation improvements will be entirely within the fenced area of the Brookings County Substation. Areas outside of the fenced area or the existing substation access road will not be disturbed. No additional grading will be needed. The Brookings County Substation will be modified to accommodate this 115 kV transmission line. Modifications to the Brookings County Substation will include adding a new 345-115 kV, 50 megavolt amp, transformer and upgrading the 345 and 115 kV yards described in more detail in Section 8.2.1 of the Application.

4. DEVIATIONS FROM DESCRIBED CENTERLINE

The specific location of the centerline of the transmission line is provided on the plan and profile drawings set forth in Exhibit 1 to this Stipulation. It might be necessary to deviate slightly from the described centerline to accommodate engineering and applicable safety and construction requirements based upon actual conditions encountered during construction.

5. ESTIMATED COST OF THE PROJECT

The estimated total cost of the South Dakota portion of this Project is $9.85 million, with the cost of separate project components estimated as follows:

Route	Cost
Yankee—Brookings 115 kV line	$3,850,000
Brookings County Substation Modifications	$6,000,000
Total Project Costs	$9,850,000

6. DEMAND FOR THE PROJECT

This Project is specifically designed to address transmission outlet capacity issues that have limited the amount of wind generation that can be carried on the transmission system in this region. The immediate demand for the Project is necessitated by existing and proposed wind development in the region, primarily on Buffalo Ridge in southwest Minnesota and southeast South Dakota around the Brookings County area.

To address this need, Applicant filed an application with the Minnesota Public Utilities Commission ("MPUC") on December 4, 2006, for a Certificate of Need to construct the BRIGO Projects. As discussed in the MPUC Certificate of Need Order of September 14, 2007, the three BRIGO projects were designed as an interim step to increasing generator outlet capability in the area until larger bulk transmission projects could be constructed.

Any delay of this Project will create a corresponding delay in the availability of additional wind power generation to meet the increasing demand for renewable energy from the Buffalo Ridge area. The MinnDakota 200 MW wind project constructed near the Brookings Substation is complete and another 50 MW wind project was been proposed in late 2008. After construction of this Project, the new wind farm will be able to interconnect at the Brookings Substation.

7. SITE DESCRIPTION

The plan and profile for the 115 kV transmission line is shown in Exhibit 1. The South Dakota portion of the Project, for which this Stipulation is being made, will be located entirely in Brookings County ("Project Area"). The Minnesota portion of the Project will be located in Lincoln County and is not part of this Stipulation.

The Project Area in which the Brookings County Substation and the 115 kV transmission lines are located is a combination of grassland and agricultural land.

The 115 kV transmission line passes through an agricultural area of rolling hills with a mixture of land cover that is primarily pasture and grassland. The line crosses approximately eight unnamed intermittent streams and associated wetlands that are tributaries to Deer Creek. The transmission line will cross 14 parcels of land, which are owned by 10 separate landowners.

8. ALTERNATIVE SITES

Applicant did an extensive review of alternative routes for the transmission line from the Minnesota border to the Brookings County Substation. Various considerations were included such as cost, landowner issues, topographic features, environmental considerations, regulations, and engineering. A discussion of the alternative evaluations is provided in Section 9 of the Application.

The assessment of alternatives, coupled with efforts to address specific landowner issues, established the centerline proposed for the transmission line, as shown in Exhibit 1. Applicant believes the Project represents the best alternative in terms of meeting customer, landowner, legal and regulatory concerns, while minimizing impacts to the environment and existing land use.

9. ENVIRONMENTAL FACTORS AND PHYSICAL ENVIRONMENT

Applicant has provided environmental information regarding the Project Area as part of its Application. The existing environment and estimates of changes and impacts to the existing environment are found in Sections 10 through 19 of the Application.

The proposed alignment for the transmission line would minimize changes and impacts to the existing environment by following existing property boundaries, paralleling township and county roads, siting in areas with compatible land use and minimizing the need to cross environmentally sensitive or significant features. The Application demonstrates that the Project will have an insignificant impact on all factors evaluated. It is not anticipated that this Project will create any significant direct, cumulative or synergistic hazards to the health and welfare of human, plant or animal communities.

a. **Topography**. The topography through this area is flat to steeply rolling. The elevation near the Yankee Substation in Minnesota is about 1,870 feet. In a steeply rolling terrain that slopes to the southwest along the Medary Creek and Deer Creek watersheds, the elevation along the route first increases to nearly 2,000 feet near the South Dakota border and then drops to approximately 1,780 feet near the Brookings County Substation in South Dakota. Surface water in the Minnesota portion of the Project Area generally flow south and west toward the Big Sioux River. In South Dakota, as the Project Area extends northward, the overall slope switches to the northwest and toward the Deer Creek watershed near the Brookings County Substation.

b. **Geologic Features**. The surficial geology of the corridor consists of unconsolidated glacial materials deposited during the Wisconsin glacial advance. These materials generally consist of till intermixed with outwash deposits. The till is made up of mostly calcareous clay and silt with inclusions of rock fragments. Outwash materials consist of

sands and gravels deposited by glacial melt water. Unconsolidated glacial materials are generally over 400 feet thick in the Project Area.

The bedrock geology of this area consists of the Upper Cretaceous Pierre Shale and Niobara Formation, and the Precambrian Sioux Formation.

c. **Economic Deposits**. The primary economic mineral deposits in Brookings County, South Dakota, consist of sand and gravel. No active gravel pits have been identified in this area.

d. **Soil Type**. Soils in the Project Area consist primarily of loam, silty loam, silty clay loam, clay loam, and sandy clay loam. Slopes range from nearly flat to up to 40 percent, which is characteristic of the rolling topography. Approximately 57 percent of the soils within the Project Area are listed as prime farmland; approximately 16 percent of the soil is listed as prime farmland when drained (USDA 2004).

e. **Potential for Erosion and Sedimentation**. Impacts to soils from the Project would be insignificant. The majority of the landscape within which the Project is located is relatively flat with some areas of rolling hills. In general, surficial soils on flat areas are less prone to erosion than soils in slope areas. Erosion control measures will be implemented to ensure that drainage ways and streams are not impacted by sediment runoff from exposed soils during significant precipitation events. Excavation activities will be avoided or minimized in steep slope areas.

Along the transmission line, the areas with greatest potential for erosion are the banks of Deer Creek and the tributaries to Deer Creek and Medary Creek, where slopes are relatively steeper. No construction will occur within the banks of Deer Creek or the tributaries to Deer Creek and Medary Creek. When construction near the banks is unavoidable, the area will be stabilized to minimize erosion. This may include protecting exposed soil, installing silt fencing and stabilizing restored soil through re-vegetation where necessary. Construction equipment will not be driven in the streambeds. If a streambed crossing is necessary, it will only occur in the winter months when the ground is frozen, and Applicant will coordinate with the appropriate agencies to obtain any necessary permits.

Decisions on the appropriateness of the implementation of various erosion control measures are determined by site-specific conditions. Contractors will be working on the Project that have experience in determining which types of measures work best for the transmission line construction. The *EPA Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices*, (US EPA, 1993) and the guidance provided in the "General Permit for Storm Water Discharges Associated with Construction Activities" for South Dakota (Effective July 1, 2002) will also be consulted.

Once construction is complete, the cultivated areas will be de-compacted and smoothed. Final restoration efforts will be coordinated with the landowners. Where necessary in non-cultivated areas, rough grading will be conducted to reasonably resemble

preconstruction contours. Non-cultivated vegetated areas disturbed by construction will be seeded with similar vegetation as was disturbed and mulched as necessary to stabilize seeds during germination.

No significant impacts related to the increase in potential for erosion are therefore expected because of construction of the Project if these measures are implemented.

f. **Seismic Risks, Subsidence Potential and Slope Instability**. The seismic activity in South Dakota is fairly low. This is especially true in the eastern portion of the state. No earthquakes have been reported in Brookings County.

The transmission facilities will be designed and constructed in accordance with all applicable codes and will incorporate state-of-the-art standards to address potential structural difficulties associated with seismic, subsidence or slope instability. In general, soils in the Project Area are expected to provide adequate foundation for transmission line structures without concern of subsidence and the Brookings County Substation is located in a flat area where slope instability will not be an issue.

g. **Geological Constraints**. There do not appear to be any geological characteristics that present unusual constraints to the design, construction or operation of the Project. Applicant does not expect that the area geology will impose significant constraints on the design or operation of the Project.

h. **Hydrology**. Exhibit 2 to the Stipulation shows surface water drainage patterns and the floodplains associated with each drainage. An intermittent section of Deer Creek flows west and south across the Project alignment. The transmission line also crosses several intermittent tributaries to Deer Creek and Medary Creek. Southwest of the city of Aurora, Deer Creek flows into Medary Creek; this ultimately flows into the Big Sioux River at the Brookings/Moody County border.

Construction equipment will not cross streams. Alternate access points to the Project Area will be identified to avoid stream and wetland crossings. Applicant will avoid major disturbance of individual wetlands and drainage systems during construction. All wetlands along the Project corridor can be spanned by the transmission line.

If a streambed crossing is necessary, it will only occur in the winter months when the ground is frozen, and Applicant will coordinate with the appropriate agencies to obtain any necessary permits.

i. **Effect on Current Planned Water Uses**. The Project would not use either municipal or private water and therefore would have no impacts on planned water uses by communities, agriculture, recreation, fish or wildlife.

j. **Surface and Groundwater Use by the Project**. The Project would not require consumptive use of or discharge to any surface water body or groundwater. However, should groundwater be encountered during foundation installation a minimal amount of groundwater would be discharged to the surface. Appropriate permits will be obtained for dewatering activities.

k. **Aquifer Use by Project**. The Project would not require the use of groundwater as a source of potable water supply or process water.

l. **Water Storage, Reprocessing and Cooling by Project**. No water storage or reprocessing will be required for the construction or operation of the Project.

m. **Deep Well Injection Use by the Project**. No deep well injection would be required for the construction or operation of the Project.

n. **Effect on Terrestrial Ecosystems**. Detailed information resulting from biological field surveys conducted to identify and quantify the terrestrial fauna and flora potentially affected by the Project is contained in Section 12.0 of the Application. It is anticipated that construction and operation of the Project will have little, if any, significant adverse impact on the terrestrial biotic environment.

o. **Effect on Terrestrial Fauna**. The project construction is not expected to significantly disrupt wildlife in the area. The area in and around the Project Area is dominated by cropland habitats. Wildlife in these habitats is made up of species adapted to grassland and riparian areas such as deer, small mammals, waterfowl, raptors, and perching birds. Displacement of fauna will be temporary.

Applicant has been working with various state and federal agencies over the past twenty years to address avian issues as quickly and efficiently as possible. In 2002, the Applicant entered into a voluntary memorandum of understanding ("MOU") with the U.S. Fish and Wildlife Service to work together to address avian issues throughout its territories. This includes the development of Avian Protection Plans ("APP") for each state the Applicant serves. Work is currently underway on the NSP-Minnesota APP, which will cover Minnesota, South Dakota and North Dakota. The APP will not be completed until 2009 and at the time it is completed, a copy will be provided to Staff.

There are no portions of this transmission line that pass through areas that would require bird flight diverters to be installed. There are no other endangered or protected wildlife species identified in the Project Area that may be affected by the Project.

p. **Effect on Terrestrial Flora**. Impacts to vegetation in the Project Area are anticipated to be minor. Short-term impacts (that affect vegetation for one (1) year or less) could include disturbance or removal of vegetation and soil compaction caused by preparing equipment yards and construction trailer sites, construction of foundations and installation of transmission poles.

Long-term impacts would be limited to excluding tall trees in the transmission line right-of-way. The vast majority of the right-of-way is currently cropland and prairie; therefore, the long-term impact would be minimal.

Cumulative impacts to vegetation are anticipated to be minor and include the effects from farming and ranching. The primary land uses in the Project Area are residential and agricultural. These practices have been changing the landscape for many years.

Construction would be sequenced to limit disruption to any area at one time to reduce the impact of construction on vegetation. After construction is complete, any compacted soil would be tilled and the area would be reseeded, with permission of the landowner.

There are no other endangered or protected plant species identified in the Project Area that may be affected by the transmission line.

q. **Effect on Aquatic Ecosystems**. The primary aquatic ecosystems within the Project Area are Deer Creek and the tributaries to Deer Creek and Medary Creek. These creeks are primarily grassy waterways with low flows. Several small wetlands are also in the Project Area. In the Minnesota section of the route, there is one record of the Topeka shiner in an unnamed tributary to Medary Creek.

During construction, there is the possibility of sediment reaching surface waters as the ground is disturbed by excavation, grading and construction traffic. Once the Project is completed, it will have no impact on surface water quality. Maintaining water quality along the Project Area will minimize potential impacts to rare and common aquatic organisms and the aquatic environment.

Applicant will avoid major disturbance of individual wetlands and drainage systems during construction. All wetlands within the Project Area can be spanned by the transmission line; spans will be approximately 670 feet for the double-circuit spans and approximately 710 feet for the single-circuit spans.

No construction will occur within Deer Creek or the tributaries to Deer Creek and Medary Creek since the transmission line will span these waterways. Applicant will also implement appropriate Best Management Practices ("BMPs") to minimize the amount of erosion and sedimentation that could potentially affect wetlands and waterways. Temporary erosion and sediment control methods will be properly placed, monitored and maintained adjacent to water resources. These erosion control methods will remain in place until work areas become re-vegetated or are stable and may include silt fencing, mulching, seeding, and hay bales. Where appropriate, Applicant will re-vegetate disturbed areas.

r. **Water Quality**. Construction of the transmission line would comply with all applicable federal, state and local permits required for alteration of wetlands, streams or rivers resulting from the Project. The following are specific measures that would be taken to protect water quality in the Project Area:

- Erosion control measures would be implemented to minimize erosion and sedimentation, runoff and surface instability during construction.

- Construction would be conducted to minimize disturbances around surface water bodies to the extent possible.

- Current drainage patterns in areas affected by construction would be maintained to the extent possible.

- Staging areas for project-related construction equipment would be located in areas that are not environmentally sensitive to control erosion.

- Staging and laydown yards for project-related construction would be established at least 100 feet from waterways or wetlands, if permitted by topography. No vegetation would be cleared between the yard and the waterway or wetland. Construction equipment would not be serviced within 100 feet of waterways or wetlands. Equipment would not be fueled within 100 feet of the waterways or wetlands.

- Any spills of fuels or other hazardous materials during construction or system maintenance would be promptly contained and cleaned up.

- Any herbicides used in right-of-way maintenance would be approved by the U.S. Environmental Protection Agency and applied by licensed professionals. Application of herbicides would be limited to the extent necessary for regular maintenance of the transmission system.

Once the Project is completed, it will have no impact on surface water quality. Maintaining water quality throughout the Project will minimize potential impacts to rare and common aquatic organisms and the aquatic environment.

s. **Air Quality**. Particulate emissions associated with construction of the Project would be mitigated using dust-suppression techniques. Examples of measures for control of particulates are, if necessary:

- Covering open haul trucks with tarps both on-site and off-site.

- Ensuring that construction vehicles use paved roads wherever possible to access the construction right-of-way.

- Removing any soil or mud deposited by construction equipment on paved roads and near the egress from unpaved areas, when necessary.

- Stabilizing disturbed areas in compliance with the revegetation plan after construction is complete.

With implementation of these mitigation measures, particulate emissions from construction would be substantially reduced. Accordingly, particulate emissions from construction of the Project, as mitigated, will not be significant. No significant emissions are expected from the operation of the transmission facilities.

t. **Health and Welfare.** The alignment for the transmission line will minimize changes and impacts to the existing environment by following existing property boundaries, paralleling township and county roads, siting in areas with compatible land use and minimizing the need to cross environmentally sensitive or significant features. The application demonstrates that the Project will not have a significant impact on all factors

evaluated. It is not anticipated that this Project will create any significant direct, cumulative or synergistic hazards to the health and welfare of human, plant or animal communities.

10. LAND USE

a. **Existing Land Use**. The Project will be located primarily on private land that is zoned as agricultural and regulated by Brookings County land use plans and ordinances.

The Project is compatible with the existing land uses in the area. There are already several high voltage transmission lines in the area. In the South Dakota portion of the route, one hundred percent of the transmission line will parallel existing corridors.

Impacts to agricultural land uses adjacent to the 115 kV transmission line will be minimized by using single, steel poles located adjacent to road right-of-way. The use of existing linear corridors also helps to minimize impacts to land uses along the route. Agricultural impacts are discussed in greater detail in Section 19.2.4 of the Application.

b. **Homes, Businesses and Persons Displaced**. No homes, businesses or persons will be displaced as a result of the construction, operation or maintenance of the transmission line. There are no homes along the route that meet the threshold for displacement due to the construction of the transmission line. There are no homes within 100 feet of the transmission line. There is one home within 300 feet of the transmission line.

c. **Land Use Compatibility**. The Project is compatible with the present land uses of the surrounding area. The majority of the transmission line traverses private land that is zoned agricultural. The Project Area is characterized by relatively flat landscapes to the east and rolling hills on the west side of the Project. The addition of a power line to the area would have minimal direct or indirect impacts on the already linear features of the landscape, including the existing transmission lines, roads, fencing and power lines that transect the area. There are no cemeteries or public facilities in the Project Area that will be impacted.

d. **Effect on Land Use**. The Project would have a minimal impact on land use. The majority of the transmission line traverses private land that is zoned agricultural and is regulated by Brookings County land use plans and ordinances. In the South Dakota portion of the route, one hundred percent of the transmission line will parallel existing linear corridors. Impacts to land uses adjacent to the 115 kV transmission line will be minimized by using single, steel poles.

The short-term impacts would include disruption of vegetation and farming caused by:

- Preparing equipment yards and construction trailer sites.
- Drilling hole foundations for installation of transmission poles and clearing vegetation where necessary.

- Temporary closure of access to livestock and farm irrigation, tilling and harvesting operations.

The short-term disturbances to vegetation would be repaired soon after construction is completed. Active construction at each pole location will be of short duration. However, there will be a time lag (up to several months) between the time the foundations are installed and the poles are erected. The Applicant does not expect that steel poles would be left on the right-of-way for long periods of time, but would be brought to the foundation location at the time they will be erected. When crews do need to access the site, the disturbances to farming would be expected to be infrequent and last only a few days per disruption. Closure of access to livestock and farm irrigation, tilling and harvesting operations will be minimized to reduce local occupational disruption.

The long-term impacts would include disruption of vegetation and farming caused by:

- Ongoing maintenance along the route of the power line, although this is expected to be infrequent given the lack of trees and use of steel poles

- Loss of crops, hay or livestock forage within the right-of-way

The cumulative impact of the construction and operation of the Project will have minimal effect on land use.

e. **Noise**. The new transmission line and substation modifications will not noticeably increase the noise level at nearby residences. Noise levels produced by a 115 kV transmission line are generally lower than outdoor background levels and are therefore not usually audible. The transmission line will not noticeably increase the noise levels at nearby residences.

f. **Local Land Use Controls**. The Project is located predominantly on private land that is zoned agricultural and is regulated by Brookings County land use plans and ordinances. There are no rezoning permits required by Brookings County for the construction, use and maintenance of the transmission facilities.

g. **Radio and Television Interference**. The Project is not expected to cause any radio or television interference. If it is determined that the presence or operation of the Project may be causing a problem, the Applicant will investigate the concern and correct those problems caused by the Project in accordance with Federal Communications Commission (FCC) rules regarding operation of such facilities.

h. **Aesthetics**. The Project Area has historically been largely agricultural; however, wind energy generation projects are rapidly causing changes to the area. Land use now includes a mixture of residential, commercial, and industrial land uses. The transmission line structures will contribute to changing the views throughout the Project Area. There are transmission lines within 0.5 miles of all residences and businesses along the route, which follows existing roadway corridors. There are also wind turbines visible in the

landscape as well as an existing 115 kV transmission line. The 115 kV transmission line will not have a major impact on the aesthetics of the area.

There are no unique aesthetic resources in the area that would be impacted by this Project.

11. TIME SCHEDULE

Applicant proposes construction will be complete in November 2009 for the Project. Construction of the Project is expected to begin in early 2009. Currently project design, right-of-way acquisition and material procurement are underway. A table showing the Project schedule is included as Exhibit 3 to the Stipulation.

12. COMMUNITY IMPACT

a. **Forecast of Socioeconomic Impact**. No significant adverse socioeconomic impacts to the local communities and governmental facilities or services are anticipated as a result of the construction and maintenance of the transmission facilities. This Project will improve the capability of local wind generators to transport energy generated in the region. This in turn may increase the amount of wind development in the area and will contribute to the local economy through easement dollars and taxes generated due to wind farm construction and operation. The Project will not have a significant short-term impact on population, income, occupational distribution or the integration or cohesion of communities in the Project Area.

b. **Forecast of Taxation Impacts**. No significant immediate or long-term adverse impacts on property and other taxes of the affected taxing jurisdictions are anticipated because of the construction and maintenance of the Project. Although Applicant will pay taxes on the Project and the Project will increase Brookings County's tax base, the Project will not result in any significant impact to the affected taxing jurisdiction. The estimated annual dollar value impact of the Project in South Dakota on property taxes is $70,000.

c. **Forecast of Agricultural Impacts**. Short-term impacts to agriculture are minimal and will occur primarily due to foundation construction and pole erection. These impacts are not expected to last more than a few days per disruption and would primarily influence access to farm tilling and harvesting operations. During construction, temporary impacts such as soil compaction and crop damages within the right-of-way are likely to occur. Up to 2.4 acres of agricultural land could be impacted temporarily by the Project. Permanent impacts to agricultural lands will also result in areas where poles are placed and are estimated at approximately 0.25 acres. The Project will have minimal impact on the overall crop production within the Project Area.

d. **Forecast of Population and Community Impacts**. The Project is not expected to substantially affect the population, income, occupational distribution or the integration and cohesion of the adjacent communities. The population of Brookings County in 2004 was estimated at 28,159 (Census 2004) and is not expected to change on a short-term basis because of this Project.

e. **Forecast of Transportation Impacts**. Impacts to the local transportation system will be minimal. One hundred percent of the South Dakota portion of the Project will parallel existing roadway. There will be some short-term temporary impacts to traffic along these roadways from construction during the construction phase of this Project. These impacts may include minor traffic delays when the poles are installed and the conductors are strung.

f. **Forecast of Cultural Resource Impacts**. The Applicant has conducted a records search and reviewed six major project surveys completed in the South Dakota portion of the Project Area, which identified potential archeological sites. The results of the cultural resource studies are discussed in Section 19.2.6 of the Application. No known sites were found within the Project Area itself. There are no cemeteries in the Project Area. The literature search results indicate that there is potential for archeological artifacts in the Project Area, particularly in areas near streams and rolling topography. Although cultural artifacts have been found in the Project Area, to date they have not been significant. Therefore, there is little indication from existing data that the undertaking would affect archaeological resources.

Applicant does not anticipate finding any cultural resources during the Project design or construction. However, based on the relatively small size of archaeological sites found in the Project Area to date, should a cultural resource be identified in the Project Area, it is likely to be small enough that it can easily be avoided by design modification (moving the planned structure placement) or mitigated by data recovery (selective excavation).

13. EMPLOYMENT ESTIMATES

Project construction would employ 32 to 48 workers for a period of 6 to 12 months. According to the South Dakota Governor's Office of Economic Development, in 2004 there were 827 workers employed in the mining and construction industry in Brookings County. An additional 50 workers for one year would be approximately a six percent increase in the mining and construction industry sector. It is expected that only a small portion of the construction work force will be native to the Brookings County area. Applicant employees will maintain the transmission Project. No permanent additional employment is expected.

14. FUTURE ADDITIONS AND MODIFICATIONS

Applicant is currently in the process of assessing the construction of additional facilities in the area to support the inclusion of additional wind generation in the area as well as improving the overall transmission grid. The projects that are under consideration include:

- Initial planning studies are considering the addition of other 115 kV transmission lines connecting the Brookings County Substation to the existing transmission system in the Toronto vicinity, northeast of the Project Area. The project would support additional wind development in that area. Those plans are in the preliminary stages and no specific plans have been developed yet.

- Applicant and Great River Energy, on behalf of themselves and other CapX2020 sponsoring utilities on August 16, 2007, submitted a Certificate of Need application to the MPUC for three 345 kV projects, including a 345 kV transmission line from the Brookings County Substation to a new Hampton Corner Substation near the Twin Cities. A Route Permit application for the Brookings County to Hampton project was filed with the MPUC at the end of 2008. Information on this endeavor can be found at www.capx2020.com. The three transmission projects are proposed to meet regional electrical reliability, local load serving needs and to increase generator outlet capability.

Given these potential future projects, the Brookings County Substation was designed and graded to accommodate the future 345 kV and potential 115 kV transmission line connections discussed above. The Brookings County Substation is also designed to accommodate up to twelve 34.5 kV wind feeder lines to support wind generation that may be built in the area and tied into the system through this substation.

15. TRANSMISSION PROJECT LAYOUT AND CONSTRUCTION

a. **Vegetation Clearing**. Applicant does not anticipate significant vegetation clearing will be required for the Project. During the right-of-way acquisition phase, individual property owners will be advised as to the construction schedules, needed access to the site and any vegetation clearing required for the Project. The right-of-way will be cleared of the amount of vegetation necessary to construct, operate and maintain the transmission line. It is standard practice to remove any vegetation that would be a danger to the line at a mature height. In addition, any vegetation that is in the way of construction equipment may have to be removed. Wood from the clearing operation will be offered to the landowner or removed from the site. Brush will be removed from the right-of-way and disposed of in a licensed landfill unless other disposal arrangements have been made with the landowner.

b. **Soils**. Excavated soils from drilled pier foundations for the transmission line structures will be hauled off-site to a licensed landfill unless other arrangements have been made with the landowner for on-site disposal. After construction is complete, any compacted soil locations will be addressed as desired by the landowners. Reseeding areas disturbed by construction activities will be done with vegetation similar to what was removed. In cases of agricultural lands, no reseeding will occur unless specified by the landowner. During the several months interval between the time the foundations are installed and the towers are erected, the Applicant will ensure that all areas disturbed by construction and construction access are stabilized to prevent erosion of soils.

c. **Herbicides and Sterilants (Weed Control)**. Because the primary land use along the transmission line is cropland, it would not be necessary to use herbicides or sterilants for construction of the transmission line. Any herbicides used in right-of-way maintenance will be approved by the U.S. Environmental Protection Agency and applied by licensed professionals. Application of herbicides will be limited to the extent necessary for regular maintenance of the transmission system and only in those areas where written approval has been received from the landowner.

d. **Construction Site Access**. Access to the Brookings County Substation will be off 484th Avenue. All other access would be on existing approaches or existing roads.

e. **Waste Disposal**. All waste generated during the construction of the Project will be disposed of in an approved landfill on a regular basis. Trash and scrap will be deposited in waste containers or otherwise controlled and managed on-site prior to ultimate disposal. Personal litter, including bottles, cans and paper from construction activities shall be removed on a daily basis.

f. **Restoration and Revegetation**. All disturbed areas will be seeded, mulched and revegetated as soon as possible after construction has been completed in any particular area. In cases of agricultural lands, no reseeding will occur unless specified by the landowner. Landowner desires will be considered in determining seed type depending on the adjacent land use.

16. INFORMATION CONCERNING TRANSMISSION FACILITIES

a. **Configuration of Poles**. Applicant will use single pole, galvanized or weatherized steel finish, davit arm structures for the 115 kV transmission line. These structures will be erected on concrete foundations approximately four to six feet in diameter, and approximately 20 to 30 feet in depth. The structures will have an average height of 90 feet and an average span of approximately 710 feet between structures.

For a two-mile segment, 115 kV/115 kV double-circuit structures will be utilized. This segment is along 207th Street in South Dakota, where the existing wood poles supporting the East River 115 kV high voltage transmission line would be removed and the conductors consolidated on the same structures with the new 115 kV HVTL. The double-circuit line will be constructed with steel single poles with davit arms. The average structure height for the double-circuit structures will be 100 feet, and the poles will have an average span of 670 feet between structures.

Figure 6 of the Application shows a steel single-circuit davit arm 115 kV structure of the type that would be used for the single-circuit portion of the Project.

Figure 7 of the Application shows a steel double-circuit davit arm 115 kV/115 kV structure of the type that will be used for the double-circuit portion of the Project.

b. **Conductor Configuration**. The conductors will be bundled 795 kcmil 26/7 Aluminum Core Steel Supported ("ACSS"). A bundled conductor configuration consists of two conductors spaced approximately 18 inches apart at the end of each insulator string. The line will be shielded with a 5/8th inch high strength still overhead shield wire for lightning protection.

c. **Reliability and Safety**. As discussed in Section 23.4 of the Application, the Project facilities will be constructed in full compliance with all applicable National Electrical Safety Code electrical performance and safety codes and will not present significant impacts posed by safety or electrical hazard to the general public.

Transmission line facilities in this area need to be designed to handle stresses created by high winds or heavy ice loadings. Since icing conditions in southeastern South Dakota exceed that of other parts of the Applicant's territory, the criteria "Heavy ice with reduced wind condition" has been modified to provide additional pole and wire attachment strength. Applicant's typical heavy ice case is for a 40 mph wind and 0.5 inches of ice. For this Project, Applicant will design for a 40 mph wind and 1.5 inches of ice. The Applicant's criteria to address these stresses to the transmission structures are more conservative than the typical criteria used for transmission line design and will address this issue.

The flow of electricity produces electric and magnetic fields (commonly referred to as EMF). Numerous sources of EMF exist in nature and in the occupational and residential environment. In nearly all instances, these fields pose no obvious threat to human health or safety. Certain epidemiological investigations have indicated potential risk factors from exposure to EMF. However, many similar studies report no statistically significant correlation.

Thus, although a substantial amount of research on EMF has been completed and is continuing, the body of research on health effects is still preliminary and inconclusive. However, there is general scientific consensus that there is little evidence that magnetic fields from transmission lines negatively impact human or animal health. Nevertheless, it is difficult to prove conclusively that there is no impact.

The tables below provide modeled magnetic fields at certain line loadings for the 115 kV transmission line and modeled electric fields. The information provided includes the expected levels under the lines and at various increments from the centerline.

CALCULATED ELECTRIC FIELDS (KV/M) FOR THE 115 KV TRANSMISSION LINE DESIGNS (3.28 FEET ABOVE GROUND)

Structure Type	Nominal Voltage	Distance to Proposed Centerline										
		-300'	-200'	-100'	-50'	-37.5	0'	37.5'	50'	100'	200'	300'
Single Circuit 115 kV Steel Pole Davit Arm	121 kV	.005	0.012	0.057	0.253	0.408	0.862	0.413	0.248	0.062	0.014	0.006

CALCULATED MAGNETIC FLUX DENSITY (MILLIGAUSS) FOR 115 KV TRANSMISSION LINE DESIGNS (3.28 FEET ABOVE GROUND)

Structure Type	System Condition & Amps (Current)	Distance to Proposed Centerline										
		-300'	-200'	-100'	-50'	-37.5'	0'	37.5'	50'	100'	200'	300'
Single Circuit 115 kV Steel Pole Davit Arm	Peak 1080	1.25	2.67	12.13	30.31	45.18	144.06	56.40	36.35	10.18	2.50	1.07
	Average 648	0.75	1.60	5.75	18.19	27.11	86.43	33.84	21.81	6.11	1.50	0.64

Currently there are no federal or state health-based exposure standards for magnetic fields. This is due to the fact that there is inadequate scientific evidence to develop a health-based standard.

Two states, (Florida and New York), have set standards for magnetic field strengths at the edges of right-of-way. Six states, (Florida, Minnesota, Montana, New Jersey, New York, and Oregon), have established standards for electric field strengths on the right-of-way and at the edge of the right-of-way. The table on the following page lists those standards. Additionally, the South Dakota PUC has recognized that a magnetic field strength of 150 mG and electric field strength of 1 kV/m are acceptable at the edge of a 115 kV transmission line right-of-way (SDPUC Docket EL04-009).

The transmission line will meet the electric and magnetic field design standards adopted by these other states, and will meet the levels found acceptable by the Commission. Applicant will provide measurements for landowners, customers and employees who request them.

STATE TRANSMISSION LINE STANDARDS AND GUIDELINES				
State	**Electric Field**		**Magnetic Field**	
	On Right-of-Way	**Edge of Right-of-Way**	**On Right-of-Way**	**Edge of Right-of-Way**
Florida*	8 kV/m[a] 10 kV/m[b]	2 kV/m	-	150 mG[a] (max. load) 200 mG[b] (max. load) 250 mG[c] (max. load)
Minnesota	8 kV/m	-	-	-
Montana	7 kV/m	1 kV/m[e]	-	-
New Jersey	-	3 kV/m	-	-
New York	11.8 kV/m 11.0 kV/m[f] 7.0 kV/m[d]	1.6 kV/m	-	200 mG (max. load)
Oregon	9 kV/m	-	-	-
South Dakota	-	1 kV/m[g]	-	150 mG[a,g]

*In the Florida standard right-of-way includes certain additional areas adjoining the right-of-way.
kV/m =kilovolt per meter. One kilovolt =1,000 volts.
[a] For lines of 69-230 kV.
[b] For 500 kV lines.
[c] For 500 kV lines on certain existing ROW.
[d] Maximum for highway crossings.
[e] May be waived by the landowner.
[f] Maximum for private road crossings.
[g] Found acceptable for a 115 kV transmission line by the SDPUC

d. **Right-of-Way or Condemnation Requirements**. Applicant has contacted all of the landowners along the Project route to discuss route proposals at public information meetings. Applicant has provided landowners with information on the Project as it has moved through the facility permitting process, through periodic newsletters. Xcel Energy has acquired easements from 8 of the 10 landowners in South Dakota. Applicant continues to work with the other landowners on finalizing the easements.

During the acquisition phase, individual property owners have been advised as to the construction schedules, needed access to the site and any vegetation clearing required for the Project. The right-of-way will be cleared of the amount of vegetation necessary to construct, operate and maintain the transmission line as discussed in Sections 22.1 and 22.4 of the Application and the requirements contained in this Stipulation.

Many structure locations required soil investigation to assist with the design of the foundations. Applicant informed the landowners at the initial survey consultation that soil borings might occur. An independent geotechnical testing company took and analyzed these borings. Survey crews also work with local utilities and the South Dakota

One-Call system to identify underground utilities along the route. This minimizes conflicts or impacts to existing utilities along the route.

Where possible, staging and lay down areas will be located within the right-of-way and limited to previously disturbed or developed areas. When additional property is temporarily required for construction, temporary limited easements ("TLE") may be obtained from landowners for the duration of construction. TLEs will be limited to special construction access needs or additional staging or lay down areas required outside of the transmission line right-of-way.

e. **Necessary Clearing Activities**. Applicant anticipates minimal tree clearing will need to be performed for this Project. The 115 kV transmission line has been sited to minimize the need to remove trees along the route.

f. **Configuration of Underground Facilities**. No underground transmission facilities would be required for the Project.

AMENDMENT OF AND ADDITION TO APPLICATION

Amendments. The Application filed January 31, 2008, is hereby amended as follows:

1. The transmission line route attached to the Application as Exhibit A, Figure A-4., map 3 of 4 and Figure A-5, map 4 of 4 is hereby amended to conform to the details set forth on Exhibit 1 to this Stipulation.

CONCLUSIONS OF LAW

1.

The Commission has jurisdiction over the subject matter and parties to this proceeding pursuant to SDCL Chapter 49-41B and ARSD 20:10:22. Subject to the findings made on the four elements of proof under SDCL 49-41B-22, the Commission has authority to grant, deny or grant upon such terms, conditions or modifications of the construction, operation and maintenance of the transmission facility as it may deem appropriate.

2.

To the extent that any of the above made findings of fact are determined to be conclusions of law or mixed findings of fact and conclusions of law the same are incorporated herein by this reference as a conclusion as if set forth in full.

3.

Administrative rules have the force of law and are presumed valid. *Feltrop v. Department of Social Svcs.*, 559 N.W.2d 883, 884 (S.D. 1997). An administrative agency is bound by its own rules. *Mulder v. Department of Social Svcs.*, 675 N.W.2d 212, 216 (S.D. 2004).

4.

The transmission line is a "transmission facility" as defined in SDCL 49-41B-2.1.

5.

The Application, as amended and supplemented by responses to Staff data requests, complies with the applicable requirements of SDCL Chapter 49-41B and ARSD 20:10:22.

6.

The Project as defined herein will comply with all applicable laws and rules, including all requirements of SDCL Chapter 49-41B and ARSD 20:10:22.

7.

The Project, if constructed in accordance with the terms and conditions of this permit, will not pose a threat of serious injury to the environment nor to the social and economic conditions of inhabitants or expected inhabitants in the Project Area.

8.

The Project, if constructed in accordance with the terms and conditions of this permit, will not substantially impair the health, safety and welfare of the inhabitants of the Project Area.

9.

The Project, if constructed in accordance with the terms and conditions of this permit, will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

10.

The Commission has the authority to revoke or suspend any permit granted under the South Dakota Energy Facility Permit Act for failure to comply with the terms and conditions of the permit pursuant to SDCL 49-41B-33.

11.

Northern States Power Company, a Minnesota corporation, will be the permitted owner of the Project.

12.

The burden of proof on the Applicant on which they have the burden is by the preponderance of the evidence.

13.

The Commission concludes that it needs no other information to assess the impact of the Project to determine if the Applicant has met its burden of proof.

14.

The Commission concludes that the Application and all required filings have been filed with the Commission in conformity with South Dakota law. All procedural requirements required under South Dakota law have been met. All data, exhibits, and related testimony have been filed.

15.

The Commission concludes that the Application is supported by the Application, the amendment to the Application, Responses to Staff's Data Requests and documentary evidence and satisfies all applicable requirements in South Dakota law.

16.

The Commission concludes that the Application, as amended and supplemented, is legally and procedurally appropriate and complete. All formatting and timing requirements have been complied with. All public hearing requirements have been met.

17.

The Applicant has met its burden of proof pursuant to SDCL 49-41B-22 and is entitled to a permit as provided in SDCL 49-41B-24, subject to the following:

STIPULATE TO THE FOLLOWING TERMS AND CONDITIONS:

1.

The Applicant will obtain all governmental permits that may be required by any township, county, state or federal agency or any other governmental unit for construction activity covered by that permit. Copies of any permits obtained by the Applicant shall be sent to the Commission.

2.

The Applicant will do a staking review with each landowner that will show the location of each of the structures to be placed on the landowner's land. During this staking review process, the Applicant will obtain the approval of the landowner for each structure location. If after landowner approval is obtained, it becomes necessary to deviate more than 10 feet (laterally) from the approved location to accommodate engineering and applicable safety and construction requirements based upon actual conditions encountered during construction, all landowners affected by the deviation and the Commission must be notified in writing five

working days before the deviation may occur. All such deviations must be approved by the Commission.

3.

In order to ensure compliance with the terms and conditions of this permit pursuant to SDCL 49-41B-33, it is necessary for the enforcement of this Order that all employees, contractors and agents of the Applicant, to the extent of its interest, involved in this Project be made aware of the terms and conditions of this permit.

The Applicant shall ensure that its employees, contractors and agents involved in right-of-way negotiations and acquisitions, right-of-way clearing, line construction and right-of-way and line maintenance understand fully and comply with the terms and conditions of this permit.

4.

If during construction, the Applicant or its agents discover what may be an archaeological resource, the Applicant or its agents shall immediately cease work at that portion of the site and notify the Commission and the State Archaeologist. If such an archaeological resource is discovered, the Applicant shall develop a plan that is acceptable to the State Archaeologist to salvage, avoid or protect the archaeological resource. If such a plan would require a different route than that approved by the Commission, the Applicant must seek Commission approval for the new route before proceeding with any further construction.

5.

In order to mitigate interference with agricultural operations during and after construction, the Applicant shall locate all structures, to the extent feasible and prudent, to minimize adverse impact and interferences with agricultural operations, shelterbelts and other land uses or activities. The Applicant shall take appropriate precautions to protect livestock and crops during construction. The Applicant shall repair all fences and gates removed or damaged during construction or maintenance unless negotiated with the landowner or designee. The Applicant shall be responsible for the repair of private roads and lanes damaged when moving equipment or when obtaining access to the right-of-way.

6.

The Applicant shall provide each landowner across whose property the Project is to be constructed with the following information:

- A copy of the Commission's Order.
- Detailed safety information describing (a) reasonable safety precautions for existing activities on or near the right-of-way; (b) known activities or uses that are presently prohibited within the right-of-way; and (c) other potential dangers or limitations within the right-of-way.
- Construction/maintenance damage compensation policies and procedures.

- The Commission's address, web site, and phone number.

- Contact person within the company including name and phone number.

The Applicant shall also comply with all other terms and conditions as set forth in the Findings of Fact.

7.

The terms and conditions of the permit shall be made a uniform condition of construction, subject only to an affirmative written request for an exemption addressed to the Commission. A request for an exemption shall clearly state which particular condition should not be applied to the property in question and the reason for the requested exemption. The Commission shall evaluate such requests on a case-by-case basis.

8.

The Applicant shall conform to its NSP-Minnesota Avian Protection Plan that is currently under development and will be reviewed and approved by the U.S. Fish and Wildlife Service.

9.

Before commencing construction, the Applicant shall furnish an indemnity bond in the amount of Fifty Thousand Dollars ($50,000.00) to comply with the requirements of SDCL 49-41B-38. Such bond shall name the Commission as the Obligee in favor of, and for the benefit of, such townships, counties, or other governmental entities whose property is crossed by the Project. The bond shall remain in effect until released by the Commission, which release shall not be unreasonably denied following completion of the construction and repair period.

10.

If the presence or operation of the Project causes interference with radio, television or any legal communication device, the Applicant shall take all appropriate action to minimize any such interference and make a good faith effort to restore or provide reception levels equivalent to reception levels in the immediate areas just prior to construction of the Project. This mitigation requirement shall apply to homes or other structures in place at the time of construction but shall not apply to any dwellings or other structures built after construction of the Project approved in this permit have been completed.

11.

If construction of any portion of the Project commences more than four years after the date the permit is granted, Applicant must certify to the Commission before construction commences that such facilities continue to meet the permit conditions.

Dated: 1/16/09

Northern States Power Company, a Minnesota Corporation

By: _____

Kent Larson
Vice President, Transmission
Xcel Energy Services Inc.
Authorized Agent for Northern States Power Company

_____

Karen Cremer
Staff Attorney
South Dakota Public Utilities Commission

_____

Don Larson
Chairperson
Brookings County Commission