STATE OF NORTH DAKOTA
BEFORE THE
NORTH DAKOTA PUBLIC SERVICE COMMISSION

NORTHERN STATES POWER COMPANY, A MINNESOTA CORPORATION — **CASE NO. PU-_____**

OTTER TAIL POWER COMPANY — **CASE NO. PU-_____**

IN THE MATTER OF THE APPLICATION FOR AN ADVANCE DETERMINATION OF PRUDENCE FOR THE CAPX2020 GROUP 1 PROJECTS

TESTIMONY OF

TIMOTHY J. ROGELSTAD

On Behalf of

APPLICANTS

NORTHERN STATES POWER COMPANY, A MINNESOTA CORPORATION,

AND

OTTER TAIL POWER CORPORATION

September 17, 2009

Joint Exhibit B

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND EMPLOYMENT ADDRESS.

A. My name is Timothy J. Rogelstad and my business address is 215 South Cascade Street, Fergus Falls, Minnesota 56537.

Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?

A. I am employed by Otter Tail Power Company ("Otter Tail") and my current position is Manager of Delivery Planning.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I graduated from North Dakota State University in 1989 with a Bachelor Degree in Electrical and Electronics Engineering. I am currently a registered professional engineer in the states of Minnesota, North Dakota, and South Dakota. I have been an employee with Otter Tail for the past 19 years. I started with the company in 1989 as a substation design engineer in the System Engineering Department. In 1992, I transferred to the Transmission Planning Department as a Planning Engineer. In 1998, I was promoted to supervisor of Transmission Planning, and in 2002 I was promoted to Manager of Delivery Planning. My current job responsibilities include managing transmission planning, transmission contracts and capital budget development.

For most of my professional career, I have been involved with transmission planning. My experience ranges from being involved in building models for transmission studies and completing transmission studies, to acting as project manager for a 100-mile, 230 kV transmission project, to managing a

department that is responsible for transmission planning at Otter Tail. I have been involved in a number of planning activities at the regional level with the Mid-Continent Area Power Pool ("MAPP"), the Midwest Independent Transmission System Operator ("MISO") and with other organizations, including: MAPP Model Building Working Group, MAPP Transmission Reliability Working Group, MAPP Line Loading Relief Working Group, MAPP Design Review Subcommittee, MAPP Planning Committee, former chair of the MAPP Red River Valley Subregional Planning Group, MISO Planning Subcommittee, CapX2020 Technical Team, CapX2020 Tariff Team, Upper Great Plains Transmission Coalition, and Chair of the Minnesota Transmission Owners. My resume is attached as Schedule 1.

Q. WHAT HAS YOUR INVOLVEMENT BEEN IN THE CAPX2020 INITIATIVE?

A. I have been involved in CapX2020 since the beginning stages of this initiative, including the first meeting held in 2004 where utilities discussed the need for a joint planning initiative. From that point on, I have been actively leading and participating in the technical planning studies that have resulted in the CapX2020 transmission proposals. I have also been involved in cost allocation discussions related to CapX2020 as well as participating and representing Otter Tail Power in the Vision Team and Management Committee meetings for the CapX2020 Initiative.

Q. FOR WHOM ARE YOU TESTIFYING?

A. I am providing testimony on behalf of Northern States Power Company, a Minnesota corporation ("Xcel Energy"), and Otter Tail Power Company ("Otter Tail"), the joint Applicants in this proceeding.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to provide the following information:

- An explanation of the transmission planning process utilities engage in to determine system needs;
- The current regulatory environment applicable to constructing and permitting new transmission facilities;
- An overview of the CapX2020 participating utilities' coordinated transmission planning efforts which resulted in the proposed Group 1 Projects, including the CapX2020 Vision Plan (as discussed in the Pre-Filed Direct Testimony of Ms. Laura McCarten); and
- Why the Group 1 Projects are needed at this juncture and the benefits the Projects will provide to the upper Midwest region, in particular North Dakota.

Q. WERE YOU INVOLVED IN THE PREPARATION OF THE APPLICATION FOR ADVANCE DETERMINATION OF PRUDENCE IN THIS PROCEEDING?

A. Yes. I provided information to the Applicants in their preparation of the Application. The Application was prepared with my participation, using information that I provided as well as the type of information that is regularly relied upon by professionals in the ordinary course of business.

II. TRANSMISSION PLANNING GENERALLY

Q. WHAT IS THE PURPOSE OF TRANSMISSION PLANNING BY UTILITIES?

A. The overall goal of transmission planning is to ensure the reliable operation of the transmission system to meet the demand for power by a utility's customers at the lowest reasonable cost. Planning involves a number of objectives, including planning for increased customer service requirements (often referred to as local load growth), taking into account generators' interconnection requests, assessing the need for system maintenance and upgrades, assessing ways to eliminate constraints on the system, and taking into consideration a utility's compliance with applicable policy and regulatory goals. Generally, transmission planning is an ongoing, continuous process of ensuring that the electrical system under review is operated in a reliable and economic fashion.

Q. PLEASE DESCRIBE GENERALLY HOW A UTILITY'S TRANSMISSION PLANNING IS DONE.

A. Transmission planners for utilities use sophisticated computer models that simulate the operation and performance of the transmission grid under various scenarios. Typically, the planners attempt to determine how the system will perform under peak load and high transfer situations, although normal operating conditions and off-peak conditions are also examined. The planners also look at how the system will operate under contingency situations, such as when a transmission line or generation facility is taken out of service by a storm or other unexpected occurrences or during planned maintenance outages. In addition to the modeling results, utilities also have to take into account such factors as costs, environmental impacts, social impacts,

and national standards. The time horizon used in developing assumptions that are used in the modeling can typically range from 1 to 25 years.

Q. ARE A UTILITY'S PLANNING EFFORTS EVER REDUCED TO FORMAL STUDIES?

A. Yes. There are generally three categories of studies that transmission planners can create during the transmission planning process: vision studies, mid-term studies; and specific studies.

Q. PLEASE EXPLAIN EACH OF THESE CATEGORIES OF TRANSMISSION PLANNING STUDIES.

A. Vision studies look at long-range needs and goals and include the following characteristics: a high level, 50,000-foot, review of the electrical system; a blue print for the future; a 10- to 25-year time horizon; and broad assumptions.

Mid-Term studies have the following characteristics: a mid-level, 25,000-foot, review of the electrical system; identified needs; a seven- to 15-year time horizon; and more certainty in assumptions.

Specific studies, which may include load-serving studies and interconnection studies, have the following characteristics: a shorter-term, 5,000-foot, review of the electrical system; needs for a specific circumstance; a one- to 10-year time horizon; and more certainty in assumptions.

Q. DOES A UTILITY GENERALLY WORK WITH OTHERS IN ITS TRANSMISSION PLANNING EFFORTS?

A. Yes. Transmission planners for the various utilities work together with MISO, regulatory agencies, and other interested persons to develop plans to conduct their transmission planning to ensure the continued reliable and economical operation of the transmission system. MAPP and MISO also maintain various committees, including Subregional Planning Groups ("SPGs") and other transmission planning groups, to focus on the need for transmission infrastructure in the region. Much of this planning is conducted in an open forum, including regulatory staff participation from North Dakota.

Q. DO UTILITIES REPORT THE WORK OF THEIR TRANSMISSION PLANNERS?

A. The planning activities of the utilities are generally reported to the public and to regulators. The reports are made available in various forms, from presentations at SPG meetings, to posting the study results on websites.

Q. HOW ARE TRANSMISSION STUDIES CONDUCTED?

A. The first step in conducting a transmission study is to develop a scope of work. The scope of work identifies the problem that is trying to be solved in a transmission study. Once we identify the problem to be solved, we then develop assumptions that can be used in modeling. The Transmission Planners in this region use software called PSSE (Power System Simulator for Engineering). This software is used to model the power system, including generators, transmission lines and loads. With the model we can develop different scenarios (varying load levels, new generation additions, new transmission additions, etc.) based on the problem we are trying to solve. The

analysis portion of a study involves running hundreds of simulations to understand the performance of the power system under different assumptions. From this analysis, planning engineers can then analyze the results from the various simulations and make recommendations as to what the best solution is for solving the problem that was identified in the initial study scope.

Q. HOW DO UTILITIES DETERMINE THE ASSUMPTIONS TO USE FOR PLANNING AND STUDY PURPOSES?

A. Engineers use their engineering judgment to narrow the number of assumptions and the number of scenarios. Studies look at a wide range of assumptions. However, they cannot cover every possible scenario because there would be an infinite number. Therefore, transmission planners use their engineering judgment to assess what types of scenarios and assumptions are prudent to evaluate in transmission studies. Engineering judgment is also used when transmission planners are called upon to assess variations or modifications of prior studies. Transmission planners use their experience and training to assess situations and provide their professional opinions on the particular situation.

III. NORTH DAKOTA'S TRANSMISSION SYSTEM

Q. DESCRIBE THE TRANSMISSION SYSTEM THAT SERVES NORTH DAKOTA.

A. North Dakota's transmission system is part of the Eastern Interconnection, which is one of three subsystems that the continental United States electric

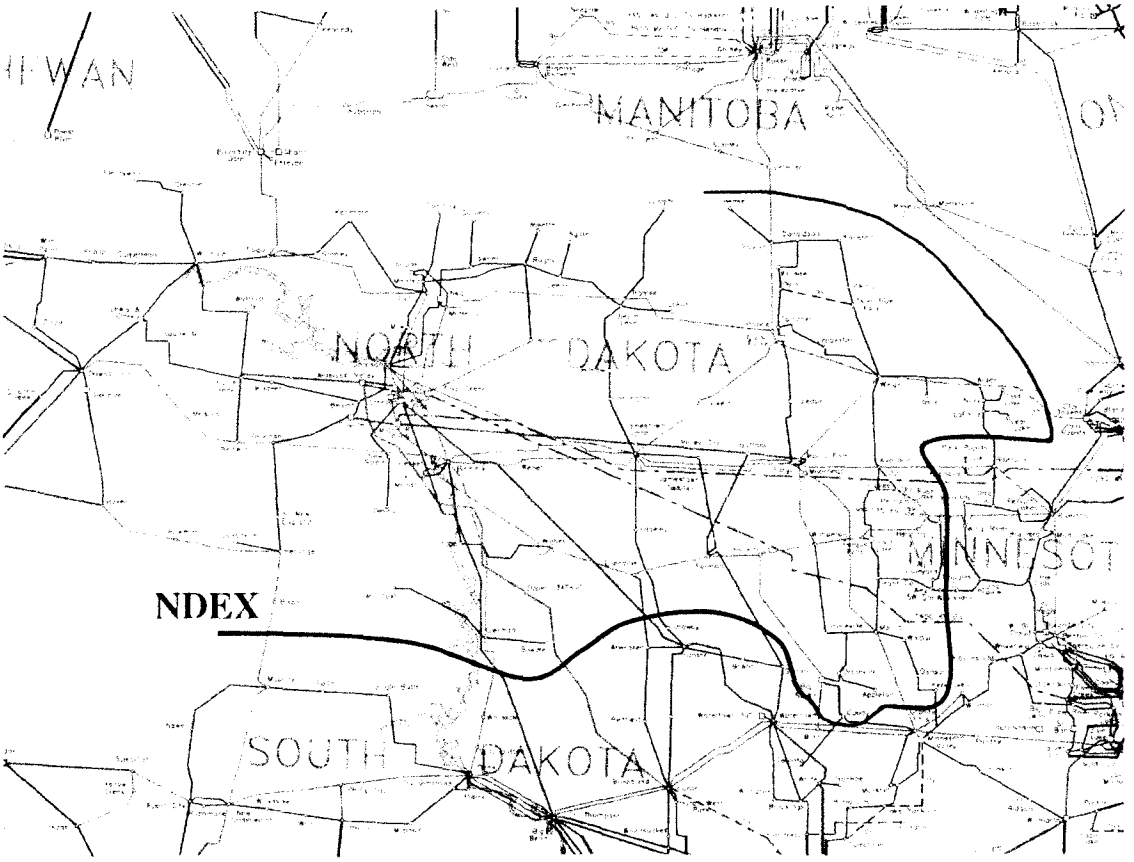
transmission grid is divided into, and therefore interconnected with the systems serving South Dakota, Minnesota, Iowa, Wisconsin, and all of the states and Canadian provinces in the eastern two-thirds of North America. The entire electric system in the Eastern Interconnection operates as a single integrated electrical machine. Therefore, the operation of electrical generators and transmission facilities in Ohio or Nebraska can potentially impact the reliability of electric service to customers in North Dakota.

The transmission system in North Dakota consists of series of 41.6 kV, 69 kV, 115 kV, 230 kV and 345 kV alternating current transmission lines and two direct current transmission lines into Minnesota. In North Dakota, the transmission system is serving two primary purposes, the first is to reliability serve North Dakota retail load customers and, second to export power out of the region. Even under peak load conditions, North Dakota has more generation than load. At lower load levels within the State, there becomes substantial generation that is available to be exported out of the State. In a situation where North Dakota exports large amounts of power to load centers remote from North Dakota, like the Twin Cities, the electrical system in the region has the potential to become unstable, and the ability to transfer power is limited by the phenomenon known as instability, which is a characteristic of generators that are located long distances from large loads through long transmission lines. The addition of strategically located transmission infrastructure can help to alleviate the possibility of the instability and increase the amount of electricity that can be exported out of North Dakota.

Historically, the limitations on transmission outlet capability from North Dakota is referenced by a phrase known as the North Dakota Export Limit ("NDEX") – which is an electrical boundary around northwestern Minnesota, southeastern North Dakota, a part of South Dakota and Montana that has a maximum generation outlet capability related to transmission lines that cross the boundary. The NDEX boundary has a maximum amount of power that can be exported from North Dakota and part of Minnesota and South Dakota without adversely affecting regional system reliability. This is significant because, as mentioned previously, even under peak load conditions, there is more generation than load within the NDEX boundary leading to exports of power to load centers like the Twin Cities and points east. If large amounts of generation were developed without a simultaneous increase in transmission capacity, the generation would effectively be trapped in North Dakota. Figure 1 shows the NDEX boundary.

Figure 1

NDEX



Q. WHEN WAS THE LAST SIGNIFICANT UPGRADE TO NORTH DAKOTA'S TRANSMISSION SYSTEM?

A. The Harvey – Glenboro 230 kV transmission line was the last major network transmission project in North Dakota. It was placed into service in 2002. There are several other projects currently under development to address load serving needs as a result of the expansion of oil production activities in the oil rich portions of North Dakota. In addition, there have been several other transmission projects that have been constructed to allow the interconnection of wind generation to the transmission system. These facilities have generally been "radial" lines that connect the wind farms to the transmission grid.

These types of facilities do not increase the ability export power out of North Dakota.

IV. REGULATORY ENVIRONMENT

Q. DESCRIBE THE REGULATORY STRUCTURE WITHIN WHICH ELECTRIC SERVICE PROVIDERS MUST SERVE ITS CUSTOMERS.

A. Because of the importance of providing safe, adequate and reliable service to customers and the important role electric transmission plays in that service, matters pertaining to electric transmission are highly regulated. Regulatory oversight of transmission in the state of North Dakota occurs at several levels and by several different state and federal regulatory bodies. These regulatory bodies and their roles are described below.

North Dakota Public Service Commission

The Commission provides plenary oversight over many aspects of the electric system pursuant to Chapter 49 of the North Dakota Century Code. For investor owned public utilities, such as Applicants, the Commission has regulatory control over all aspects of the provision of retail electric service to customers. The Commission reviews and approves the rates, charges and service provisions of public utilities, as well as matters pertaining to the quality of service, affiliated interests and a variety of other types of transactions. The Commission also has permitting authority over the construction and routing of transmission facilities through its powers to issue Certificates of Public

Convenience and Necessity, Certificates of Corridor Compatibility and Route Permits.

Federal Energy Regulatory Commission ("FERC")

The FERC has authority over the transmission of electric energy in interstate commerce and wholesale sales of electricity, including regulating transmission rates and practices and authorizing and overseeing the operation of regional transmission organizations. The FERC is also responsible for oversight of mandatory electric reliability standards and for designating the Electrical Reliability Organization ("ERO") for the United States. In 1996 FERC mandated the functional separation of transmission from generation to ensure equal access to the transmission grid, thereby requiring that transmission planning and development be prepared to meet the needs of all regional market participants rather than just those of an individual utility's customers or a specific generation resource type.

Regional Transmission Organizations ("RTOs")

RTOs, including MISO, oversee and coordinate regional transmission planning and regional transmission services and manage access to the transmission grid to facilitate fair and competitive wholesale electric markets. Applicants are transmission-owning members of MISO and both are subject to the terms and conditions of MISO's Open Access Transmission, Energy Markets and Operating Reserves Tariff ("Tariff").

As part of its transmission function, MISO also undertakes studies of the transmission system and recommends proposed transmission projects that are

necessary to meet the needs of end use customers and new generators and improve electric power grid performance throughout the Midwest. MISO then reports on those recommended projects in its annual Midwest ISO Transmission Expansion Plan ("MTEP") report.

MISO also operates a centralized regional wholesale energy market, known as the "Day 2" market. Under the MISO Tariff, short-term and spot market transactions are available to utilities to acquire energy supply to meet load demands at lower cost than operating their own longer-term resources. Under the MISO Tariff, participating utilities are required to purchase and sell energy within the MISO Day-Ahead and Real Time markets. These transactions are conducted through MISO through those markets. MISO uses a security constrained economic dispatch that employs Locational Marginal Pricing ("LMP") that is intended to take into account the costs of resources and capacity limitations (referred to as "congestion") on the transmission system to use the least cost available generation to serve loads on a regional basis within MISO.

North American Electric Reliability Corporation ("NERC")

NERC, designated as the ERO by FERC, sets standards for grid planning and operations and monitors compliance with reliability standards, which recently became mandatory. The standards apply to the planning, construction, operation, and maintenance of electric utilities' electric systems in the upper Midwest.

Midwest Reliability Organization ("MRO")

MRO is a regional entity that implements the NERC standards for Minnesota and the surrounding region. MRO is designed to develop standards, monitor compliance, enforce standards, and assess reliability of the bulk power system in the Midwest. MRO operates independently of the entities subject to its jurisdiction, thereby ensuring that the reliability standards developed and enforced by NERC are fair.

V. THE CAPX2020 PLANNING AND STUDY EFFORTS

Q. DESCRIBE GENERALLY THE CAPX2020 INITIATIVE'S STUDY EFFORTS.

A. In 2004, Xcel Energy, Great River Energy, Minnesota Power and Otter Tail agreed to conduct the engineering studies they believed were needed to establish a framework or comprehensive plan for the development of transmission infrastructure to meet the increasing demand for electricity in the upper Midwest. As the momentum of the planning effort grew, additional utilities joined the Initiative and its study efforts. The CapX2020 Initiative recognized a need to develop a long range transmission plan that also addressed short term transmission needs for customer service requirements. As a result, the CapX2020 Initiative launched multiple transmission planning study efforts to address both long and short term needs of the system.

To evaluate long-term needs, the CapX2020 Vision Plan was initiated to develop a long-term transmission plan to ensure that load in the region could be served reliably under different generation scenarios. This study was

intended to be a high level study that would provide a blue-print for future transmission development in the region.

In addition to the Vision Plan, there were other studies initiated to address the short term needs. These studies, the Southeastern Minnesota and Southwestern Wisconsin Reliability Enhancement Study, the Red River Valley/Northwest Minnesota Load-Serving Transmission Study (TIPS Update), and the Southwest Minnesota – Twin Cities EHV Development Electric Transmission Study, were initiated to address the increasing load-serving capability and generation outlet needs in the Red River Valley and other areas in the CapX2020 Study Region, described further below. These study efforts were launched in parallel to address the needs of each of these areas.

Q. IS IT IMPORTANT THAT SHORT-TERM AND LONG-TERM TRANSMISSION PLANS ARE COORDINATED?

A. Yes. As transmission planners, we strive to develop a reliable and cost effective transmission system. One way this is accomplished is through coordinated planning. Coordinated planning is accomplished in several different ways, including working collaboratively with different utilities, working with MISO, and engaging other interested individuals and parties during the study process.

There are many assumptions that go into developing transmission plans, and those plans change over time. Since it takes time to plan, permit and construct transmission infrastructure, the passage of time will affect the

assumptions that went into the planning. But at some point, planners must make a decision on what facility to build and move forward. Otherwise, nothing would ever get built and the process would get bogged down in what is sometimes termed "analysis paralysis." With the CapX2020 Initiative planning effort, we have developed a long range plan to address regional reliability in the future under different generation scenarios and in addition, we have developed a short-term plan that addresses the immediate load-serving capability needs of specific areas within our region's system.

Q. PLEASE DESCRIBE THE CAPX2020 VISION PLAN IN MORE DETAIL.

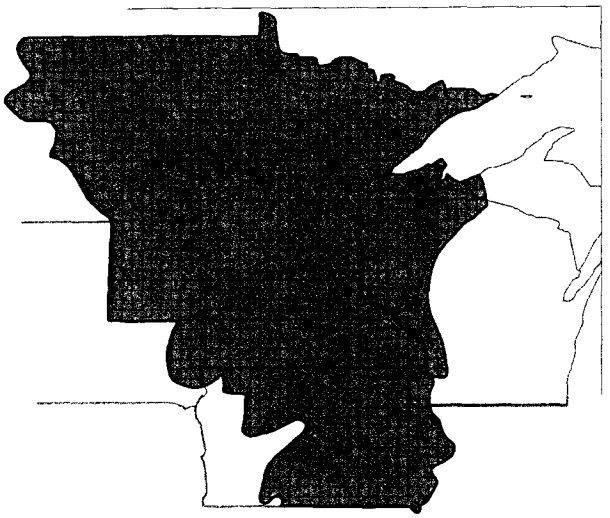
A. In any transmission study there are key assumptions that are made prior to conducting the study analysis. Key assumptions in the modeling of the CapX2020 Vision Plan are in the areas of: (1) Study region, (2) load and (3) generation.

Q. DESCRIBE THE STUDY REGION ESTABLISHED FOR THE VISION PLAN.

A. The CapX2020 study region was designed to examine the implications of growth in the demand for power on the systems of those utilities serving customers in the region. The CapX2020 Initiative addresses important needs in all areas of the CapX2020 Study Region, including North Dakota. Figure 2 is an illustration of the geographic area.

Figure 2

CapX2020 Study Region



While this footprint was the primary area of focus, transmission is regional in nature, and, as a result, we included modeling of a region larger than the primary study area.

Q. WHAT LOAD ASSUMPTIONS WERE USED FOR THE VISION PLAN?

A. The goal of the Vision Plan was to develop a long range plan for serving load out through the year 2020; therefore, we wanted to have loads in models that represented the projected load in 2020. The initial planning models used in the Vision Plan represented a 2009 Summer peak load. As a result, we needed to adjust the load estimates to represent 2020 load. In order to make the load adjustments in the models, we used several sources of information to compare the load levels between 2009 and 2020. We then adjusted the load in the models to represent this change. There were two load levels that were studied. The first load level indicated a 6,300 MW increase in peak demand between what was assumed in 2009 planning models and aggregated 2020 forecasts.

This 6,300 MW increase reflects load growth from 20,201 MW in 2009 to 26,488 MW in 2020, based on the forecast described above.

We also wanted to study a load level that represented a lower load growth as well. As a result we included a second load level scenario reflecting a growth of 4,500 MW, from 20,201 MW in 2009 to 24,701 MW in 2020. This "slow growth" forecast scenario, approximately 30 percent lower, was a check or validation of the planning effort to assess system needs under conditions substantially different than the base planning assumptions. The load growth projections utilized in the Vision Plan were intended to act as a reasonable proxy for expected customer demand growth over the next decade or more.

Q. DESCRIBE HOW THE CAPX2020 INITIATIVE ESTIMATED THE PROJECTED GENERATION THAT WOULD BE ADDED TO THE ELECTRICAL SYSTEM.

A. One of the more difficult assumptions to make in transmission planning is determining the location of projected future generation. This is a difficult assumption to make because of all of the uncertainties associated with the development of and interest in generation projects. We determined that, given the uncertainty in where generation will develop, we would create multiple generation scenarios, or biases, and test our transmission plan around each scenario. Accordingly, planning engineers developed and studied three generation scenarios: a Minnesota bias, a western bias and an eastern bias.

Q. PLEASE DESCRIBE HOW THE THREE GENERATION SCENARIOS WERE DEVELOPED.

A. Planning engineers developed the three generation scenarios based on input from resource planners and independent power producers. Planning engineers reviewed the MISO interconnection queue, comparing the queue with wind maps showing the best wind resources. Representative generation locations were developed by engineers through this broad data gathering process. Based on the data gathering, it became apparent there were common geographic locations, or regions, where generation was likely to develop. These regions were categorized into southwestern Minnesota, southeastern Minnesota, North Dakota, South Dakota, Manitoba and Wisconsin. It is unlikely that all generation to meet future load would come from one region, therefore generation scenarios were developed that included generation from each region. These scenarios were described as the Minnesota bias, the western bias and the eastern bias. Once the amount of generation from each region was approximated, representative sites were selected based on the data that we had gathered during the data gathering phase of the study. The assumptions of generation additions in North Dakota for each of the scenarios is listed in the table below.

Scenario	North Dakota Generation
Western Bias	1050 MW
Eastern Bias	550 MW
Minnesota Bias	550 MW

Q. DOES THE FUEL TYPE OF THE VARIOUS GENERATION OPTIONS YOU MODELED HAVE ANY BEARING ON YOUR STUDY WORK?

A. No. Fuel type has no bearing on our work in power flow analysis. We did not model specific generation proposals. The Vision Plan examined the impact on the transmission system associated with different geographic patterns of generation injecting power into the transmission network that serves customers throughout the upper Midwest.

Q. HOW WERE THE GENERATION SCENARIOS USED IN THIS STUDY?

A. Planning engineers developed a transmission plan around each of the three generation scenarios or biases. These three transmission plans were then compared to determine whether there were transmission facilities common to each scenario. The common facilities that were identified through this process are listed below:

Facility Name			
From	**To**	**Volt (kV)**	**Miles**
Alexandria	Benton County	345	80
Alexandria	Maple River	345	126
Antelope Valley	Jamestown	345	185
Arrowhead	Chisago	345	120
Arrowhead	Forbes	345	60
Benton County	Chisago County	345	59
Benton County	Granite Falls	345	110
Benton County	St. Boni	345	62
Blue Lake	Ellendale	345	200
Chisago County	Prairie Island	345	82
Columbia	North La Crosse	345	80
Ellendale	Hettinger	345	231
Rochester	North La Crosse	345	60
Jamestown	Maple River	345	107
Prairie Island	Rochester	345	58

Q. WHAT IS THE SIGNIFICANCE OF THE COMMON FACILITIES TABLE?

A. This table identifies the transmission facilities that are common to all three generation scenarios, which means that regardless of which generation scenario actually develops, these transmission facilities are needed. The Group 1 Projects are a subset of these common facilities. The Fargo Project is identified in the table above as two line sections Alexandria – Benton County and Alexandria – Maple River. The Brookings Project is a portion of the Ellendale – Blue Lake line in the table above, and the La Crosse Project is identified as Prairie Island – Rochester and Rochester – North La Crosse in the table above. The Bemidji Project is not included in the table above, because it is not a 345 kV project, but rather a 230 kV project.

Q. WHAT IMPACT DID THE LOW LOAD GROWTH SCENARIO HAVE ON THE TRANSMISSION PLANS?

A. The plan changed very little as a result of changing the load growth assumption from 6,300 MW to 4,500 MW. The common facilities listed above were found to be needed in both growth scenarios.

Q. PLEASE DESCRIBE IN MORE DETAIL THE SHORT TERM STUDIES THAT WERE UNDERTAKEN AS PART OF THE CAPX2020 INITIATIVE.

A. To address the short term needs, identified as community load serving needs and generation outlet needs, three detailed transmission studies were then conducted. Each study had a specific study scope and is briefly summarized below.

- Southeastern Minnesota and Southwestern Wisconsin Reliability Enhancement Study: This study addressed the load serving needs of the Rochester, Minnesota and La Crosse, Wisconsin communities.
- Red River Valley/Northwest Minnesota Load-Serving Transmission Study (TIPS Update): This study addressed the load serving needs of the Red River Valley and the Bemidji areas.
- Southwest Minnesota – Twin Cities EHV Development Electric Transmission Study: This study addressed the need to increase the ability to interconnect and deliver generation from the Buffalo Ridge area.

(collectively referred to as the "Short Term Studies")

Q. WHY WERE THE GROUP 1 PROJECTS SELECTED FROM THE COMMON FACILITIES TABLE?

A. The CapX2020 Initiative decided to proceed with the Group 1 Projects first because the Short Term Studies identified projects that were necessary to address short term needs of the system, were also common to any future reasonable transmission system development scenario, and provide the most expansive foundation for any future reasonable expansion of the transmission system.

Q. IDENTIFY THE NEEDS THAT WILL BE ADDRESSED BY THE GROUP 1 PROJECTS.

A. There are multiple needs that will be met by the Group 1 Projects. These include: 1) improving regional system reliability and meeting demand growth through 2020; 2) meeting specific community reliability needs; and 3)

providing outlet for added generation throughout the region; and 4) creating a robust platform for future development.

Q. PLEASE DESCRIBE THE SYSTEM RELIABILITY NEED.

A. As explained earlier in my testimony, the utilities participating in the Group 1 Projects are obligated under federal and state law to provide reliable service to all of their customers in all their service areas. The ability to meet this obligation is projected to be, at risk in the near future. There are several areas within the region where the transmission system is constrained or is exceeding the level at which customers can be reliably served. Studies undertaken as part of the CapX2020 Initiative confirmed that the Group 1 Projects will be able to address this need by providing an increment of additional regional transmission infrastructure which will substantially improve the future reliability of electric service in those areas.

Q. ARE ANY OF THE AREAS OF CONCERN LOCATED IN NORTH DAKOTA?

A. Yes. The Red River Valley is identified as an area where the transmission system is projected to be at risk in the near future and reliable service to customers in that area is a concern.

Q. DESCRIBE THE TRANSMISSION SYSTEM CURRENTLY SERVING THE RED RIVER VALLEY.

A. Geographically the transmission system serves not only the Red River Valley, but encompasses parts of North Dakota extending west to Jamestown and Devils Lake, and parts of Minnesota as far east as Bemidji, Park Rapids and Alexandria.

The bulk electric transmission system in the Red River Valley primarily consists of a 230 kV network with a single 345 kV connection between the Red River Valley and western North Dakota. Nearly all of the power supply to the Red River Valley is from remote generation sources. Power typically flows through the Red River Valley region from west-to-east and north-to-south. However, long term power purchase and capacity exchange agreements between Manitoba Hydro and United States power suppliers require that adequate transmission capability be maintained to enable both northward and southward power transfers at all times of the year.

Q. HAS THE TRANSMISSION SYSTEM SERVING THE RED RIVER VALLEY BEEN STUDIED RECENTLY?

A. Yes. Building on the Vision Plan, which I described above, and a 2002 effort of the Red River Valley Subregional Planning Group (the "RRV-SPG") – which was made up of area utilities, generation developers, MISO and MAPP staff, state regulatory staff – CapX2020 planners undertook the Red River Valley/Northwest Minnesota Load-Serving Transmission Study (the "TIPS Update") in 2006 to examine community service reliability needs for the electrical system serving the Red River Valley.

For the TIPS Update, planning engineers began their evaluation with the actual system peak for the 2003/2004 winter period. The study found that load serving capability in the Red River Valley becomes constrained when one transmission line is out of service. There were also voltage concerns for both local and remote transmission contingencies. The most severe contingency of

local lines connecting the Red River Valley to the generation from the west and north is outage of the Center – Jamestown – Buffalo – Maple River 345 kV transmission line, which is the highest capacity transmission tie between the Red River Valley area and the baseload generation sources to the west. The most severe remote contingency for the Red River Valley is outage of the Dorsey – Forbes transmission line. Outage of this 500 kV circuit during northward flow conditions causes significant power to flow through the Red River Valley's transmission system. This "throughflow" results in high reactive power losses, contributing to the risk of voltage collapse.

Q. WHAT DID THE TIPS UPDATE CONCLUDE?

A. Consistent with previous studies, the TIPS Update confirmed that the most robust, economic and efficient upgrades to improve local load serving capability of the Red River Valley area and local load centers within it are the Bemidji Project (North Zone) and the Fargo Project (South Zone). In reaching this conclusion, the TIPS Update considered several other options including increasing reactive power sources in the area and other transmission line options.

The TIPS Update also identified community service reliability needs in the Alexandria, Minnesota area and St. Cloud, Minnesota area that can be met with the Fargo Project. Improving reliability in these communities also will help North Dakota communities located in the Red River Valley. The Fargo Project will assist in maintaining voltage levels and prevent overloads to the transmission lines serving the Red River Valley, including those serving North Dakota communities.

Q. WILL THE GROUP 1 PROJECTS SERVE THE RELIABILITY NEEDS OF OTHER COMMUNITIES?

A. Yes. The Southeastern Minnesota – Southwestern Wisconsin Reliability Enhancement Study of 2006 identified community service reliability needs in the Rochester, Minnesota and La Crosse, Wisconsin areas that can be met by the La Crosse Project. The Southwest Minnesota – Twin Cities EHV Development Electric Transmission Study identified community service reliability needs in many of the communities that lie within the area affected by installation of the Brookings Project. The Brookings Project will help to meet these identified needs.

It is important to understand that while the La Crosse and Brookings Projects are not located in North Dakota, they will help address the needs of North Dakota. For example, the La Crosse Project will provide an outlet for new generation in the west, including generation proposed to be built in North Dakota, to access markets serving large load centers located in the east; and the Brookings Project will alleviate a congestion bottleneck that limits the amount of generation that can be delivered out of North Dakota. Both of these projects provide significant benefits to North Dakota for purposes of generator outlet and overall system reliability.

Q. DESCRIBE THE SYSTEM WIDE GROWTH NEED.

A. One of the drivers for the Group 1 Projects is current and future predicted demand for electricity. The utilities participating in the CapX2020 Initiative studied the peak demand of the regional transmission system generally and the

peak demand of particular communities. Their analysis concluded that the Upper Midwest will experience several thousands of megawatts in demand growth between now and 2020.

The regional transmission system, however, has not kept pace with current or projected load and generation growth. Current growth has increasingly used up the capability created by major transmission expansions in the 1950s, 1960s, and 1970s. In addition, the capacity stemming from the other transmission expansion projects that Applicants and other CapX2020 Utilities are currently constructing are expected to be fully used by the time the Group 1 Projects are placed in service. For the electrical system to continue to deliver power safely and reliably to Applicants' customers, additional transmission infrastructure must be built.

Q. HOW WILL THE GROUP 1 PROJECTS ADDRESS SYSTEM WIDE GROWTH?

A. As part of the Vision Plan, planners looked at the overall electrical system in light of both the current and future predicted demand for electricity and generation. The Vision Plan identified fifteen facilities necessary to meet this demand. The Group 1 Projects were identified as those system improvements that would satisfy immediate needs and also provide a platform for meeting the needs of anticipated regional growth.

Q. DESCRIBE THE GENERATION OUTLET NEED.

A. To serve growing demands of customers in the upper Midwest, large amounts of new electric generation, both renewable and nonrenewable, will need to be installed. CapX2020 studies estimate that 5700 to 8000 MW of generation will

be needed by 2020 to meet power demands. Without expansion of the bulk transmission network, the current transmission system serving the upper Midwest will not be able to support the addition of this amount of new generation.

Recently enacted legislation in several states in the CapX2020 Study Region is also driving the need for additional generation outlet. Several states are requiring retail electric providers to supply a certain percentage of their retail electricity from renewable sources. For example, both the North Dakota and Minnesota legislatures passed renewable energy legislation in 2007. North Dakota passed the Renewable and Recycled Energy Objective that established the goal of achieving ten percent of retail electric sales from renewable and recycled energy sources by 2015. N.D.C.C. § 49-02-28. Minnesota passed the Renewable Energy Standard that mandates that twenty-five percent of retail electric sales come from renewable sources by 2025 (Xcel Energy must provide 30% of it retail electrical sales from renewable energy by 2020). Minn. Stat. § 216B.1691. In addition, a federal renewable standard appears to be on the horizon. These legislative initiatives create a need for additional renewable generation to come on line sooner rather than later.

Oftentimes, large scale generation projects are not constructed near the load which will consume the electricity generated. For example, North Dakota currently generates substantial generation based on traditional fuels and has rich wind resources that can be developed so that utilities can meet their state mandated renewable energy requirements. However, North Dakota's loads are too small to absorb all of the electricity that is and can be generated within

the State. Additional transmission will allow an outlet for new generation to reach remote areas where it can be used.

Q. WILL THE GROUP 1 PROJECTS ADDRESS THIS NEED?

A. Yes. The Group 1 Projects are designed to work together to provide outlet for generation. The Fargo and Bemidji Projects will increase the capacity and support for generation created in North Dakota, as well as exported out of North Dakota, including renewable generation. The Brookings Project will allow the continued development of renewable generation in Minnesota and eastern South Dakota and alleviate some strain on the transmission system in North Dakota by creating an additional path for North Dakota based generation. The La Crosse Project will provide additional capacity to transmit generation produced in North Dakota into the MISO Market providing access to the eastern portion of the MISO footprint thereby increasing the number of available purchasers for generation produced in North Dakota.

The Vision Plan analyzed different possible, fuel neutral, generation scenarios to determine the type of additional transmission infrastructure would be necessary to support the needed additional generation on the bulk transmission system. The Vision Plan and the additional studies performed concluded that the Group 1 Projects are common facilities reasonably necessary to serve any future generation scenario for our region.

Q. DESCRIBE THE NEED FOR A ROBUST PLATFORM FOR FUTURE DEVELOPMENT.

A. The Group 1 Projects are needed to establish a common foundation for future development across the system. This will allow for regional generation to access the wider MISO market. By building the Group 1 Projects, the CapX2020 Utilities will effectively balance immediate and future needs. Further, the Group 1 Projects, by providing a foundation for future system build-out, are a prudent way for the CapX2020 Utilities to cost-effectively meet additional system-wide needs in the future. Finally, North Dakota is a net-exporting State and is dependent upon a robust transmission system to access regional markets for excess generation. The ability to export North Dakota generation is already constrained and new transmission is needed to enhance that access.

Q. DID CAPX2020 PLANNING ENGINEERS EVALUATE ALTERNATIVES TO THE GROUP 1 PROJECTS TO MEET THE NEEDS YOU DESCRIBED?

A. Yes. CapX2020 planning engineers analyzed other alternatives to constructing the Group 1 Projects including upgrades to currently built facilities, double-circuiting existing facilities, adding localized generation and using higher or lower voltage transmission lines. CapX2020 planning engineers determined that these alternatives did not adequately meet the multiple needs identified for these projects. Many of the alternatives considered by Applicants are described in the Application. The Group 1 Projects' ability to meet multiple needs simultaneously make them the most prudent option for maintaining the reliability of the regional transmission system.

IX. BENEFITS OF THE CAPX2020 GROUP 1 PROJECTS

Q. WHAT BENEFITS WILL BE PROVIDED BY THE GROUP 1 PROJECTS TO NORTH DAKOTA?

A. The Group 1 Projects will provide the following benefits to Applicants' North Dakota customers and the state as a whole: 1) enhanced reliability throughout the region including North Dakota; 2) added export capacity to the transmission system within North Dakota; 3) improved access to the MISO market for North Dakota based generation; 4) increase the value of generation currently located in the state; 5) create opportunities for the development of new generation, including wind based generation; and 6) stimulate economic development in North Dakota.

Q. HOW WILL THE GROUP 1 PROJECTS ENHANCE REGIONAL RELIABILITY?

A. Regional reliability is related to the shared importance of an efficient and reliable transfer of bulk power across regions and between regions. By constructing the Group 1 Projects, the regional interconnected transmission system is benefited as a whole because those additional connections provide for a more robust transmission system that is able to better withstand system contingencies. A more robust bulk power system also enhances efficient transfer of power across and between regions. Efficient regional power transfers promote and support fair and competitive wholesale electric markets thereby assisting in meeting the needs of all regional market participants, rather than just those of the individual utility's customers or a specific generation resource type.

Q. HOW WILL THE GROUP 1 PROJECTS IMPROVE EXPORT CAPABILITY?

A. The Group 1 Projects will enhance the export capability of all generation in North Dakota by alleviating some of the constraints of the NDEX boundary and facilitate MISO dispatch of North Dakota generation into the MISO energy markets.

Q. HOW WILL THE GROUP 1 PROJECTS ADDRESS THE CURRENT NDEX CONSTRAINT?

A. The Group 1 Projects will provide additional export capability for North Dakota Generation. The Fargo and Bemidji Projects will together increase NDEX limits by approximately 550 MW. The addition of the Brookings Project should further increase NDEX. Depending upon the size and location of new generation, the combination of the Fargo, Bemidji and Brookings Projects could increase NDEX by 700-800 MW. Applicants' Proposal provides for future additional increases to the NDEX limit because it utilizes the double-circuit compatible configuration.

Q. HOW WILL THE GROUP 1 PROJECTS IMPROVE MISO MARKET ACCESS?

A. In order to reliably operate the transmission system, generation and load must always be in balance. MISO operates as a centralized dispatcher of generation in the MISO foot print to make sure that the system remains in balance. Alleviating congestion on the system with an eastbound outlet, provided by all the Group 1 Projects, allows MISO to more efficiently dispatch generation from the generation rich western portion of the MISO footprint, especially North Dakota, into the load centers in the east. Without more eastbound

outlet, especially into the congested areas east of Minnesota, the generation in the western portion of the MISO footprint essentially becomes trapped. Any generation bid into the MISO market therefore effectively displaces existing generation instead of adding an incremental benefit to the system as a whole. An eastern outlet will enlarge the possible market for North Dakota based generation.

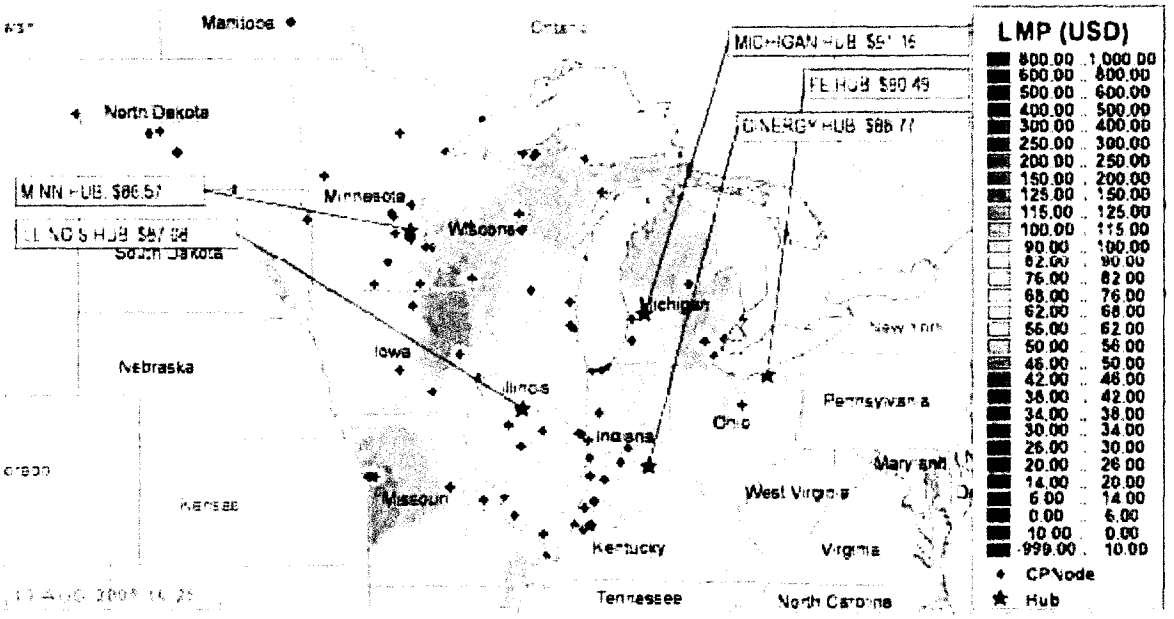
Q. WHY IS IT BENEFICIAL FOR NORTH DAKOTA GENERATORS TO HAVE ACCESS TO THE MISO MARKET?

A. MISO prices energy based on LMP which provides price signals that account for the additional costs of electricity caused by transmission congestion and line loss at various points on the electricity grid. Under the LMP pricing structure, areas on the grid which experience the least amount of congestion and have sufficient generation resources have the lowest prices for electricity.

Figure 3 is a representative map showing the LMP for the MISO footprint.

Figure 3

LMP



Source: MISO

As demonstrated in Figure 3; the LMP in Wisconsin and Michigan are higher than in North Dakota and Minnesota. A higher LMP signifies congestion in serving those areas with higher prices. The La Crosse Project will help to alleviate some of the congestion in serving Wisconsin. The La Crosse Project will complete the direct path provided by the Fargo Project, aided by the additional NDEX increase of the Brookings and Bemidji Projects, and the secondary path through the Brookings Project into those areas of the MISO footprint with higher LMPs. This access to the eastern portion of the MISO footprint enlarges the market for generation based in the western part of the CapX2020 study region, including North Dakota based generation.

Q. HOW WILL THE GROUP 1 PROJECTS ENHANCE THE EXISTING VALUE OF NORTH DAKOTA GENERATION?

A. The Group 1 Projects will allow for additional increments of outlet for North Dakota based generation and additional access to the MISO markets. This in turn will make the energy and capacity produced by North Dakota's current generation facilities more valuable. Since North Dakota is a net exporting state which has more generation than load to absorb it, North Dakota's generators need a robust transmission infrastructure to transport and sell their energy to load centers further east.

The Fargo, Brookings and Bemidji Projects will increase the NDEX limit, allowing more generation to physically leave the NDEX area without creating instability on the transmission system serving North Dakota's customers. The Brookings Project will alleviate some strain on the North Dakota transmission system and provide an additional path east for North Dakota based generation through transmission ties between North Dakota and South Dakota. The La Crosse Project will create a path into the MISO market creating additional opportunities for the marketing of North Dakota based generation. The ability to access loads east of North Dakota creates a larger market for North Dakota based generation thereby making it more valuable.

Q. WILL THE GROUP 1 PROJECTS INCREASE THE POTENTIAL FOR DEVELOPING NEW GENERATION IN NORTH DAKOTA?

A. Yes. Much the same way that the Group 1 Projects will enhance the value of existing North Dakota based generation, the Projects will also create a

transmission backbone which may be attractive to developers of new generation.

Q. IS THERE MUCH INTEREST IN DEVELOPING NEW GENERATION IN NORTH DAKOTA?

A. Yes. Based on my understanding of the rich wind resource available in North Dakota, I would assume that there is substantial interest in harnessing this resource. This assumption is borne out by the amount of generation waiting to interconnect in North Dakota.

Q. WHAT IS YOUR UNDERSTANDING OF NORTH DAKOTA'S POTENTIAL FOR RENEWABLE FUEL GENERATION.

A. According to the American Wind Energy Association, North Dakota ranks number one in the country for wind energy potential. The entire state has a class 3 (14 to 15 mph) or better wind resource, with several areas containing class 5 winds (16 to 18 mph). The U.S. Department of Energy describes North Dakota's wind resources as good to excellent and consistent with utility scale production. North Dakota has an unparalleled opportunity to develop its wind energy potential.

There is also significant regional demand for the energy produced by wind-based generation. In addition to assisting North Dakota in meeting its renewable energy goals, development of wind based generation in North Dakota will assist regional utilities in meeting Minnesota's Renewable Energy Standard which allows renewable energy not produced in the State to be counted towards a utility's requirements. As North Dakota develops its wind

resources, Minnesota and points east can be a substantial market for the energy produced.

Q. IS THE DEMAND FOR NORTH DAKOTA RENEWABLE GENERATION STARTING TO INCREASE?

A. Yes. The demand for North Dakota's wind resource is starting to grow. In fact, MISO's Interconnection Queue in North Dakota shows that 7,128 MW of wind energy has entered the queue as of June 28th, 2009, and the WAPA Interconnection Queue shows that 4857 MW of wind energy has entered that queue as of June 28th, 2009, and the Minnkota Power Cooperative Interconnection Queue shows 3067 MW as of June 28th, 2009.

Q. WILL THE GROUP 1 PROJECTS BENEFIT THE DEVELOPMENT OF RENEWABLE FUEL BASED GENERATION?

A. Yes. The Group 1 Projects will expand interconnection opportunities for generation development in eastern North Dakota and as a result help facilitate development of wind based generation in North Dakota.

Q. WHAT ABOUT NON-RENEWABLE GENERATION? WILL THE GROUP 1 PROJECTS BENEFIT THE DEVELOPMENT OF NON-RENEWABLE GENERATION?

A. Yes. The outlet capabilities provided by the Group 1 Projects and any additional transmission facilities which may expand on the platform provided by the Group 1 Projects may facilitate the development of traditional fuel based generation to meet growing system wide baseload demand. Planning studies are non-discriminatory in terms of generation sources.

Q. HAVE THERE BEEN OTHER TRANSMISSION STUDIES CONDUCTED IN THIS REGION THAT HAVE IDENTIFIED SIMILAR PROJECTS?

A. Yes. There have been several studies conducted over the years that identified the same projects or very similar projects. The most recent study completed prior to the CapX2020 transmission studies is the Northwest Exploratory Study. In this study, 345 kV transmission projects from North Dakota to the Twin Cities were identified. The Fargo Project and the Brookings Project represent a portion of those projects that were identified in that plan.

Q. WHAT WAS THE PURPOSE OF THE NORTHWEST EXPLORATORY STUDY?

A. The primary purpose of this study was to identify a transmission plan that would allow additional generation, approximately 2000 MWs, to be built in North Dakota and to deliver this power to loads outside of North Dakota.

Q. PLEASE SUMMARIZE THE RESULTS OF THE NORTHWEST EXPLORATORY STUDY.

A. The Northwest Exploratory identified two 345 kV transmission lines between western North Dakota and the Minneapolis area. These lines were necessary to add generation in North Dakota and deliver to the Minneapolis area. The Brookings Project and the Fargo Project represent portions of these two lines.

VI. MISO'S ROLE IN THE DEVELOPMENT OF THE GROUP 1 PROJECTS

Q. IDENTIFY THE OTHER REGIONAL TRANSMISSION STUDIES THAT HAVE BEEN PERFORMED?

A. MISO plays an important role in coordinating the transmission planning in its footprint, and has undertaken regional transmission planning efforts and publishes its results in the Midwest ISO Transmission Expansion Plan ("MTEP"). Other regional planning efforts include the North Dakota 10-year Plan filing requirements and the Upper Midwest Transmission Development Initiative ("UMTDI").

Q. DESCRIBE MISO'S MTEP EFFORTS.

A. The MTEP identifies projects required to maintain reliability for the next 10-year period, and provides a preliminary evaluation of projects that may be required to enhance market transactions up to 20 years in the future. A project's inclusion in the MTEP makes it eligible for different cost allocation treatment under the MISO tariff.

Q. DESCRIBE THE APPROACH TAKEN BY MISO WHEN DEVELOPING THE MTEP.

A. MISO uses a "bottom-up, top down" approach in developing the MTEP. The "bottom-up" portion relies on the ongoing responsibilities of the individual transmission owning members of MISO to continuously review and plan for reliably meeting the needs of their local systems. MISO then reviews these local planning activities with stakeholders and performs a top-down

review of the adequacy of and appropriateness of these local plans in meeting needs.

In addition, MISO considers together with stakeholders, opportunities for expansion that would reduce customer costs by providing access to new low cost resources that are consistent with and required by evolving energy legislative policies. MISO's planning process examines congestion that may limit access to the most efficient resources, and considers upgrades that may be needed to meet applicable statutory requirements.

Q. HAVE THE GROUP 1 PROJECTS BEEN EVALUATED BY MISO?

A. Yes, they have. The Group 1 Projects have been submitted to MISO and MISO has analyzed them for inclusion in the MTEP. MISO has designated the Fargo, Bemidji and parts of the La Crosse Projects as Baseline Reliability Projects and has included the Brookings Project in MTEP as well, but has not given the Brookings Project an MTEP designation.

Q. HAS MISO'S COST ALLOCATION TREATMENT FOR THE GROUP 1 PROJECTS BEEN ACCEPTABLE TO APPLICANT OTTER TAIL?

A. The discussion on page 36 of the Application adequately states Applicant Otter Tail's views with respect to its position within MISO and the impact of MISO's cost allocation methodology to it.

Q. DESCRIBE NORTH DAKOTA'S 10-YEAR TRANSMISSION INFRASTRUCTURE PLAN.

A. The Commission conducts its own planning oversight by requiring each utility which owns transmission infrastructure in the state to submit a ten-year plan.

This plan requires, among other things, that a utility provide information on the transmission facilities it plans to construct, keep in service or remove from service. Utilities are also required to inform the Commission of their efforts to coordinate with other utilities to provide a coordinated regional plan for meeting the needs of the region.

Q. HAVE THE GROUP 1 PROJECTS BEEN INCLUDED IN THE NORTH DAKOTA 10-YEAR PLAN?

A. Yes. The Group 1 Projects have been included in each Applicant's 10-year plan.

VII. OTHER REGIONAL TRANSMISSION INITIATIVES

Q. WHAT ARE SOME OF THE TRANSMISSION INITIATIVES FOCUSING ON THE DEVELOPMENT OF A TRANSMISSION SYSTEM THAT COULD DELIVER POWER TO LOADS OUTSIDE OF NORTH DAKOTA?

A. From the time that I have been involved with transmission planning, North Dakota has had an interest in seeing the development of more transmission that would allow generation export from North Dakota. Some of the more recent initiatives that North Dakota has been involved with include the Upper Great Plains Transmission Coalition ("UGPTC" or "Coalition") and the Upper Midwest Transmission Initiative (UMTDI).

Q. PLEASE DESCRIBE THE PURPOSE OF THE UGPTC?

A. The mission of the Coalition is to identify, publicize, and advocate solutions to increase the export of electricity from the upper Great Plains. The Coalition is made up of many different stakeholders including utilities such as Applicants Otter Tail and Xcel Energy; generation developers such as NextEra, Crown Butte Wind; and generation advocacy groups such as the North Dakota Lignite Energy Council, and Wind on the Wires. In addition to the actual members, there are other stakeholders that have participated in the Coalition, such as the North Dakota Industrial Commission, Western Area Power Administration and the regulatory agencies from North Dakota, South Dakota and Minnesota.

Q. DESCRIBE THE UMTDI.

A. The UMTDI is a regional transmission planning effort initiated by the governors of the states of North Dakota, Iowa, Wisconsin, Minnesota and South Dakota to promote regional electric transmission development and equitable cost sharing. The UMTDI was created due to the need for developing transmission infrastructure on a coordinated regional basis. The UMTDI will identify energy generation zones, transmission projects, and other infrastructure needed to support those resources in a cost-effective manner. The UMTDI held its first meeting in October of 2008 and is in the process of developing its work plan.

Q. HAVE THE GROUP 1 PROJECTS BEEN EVALUATED OR INCLUDED IN THE TRANSMISSION STUDIES THAT ARE BEING CONDUCTED FOR THE UMTDI INITIATIVE?

A. Yes, the UMTDI transmission studies have included Group 1 Projects. The base case models that are being used for the UMTDI transmission studies included the transmission facilities that were identified and approved in the MISO MTEP '08, which include all of Group 1 Projects, with the exception of the Brookings Project. However, all UMTDI transmission options that are under study include the Brookings Project or a similar variation of that project.. The UMTDI studies will identify additional facilities beyond the Group 1 Projects to integrate additional resources into the grid.

VIII. ONGOING TRANSMISSION PLANNING STUDY EFFORTS

Q. BEYOND THE STUDIES YOU HAVE DESCRIBED, ARE THE CAPX2020 UTILITIES CONDUCTING OR PARTICIPATING IN ANY ADDITIONAL TRANSMISSION STUDIES IN ORDER TO PLAN FOR FUTURE NEEDED TRANSMISSION DEVELOPMENT IN THE REGION BEYOND THE GROUP 1 PROJECTS?

A. Yes. There are several studies that we are either conducting ourselves or having active participation. These studies are being conducted to ensure a reliable electrical system in the region is developed while facilitating compliance with regulatory requirements and meeting important load-serving and reliability needs.

Q. WHY ARE THE CAPX2020 UTILITIES CONDUCTING TRANSMISSION STUDIES NOW FOR TRANSMISSION INFRASTRUCTURE THAT IS NOT ANTICIPATED TO BE NEEDED UNTIL 2025 OR BEYOND?

A. The CapX2020 Utilities are conducting these additional transmission studies now for the same reason that the Vision Plan was performed: to establish a comprehensive plan to guide near term transmission investments toward an efficient, well-coordinated goal. Due in part to the renewable energy standards established by the states in the Study Region, including North Dakota, significant generation additions above and beyond those modeled in the Vision Plan will be needed. In addition, there is significant discussion at the national level regarding a renewable energy standard that if enacted would require substantial transmission expansion. While 2020 and 2025 seem a long way away at this point, from a transmission planning perspective, it is time to begin looking at the system and planning the facilities that will need to be built to address customer needs in that timeframe.

Q. HAVE THERE BEEN OTHER TRANSMISSION STUDIES COMPLETED FOR THIS REGION SINCE THE CAPX2020 STUDIES?

A. In late March 2009, several of the regional utilities released three additional studies, the "RES Study," "Corridor Study" and the "Capacity Validation Study" ("CVS"). These studies provide insight into the development of the transmission system beyond the Group 1 projects and one of them in particular, the CVS provides additional insight with respect to the benefits of the Group 1 Projects.

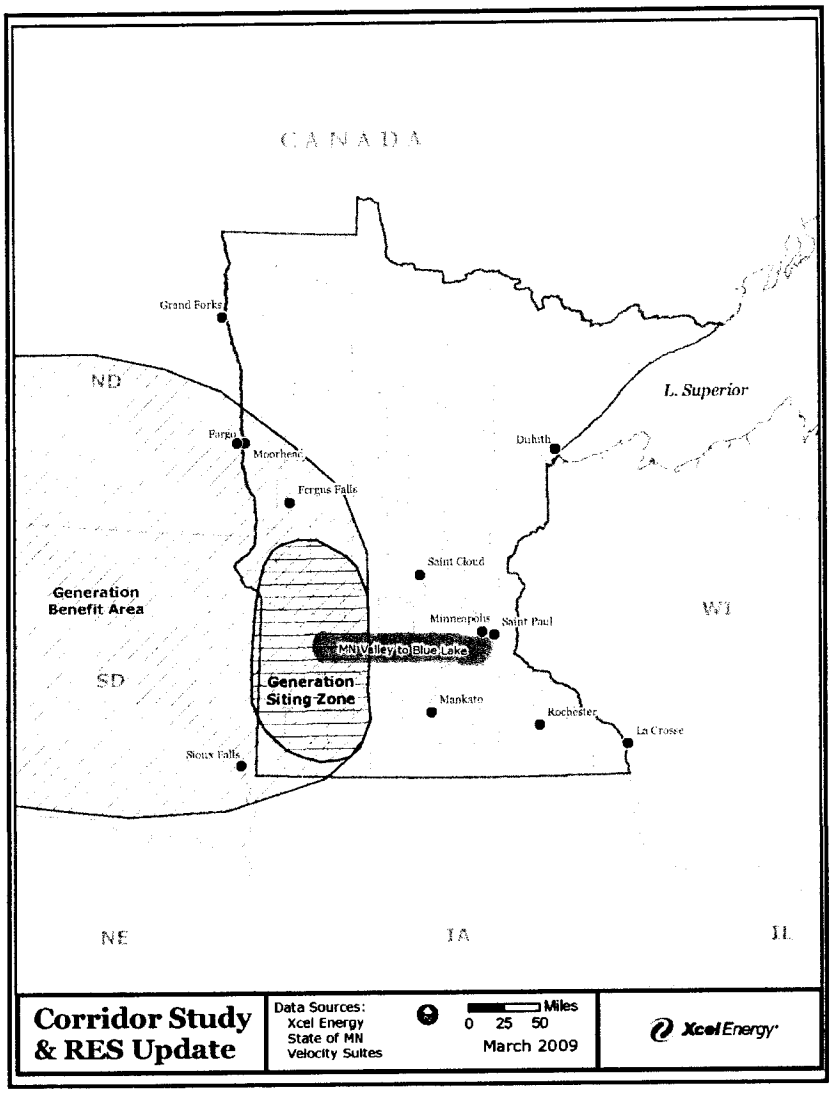
Q. PLEASE DESCRIBE THE OBJECTIVE AND SCOPE OF THE CORRIDOR STUDY.

A. The objective of the corridor study was to identify a solution for the transmission limitations that exist between western Minnesota and the Twin Cities. The results of the study indicate the rebuild of an existing 230 kV line between the Granite Falls area and the southwestern side of the Twin Cities should be rebuilt as a double circuit 345 kV line. This upgrade will create a substantial increase in transfer capability.

Q. WILL THE TRANSFER CAPABILITY IDENTIFIED IN THE CORRIDOR STUDY BENEFIT NORTH DAKOTA?

A. The transfer capability identified in the study enhances the ability of the regional transmission system to move generation from western Minnesota and points west to the Twin Cities. This not only helps generation additions in Minnesota, but also in the Dakotas. Figure 4 illustrates this point.

Figure 4



The gold line on the diagram shows the location of the "Corridor Project," and the hashed areas on the diagram show the areas where additional generation can be added to the system as a result of this transmission addition. Even though this line is physically located in Minnesota, it provides benefits for generation sited in the Dakotas. While more transmission facilities may also be necessary, without this line, it would be very unlikely that additional generation could be added and delivered to the Twin Cities or points further

east. The total capability added by this line is estimated to be an incremental 2000 MWs.

Q. WERE THERE OTHER FINDINGS IN THE CORRIDOR STUDY?

A. Yes, another important result from the Corridor Study was the identification of the need for a line in Wisconsin to allow generation development in Minnesota and the Dakotas to access load centers in the east. The study reveals that adding a line from La Crosse, Wisconsin to Madison, Wisconsin can increase the 2000 MW transfer capability created by the Corridor Project by an additional 1600 MWs, which will facilitate generation development in Minnesota and the Dakotas. This study demonstrates the benefits of regional transmission and how transmission constructed in a non-neighboring state has the potential to provide benefits to generators seeking to site in North Dakota.

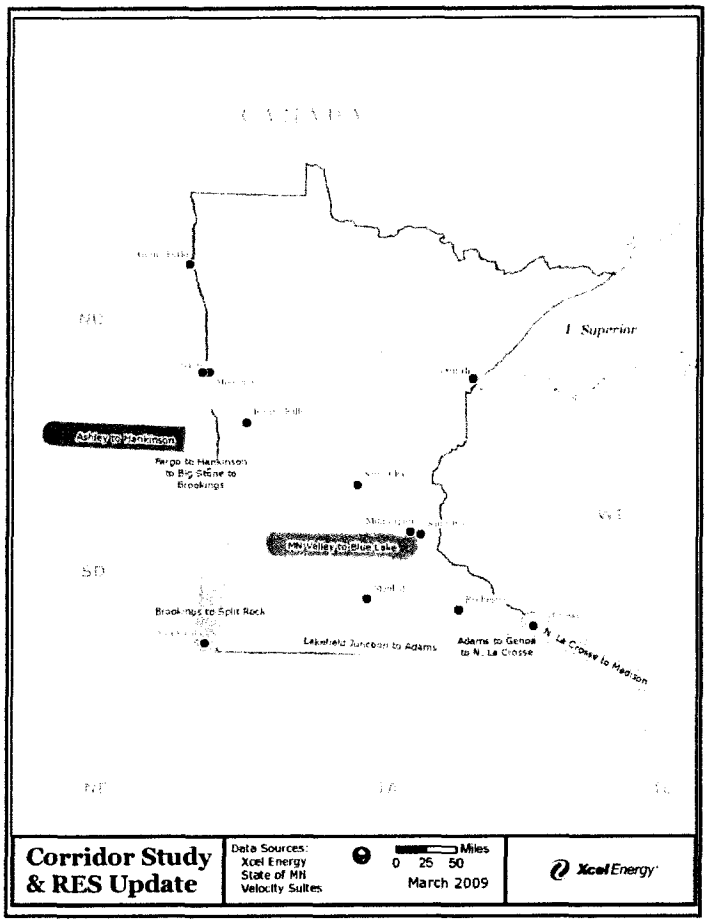
Q. PLEASE DESCRIBE THE OBJECTIVE AND SCOPE OF RES UPDATE STUDY.

A. The scope of the RES Update transmission study was to examine the transmission facilities necessary to meet the Minnesota Renewable Energy Standard beyond the Group 1 projects and the Corridor project. Transmission projects identified during this study would support renewable generation projects, and other generation projects necessary to maintain system reliability in the region. Similar to the CapX2020 Vision Plan, this study looked at various generation development scenarios, and looked for common transmission plans across the various scenarios.

Q. WHAT WERE THE RESULTS OF THE RES UPDATE STUDY?

A. Figure 5 illustrates the next likely set of transmission facilities that were identified in this study. A new double circuit 345 kV line from Fargo to Sioux Falls allows for a north-south tie for several major east-west transmission lines, therefore optimizing the performance of the Group 1 facilities and the Corridor project. The Ashley – Hankinson extension would allow several new wind projects to be integrated into the system. Furthermore, the transmission lines proposed in Southern Minnesota enable more generation outlet capability from the Buffalo Ridge area and points west.

Figure 5



Q. PLEASE DESCRIBE THE OBJECTIVE AND SCOPE OF THE CVS STUDY.

A. Most of the transmission studies that have been conducted for high voltage transmission projects have primarily been performed on an individual or small group basis, each using a different set of assumptions. The objective and scope of the CVS Study was to evaluate, at a high level various combinations of proposed projects with a common set of assumptions to identify the potential range of capability that may be achieved by a single project or a set of projects.

Q. PLEASE DESCRIBE THE RESULTS OF THE CVS STUDY.

A. Some key findings of the CVS Study were that the Group 1 projects provide more transfer capability together than each project individually. Following the construction of the Group 1 projects, the CVS Study concluded that the Corridor Project is the next logical development because it offers the most amount of incremental transfer capability at the lowest cost. The CVS Study also verified that a new line in Wisconsin greatly enhances power transfer through the system regardless of any combination of transmission projects. Furthermore, the CVS Study confirmed that the 500 kV line between Manitoba and Minnesota is the next major transmission constraint in the region.

Q. DOES THE CAPX2020 INITIATIVE HAVE PLANS FOR FURTHER TRANSMISSION PLANNING STUDIES?

A. Yes. Because transmission planning is an ongoing and evolving process, there will always be a need to continue to conduct additional studies. At this point, we expect that once the current phase of transmission studies are completed,

we would conduct additional studies in a similar fashion with updated assumptions.

Q. IS THERE ANYTHING ABOUT THE ONGOING TRANSMISSION STUDY WORK THAT CONTRADICTS THE NEED FOR MAJOR TRANSMISSION INFRASTRUCTURE IMPROVEMENTS IN THE REGION?

A. No, in fact, just the contrary. Each study that has been conducted, or is underway, continues to point to the conclusion that major improvements to the transmission system are needed and that significant improvements in the CapX2020 Study Region is necessary. The ongoing study work reinforces the need for major transmission line construction and the Group 1 Projects.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

Timothy J. Rogelstad
Otter Tail Power Company
215 S Cascade St
Fergus Falls, MN 56537

Professional Experience

Manager of Delivery Planning, Otter Tail Power Company **2002 to Present**

- Accountable for managing Transmission Planning, transmission contracts, capital budget development and monitoring and overseeing the project management for Big Stone transmission.
- Ensure that Otter Tail has an adequate transmission system to reliably and economically serve its customers.
- Ensure compliance with NERC Planning Standards
- Negotiate transmission contracts.
- Represent Otter Tail on various industry working groups and committees.
- Manage the development and monitoring of Otter Tail Power capital spending.
- Manage the project management for Big Stone transmission.

Supervisor of Transmission Planning, Otter Tail Power Company **1998 to 2002**

- Supervise Transmission Planning staff.
- Negotiate transmission contracts with neighboring utilities.
- Represent Otter Tail on key MAPP/MISO committees and working groups.
- Ensure compliance with NERC Planning Standards.
- Project Manager for a 100 mile 230 kV transmission project.

Planning Engineer, Otter Tail Power Company **1992 to 1998**

- Conduct transmission studies.
  - Powerflow analysis
  - Stability analysis
  - Economic analysis
- Review transmission studies from neighboring utilities.
- Build and submit transmission modeling information.
- Participate in MAPP working groups regarding transmission planning issues.

Engineer, System Engineering, Otter Tail Power Company **1989 to 1992**

- Conduct relay coordination and distribution coordination studies.
- Design transmission substation protection schemes.
- Field check-out and commissioning of new transmission substation installations and modifications.

Education

- Bachelors of Science, Electrical and Electronics Engineering, North Dakota State University, 1989.
- Registered professional engineer in the states of Minnesota (1994 to present), North Dakota (1994 to present), and South Dakota (1994 to present).
- Participated in numerous continuing education programs, and currently enrolled in an Accelerated Leadership Program for Otter Tail Coorporation.

Affiliations

- Member of the Institute of Electrical and Electronics Engineers (IEEE), past chair of Red River Valley Section
- Member of the Minnesota Society of Professional Engineers
- Former member MAPP Model Building Working Group
- Former member MAPP Transmission Reliability Working Group
- Former member MAPP Line Loading Relief Working Group
- Former member MAPP Design Review Sub-Committee
- Past chair of the MAPP RRV SPG (Red River Valley Sub-Regional Planning Group)
- Current participant MISO Planning Sub-Committee
- Current participant CAPX Technical Team
- Current participant CAPX Tariff Team
- Current participant Upper Great Plains Transmission Coalition
- Chair, Minnesota Transmission Owners

STATE OF NORTH DAKOTA
BEFORE THE
NORTH DAKOTA PUBLIC SERVICE COMMISSION

NORTHERN STATES POWER COMPANY,
A MINNESOTA CORPORATION

CASE NO. PU-_____

OTTER TAIL POWER COMPANY

IN THE MATTER OF THE APPLICATION FOR AN ADVANCE DETERMINATION OF PRUDENCE FOR THE CAPX2020 GROUP 1 TRANSMISSION PROJECTS

CASE NO. PU-_____

VERIFICATION

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

TIMOTHY J. ROGELSTAD, being first duly sworn on oath, deposes and says that he is Manager of Delivery Planning for Applicant Otter Tail Power Company in the above captioned matter, that the testimony and schedules submitted in the above captioned matter under his name were prepared under his direction, that he knows the contents thereof, and that the same is true and correct to the best of his knowledge and belief.

[SIGNATURE PAGE FOLLOWS]

TIMOTHY J. ROGELSTAD

Subscribed and sworn to before me this 10th day of September, 2009.

Notary Public
My Commission Expires: JAN. 31, 2012